Luminant

Illinois Power Generating Company
1500 Eastport Plaza Drive
Collinsville, IL 62234

May 14, 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.) § 845.610(b)(3)(D), Illinois Power Generating Company is submitting groundwater monitoring data for the Quarter 1, 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,

Dianna Tickner

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

Enclosures

Groundwater Monitoring Data and Detected Exceedances, Quarter 1, 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 1, 2024
BOTTOM ASH BASIN, DUCK CREEK POWER PLANT, CANTON, ILLINOIS

May 14, 2024

Samples were collected between January 25 and February 7, 2024 and analyzed for the parameters listed in Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845.600(a), calcium, and turbidity. Final laboratory analytical data was received on March 15, 2024.

The monitoring well locations are included in **Figure 1**. **Attachment A** summarizes the groundwater elevation data for the Quarter 1, 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 1, 2024 sampling event.

Statistical procedures used to evaluate groundwater results are provided in Appendix A of the Groundwater Monitoring Plan[1] provided in the operating permit application. In accordance with 35 I.A.C. § 845.610(b)(3)(B), the Quarter 1, 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 1, 2024
Table 2 Comparison of Statistical Results to GWPS - Quarter 1, 2024

FIGURES

Figure 1 Monitoring Well Location Map

ATTACHMENTS

Attachment A Groundwater Elevation Data - Quarter 1, 2024
Attachment B Laboratory Reports and Field Data Sheets - Quarter 1, 2024
Attachment C Comparison of Statistical Results to Background - Quarter 1, 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 1, 2024
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA05	Background	E004	02/05/2024	Antimony, total	0.00043 U	mg/L
BA05	Background	E004	02/05/2024	Arsenic, total	0.00330	mg/L
BA05	Background	E004	02/05/2024	Barium, total	0.0600	mg/L
BA05	Background	E004	02/05/2024	Beryllium, total	0.00059 U	mg/L
BA05	Background	E004	02/05/2024	Boron, total	0.0770 J+	mg/L
BA05	Background	E004	02/05/2024	Cadmium, total	0.00074 U	mg/L
BA05	Background	E004	02/05/2024	Calcium, total	210	mg/L
BA05	Background	E004	02/05/2024	Chloride, total	9.80	mg/L
BA05	Background	E004	02/05/2024	Chromium, total	0.00400	mg/L
BA05	Background	E004	02/05/2024	Cobalt, total	0.0019	mg/L
BA05	Background	E004	02/05/2024	Dissolved Oxygen	0	mg/L
BA05	Background	E004	02/05/2024	Fluoride, total	0.167	mg/L
BA05	Background	E004	02/05/2024	Lead, total	0.00180	mg/L
BA05	Background	E004	02/05/2024	Lithium, total	0.0074	mg/L
BA05	Background	E004	02/05/2024	Mercury, total	0.00017	mg/L
BA05	Background	E004	02/05/2024	Molybdenum, total	0.00210	mg/L
BA05	Background	E004	02/05/2024	Oxidation Reduction Potential	-91.0	mV
BA05	Background	E004	02/05/2024	pH (field)	7.1	SU
BA05	Background	E004	02/05/2024	Radium 226 + Radium 228, total	2.17	pCi/L
BA05	Background	E004	02/05/2024	Selenium, total	0.00074 U	mg/L
BA05	Background	E004	02/05/2024	Specific Conductance @ 25C (field)	1,510	micromhos/cm
BA05	Background	E004	02/05/2024	Sulfate, total	490	mg/L
BA05	Background	E004	02/05/2024	Temperature	11.4	degrees C
BA05	Background	E004	02/05/2024	Thallium, total	0.00038 U	mg/L
BA05	Background	E004	02/05/2024	Total Dissolved Solids	1,100 J	mg/L
BA05	Background	E004	02/05/2024	Turbidity, field	258	NTU
BA06	Background	E004	01/26/2024	Antimony, total	0.00043 U	mg/L
BA06	Background	E004	01/26/2024	Arsenic, total	0.00640	mg/L
BA06	Background	E004	01/26/2024	Barium, total	0.130	mg/L
BA06	Background	E004	01/26/2024	Beryllium, total	0.00059 U	mg/L
BA06	Background	E004	01/26/2024	Boron, total	11.0	mg/L
BA06	Background	E004	01/26/2024	Cadmium, total	0.00074 U	mg/L
BA06	Background	E004	01/26/2024	Calcium, total	320	mg/L
BA06	Background	E004	01/26/2024	Chloride, total	520	mg/L
BA06	Background	E004	01/26/2024	Chromium, total	0.00990	mg/L
BA06	Background	E004	01/26/2024	Cobalt, total	0.0110	mg/L
BA06	Background	E004	01/26/2024	Dissolved Oxygen	0.840	mg/L
BA06	Background	E004	01/26/2024	Fluoride, total	0.280	mg/L
BA06	Background	E004	01/26/2024	Lead, total	0.00650	mg/L
BA06	Background	E004	01/26/2024	Lithium, total	0.0094	mg/L
BA06	Background	E004	01/26/2024	Mercury, total	0.00014 U	mg/L
BA06	Background	E004	01/26/2024	Molybdenum, total	0.00180	mg/L
BA06	Background	E004	01/26/2024	Oxidation Reduction Potential	-17.0	mV
BA06	Background	E004	01/26/2024	pH (field)	6.7	SU
BA06	Background	E004	01/26/2024	Radium 226 + Radium 228, total	4.69	pCi/L
BA06	Background	E004	01/26/2024	Selenium, total	0.00074 U	mg/L

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 1, 2024
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA06	Background	E004	01/26/2024	Specific Conductance @ 25C (field)	2,091	micromhos/cm
BA06	Background	E004	01/26/2024	Sulfate, total	360	mg/L
BA06	Background	E004	01/26/2024	Temperature	11.1	degrees C
BA06	Background	E004	01/26/2024	Thallium, total	0.00038 U	mg/L
BA06	Background	E004	01/26/2024	Total Dissolved Solids	1,900	mg/L
BA06	Background	E004	01/26/2024	Turbidity, field	352	NTU
BA01	Compliance	E004	01/26/2024	Antimony, total	0.00043 U	mg/L
BA01	Compliance	E004	01/26/2024	Arsenic, total	0.00150	mg/L
BA01	Compliance	E004	01/26/2024	Barium, total	0.130	mg/L
BA01	Compliance	E004	01/26/2024	Beryllium, total	0.00059 U	mg/L
BA01	Compliance	E004	01/26/2024	Boron, total	0.0160 J+	mg/L
BA01	Compliance	E004	01/26/2024	Cadmium, total	0.00074 U	mg/L
BA01	Compliance	E004	01/26/2024	Calcium, total	130	mg/L
BA01	Compliance	E004	01/26/2024	Chloride, total	16.0	mg/L
BA01	Compliance	E004	01/26/2024	Chromium, total	0.0028 U	mg/L
BA01	Compliance	E004	01/26/2024	Cobalt, total	0.00087	mg/L
BA01	Compliance	E004	01/26/2024	Dissolved Oxygen	1.40	mg/L
BA01	Compliance	E004	01/26/2024	Fluoride, total	0.04 U	mg/L
BA01	Compliance	E004	01/26/2024	Lead, total	0.00022 U	mg/L
BA01	Compliance	E004	01/26/2024	Lithium, total	0.005 U	mg/L
BA01	Compliance	E004	01/26/2024	Mercury, total	0.00014 U	mg/L
BA01	Compliance	E004	01/26/2024	Molybdenum, total	0.00100	mg/L
BA01	Compliance	E004	01/26/2024	Oxidation Reduction Potential	-7.00	mV
BA01	Compliance	E004	01/26/2024	pH (field)	6.9	SU
BA01	Compliance	E004	01/26/2024	Radium 226 + Radium 228, total	1.09	pCi/L
BA01	Compliance	E004	01/26/2024	Selenium, total	0.00074 U	mg/L
BA01	Compliance	E004	01/26/2024	Specific Conductance @ 25C (field)	1,010	micromhos/cm
BA01	Compliance	E004	01/26/2024	Sulfate, total	150	mg/L
BA01	Compliance	E004	01/26/2024	Temperature	10.6	degrees C
BA01	Compliance	E004	01/26/2024	Thallium, total	0.00038 U	mg/L
BA01	Compliance	E004	01/26/2024	Total Dissolved Solids	610 J	mg/L
BA01	Compliance	E004	01/26/2024	Turbidity, field	0.700	NTU
BA02	Compliance	E004	01/25/2024	Antimony, total	0.00043 U	mg/L
BA02	Compliance	E004	01/25/2024	Arsenic, total	0.00770	mg/L
BA02	Compliance	E004	01/25/2024	Barium, total	0.210	mg/L
BA02	Compliance	E004	01/25/2024	Beryllium, total	0.00059 U	mg/L
BA02	Compliance	E004	01/25/2024	Boron, total	0.0450 J+	mg/L
BA02	Compliance	E004	01/25/2024	Cadmium, total	0.00074 U	mg/L
BA02	Compliance	E004	01/25/2024	Calcium, total	94.0	mg/L
BA02	Compliance	E004	01/25/2024	Chloride, total	11.0	mg/L
BA02	Compliance	E004	01/25/2024	Chromium, total	0.0028 U	mg/L
BA02	Compliance	E004	01/25/2024	Cobalt, total	0.00048 U	mg/L
BA02	Compliance	E004	01/25/2024	Dissolved Oxygen	3.20	mg/L
BA02	Compliance	E004	01/25/2024	Fluoride, total	0.203	mg/L
BA02	Compliance	E004	01/25/2024	Lead, total	0.00022 U	mg/L
BA02	Compliance	E004	01/25/2024	Lithium, total	0.005 U	mg/L

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BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA02	Compliance	E004	01/25/2024	Mercury, total	0.00014 U	mg/L
BA02	Compliance	E004	01/25/2024	Molybdenum, total	0.00430	mg/L
BA02	Compliance	E004	01/25/2024	Oxidation Reduction Potential	175	mV
BA02	Compliance	E004	01/25/2024	pH (field)	7.2	SU
BA02	Compliance	E004	01/25/2024	Radium 226 + Radium 228, total	1.16	pCi/L
BA02	Compliance	E004	01/25/2024	Selenium, total	0.00074 U	mg/L
BA02	Compliance	E004	01/25/2024	Specific Conductance @ 25C (field)	864	micromhos/cm
BA02	Compliance	E004	01/25/2024	Sulfate, total	14.0	mg/L
BA02	Compliance	E004	01/25/2024	Temperature	10.2	degrees C
BA02	Compliance	E004	01/25/2024	Thallium, total	0.00038 U	mg/L
BA02	Compliance	E004	01/25/2024	Total Dissolved Solids	500	mg/L
BA02	Compliance	E004	01/25/2024	Turbidity, field	37.3	NTU
BA02L	Compliance	E004	02/05/2024	Antimony, total	0.00043 U	mg/L
BA02L	Compliance	E004	02/05/2024	Arsenic, total	0.0120	mg/L
BA02L	Compliance	E004	02/05/2024	Barium, total	0.130	mg/L
BA02L	Compliance	E004	02/05/2024	Beryllium, total	0.00059 U	mg/L
BA02L	Compliance	E004	02/05/2024	Boron, total	0.0660 J+	mg/L
BA02L	Compliance	E004	02/05/2024	Cadmium, total	0.00074 U	mg/L
BA02L	Compliance	E004	02/05/2024	Calcium, total	120	mg/L
BA02L	Compliance	E004	02/05/2024	Chloride, total	5.80 J+	mg/L
BA02L	Compliance	E004	02/05/2024	Chromium, total	0.0028 U	mg/L
BA02L	Compliance	E004	02/05/2024	Cobalt, total	0.00330	mg/L
BA02L	Compliance	E004	02/05/2024	Dissolved Oxygen	1.20	mg/L
BA02L	Compliance	E004	02/05/2024	Fluoride, total	6.79	mg/L
BA02L	Compliance	E004	02/05/2024	Lead, total	0.00150	mg/L
BA02L	Compliance	E004	02/05/2024	Lithium, total	0.005 U	mg/L
BA02L	Compliance	E004	02/05/2024	Mercury, total	0.00014 U	mg/L
BA02L	Compliance	E004	02/05/2024	Molybdenum, total	0.00170	mg/L
BA02L	Compliance	E004	02/05/2024	Oxidation Reduction Potential	-118	mV
BA02L	Compliance	E004	02/05/2024	pH (field)	7.2	SU
BA02L	Compliance	E004	02/05/2024	Radium 226 + Radium 228, total	1.29	pCi/L
BA02L	Compliance	E004	02/05/2024	Selenium, total	0.00074 U	mg/L
BA02L	Compliance	E004	02/05/2024	Specific Conductance @ 25C (field)	856	micromhos/cm
BA02L	Compliance	E004	02/05/2024	Sulfate, total	0.89	mg/L
BA02L	Compliance	E004	02/05/2024	Temperature	10.6	degrees C
BA02L	Compliance	E004	02/05/2024	Thallium, total	0.00038 U	mg/L
BA02L	Compliance	E004	02/05/2024	Total Dissolved Solids	340 J	mg/L
BA02L	Compliance	E004	02/05/2024	Turbidity, field	142	NTU
BA03	Compliance	E004	01/25/2024	Antimony, total	0.00043 U	mg/L
BA03	Compliance	E004	01/25/2024	Arsenic, total	0.00069 U	mg/L
BA03	Compliance	E004	01/25/2024	Barium, total	0.140	mg/L
BA03	Compliance	E004	01/25/2024	Beryllium, total	0.00059 U	mg/L
BA03	Compliance	E004	01/25/2024	Boron, total	0.0570 J+	mg/L
BA03	Compliance	E004	01/25/2024	Cadmium, total	0.00074 U	mg/L
BA03	Compliance	E004	01/25/2024	Calcium, total	110	mg/L
BA03	Compliance	E004	01/25/2024	Chloride, total	6.00	mg/L

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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA03	Compliance	E004	01/25/2024	Chromium, total	0.0028 U	mg/L
BA03	Compliance	E004	01/25/2024	Cobalt, total	0.00048 U	mg/L
BA03	Compliance	E004	01/25/2024	Dissolved Oxygen	1.30	mg/L
BA03	Compliance	E004	01/25/2024	Fluoride, total	0.2	mg/L
BA03	Compliance	E004	01/25/2024	Lead, total	0.00022 U	mg/L
BA03	Compliance	E004	01/25/2024	Lithium, total	0.005 U	mg/L
BA03	Compliance	E004	01/25/2024	Mercury, total	0.000310	mg/L
BA03	Compliance	E004	01/25/2024	Molybdenum, total	0.00130	mg/L
BA03	Compliance	E004	01/25/2024	Oxidation Reduction Potential	131	mV
BA03	Compliance	E004	01/25/2024	pH (field)	6.9	SU
BA03	Compliance	E004	01/25/2024	Radium 226 + Radium 228, total	1.28	pCi/L
BA03	Compliance	E004	01/25/2024	Selenium, total	0.00210	mg/L
BA03	Compliance	E004	01/25/2024	Specific Conductance @ 25C (field)	836	micromhos/cm
BA03	Compliance	E004	01/25/2024	Sulfate, total	17.0	mg/L
BA03	Compliance	E004	01/25/2024	Temperature	10.8	degrees C
BA03	Compliance	E004	01/25/2024	Thallium, total	0.00038 U	mg/L
BA03	Compliance	E004	01/25/2024	Total Dissolved Solids	480	mg/L
BA03	Compliance	E004	01/25/2024	Turbidity, field	65.1	NTU
BA03L	Compliance	E004	01/25/2024	Antimony, total	0.00043 U	mg/L
BA03L	Compliance	E004	01/25/2024	Arsenic, total	0.00069 U	mg/L
BA03L	Compliance	E004	01/25/2024	Barium, total	0.120	mg/L
BA03L	Compliance	E004	01/25/2024	Beryllium, total	0.00059 U	mg/L
BA03L	Compliance	E004	01/25/2024	Boron, total	1.00 J+	mg/L
BA03L	Compliance	E004	01/25/2024	Cadmium, total	0.00074 U	mg/L
BA03L	Compliance	E004	01/25/2024	Calcium, total	190	mg/L
BA03L	Compliance	E004	01/25/2024	Chloride, total	33.0	mg/L
BA03L	Compliance	E004	01/25/2024	Chromium, total	0.0036	mg/L
BA03L	Compliance	E004	01/25/2024	Cobalt, total	0.00048 U	mg/L
BA03L	Compliance	E004	01/25/2024	Dissolved Oxygen	3.50	mg/L
BA03L	Compliance	E004	01/25/2024	Fluoride, total	0.201	mg/L
BA03L	Compliance	E004	01/25/2024	Lead, total	0.00041	mg/L
BA03L	Compliance	E004	01/25/2024	Lithium, total	0.0053	mg/L
BA03L	Compliance	E004	01/25/2024	Mercury, total	0.000200	mg/L
BA03L	Compliance	E004	01/25/2024	Molybdenum, total	0.00180	mg/L
BA03L	Compliance	E004	01/25/2024	Oxidation Reduction Potential	188	mV
BA03L	Compliance	E004	01/25/2024	pH (field)	6.7	SU
BA03L	Compliance	E004	01/25/2024	Radium 226 + Radium 228, total	1.83	pCi/L
BA03L	Compliance	E004	01/25/2024	Selenium, total	0.00074 U	mg/L
BA03L	Compliance	E004	01/25/2024	Specific Conductance @ 25C (field)	1,630	micromhos/cm
BA03L	Compliance	E004	01/25/2024	Sulfate, total	410	mg/L
BA03L	Compliance	E004	01/25/2024	Temperature	9.60	degrees C
BA03L	Compliance	E004	01/25/2024	Thallium, total	0.00038 U	mg/L
BA03L	Compliance	E004	01/25/2024	Total Dissolved Solids	1,200	mg/L
BA03L	Compliance	E004	01/25/2024	Turbidity, field	40.1	NTU
BA04	Compliance	E004	01/26/2024	Antimony, total	0.00043 U	mg/L
BA04	Compliance	E004	01/26/2024	Arsenic, total	0.00140	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	E004	01/26/2024	Barium, total	0.110	mg/L
BA04	Compliance	E004	01/26/2024	Beryllium, total	0.00059 U	mg/L
BA04	Compliance	E004	01/26/2024	Boron, total	0.230 J+	mg/L
BA04	Compliance	E004	01/26/2024	Cadmium, total	0.00074 U	mg/L
BA04	Compliance	E004	01/26/2024	Calcium, total	140	mg/L
BA04	Compliance	E004	01/26/2024	Chloride, total	43.0	mg/L
BA04	Compliance	E004	01/26/2024	Chromium, total	0.0028 U	mg/L
BA04	Compliance	E004	01/26/2024	Cobalt, total	0.0013	mg/L
BA04	Compliance	E004	01/26/2024	Dissolved Oxygen	0.500	mg/L
BA04	Compliance	E004	01/26/2024	Fluoride, total	0.04 U	mg/L
BA04	Compliance	E004	01/26/2024	Lead, total	0.00022 U	mg/L
BA04	Compliance	E004	01/26/2024	Lithium, total	0.005 U	mg/L
BA04	Compliance	E004	01/26/2024	Mercury, total	0.00014 U	mg/L
BA04	Compliance	E004	01/26/2024	Molybdenum, total	0.00170	mg/L
BA04	Compliance	E004	01/26/2024	Oxidation Reduction Potential	-15.0	mV
BA04	Compliance	E004	01/26/2024	pH (field)	6.9	SU
BA04	Compliance	E004	01/26/2024	Radium 226 + Radium 228, total	1.32	pCi/L
BA04	Compliance	E004	01/26/2024	Selenium, total	0.00074 U	mg/L
BA04	Compliance	E004	01/26/2024	Specific Conductance @ 25C (field)	1,120	micromhos/cm
BA04	Compliance	E004	01/26/2024	Sulfate, total	180	mg/L
BA04	Compliance	E004	01/26/2024	Temperature	10.8	degrees C
BA04	Compliance	E004	01/26/2024	Thallium, total	0.00038 U	mg/L
BA04	Compliance	E004	01/26/2024	Total Dissolved Solids	690	mg/L
BA04	Compliance	E004	01/26/2024	Turbidity, field	0 U	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 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 1, 2024
845 QUARTERLY REPORT
DUCK 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	E004	Antimony, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA01	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/26/24	12	25	CI around mean	0.00035	0.0240	Background	No Exceedance
BA01	UA	E004	Barium, total	mg/L	02/05/16 - 01/26/24	12	0	CI around mean	0.133	2.0	Standard	No Exceedance
BA01	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA01	UA	E004	Boron, total	mg/L	02/05/16 - 01/26/24	24	0	CI around median	0.021	7.90	Background	No Exceedance
BA01	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA01	UA	E004	Chloride, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	11	700	Background	No Exceedance
BA01	UA	E004	Chromium, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.004	0.1	Standard	No Exceedance
BA01	UA	E004	Cobalt, total	mg/L	02/05/16 - 01/26/24	12	83	CI around median	0.002	0.0300	Background	No Exceedance
BA01	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/26/24	24	58	CI around median	0.25	4.0	Standard	No Exceedance
BA01	UA	E004	Lead, total	mg/L	02/05/16 - 01/26/24	12	42	CI around geomean	0.00137	0.0420	Background	No Exceedance
BA01	UA	E004	Lithium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA01	UA	E004	Mercury, total	mg/L	02/05/16 - 01/26/24	12	92	Most recent sample	0.0002	0.00400	Background	No Exceedance
BA01	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/26/24	12	0	CI around geomean	0.00128	0.1	Standard	No Exceedance
BA01	UA	E004	pH (field)	SU	02/05/16 - 01/26/24	28	0	CI around median	6.8/7.0	6.4/9.0	Background/Standard	No Exceedance
BA01	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/26/24	12	0	CI around mean	0.454	7.27	Background	No Exceedance
BA01	UA	E004	Selenium, total	mg/L	02/05/16 - 01/26/24	11	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA01	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/26/24	24	0	CB around linear reg	136	890	Background	No Exceedance
BA01	UA	E004	Thallium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA01	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/26/24	24	0	CI around mean	538	2,590	Background	No Exceedance
BA02	UA	E004	Antimony, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/25/24	12	8	CI around mean	0.00197	0.0240	Background	No Exceedance
BA02	UA	E004	Barium, total	mg/L	02/05/16 - 01/25/24	12	0	CI around mean	0.193	2.0	Standard	No Exceedance
BA02	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/25/24	12	92	CI around median	0.001	0.004	Standard	No Exceedance
BA02	UA	E004	Boron, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	0.0469	7.90	Background	No Exceedance
BA02	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02	UA	E004	Chloride, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	9.3	700	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 1, 2024
845 QUARTERLY REPORT
DUCK 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	E004	Chromium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.004	0.1	Standard	No Exceedance
BA02	UA	E004	Cobalt, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA02	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/25/24	24	79	CI around median	0.25	4.0	Standard	No Exceedance
BA02	UA	E004	Lead, total	mg/L	02/05/16 - 01/25/24	12	75	CI around median	0.001	0.0420	Background	No Exceedance
BA02	UA	E004	Lithium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA02	UA	E004	Mercury, total	mg/L	02/05/16 - 01/25/24	12	92	CI around median	0.0002	0.00400	Background	No Exceedance
BA02	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/25/24	12	0	CI around mean	0.00398	0.1	Standard	No Exceedance
BA02	UA	E004	pH (field)	SU	02/05/16 - 01/25/24	25	0	CI around median	6.9/7.2	6.4/9.0	Background/Standard	No Exceedance
BA02	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/25/24	12	0	CI around mean	0.421	7.27	Background	No Exceedance
BA02	UA	E004	Selenium, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.001	0.05	Standard	No Exceedance
BA02	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	11.4	890	Background	No Exceedance
BA02	UA	E004	Thallium, total	mg/L	02/05/16 - 01/25/24	12	92	Most recent sample	0.001	0.002	Standard	No Exceedance
BA02	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	487	2,590	Background	No Exceedance
BA02L	UA/PMP	E004	Antimony, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02L	UA/PMP	E004	Arsenic, total	mg/L	04/14/21 - 02/05/24	10	0	CI around mean	0.0104	0.0240	Background	No Exceedance
BA02L	UA/PMP	E004	Barium, total	mg/L	04/14/21 - 02/05/24	10	0	CI around median	0.046	2.0	Standard	No Exceedance
BA02L	UA/PMP	E004	Beryllium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA02L	UA/PMP	E004	Boron, total	mg/L	04/14/21 - 02/05/24	11	0	CI around mean	0.0755	7.90	Background	No Exceedance
BA02L	UA/PMP	E004	Cadmium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02L	UA/PMP	E004	Chloride, total	mg/L	04/14/21 - 02/05/24	11	0	CB around linear reg	0.826	700	Background	No Exceedance
BA02L	UA/PMP	E004	Chromium, total	mg/L	04/14/21 - 02/05/24	10	90	CI around median	0.004	0.1	Standard	No Exceedance
BA02L	UA/PMP	E004	Cobalt, total	mg/L	04/14/21 - 02/05/24	10	80	CI around median	0.002	0.0300	Background	No Exceedance
BA02L	UA/PMP	E004	Fluoride, total	mg/L	04/14/21 - 02/05/24	11	0	CI around median	0.445	4.0	Standard	No Exceedance
BA02L	UA/PMP	E004	Lead, total	mg/L	04/14/21 - 02/05/24	10	70	CI around median	0.001	0.0420	Background	No Exceedance
BA02L	UA/PMP	E004	Lithium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA02L	UA/PMP	E004	Mercury, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.0002	0.00400	Background	No Exceedance
BA02L	UA/PMP	E004	Molybdenum, total	mg/L	04/14/21 - 02/05/24	10	0	CI around mean	0.00704	0.1	Standard	No Exceedance

TABLE 2.
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845 QUARTERLY REPORT
DUCK 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	E004	pH (field)	SU	04/14/21 - 02/05/24	11	0	CI around mean	7.2/7.6	6.4/9.0	Background/Standard	No Exceedance
BA02L	UA/PMP	E004	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 02/05/24	9	0	CI around mean	0.148	7.27	Background	No Exceedance
BA02L	UA/PMP	E004	Selenium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA02L	UA/PMP	E004	Sulfate, total	mg/L	04/14/21 - 02/05/24	11	9	CI around geomean	1.75	890	Background	No Exceedance
BA02L	UA/PMP	E004	Thallium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA02L	UA/PMP	E004	Total Dissolved Solids	mg/L	04/14/21 - 02/05/24	11	0	CI around mean	198	2,590	Background	No Exceedance
BA03	UA	E004	Antimony, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA03	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.001	0.0240	Background	No Exceedance
BA03	UA	E004	Barium, total	mg/L	02/05/16 - 01/25/24	12	0	CB around linear reg	0.111	2.0	Standard	No Exceedance
BA03	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA03	UA	E004	Boron, total	mg/L	02/05/16 - 01/25/24	24	0	CI around mean	0.0256	7.90	Background	No Exceedance
BA03	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03	UA	E004	Chloride, total	mg/L	02/05/16 - 01/25/24	24	0	CI around median	5.8	700	Background	No Exceedance
BA03	UA	E004	Chromium, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.004	0.1	Standard	No Exceedance
BA03	UA	E004	Cobalt, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA03	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/25/24	24	54	CI around median	0.25	4.0	Standard	No Exceedance
BA03	UA	E004	Lead, total	mg/L	02/05/16 - 01/25/24	12	67	CI around median	0.001	0.0420	Background	No Exceedance
BA03	UA	E004	Lithium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA03	UA	E004	Mercury, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.0002	0.00400	Background	No Exceedance
BA03	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/25/24	12	8	CB around linear reg	-0.00104	0.1	Standard	No Exceedance
BA03	UA	E004	pH (field)	SU	02/05/16 - 01/25/24	26	0	CB around linear reg	6.7/7.1	6.4/9.0	Background/Standard	No Exceedance
BA03	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/25/24	12	0	CI around mean	0.579	7.27	Background	No Exceedance
BA03	UA	E004	Selenium, total	mg/L	02/05/16 - 01/25/24	12	42	CI around median	0.001	0.05	Standard	No Exceedance
BA03	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	14.1	890	Background	No Exceedance
BA03	UA	E004	Thallium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	438	2,590	Background	No Exceedance
BA03L	UA/PMP	E004	Antimony, total	mg/L	04/14/21 - 01/25/24	12	100	All ND - Last	0.003	0.006	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 1, 2024
845 QUARTERLY REPORT
DUCK 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	E004	Arsenic, total	mg/L	04/14/21 - 01/25/24	12	75	CI around median	0.001	0.0240	Background	No Exceedance
BA03L	UA/PMP	E004	Barium, total	mg/L	04/14/21 - 01/25/24	12	0	CI around median	0.12	2.0	Standard	No Exceedance
BA03L	UA/PMP	E004	Beryllium, total	mg/L	04/14/21 - 01/25/24	12	92	CI around median	0.001	0.004	Standard	No Exceedance
BA03L	UA/PMP	E004	Boron, total	mg/L	04/14/21 - 01/25/24	13	0	CB around T-S line	0.22	7.90	Background	No Exceedance
BA03L	UA/PMP	E004	Cadmium, total	mg/L	04/14/21 - 01/25/24	12	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03L	UA/PMP	E004	Chloride, total	mg/L	04/14/21 - 01/25/24	13	0	CI around mean	18.5	700	Background	No Exceedance
BA03L	UA/PMP	E004	Chromium, total	mg/L	04/14/21 - 01/25/24	12	42	CI around median	0.004	0.1	Standard	No Exceedance
BA03L	UA/PMP	E004	Cobalt, total	mg/L	04/14/21 - 01/25/24	12	83	CI around median	0.002	0.0300	Background	No Exceedance
BA03L	UA/PMP	E004	Fluoride, total	mg/L	04/14/21 - 01/25/24	13	77	CI around median	0.25	4.0	Standard	No Exceedance
BA03L	UA/PMP	E004	Lead, total	mg/L	04/14/21 - 01/25/24	12	50	CI around median	0.001	0.0420	Background	No Exceedance
BA03L	UA/PMP	E004	Lithium, total	mg/L	04/14/21 - 01/25/24	12	92	CI around median	0.02	0.0680	Background	No Exceedance
BA03L	UA/PMP	E004	Mercury, total	mg/L	04/14/21 - 01/25/24	12	83	CI around median	0.0002	0.00400	Background	No Exceedance
BA03L	UA/PMP	E004	Molybdenum, total	mg/L	04/14/21 - 01/25/24	12	33	CI around median	0.001	0.1	Standard	No Exceedance
BA03L	UA/PMP	E004	pH (field)	SU	04/14/21 - 01/25/24	13	0	CI around mean	6.7/6.9	6.4/9.0	Background/Standard	No Exceedance
BA03L	UA/PMP	E004	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 01/25/24	11	0	CI around mean	0.181	7.27	Background	No Exceedance
BA03L	UA/PMP	E004	Selenium, total	mg/L	04/14/21 - 01/25/24	12	92	CI around median	0.001	0.05	Standard	No Exceedance
BA03L	UA/PMP	E004	Sulfate, total	mg/L	04/14/21 - 01/25/24	13	0	CB around linear reg	374	890	Background	No Exceedance
BA03L	UA/PMP	E004	Thallium, total	mg/L	04/14/21 - 01/25/24	12	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03L	UA/PMP	E004	Total Dissolved Solids	mg/L	04/14/21 - 01/25/24	13	0	CI around median	990	2,590	Background	No Exceedance
BA04	UA	E004	Antimony, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA04	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/26/24	12	83	CI around median	0.001	0.0240	Background	No Exceedance
BA04	UA	E004	Barium, total	mg/L	02/05/16 - 01/26/24	12	0	CI around mean	0.1	2.0	Standard	No Exceedance
BA04	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA04	UA	E004	Boron, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	0.3	7.90	Background	No Exceedance
BA04	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA04	UA	E004	Chloride, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	38.6	700	Background	No Exceedance
BA04	UA	E004	Chromium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.004	0.1	Standard	No Exceedance

TABLE 2.
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845 QUARTERLY REPORT
DUCK 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	E004	Cobalt, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA04	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/26/24	24	25	CI around mean	0.275	4.0	Standard	No Exceedance
BA04	UA	E004	Lead, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.001	0.0420	Background	No Exceedance
BA04	UA	E004	Lithium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA04	UA	E004	Mercury, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.0002	0.00400	Background	No Exceedance
BA04	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/26/24	12	0	CI around geomean	0.00182	0.1	Standard	No Exceedance
BA04	UA	E004	pH (field)	SU	02/05/16 - 01/26/24	25	0	CB around T-S line	6.6/6.8	6.4/9.0	Background/Standard	No Exceedance
BA04	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/26/24	12	0	CI around mean	0.429	7.27	Background	No Exceedance
BA04	UA	E004	Selenium, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.001	0.05	Standard	No Exceedance
BA04	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	147	890	Background	No Exceedance
BA04	UA	E004	Thallium, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.001	0.002	Standard	No Exceedance
BA04	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/26/24	24	0	CB around linear reg	690	2,590	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 1, 2024
845 QUARTERLY REPORT
DUCK 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
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
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

PROJECT: 1690000XXXX | DATED: 9/24/2021 | DESIGNER: STOLZSD

Y:\Mapping\Projects\2222885\MXD\845_Operating_Permit\Duck_Creek\BABGMP\Figure 2-1_Proposed 845 GW Monitoring Well Network.mxd

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

0 50 100 Feet

Monitoring Well Location Map

BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

ATTACHMENTS

ATTACHMENT A.
GROUNDWATER ELEVATION DATA - QUARTER 1, 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	01/17/2024	14.07	573.19
BA02	Compliance	01/17/2024	8.89	571.21
BA02L	Compliance	01/17/2024	8.70	571.38
BA03	Compliance	01/17/2024	5.92	572.59
BA03L	Compliance	01/17/2024	5.49	572.43
BA04	Compliance	01/17/2024	6.16	572.20
BA05	Background	01/17/2024	17.45	578.24
BA06	Background	01/17/2024	20.05	575.45

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

Pace Analytical Services, LLC
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April 27, 2024

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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.

Diane Billings
Project Manager

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

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order HA03720

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

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

Work Order HA03925

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

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

Work Order HB00518

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

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

Case Narrative

This report is a revision of the original report dated 3/06/2024. G52S could not be sampled. XTPW02 was dry. P05L, BA06, G64 L and G51L have multiple work orders. There is no access point for X301 to obtain the DTW. A revised report was requested 2/26/24 adding Li and removing Mg for 73L. The fluoride result for BA02L is further discussed in the attached letter and raw data is included .

Pace® PEOPLE ADVANCING SCIENCE

April 16, 2024

To whom it may concern,

On Friday April 5, 2024, we reviewed **HB00518-01** results for Fluoride by EPA 300.0. The results entered into the Laboratory Information Management System (LIMS) matched the original data. The sample was used as a Matrix Spike/Matrix Spike Duplicate (MS/MSD) in the analytical batch. Recoveries for the MS/MSD were not able to be accurately assessed due to matrix related bias therefore the results for sample HB00518-01 had been qualified with a Q3 qualifier. The "NR" on the final report for the MS/MSD recovery indicates no recovery. This is due to the background concentration being high in comparison to the amount spiked therefore a true recovery could not be calculated.

There was no remaining volume of the original sample to perform reanalysis for total Fluoride. However, additional volume of the dissolved bottle was available, and this was analyzed for Fluoride by SM 4500 F^- - C past the analytical hold time. The observed result for dissolved fluoride was 0.34 mg/L from this analysis which is in line with historical data.

Based on this further review and the data results not matching historical, it does appear that the result for Fluoride in the original data from 2-12-2024 is elevated due to a potential matrix interference peak.

The laboratory procedure for fluoride by EPA 300.0 when an interference peak is observed in the chromatogram is for the analysis is to be changed to fluoride by probe (SM 4500 F^- - C). We will continue to follow this practice going forward to prevent this in the future.

Sincerely,

Julie Rada
Lab Operations Manager - Peoria/McHenry IL
Pace Analytical Services, LLC.

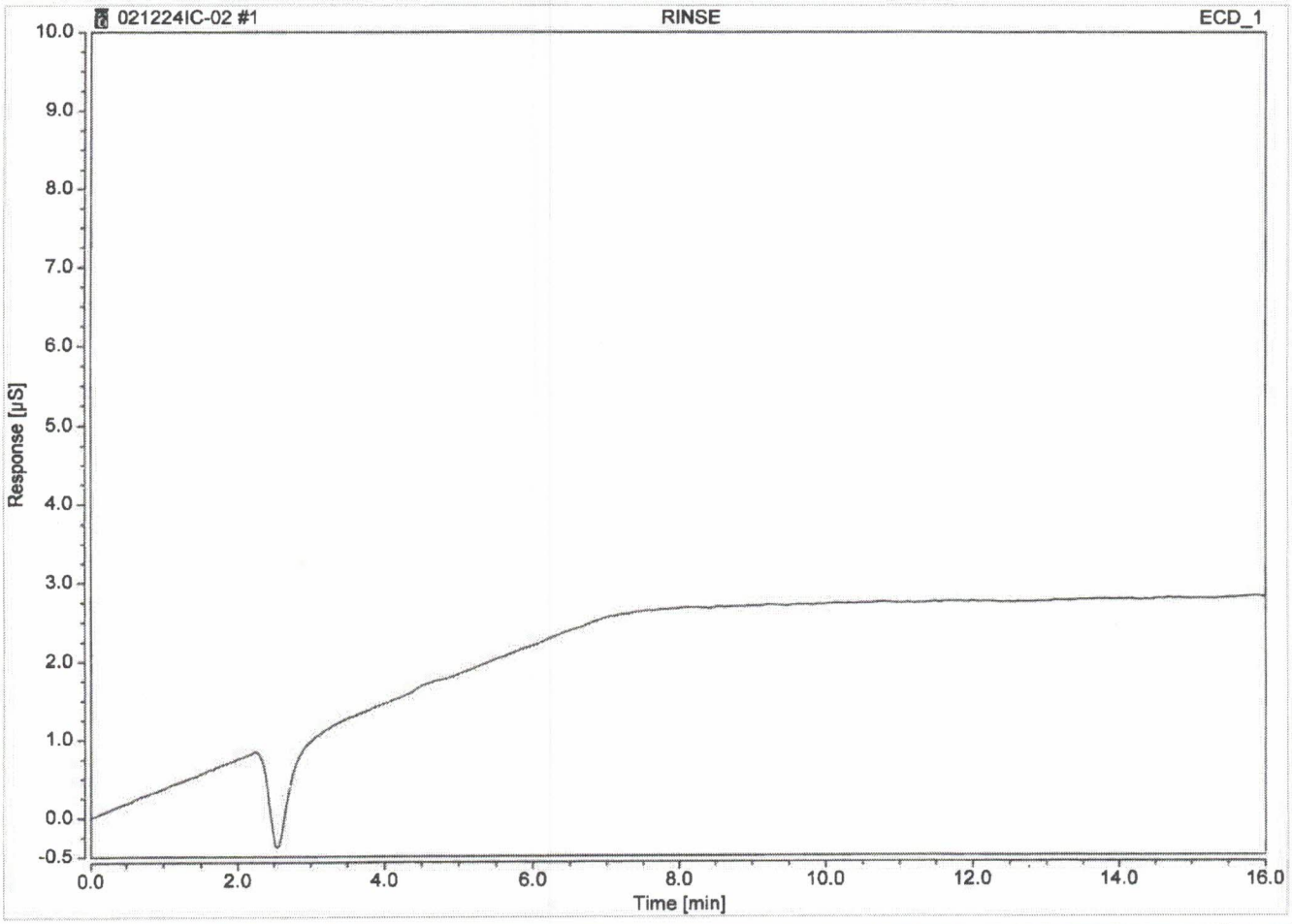
1 RINSE

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**RINSE**	*Run Time (min):*	**16.00**
Vial Number:	**45**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

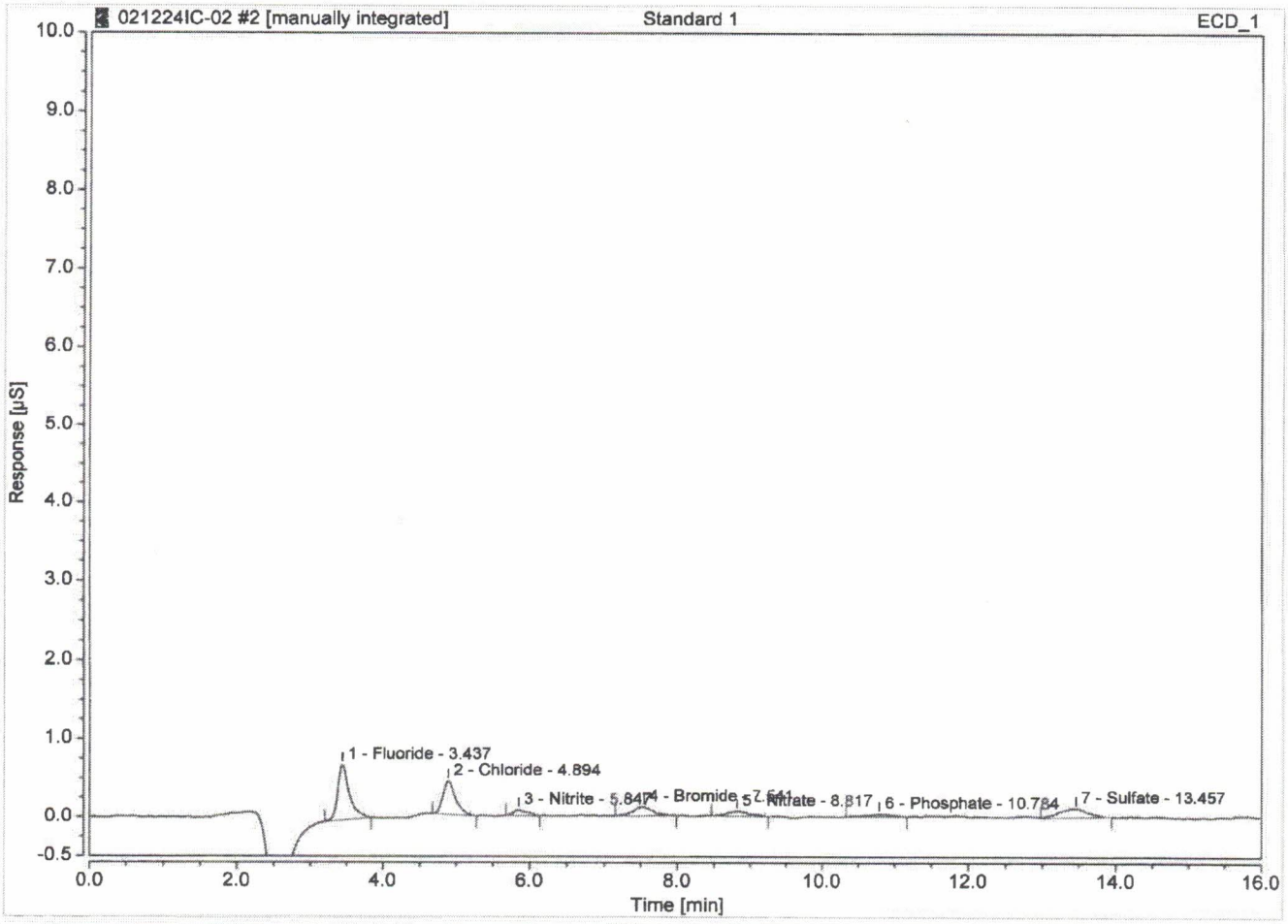
2 Standard 1

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**Standard 1**	*Run Time (min):*	**16.00**
Vial Number:	**46**	*Injection Volume:*	**100.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.44	Fluoride	0.133	0.712	-3.2109	0.2420	BMB
2	4.89	Chloride	0.087	0.431	-1.5417	0.2461	BMB
3	5.85	Nitrite	0.017	0.075	-9.4804	0.0272	BMB*
4	7.54	Bromide	0.037	0.116	3.8892	0.2597	BMB*
5	8.82	Nitrate	0.022	0.060	18.1536	0.0236	BMB*
6	10.78	Phosphate	0.014	0.034	-12.8052	0.0698	BMB*
7	13.46	Sulfate	0.051	0.115	-5.2585	0.2369	BMB*
Total:			**0.361**	**1.543**	**-10.25**	**1.11**	

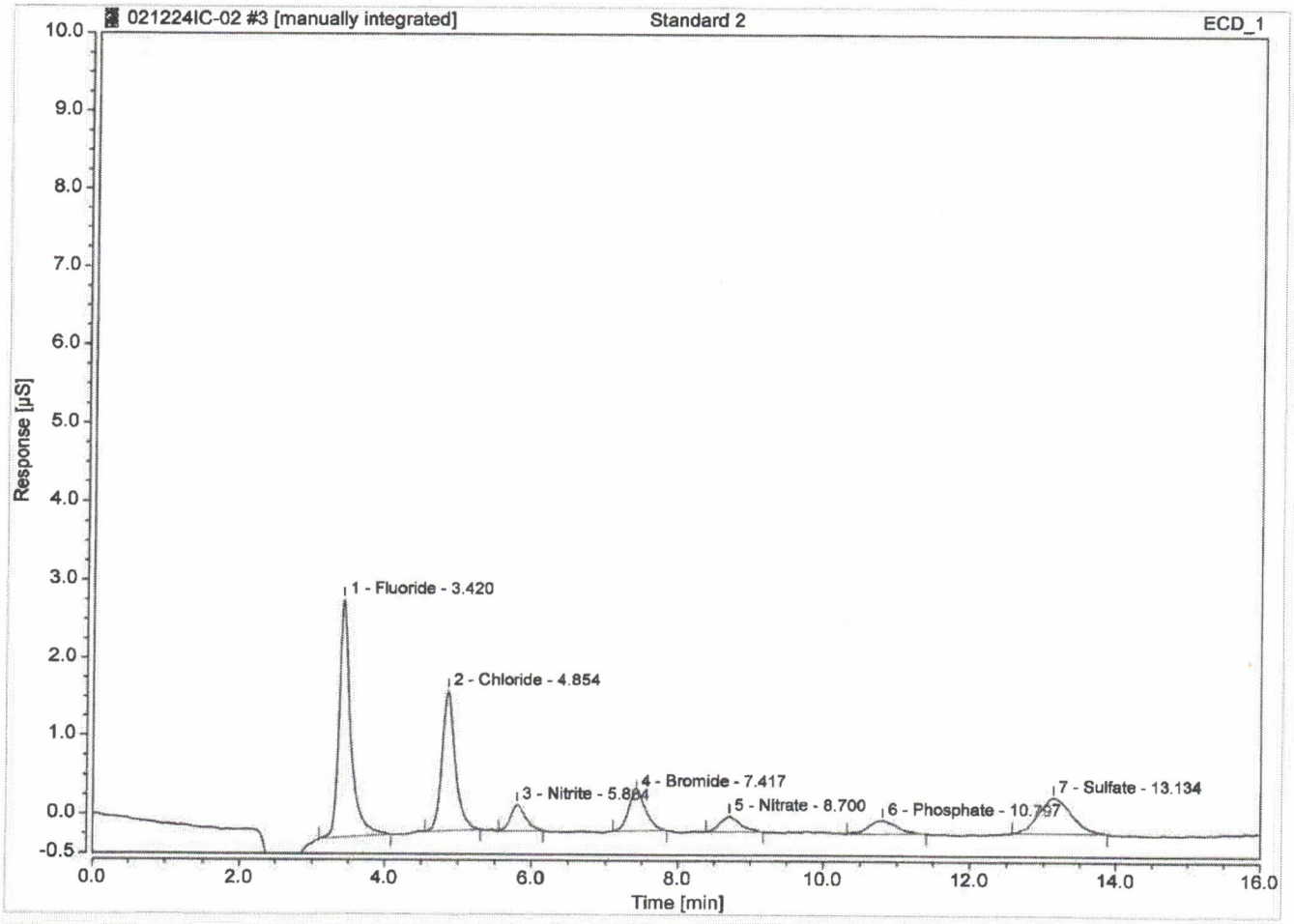
3 Standard 2

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**Standard 2**	*Run Time (min):*	**16.00**
Vial Number:	**47**	*Injection Volume:*	**100.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.42	Fluoride	0.568	3.050	-4.8565	0.9514	BMB
2	4.85	Chloride	0.372	1.793	-7.0266	0.9297	BMB
3	5.80	Nitrite	0.081	0.335	-12.4737	0.1050	BMB
4	7.42	Bromide	0.139	0.493	-9.9044	0.9010	BMB
5	8.70	Nitrate	0.065	0.199	-12.5585	0.0700	BMB
6	10.80	Phosphate	0.075	0.170	-10.3760	0.2868	BMB*
7	13.13	Sulfate	0.240	0.458	-3.3186	0.9668	BMB
Total:			**1.539**	**6.498**	**-60.51**	**4.21**	

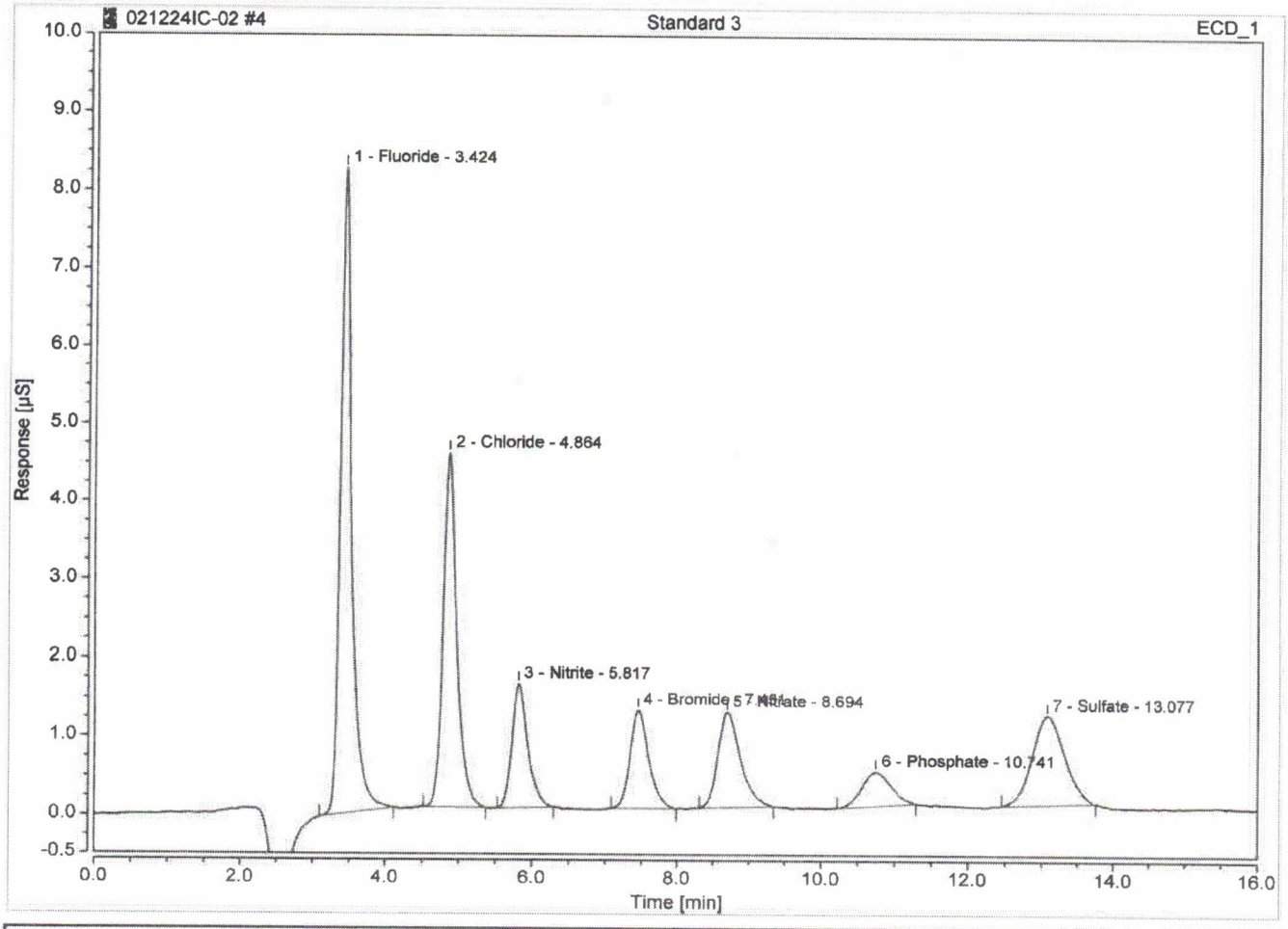
4 Standard 3

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**Standard 3**	*Run Time (min):*	**16.00**
Vial Number:	**48**	*Injection Volume:*	**100.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 12:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.42	Fluoride	1.465	8.273	-3.3310	2.4167	BMB
2	4.86	Chloride	0.952	4.537	-7.0579	2.3236	BMB
3	5.82	Nitrite	0.394	1.581	-3.0757	0.4846	BMB
4	7.45	Bromide	0.374	1.255	-5.1124	2.3722	BMB
5	8.69	Nitrate	0.444	1.214	-3.8467	0.4808	BMB
6	10.74	Phosphate	0.200	0.432	-2.3207	0.7326	BMB
7	13.08	Sulfate	0.586	1.133	-7.8363	2.3041	BMB
Total:			**4.415**	**18.426**	**-32.58**	**11.11**	

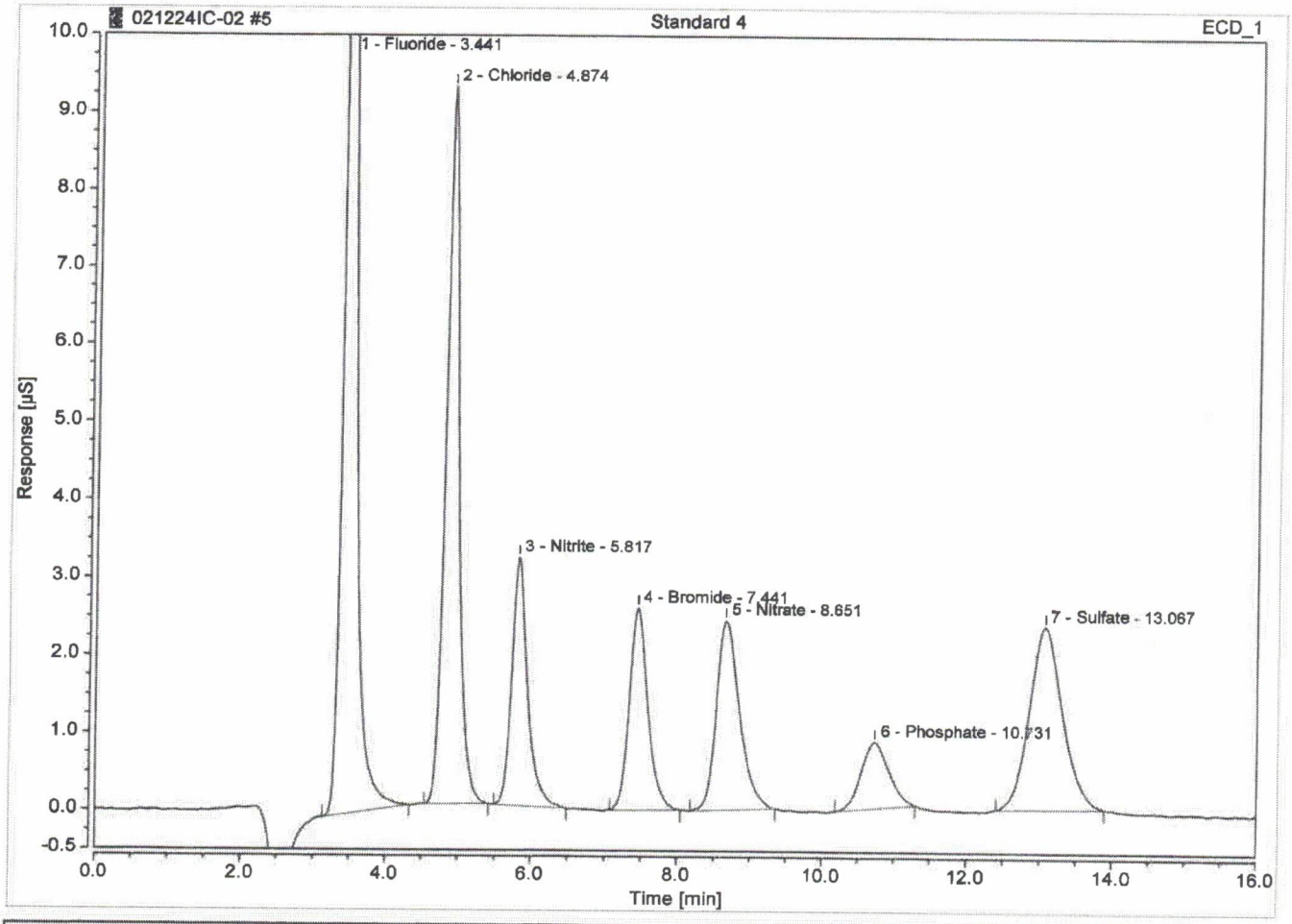
5 Standard 4

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**Standard 4**	*Run Time (min):*	**16.00**
Vial Number:	**49**	*Injection Volume:*	**100.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.44	Fluoride	3.063	16.971	0.5153	5.0258	BMB
2	4.87	Chloride	1.981	9.253	-4.1093	4.7945	BMB
3	5.82	Nitrite	0.813	3.208	-0.7233	0.9928	BMB
4	7.44	Bromide	0.771	2.610	-2.6707	4.8665	BMB
5	8.65	Nitrate	0.899	2.446	-2.5829	0.9742	BMB
6	10.73	Phosphate	0.387	0.867	-6.8082	1.3979	BMB
7	13.07	Sulfate	1.252	2.362	-2.4470	4.8776	BMB
Total:			**9.167**	**37.718**	**-18.83**	**22.93**	

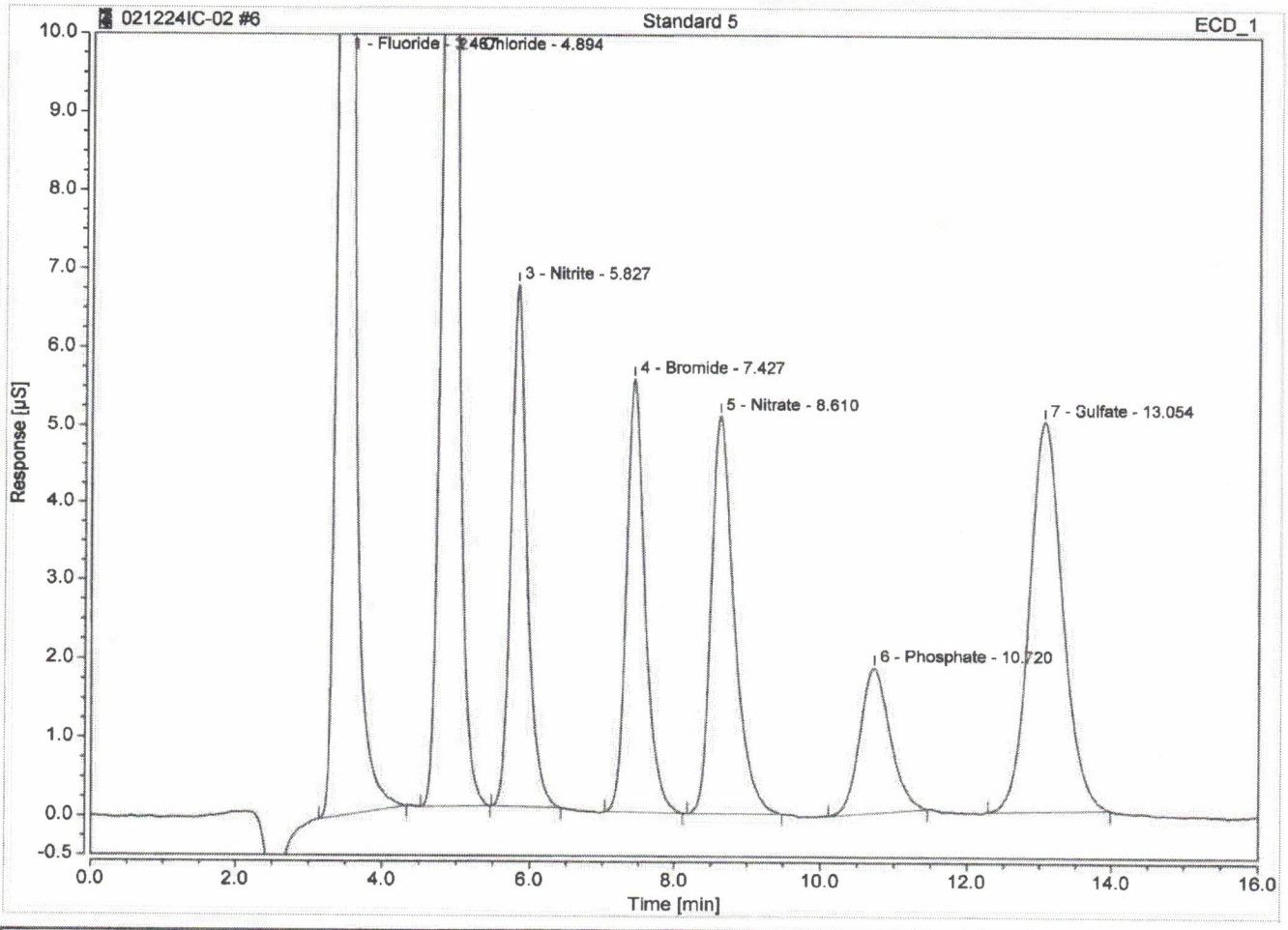
6 Standard 5

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**Standard 5**	*Run Time (min):*	**16.00**
Vial Number:	**50**	*Injection Volume:*	**100.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 13:10**	*Sample Weight:*	**1.0000**

Chromatogram

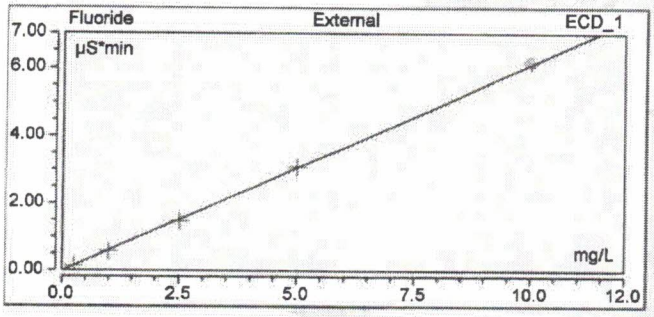


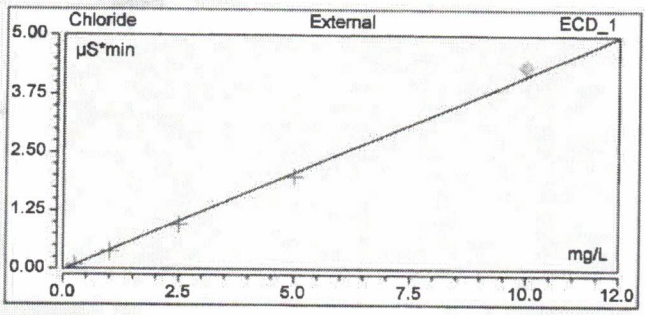
Integration Results

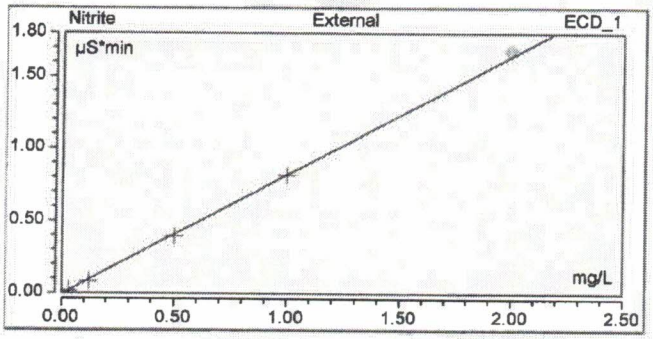
No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.47	Fluoride	6.179	32.210	1.1410	10.1141	BMB
2	4.89	Chloride	4.340	18.695	4.5603	10.4560	BMB
3	5.83	Nitrite	1.677	6.681	2.0212	2.0404	BMB
4	7.43	Bromide	1.645	5.557	3.5066	10.3507	BMB
5	8.61	Nitrate	1.894	5.104	2.5739	2.0515	BMB
6	10.72	Phosphate	0.884	1.855	5.4325	3.1630	BMB
7	13.05	Sulfate	2.672	5.003	3.6459	10.3646	BMB
Total:			**19.290**	**75.107**	**22.88**	**48.54**	

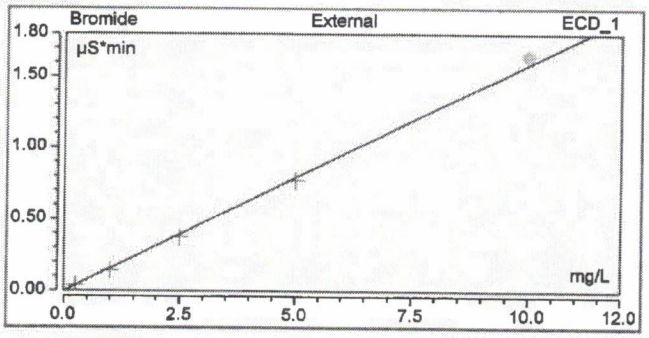
Calibration

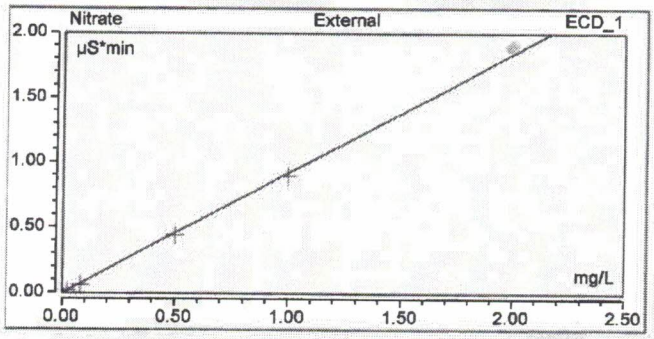
No.	Peak Name	Ret. Time	Points	Corr.Coeff. %	Offset	Slope	Cal. Type
1	Fluoride	3.437	6	99.972	-0.015	0.612	Lin, AddZero, 1/A
2	Chloride	4.894	6	99.838	-0.016	0.417	Lin, AddZero, 1/A
3	Nitrite	5.847	6	99.923	-0.006	0.825	Lin, AddZero, 1/A
4	Bromide	7.541	6	99.891	-0.004	0.159	Lin, AddZero, 1/A
5	Nitrate	8.817	6	99.931	0.000	0.923	Lin, AddZero, 1/A
6	Phosphate	10.784	6	99.724	-0.006	0.281	Lin, AddZero, 1/A
7	Sulfate	13.457	6	99.879	-0.010	0.259	Lin, AddZero, 1/A

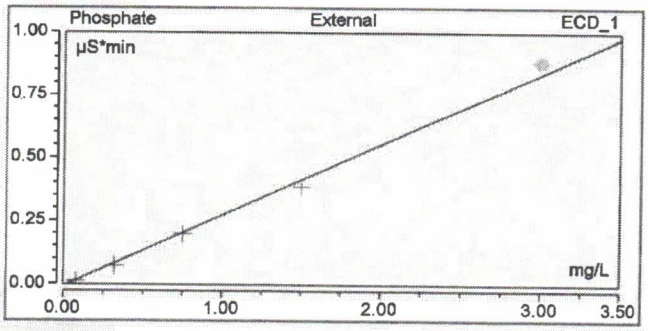


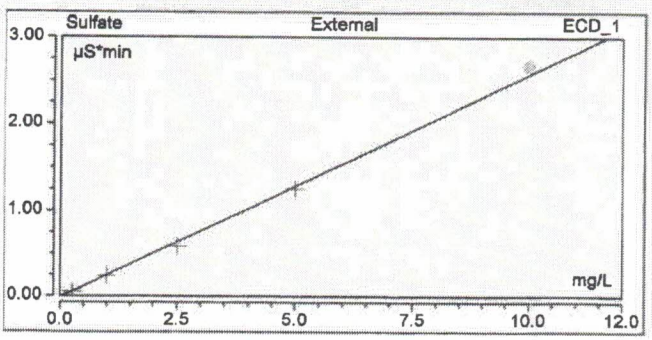












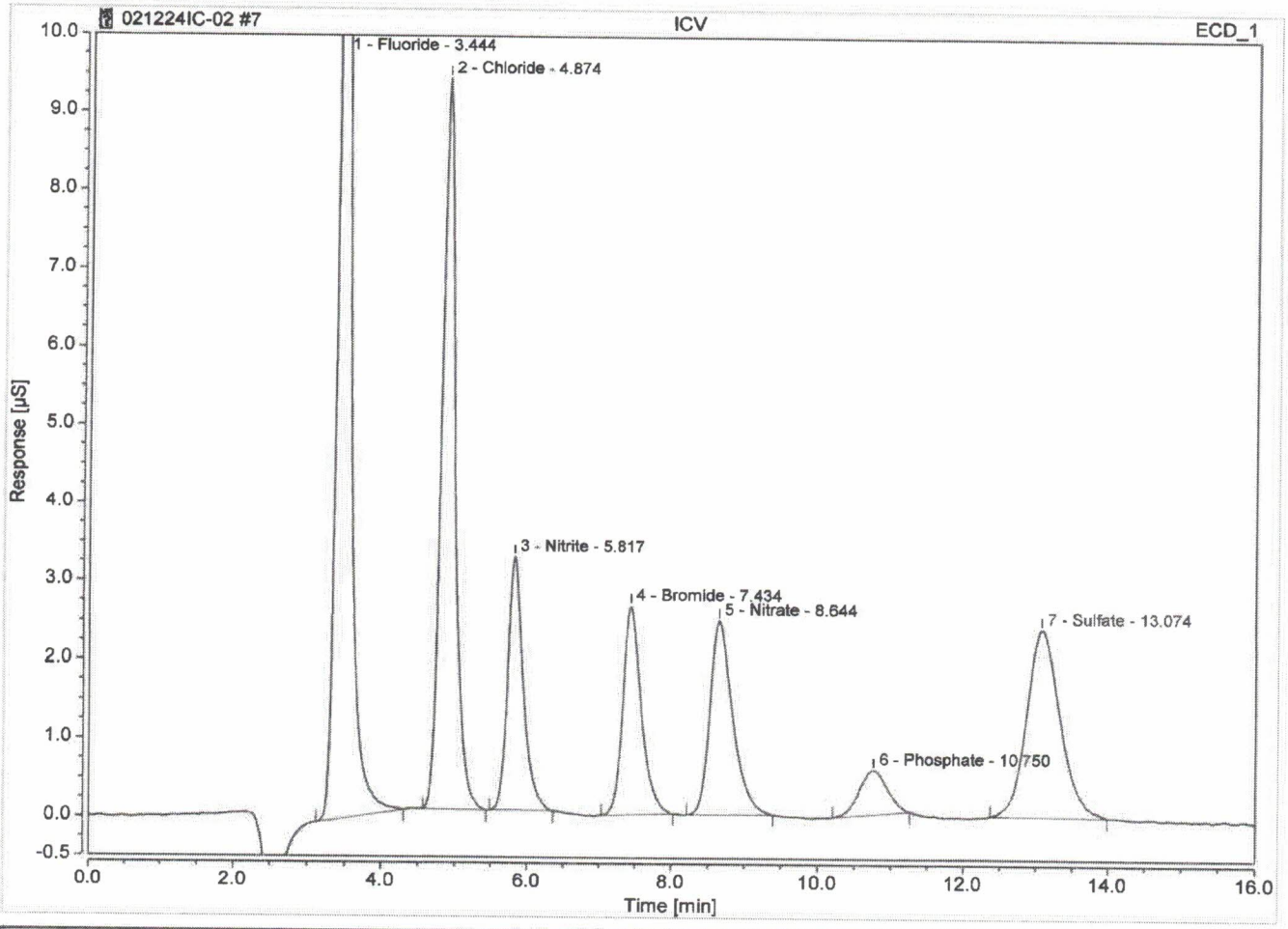
7 ICV

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	ICV	*Run Time (min):*	**16.00**
Vial Number:	1	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.44	Fluoride	3.080	17.111	n.a.	5.0537	BMB
2	4.87	Chloride	2.023	9.346	n.a.	4.8938	BMB
3	5.82	Nitrite	0.800	3.231	n.a.	0.9778	BMB
4	7.43	Bromide	0.789	2.657	n.a.	4.9758	BMB
5	8.64	Nitrate	0.903	2.476	n.a.	0.9780	BMB
6	10.75	Phosphate	0.254	0.566	n.a.	0.9230	BMB
7	13.07	Sulfate	1.279	2.393	n.a.	4.9800	BMB
Total:			**9.127**	**37.781**	**0.00**	**22.78**	

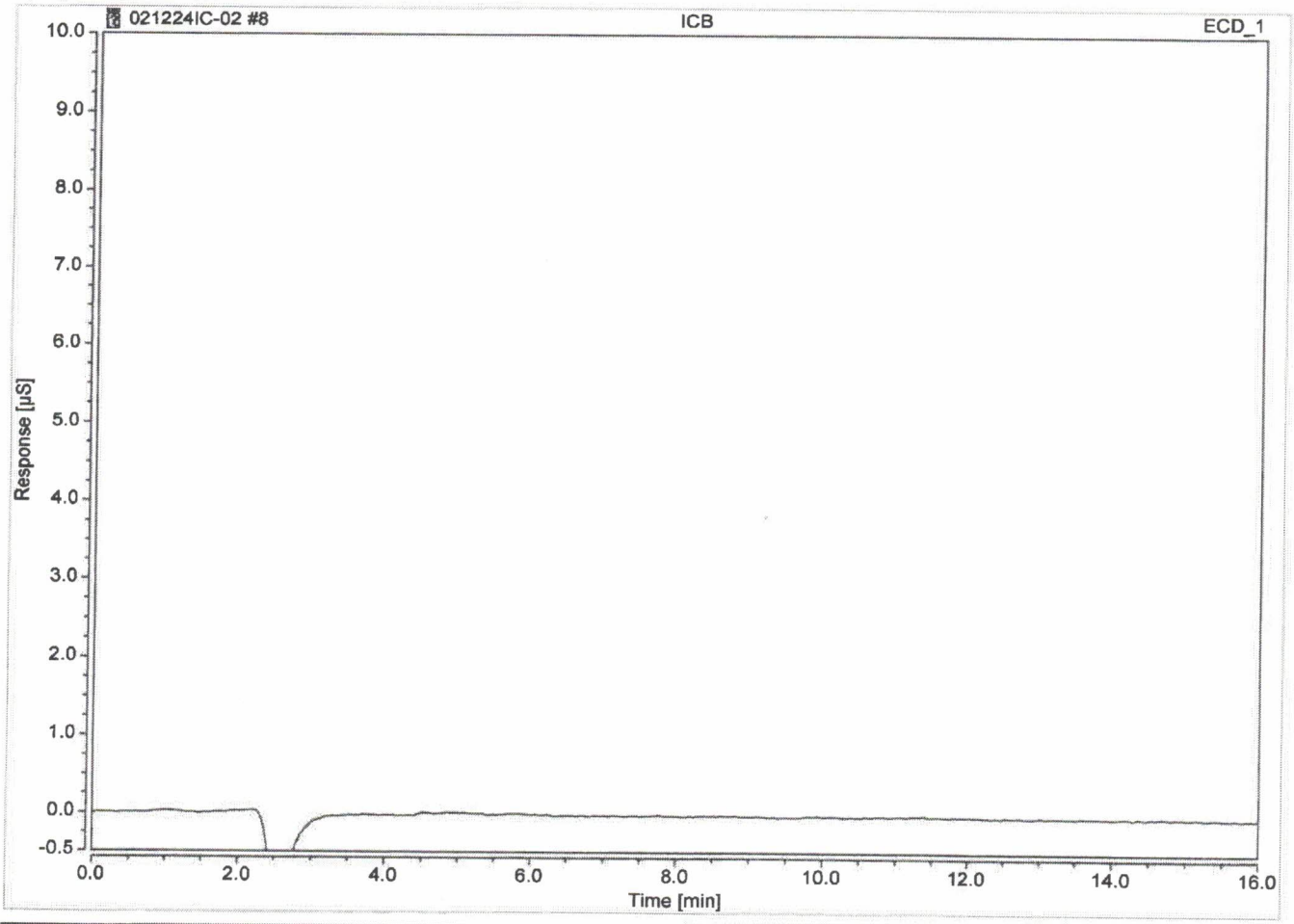
8 ICB

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**ICB**	*Run Time (min):*	**16.00**
Vial Number:	**2**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/5/2024 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

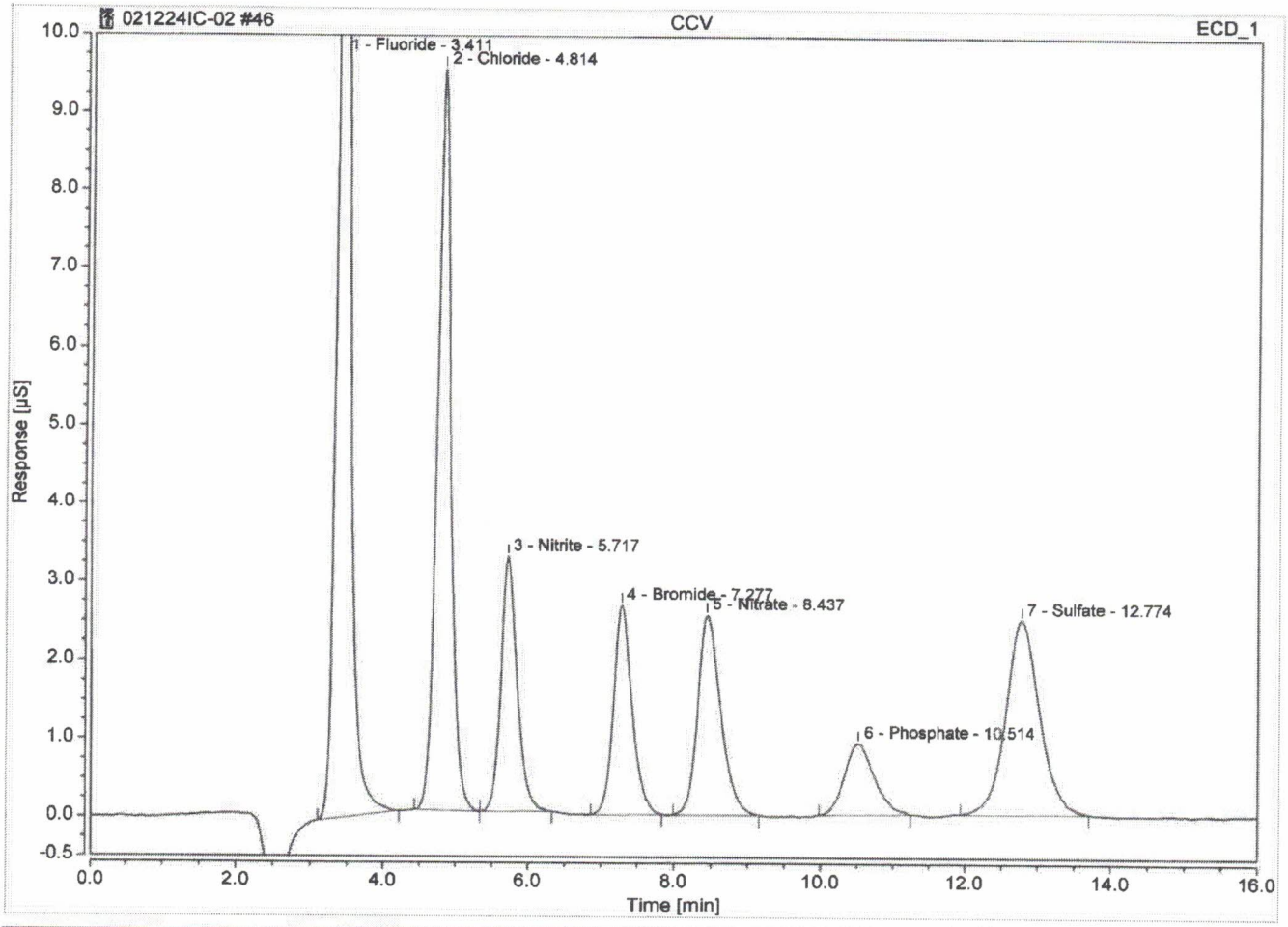
46 CCV

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**16.00**
Vial Number:	**37**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/12/2024 22:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.41	Fluoride	3.154	16.663	n.a.	5.1742	BMB
2	4.81	Chloride	2.077	9.485	n.a.	5.0241	BMB
3	5.72	Nitrite	0.838	3.258	n.a.	1.0231	BMB
4	7.28	Bromide	0.805	2.681	n.a.	5.0777	BMB
5	8.44	Nitrate	0.930	2.555	n.a.	1.0069	BMB
6	10.51	Phosphate	0.443	0.917	n.a.	1.5957	BMB
7	12.77	Sulfate	1.347	2.483	n.a.	5.2440	BMB
Total:			**9.593**	**38.043**	**0.00**	**24.15**	

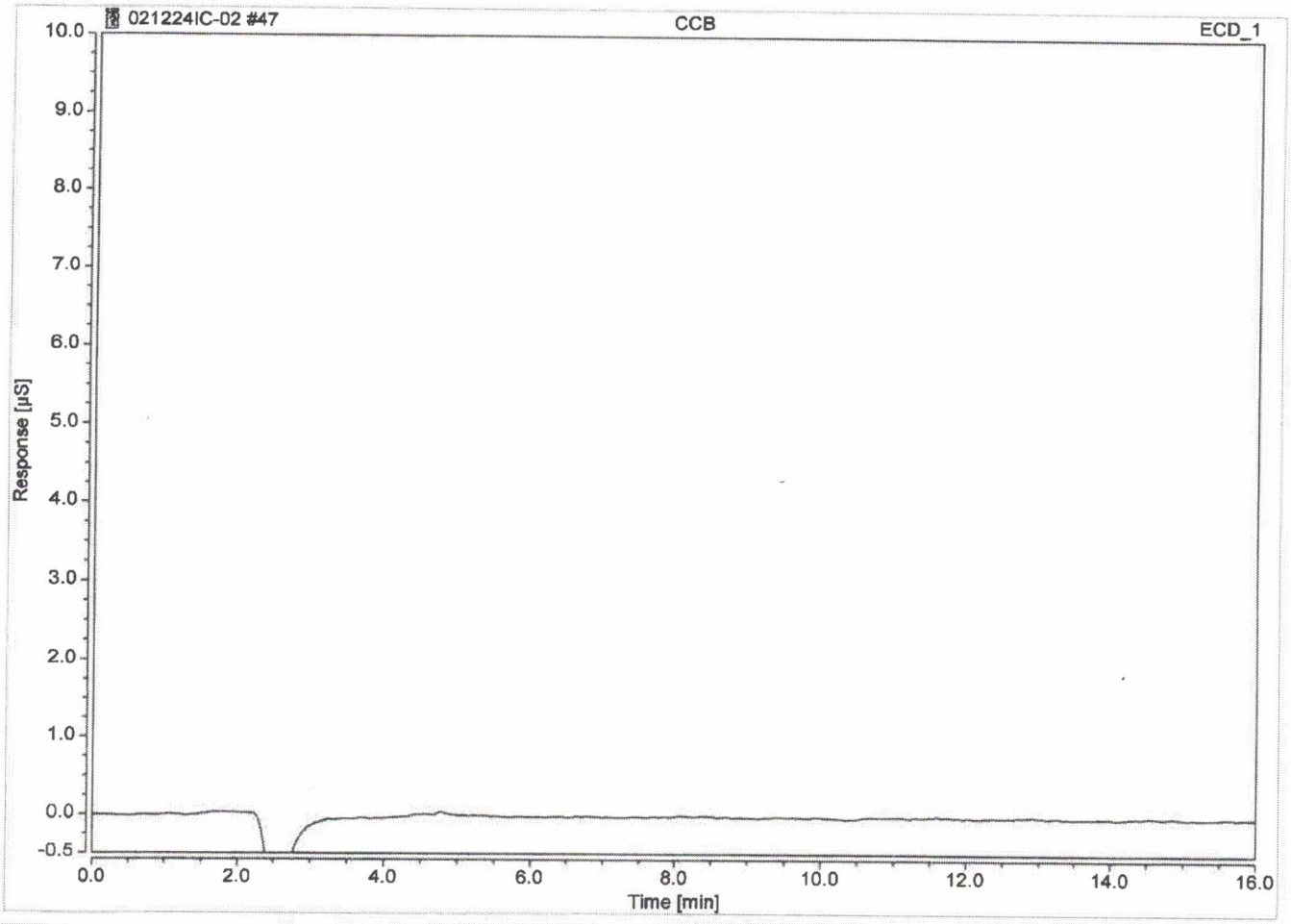
47 CCB

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**16.00**
Vial Number:	**38**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/12/2024 23:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

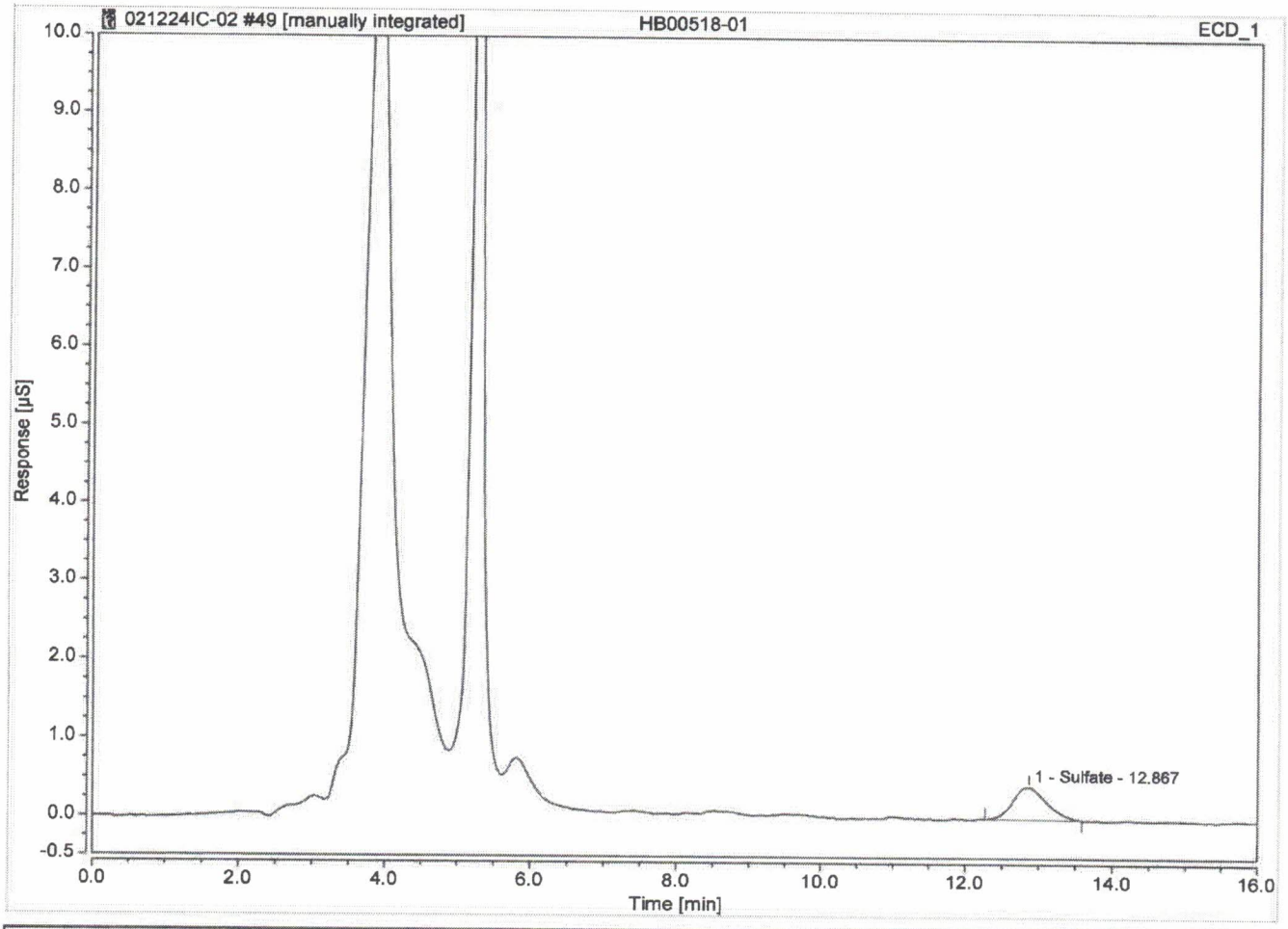
49 HB00518-01

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**HB00518-01**	*Run Time (min):*	**16.00**
Vial Number:	**40**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/12/2024 23:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
1	12.87	Sulfate	0.220	0.414	n.a.	0.8888	BMB*
Total:			**0.220**	**0.414**	**0.00**	**0.89**	

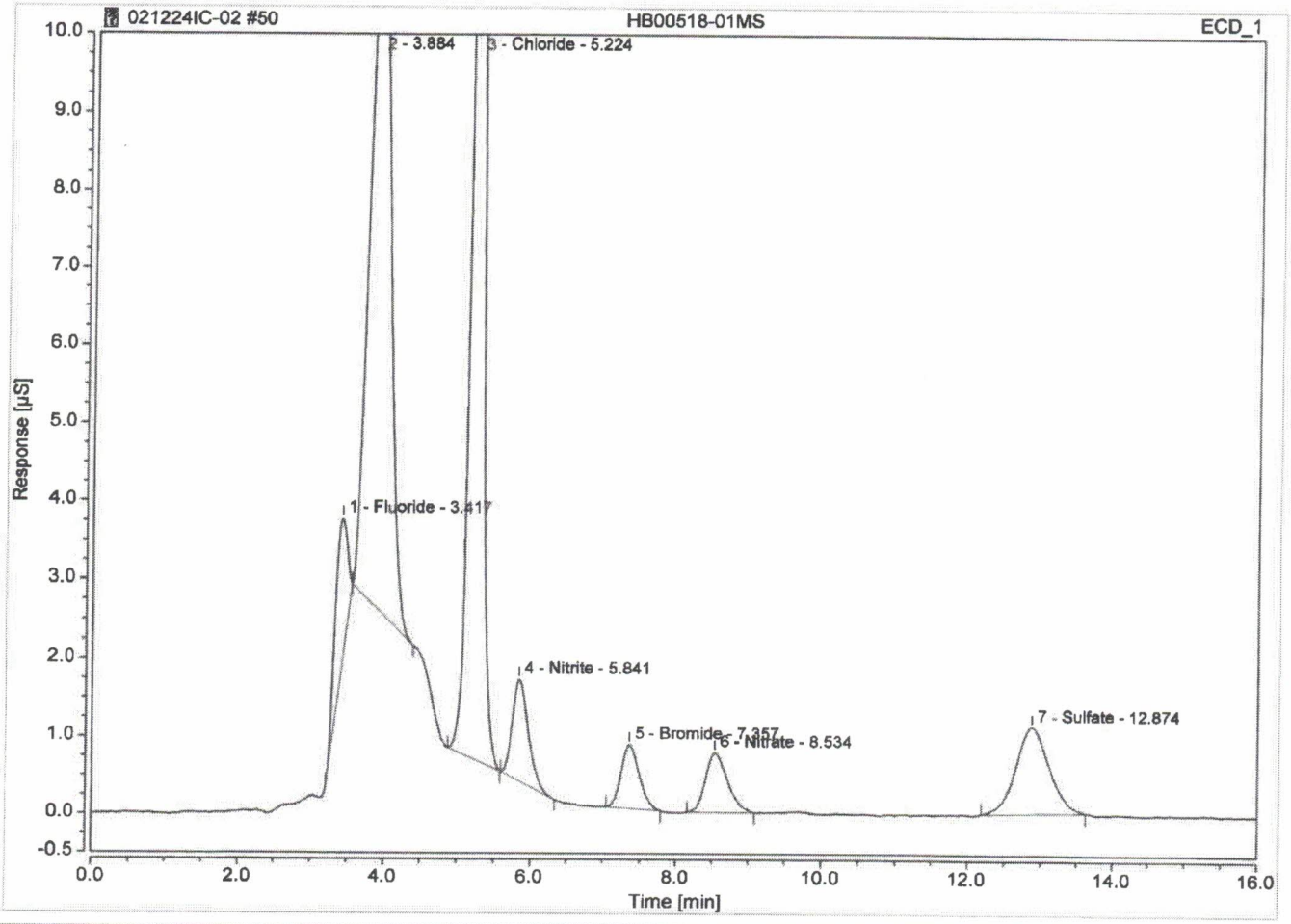
50 HB00518-01MS

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**HB00518-01MS**	*Run Time (min):*	**16.00**
Vial Number:	**41**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/12/2024 23:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.42	Fluoride	0.351	1.855	n.a.	0.5971	BMb
2	3.88		2.950	9.074	n.a.	n.a.	bMB
3	5.22	Chloride	3.294	19.725	n.a.	7.9455	BMB
4	5.84	Nitrite	0.331	1.314	n.a.	0.4086	BMB
5	7.36	Bromide	0.237	0.830	n.a.	1.5153	BMB
6	8.53	Nitrate	0.277	0.779	n.a.	0.2997	BMB
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
7	12.87	Sulfate	0.607	1.126	n.a.	2.3851	BMB
Total:			**8.048**	**34.704**	**0.00**	**13.15**	

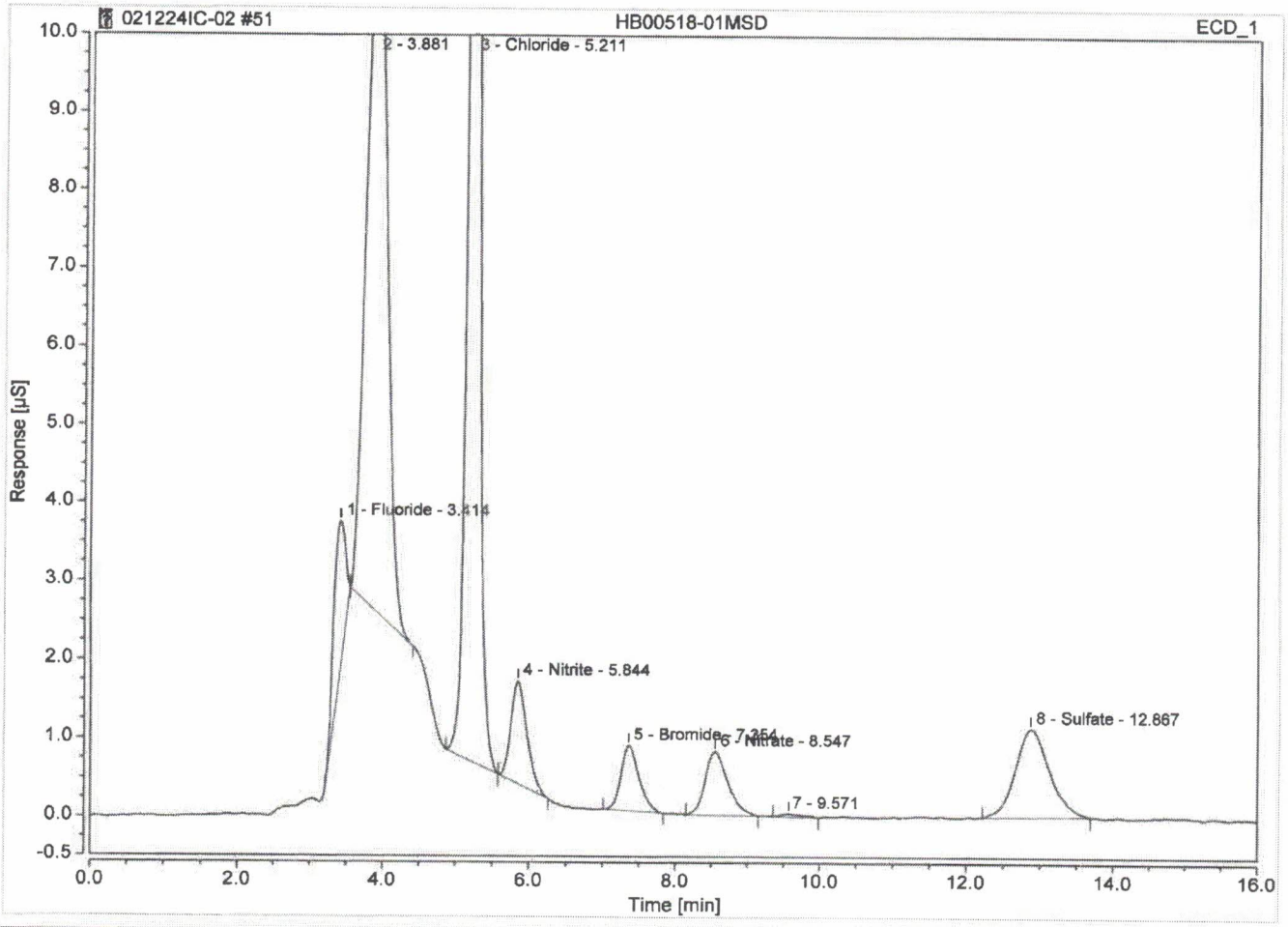
51 HB00518-01MSD

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**HB00518-01MSD**	*Run Time (min):*	**16.00**
Vial Number:	**42**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/13/2024 0:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.41	Fluoride	0.354	1.859	n.a.	0.6020	BMb
2	3.88		2.965	9.092	n.a.	n.a.	bMB
3	5.21	Chloride	3.331	20.463	n.a.	8.0345	BMB
4	5.84	Nitrite	0.329	1.315	n.a.	0.4061	BMB
5	7.35	Bromide	0.242	0.834	n.a.	1.5419	BMB
6	8.55	Nitrate	0.294	0.811	n.a.	0.3178	BMB
7	9.57		0.015	0.041	n.a.	n.a.	BMB
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
8	12.87	Sulfate	0.608	1.129	n.a.	2.3893	BMB
Total:			**8.137**	**35.544**	**0.00**	**13.29**	

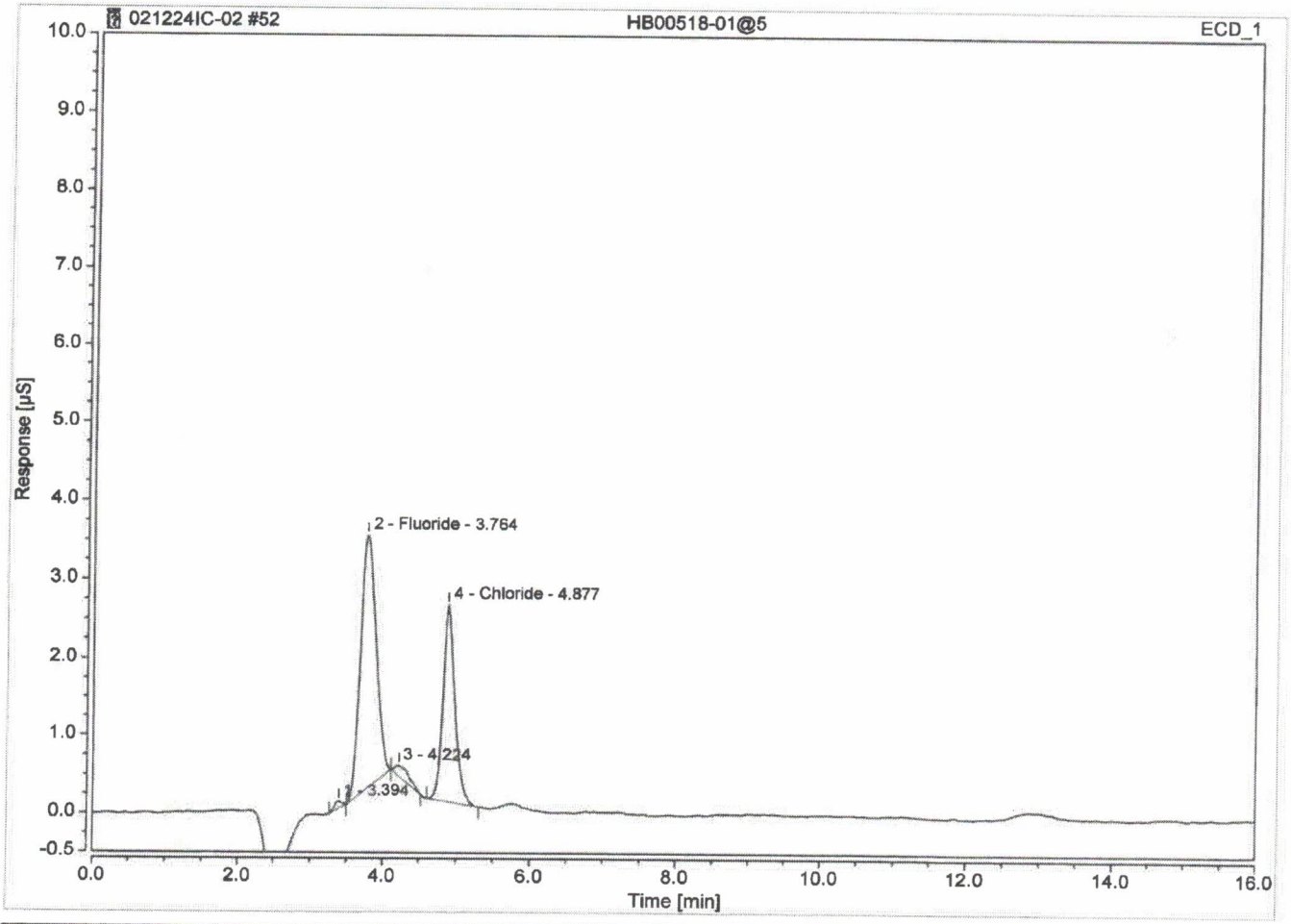
52 HB00518-01@5

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**HB00518-01@5**	*Run Time (min):*	**16.00**
Vial Number:	**43**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/13/2024 0:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.39		0.011	0.091	n.a.	n.a.	BMB
2	3.76	Fluoride	0.817	3.255	n.a.	1.3584	BMb
3	4.22		0.033	0.136	n.a.	n.a.	bMB
4	4.88	Chloride	0.470	2.537	n.a.	1.1654	BMB
n.a.	n.a.	Nitrite	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.331**	**6.019**	**0.00**	**2.52**	

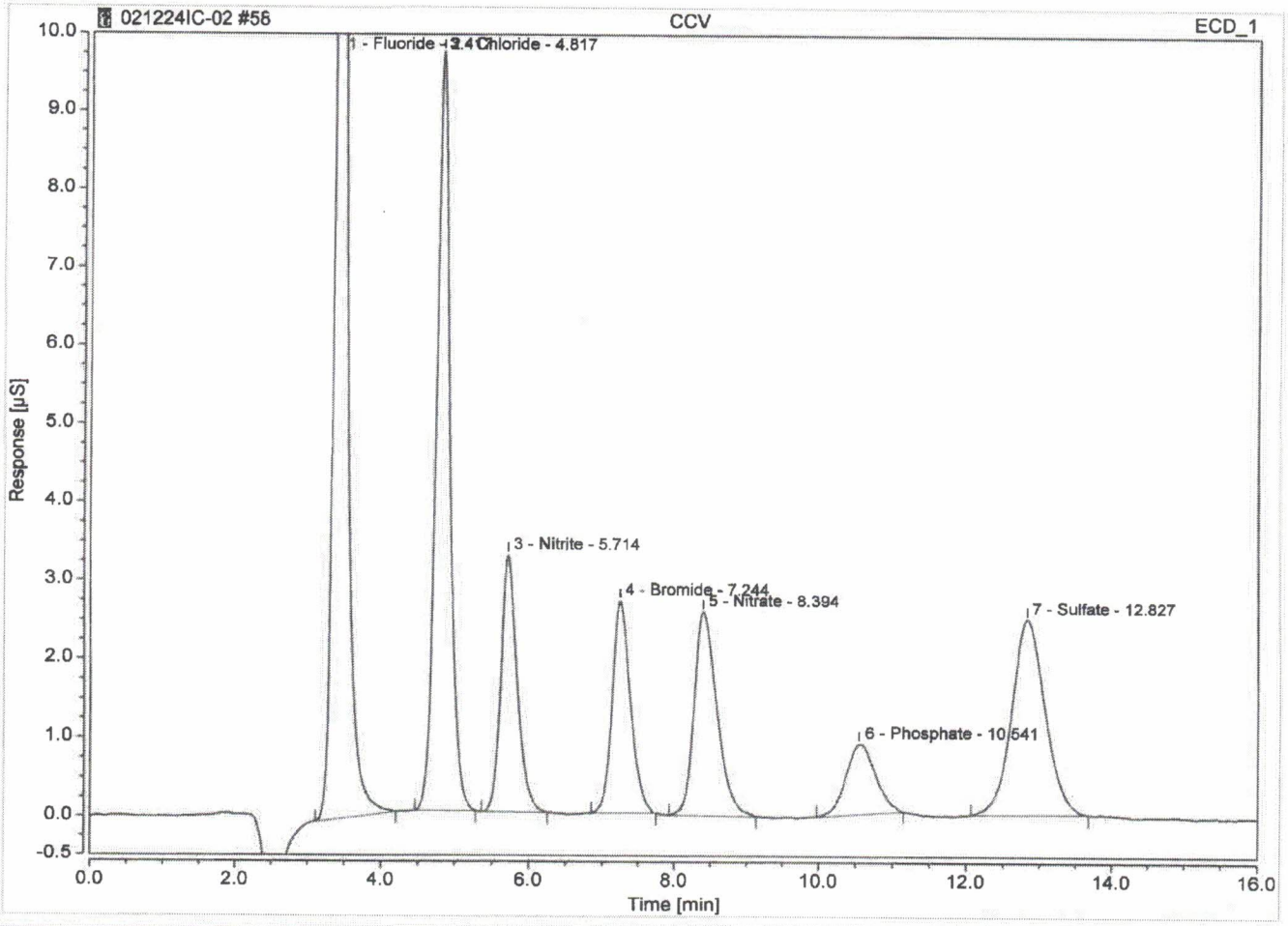
58 CCV

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**16.00**
Vial Number:	**49**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/13/2024 2:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
1	3.42	Fluoride	3.185	16.806	n.a.	5.2245	BMB
2	4.82	Chloride	2.078	9.708	n.a.	5.0256	BMB
3	5.71	Nitrite	0.835	3.281	n.a.	1.0198	BMB
4	7.24	Bromide	0.798	2.710	n.a.	5.0314	BMB
5	8.39	Nitrate	0.947	2.600	n.a.	1.0252	BMB
6	10.54	Phosphate	0.421	0.893	n.a.	1.5182	BMB
7	12.83	Sulfate	1.330	2.496	n.a.	5.1790	BMB
Total:			**9.593**	**38.495**	**0.00**	**24.02**	

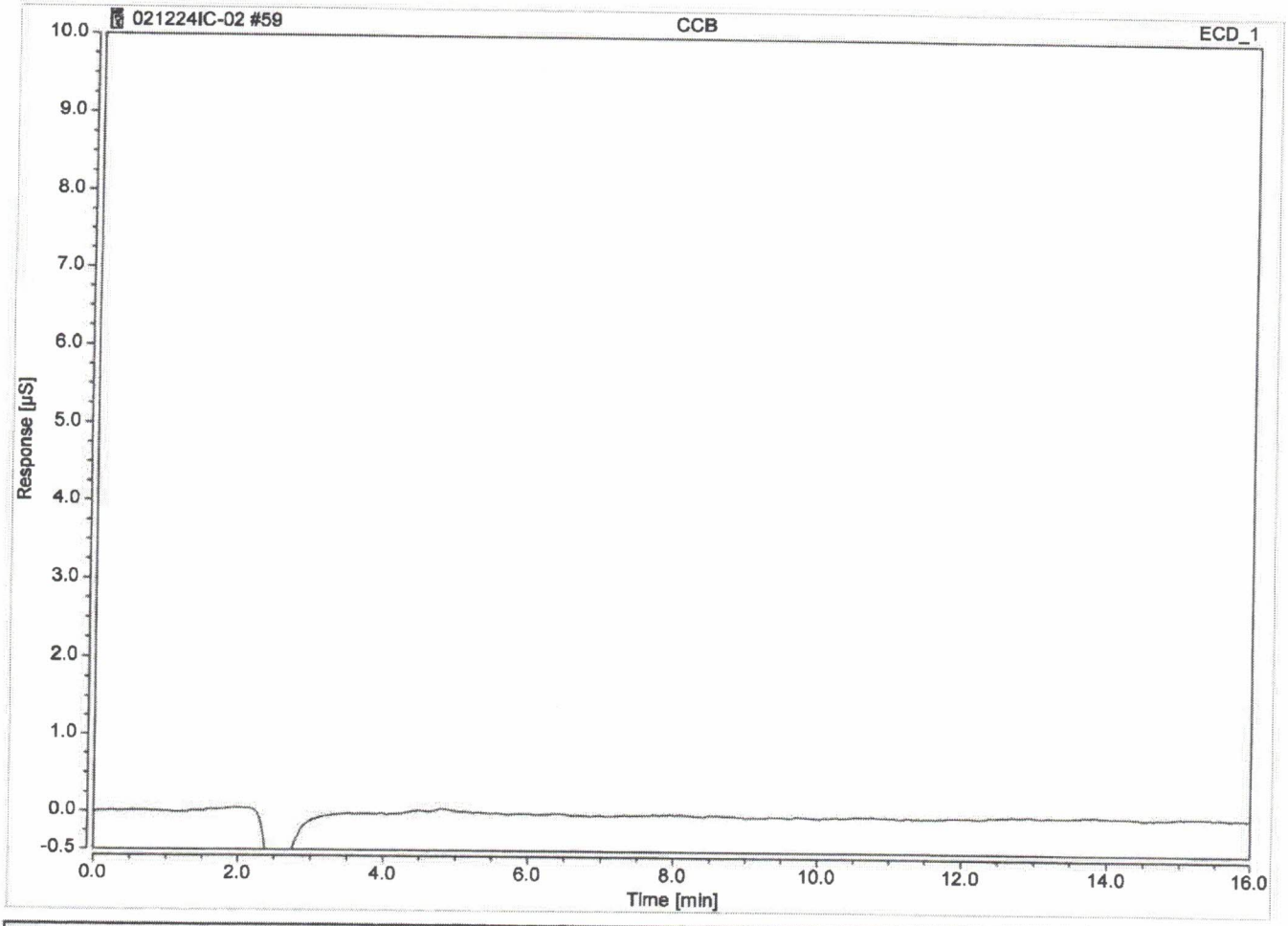
59 CCB

021224IC-02
PDC Laboratories Inc. - Peoria, IL

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**16.00**
Vial Number:	**50**	*Injection Volume:*	**100.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions IC02**	*Bandwidth:*	**n.a.**
Processing Method:	**IC 02 Calibration**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/13/2024 2:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Retention Time min	Peak Name	Area µS*min	Height µS	Relative Error %	Amount mg/L	Peak Type
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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

ANALYTICAL RESULTS

Sample: HA03720-01
Name: BA02
Matrix: Ground Water - Grab

Sampled: 01/25/24 14:39
Received: 01/25/24 16:33

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	11	mg/L	Q4	02/05/24 15:18	5	5.0	02/05/24 15:18	CRD	EPA 300.0 REV 2.1
Sulfate	14	mg/L	Q4	02/05/24 15:18	5	5.0	02/05/24 15:18	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	8.37	Feet		01/25/24 14:39	1		01/25/24 14:39	FIELD	Field*
Dissolved oxygen, Field	3.2	mg/L		01/25/24 14:39	1		01/25/24 14:39	FIELD	Field*
Oxidation Reduction Potential	175	mV		01/25/24 14:39	1	-500	01/25/24 14:39	FIELD	Field*
pH, Field Measured	7.15	pH Units		01/25/24 14:39	1		01/25/24 14:39	FIELD	Field*
Specific Conductance, Field Measured	864.0	umhos/cm		01/25/24 14:39	1		01/25/24 14:39	FIELD	Field*
Temperature, Field Measured	10.2	°C		01/25/24 14:39	1		01/25/24 14:39	FIELD	Field*
Turbidity, Field Measured	37.3	NTU		01/25/24 14:39	1	0.00	01/25/24 14:39	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	480	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Fluoride	< 0.250	mg/L		02/06/24 16:38	1	0.250	02/06/24 16:38	TTH	SM 4500F C 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	500	mg/L		01/30/24 10:29	1	26	01/30/24 13:14	CPS	SM 2540C
Total Metals - PIA									
Boron	45	ug/L		01/30/24 07:30	5	10	02/07/24 14:37	TJJ	EPA 6020A
Calcium	94	mg/L	Q4	01/30/24 07:30	5	0.20	02/06/24 13:42	TJJ	EPA 6020A
Magnesium	44	mg/L		01/30/24 07:30	5	0.10	02/06/24 13:42	TJJ	EPA 6020A
Potassium	0.97	mg/L		01/30/24 07:30	5	0.10	02/06/24 13:42	TJJ	EPA 6020A
Sodium	55	mg/L		01/30/24 07:30	5	0.10	02/06/24 13:42	TJJ	EPA 6020A

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

ANALYTICAL RESULTS

Sample: HA03720-02
Name: BA03
Matrix: Ground Water - Grab

Sampled: 01/25/24 13:25
Received: 01/25/24 16:33

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	6.0	mg/L	Q4	02/05/24 16:35	5	5.0	02/05/24 16:35	CRD	EPA 300.0 REV 2.1
Sulfate	17	mg/L	Q4	02/05/24 16:35	5	5.0	02/05/24 16:35	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	4.35	Feet		01/25/24 13:25	1		01/25/24 13:25	FIELD	Field*
Dissolved oxygen, Field	1.3	mg/L		01/25/24 13:25	1		01/25/24 13:25	FIELD	Field*
Oxidation Reduction Potential	131	mV		01/25/24 13:25	1	-500	01/25/24 13:25	FIELD	Field*
pH, Field Measured	6.94	pH Units		01/25/24 13:25	1		01/25/24 13:25	FIELD	Field*
Specific Conductance, Field Measured	836.0	umhos/cm		01/25/24 13:25	1		01/25/24 13:25	FIELD	Field*
Temperature, Field Measured	10.8	°C		01/25/24 13:25	1		01/25/24 13:25	FIELD	Field*
Turbidity, Field Measured	65.1	NTU		01/25/24 13:25	1	0.00	01/25/24 13:25	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	450	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Fluoride	< 0.250	mg/L		02/06/24 16:39	1	0.250	02/06/24 16:39	TTH	SM 4500F C 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	480	mg/L		01/30/24 10:29	1	26	01/30/24 13:14	CPS	SM 2540C
Total Metals - PIA									
Boron	57	ug/L		01/30/24 07:30	5	10	02/07/24 15:08	TJJ	EPA 6020A
Calcium	110	mg/L		01/30/24 07:30	5	0.20	02/06/24 13:57	TJJ	EPA 6020A
Magnesium	52	mg/L		01/30/24 07:30	5	0.10	02/06/24 13:57	TJJ	EPA 6020A
Potassium	0.75	mg/L		01/30/24 07:30	5	0.10	02/06/24 13:57	TJJ	EPA 6020A
Sodium	7.1	mg/L		01/30/24 07:30	5	0.10	02/06/24 13:57	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HA03720-03
Name: BA03L
Matrix: Ground Water - Grab

Sampled: 01/25/24 12:19
Received: 01/25/24 16:33

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	33	mg/L		02/05/24 17:14	5	5.0	02/05/24 17:14	CRD	EPA 300.0 REV 2.1
Sulfate	410	mg/L		02/05/24 18:12	50	50	02/05/24 18:12	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	3.95	Feet		01/25/24 12:19	1		01/25/24 12:19	FIELD	Field*
Dissolved oxygen, Field	3.5	mg/L		01/25/24 12:19	1		01/25/24 12:19	FIELD	Field*
Oxidation Reduction Potential	188	mV		01/25/24 12:19	1	-500	01/25/24 12:19	FIELD	Field*
pH, Field Measured	6.71	pH Units		01/25/24 12:19	1		01/25/24 12:19	FIELD	Field*
Specific Conductance, Field Measured	1630	umhos/cm		01/25/24 12:19	1		01/25/24 12:19	FIELD	Field*
Temperature, Field Measured	9.6	°C		01/25/24 12:19	1		01/25/24 12:19	FIELD	Field*
Turbidity, Field Measured	40.1	NTU		01/25/24 12:19	1	0.00	01/25/24 12:19	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	490	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Fluoride	< 0.250	mg/L		02/06/24 16:40	1	0.250	02/06/24 16:40	TTH	SM 4500F C 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	1200	mg/L		01/30/24 10:29	1	26	01/30/24 13:14	CPS	SM 2540C
Total Metals - PIA									
Boron	1000	ug/L		01/30/24 07:30	5	10	02/07/24 15:11	TJJ	EPA 6020A
Calcium	190	mg/L		01/30/24 07:30	5	0.20	02/06/24 14:01	TJJ	EPA 6020A
Magnesium	100	mg/L		01/30/24 07:30	5	0.10	02/06/24 14:01	TJJ	EPA 6020A
Potassium	0.45	mg/L		01/30/24 07:30	5	0.10	02/06/24 14:01	TJJ	EPA 6020A
Sodium	71	mg/L		01/30/24 07:30	5	0.10	02/06/24 14:01	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HA03925-01
Name: BA01
Matrix: Ground Water - Grab

Sampled: 01/26/24 12:22
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	16	mg/L	Q4	02/06/24 12:19	5	5.0	02/06/24 12:19	KCS1	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/06/24 11:18	1	0.250	02/06/24 11:18	KCS1	EPA 300.0 REV 2.1
Sulfate	150	mg/L	Q4	02/06/24 13:19	25	25	02/06/24 13:19	KCS1	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	13.41	Feet		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Dissolved oxygen, Field	1.4	mg/L		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Oxidation Reduction Potential	-7.00	mV		01/26/24 12:22	1	-500	01/26/24 12:22	FIELD	Field*
pH, Field Measured	6.90	pH Units		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Specific Conductance, Field Measured	1010	umhos/cm		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Temperature, Field Measured	10.6	°C		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Turbidity, Field Measured	0.700	NTU		01/26/24 12:22	1	0.00	01/26/24 12:22	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	390	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	610	mg/L		02/02/24 11:37	1	26	02/02/24 13:09	CPS	SM 2540C
Total Metals - PIA									
Boron	16	ug/L		01/31/24 10:11	5	10	02/08/24 11:51	TJJ	EPA 6020A
Calcium	130	mg/L		01/31/24 10:11	5	0.20	02/06/24 09:11	TJJ	EPA 6020A
Magnesium	61	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:11	TJJ	EPA 6020A
Potassium	0.78	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:11	TJJ	EPA 6020A
Sodium	11	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:11	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HA03925-02
Name: BA01 DUP
Matrix: Ground Water - Grab

Sampled: 01/26/24 12:22
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L		02/06/24 13:59	5	5.0	02/06/24 13:59	KCS1	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/06/24 13:39	1	0.250	02/06/24 13:39	KCS1	EPA 300.0 REV 2.1
Sulfate	160	mg/L		02/06/24 14:19	25	25	02/06/24 14:19	KCS1	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	13.41	Feet		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Dissolved oxygen, Field	1.4	mg/L		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Oxidation Reduction Potential	-7.00	mV		01/26/24 12:22	1	-500	01/26/24 12:22	FIELD	Field*
pH, Field Measured	6.90	pH Units		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Specific Conductance, Field Measured	1010	umhos/cm		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Temperature, Field Measured	10.6	°C		01/26/24 12:22	1		01/26/24 12:22	FIELD	Field*
Turbidity, Field Measured	0.700	NTU		01/26/24 12:22	1	0.00	01/26/24 12:22	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	390	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	620	mg/L		02/02/24 11:37	1	26	02/02/24 13:09	CPS	SM 2540C
Total Metals - PIA									
Boron	16	ug/L		01/31/24 10:11	5	10	02/08/24 12:03	TJJ	EPA 6020A
Calcium	120	mg/L		01/31/24 10:11	5	0.20	02/06/24 09:42	TJJ	EPA 6020A
Magnesium	60	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:42	TJJ	EPA 6020A
Potassium	0.77	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:42	TJJ	EPA 6020A
Sodium	11	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:42	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HA03925-03
Name: BA04
Matrix: Ground Water - Grab

Sampled: 01/26/24 13:38
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	43	mg/L		02/06/24 14:59	25	25	02/06/24 14:59	KCS1	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/06/24 14:39	1	0.250	02/06/24 14:39	KCS1	EPA 300.0 REV 2.1
Sulfate	180	mg/L		02/06/24 14:59	25	25	02/06/24 14:59	KCS1	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	5.65	Feet		01/26/24 13:38	1		01/26/24 13:38	FIELD	Field*
Dissolved oxygen, Field	0.50	mg/L		01/26/24 13:38	1		01/26/24 13:38	FIELD	Field*
Oxidation Reduction Potential	-15.0	mV		01/26/24 13:38	1	-500	01/26/24 13:38	FIELD	Field*
pH, Field Measured	6.93	pH Units		01/26/24 13:38	1		01/26/24 13:38	FIELD	Field*
Specific Conductance, Field Measured	1120	umhos/cm		01/26/24 13:38	1		01/26/24 13:38	FIELD	Field*
Temperature, Field Measured	10.8	°C		01/26/24 13:38	1		01/26/24 13:38	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		01/26/24 13:38	1	0.00	01/26/24 13:38	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	400	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	690	mg/L		02/02/24 11:37	1	26	02/02/24 13:09	CPS	SM 2540C
Total Metals - PIA									
Boron	230	ug/L		01/31/24 10:11	5	10	02/08/24 12:25	TJJ	EPA 6020A
Calcium	140	mg/L		01/31/24 10:11	5	0.20	02/06/24 09:46	TJJ	EPA 6020A
Magnesium	68	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:46	TJJ	EPA 6020A
Potassium	0.88	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:46	TJJ	EPA 6020A
Sodium	13	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:46	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HA03925-04
Name: BA06
Matrix: Ground Water - Grab

Sampled: 01/26/24 14:53
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	520	mg/L		01/26/24 20:22	100	100	01/26/24 20:22	TMS	EPA 300.0 REV 2.1
Sulfate	360	mg/L		01/26/24 20:22	100	100	01/26/24 20:22	TMS	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	19.51	Feet		01/26/24 14:53	1		01/26/24 14:53	FIELD	Field*
Dissolved oxygen, Field	0.84	mg/L		01/26/24 14:53	1		01/26/24 14:53	FIELD	Field*
Oxidation Reduction Potential	-17.0	mV		01/26/24 14:53	1	-500	01/26/24 14:53	FIELD	Field*
pH, Field Measured	6.66	pH Units		01/26/24 14:53	1		01/26/24 14:53	FIELD	Field*
Specific Conductance, Field Measured	2091	umhos/cm		01/26/24 14:53	1		01/26/24 14:53	FIELD	Field*
Temperature, Field Measured	11.1	°C		01/26/24 14:53	1		01/26/24 14:53	FIELD	Field*
Turbidity, Field Measured	352	NTU		01/26/24 14:53	1	0.00	01/26/24 14:53	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	480	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/06/24 08:25	1	10	02/06/24 08:25	TMS	SM 2320B 1997*
Fluoride	0.280	mg/L		02/02/24 16:45	1	0.250	02/06/24 16:45	ANK	SM 4500F C 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	1900	mg/L		02/02/24 11:37	1	26	02/02/24 13:09	CPS	SM 2540C
Total Metals - PIA									
Boron	11000	ug/L		01/31/24 10:11	100	200	02/07/24 16:03	TJJ	EPA 6020A
Calcium	320	mg/L		01/31/24 10:11	5	0.20	02/06/24 09:50	TJJ	EPA 6020A
Magnesium	200	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:50	TJJ	EPA 6020A
Potassium	1.5	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:50	TJJ	EPA 6020A
Sodium	16	mg/L		01/31/24 10:11	5	0.10	02/06/24 09:50	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HB00518-01
Name: BA02L
Matrix: Ground Water - Grab

Sampled: 02/05/24 14:40
Received: 02/05/24 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	5.8	mg/L	Q3	02/13/24 00:33	5	5.0	02/13/24 00:33	CRD	EPA 300.0 REV 2.1
Fluoride	6.79	mg/L	Q3	02/13/24 00:33	5	1.25	02/13/24 00:33	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/12/24 23:39	1	1.0	02/12/24 23:39	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.74	Feet		02/05/24 14:40	1		02/05/24 14:40	FIELD	Field*
Dissolved oxygen, Field	1.2	mg/L		02/05/24 14:40	1		02/05/24 14:40	FIELD	Field*
Oxidation Reduction Potential	-118	mV		02/05/24 14:40	1	-500	02/05/24 14:40	FIELD	Field*
pH, Field Measured	7.23	pH Units		02/05/24 14:40	1		02/05/24 14:40	FIELD	Field*
Specific Conductance, Field Measured	856.0	umhos/cm		02/05/24 14:40	1		02/05/24 14:40	FIELD	Field*
Temperature, Field Measured	10.6	°C		02/05/24 14:40	1		02/05/24 14:40	FIELD	Field*
Turbidity, Field Measured	142	NTU		02/05/24 14:40	1	0.00	02/05/24 14:40	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	420	mg/L		02/13/24 10:32	1	10	02/13/24 10:32	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/13/24 10:32	1	10	02/13/24 10:32	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	340	mg/L	M	02/09/24 09:59	1	26	02/09/24 11:01	OGS	SM 2540C
Total Metals - PIA									
Boron	66	ug/L		02/08/24 08:01	5	10	02/16/24 09:50	TJJ	EPA 6020A
Calcium	120	mg/L		02/08/24 08:01	5	0.20	02/15/24 16:03	TJJ	EPA 6020A
Magnesium	42	mg/L		02/08/24 08:01	5	0.10	02/15/24 16:03	TJJ	EPA 6020A
Potassium	0.55	mg/L		02/08/24 08:01	5	0.10	02/15/24 16:03	TJJ	EPA 6020A
Sodium	4.1	mg/L		02/08/24 08:01	5	0.10	02/15/24 16:03	TJJ	EPA 6020A

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ANALYTICAL RESULTS

Sample: HB00518-02
Name: BA05
Matrix: Ground Water - Grab

Sampled: 02/05/24 13:29
Received: 02/05/24 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	9.8	mg/L		02/13/24 00:51	1	1.0	02/13/24 00:51	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/13/24 00:51	1	0.250	02/13/24 00:51	CRD	EPA 300.0 REV 2.1
Sulfate	490	mg/L		02/13/24 01:27	100	100	02/13/24 01:27	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	16.15	Feet		02/05/24 13:20	1		02/05/24 13:20	FIELD	Field*
Dissolved oxygen, Field	0.0	mg/L		02/05/24 13:20	1		02/05/24 13:20	FIELD	Field*
Oxidation Reduction Potential	-91.0	mV		02/05/24 13:20	1	-500	02/05/24 13:20	FIELD	Field*
pH, Field Measured	7.06	pH Units		02/05/24 13:20	1		02/05/24 13:20	FIELD	Field*
Specific Conductance, Field Measured	1510	umhos/cm		02/05/24 13:20	1		02/05/24 13:20	FIELD	Field*
Temperature, Field Measured	11.4	°C		02/05/24 13:20	1		02/05/24 13:20	FIELD	Field*
Turbidity, Field Measured	258	NTU		02/05/24 13:20	1	0.00	02/05/24 13:20	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	450	mg/L		02/13/24 10:32	1	10	02/13/24 10:32	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/13/24 10:32	1	10	02/13/24 10:32	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	1100	mg/L	M	02/09/24 09:59	1	26	02/09/24 11:01	OGS	SM 2540C
Total Metals - PIA									
Boron	77	ug/L		02/08/24 08:01	5	10	02/16/24 09:54	TJJ	EPA 6020A
Calcium	210	mg/L		02/08/24 08:01	5	0.20	02/15/24 16:07	TJJ	EPA 6020A
Magnesium	100	mg/L		02/08/24 08:01	5	0.10	02/15/24 16:07	TJJ	EPA 6020A
Potassium	2.5	mg/L		02/08/24 08:01	5	0.10	02/15/24 16:07	TJJ	EPA 6020A
Sodium	44	mg/L		02/08/24 08:01	5	0.10	02/15/24 16:07	TJJ	EPA 6020A

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B424020 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B424020-CCB1)				Prepared & Analyzed: 01/26/24					
Chloride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B424020-CCV1)				Prepared & Analyzed: 01/26/24					
Chloride	5.08	mg/L		5.000		102	90-110		
Sulfate	5.12	mg/L		5.000		102	90-110		
Matrix Spike (B424020-MS1)	**Sample: HA03720-10**			Prepared & Analyzed: 01/26/24					
Chloride	< 1.0	mg/L	Q4	1.500	1400	NR	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	684	NR	80-120		
Matrix Spike Dup (B424020-MSD1)	**Sample: HA03720-10**			Prepared & Analyzed: 01/26/24					
Chloride	< 1.0	mg/L	Q4	1.500	1400	NR	80-120		20
Sulfate	1.00E9	mg/L	Q4	1.500	684	NR	80-120	0	20
Batch B424144 - SW 3015 - EPA 6020A									
Blank (B424144-BLK1)				Prepared: 01/30/24 Analyzed: 02/07/24					
Boron	< 10	ug/L							
Calcium	< 0.20	mg/L							
Magnesium	< 0.10	mg/L							
Potassium	< 0.10	mg/L							
Sodium	< 0.10	mg/L							
LCS (B424144-BS1)				Prepared: 01/30/24 Analyzed: 02/07/24					
Boron	554	ug/L		555.6		100	80-120		
Calcium	5.40	mg/L		5.556		97	80-120		
Magnesium	5.61	mg/L		5.556		101	80-120		
Potassium	5.43	mg/L		5.556		98	80-120		
Sodium	5.65	mg/L		5.556		102	80-120		
Matrix Spike (B424144-MS1)	**Sample: HA03720-01**			Prepared: 01/30/24 Analyzed: 02/07/24					
Boron	602	ug/L		555.6	45.0	100	75-125		
Calcium	96.4	mg/L	Q4	5.556	94.2	40	75-125		
Magnesium	48.0	mg/L	Q4	5.556	44.1	71	75-125		
Potassium	6.37	mg/L		5.556	0.968	97	75-125		
Sodium	58.2	mg/L	Q4	5.556	54.5	67	75-125		
Matrix Spike Dup (B424144-MSD1)	**Sample: HA03720-01**			Prepared: 01/30/24 Analyzed: 02/07/24					
Boron	616	ug/L		555.6	45.0	103	75-125	2	20
Calcium	97.8	mg/L	Q4	5.556	94.2	64	75-125	1	20
Magnesium	48.6	mg/L		5.556	44.1	82	75-125	1	20
Potassium	6.44	mg/L		5.556	0.968	99	75-125	1	20
Sodium	58.8	mg/L		5.556	54.5	77	75-125	1	20
Batch B424172 - No Prep - SM 2540C									
Blank (B424172-BLK1)				Prepared & Analyzed: 01/30/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B424172-BS1)				Prepared & Analyzed: 01/30/24					
Solids - total dissolved solids (TDS)	973	mg/L		1000		97	84.9-109		
Duplicate (B424172-DUP1)	**Sample: HA03720-01**			Prepared & Analyzed: 01/30/24					

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Duplicate (B424172-DUP1)	**Sample: HA03720-01**			Prepared & Analyzed: 01/30/24					
Solids - total dissolved solids (TDS)	485	mg/L			505			4	5
Duplicate (B424172-DUP2)	**Sample: HA03720-05**			Prepared & Analyzed: 01/30/24					
Solids - total dissolved solids (TDS)	580	mg/L			575			0.9	5
Batch B424278 - SW 3015 - EPA 6020A									
Blank (B424278-BLK1)				Prepared: 01/31/24 Analyzed: 02/05/24					
Boron	< 10	ug/L							
Calcium	< 0.20	mg/L							
Magnesium	< 0.10	mg/L							
Potassium	< 0.10	mg/L							
Sodium	< 0.10	mg/L							
LCS (B424278-BS1)				Prepared: 01/31/24 Analyzed: 02/05/24					
Boron	594	ug/L		555.6		107	80-120		
Calcium	5.92	mg/L		5.556		106	80-120		
Magnesium	5.83	mg/L		5.556		105	80-120		
Potassium	5.82	mg/L		5.556		105	80-120		
Sodium	5.86	mg/L		5.556		105	80-120		
Matrix Spike (B424278-MS1)	**Sample: HA03925-01**			Prepared: 01/31/24 Analyzed: 02/08/24					
Boron	544	ug/L		555.6	16.3	95	75-125		
Calcium	130	mg/L		5.556	126	75	75-125		
Magnesium	64.9	mg/L		5.556	60.6	77	75-125		
Potassium	6.17	mg/L		5.556	0.782	97	75-125		
Sodium	16.3	mg/L		5.556	11.0	96	75-125		
Matrix Spike Dup (B424278-MSD1)	**Sample: HA03925-01**			Prepared: 01/31/24 Analyzed: 02/08/24					
Boron	535	ug/L		555.6	16.3	93	75-125	2	20
Calcium	130	mg/L		5.556	126	81	75-125	0.2	20
Magnesium	65.2	mg/L		5.556	60.6	83	75-125	0.5	20
Potassium	6.16	mg/L		5.556	0.782	97	75-125	0.2	20
Sodium	16.3	mg/L		5.556	11.0	97	75-125	0.2	20
Batch B424290 - No Prep - SM 2540C									
Blank (B424290-BLK1)				Prepared & Analyzed: 01/31/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B424290-BS1)				Prepared & Analyzed: 01/31/24					
Solids - total dissolved solids (TDS)	613	mg/L	BS1	1000		61	84.9-109		
Duplicate (B424290-DUP1)	**Sample: HA03925-04**			Prepared & Analyzed: 01/31/24					
Solids - total dissolved solids (TDS)	1860	mg/L	M		2040			9	5
Duplicate (B424290-DUP2)	**Sample: HA03925-07**			Prepared & Analyzed: 01/31/24					
Solids - total dissolved solids (TDS)	875	mg/L	M		780			11	5
Batch B424513 - No Prep - SM 2540C									
Blank (B424513-BLK1)				Prepared & Analyzed: 02/02/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B424513-BS1)				Prepared & Analyzed: 02/02/24					
Solids - total dissolved solids (TDS)	977	mg/L		1000		98	84.9-109		
Duplicate (B424513-DUP1)	**Sample: HA03925-07RE1**			Prepared & Analyzed: 02/02/24					
Solids - total dissolved solids (TDS)	815	mg/L	M		765			6	5

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(800)752-6651

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Duplicate (B424513-DUP2)	**Sample: HA03925-10RE1**			Prepared & Analyzed: 02/02/24					
Solids - total dissolved solids (TDS)	710	mg/L			715			0.7	5
Batch B424521 - No Prep - SM 4500F C 1997									
Calibration Blank (B424521-CCB1)				Prepared & Analyzed: 02/02/24					
Fluoride	0.0180	mg/L							
Calibration Blank (B424521-CCB2)				Prepared & Analyzed: 02/02/24					
Fluoride	0.0180	mg/L							
Calibration Check (B424521-CCV1)				Prepared & Analyzed: 02/02/24					
Fluoride	0.678	mg/L		0.7000		97	90-110		
Calibration Check (B424521-CCV2)				Prepared & Analyzed: 02/02/24					
Fluoride	0.694	mg/L		0.7000		99	90-110		
Matrix Spike (B424521-MS2)	**Sample: HA03720-13**			Prepared & Analyzed: 02/02/24					
Fluoride	1.22	mg/L		1.000	0.205	101	80-120		
Matrix Spike Dup (B424521-MSD2)	**Sample: HA03720-13**			Prepared & Analyzed: 02/02/24					
Fluoride	1.23	mg/L		1.000	0.205	103	80-120	1	20
Batch B424742 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B424742-CCB1)				Prepared & Analyzed: 02/05/24					
Sulfate	0.00	mg/L							
Chloride	0.00	mg/L							
Calibration Blank (B424742-CCB2)				Prepared & Analyzed: 02/05/24					
Chloride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B424742-CCV1)				Prepared & Analyzed: 02/05/24					
Sulfate	4.97	mg/L		5.000		99	90-110		
Chloride	4.86	mg/L		5.000		97	90-110		
Calibration Check (B424742-CCV2)				Prepared & Analyzed: 02/05/24					
Sulfate	5.01	mg/L		5.000		100	90-110		
Chloride	4.79	mg/L		5.000		96	90-110		
Matrix Spike (B424742-MS1)	**Sample: HA03720-01**			Prepared & Analyzed: 02/05/24					
Chloride	< 1.0	mg/L	Q4	1.500	11	NR	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	13.6	NR	80-120		
Matrix Spike (B424742-MS2)	**Sample: HA03720-02**			Prepared & Analyzed: 02/05/24					
Chloride	< 1.0	mg/L	Q4	1.500	6.0	NR	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	16.7	NR	80-120		
Matrix Spike (B424742-MS3)	**Sample: HA03720-05**			Prepared & Analyzed: 02/05/24					
Sulfate	1.00E9	mg/L	Q4	1.500	71.3	NR	80-120		
Matrix Spike Dup (B424742-MSD1)	**Sample: HA03720-01**			Prepared & Analyzed: 02/05/24					
Sulfate	1.00E9	mg/L	Q4	1.500	13.6	NR	80-120	0	20
Chloride	< 1.0	mg/L	Q4	1.500	11	NR	80-120		20
Matrix Spike Dup (B424742-MSD2)	**Sample: HA03720-02**			Prepared & Analyzed: 02/05/24					
Sulfate	1.00E9	mg/L	Q4	1.500	16.7	NR	80-120	0	20
Chloride	< 1.0	mg/L	Q4	1.500	6.0	NR	80-120		20
Matrix Spike Dup (B424742-MSD3)	**Sample: HA03720-05**			Prepared & Analyzed: 02/05/24					
Sulfate	1.00E9	mg/L	Q4	1.500	71.3	NR	80-120	0	20
Batch B424757 - No Prep - SM 4500F C 1997									

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2231 W. Altorfer Drive
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(800)752-6651

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Calibration Blank (B424757-CCB1)				Prepared & Analyzed: 02/06/24					
Fluoride	0.00700	mg/L							
Calibration Blank (B424757-CCB2)				Prepared & Analyzed: 02/06/24					
Fluoride	0.0140	mg/L							
Calibration Check (B424757-CCV1)				Prepared & Analyzed: 02/06/24					
Fluoride	0.686	mg/L		0.7000		98	90-110		
Calibration Check (B424757-CCV2)				Prepared & Analyzed: 02/06/24					
Fluoride	0.699	mg/L		0.7000		100	90-110		
Batch B424779 - No Prep - SM 2320B 1997									
Duplicate (B424779-DUP1)	**Sample: HA03720-01**			Prepared & Analyzed: 02/06/24					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Alkalinity - bicarbonate as CaCO3	488	mg/L			475			3	10
Duplicate (B424779-DUP2)	**Sample: HA03720-11**			Prepared & Analyzed: 02/06/24					
Alkalinity - bicarbonate as CaCO3	662	mg/L			638			4	10
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Duplicate (B424779-DUP4)	**Sample: HA03925-11**			Prepared & Analyzed: 02/06/24					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Alkalinity - bicarbonate as CaCO3	388	mg/L			388			0	10
Duplicate (B424779-DUP7)	**Sample: HA03925-01**			Prepared & Analyzed: 02/06/24					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Alkalinity - bicarbonate as CaCO3	400	mg/L			388			3	10
Batch B424892 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B424892-CCB1)				Prepared & Analyzed: 02/06/24					
Fluoride	0.00	mg/L							
Chloride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B424892-CCV1)				Prepared & Analyzed: 02/06/24					
Chloride	4.90	mg/L		5.000		98	90-110		
Fluoride	5.21	mg/L		5.000		104	90-110		
Sulfate	5.24	mg/L		5.000		105	90-110		
Matrix Spike (B424892-MS1)	**Sample: HA03925-01**			Prepared & Analyzed: 02/06/24					
Fluoride	1.43	mg/L		1.500	ND	95	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	153	NR	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	16	NR	80-120		
Matrix Spike (B424892-MS2)	**Sample: HA03925-05**			Prepared & Analyzed: 02/06/24					
Fluoride	1.34	mg/L	Q1	1.500	0.268	71	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	16	NR	80-120		
Matrix Spike (B424892-MS3)	**Sample: HA03925-06**			Prepared & Analyzed: 02/06/24					
Sulfate	1.00E9	mg/L	Q4	1.500	39.2	NR	80-120		
Fluoride	1.42	mg/L	Q1	1.500	0.226	79	80-120		
Matrix Spike Dup (B424892-MSD1)	**Sample: HA03925-01**			Prepared & Analyzed: 02/06/24					
Chloride	1.0E9	mg/L	Q4	1.500	16	NR	80-120	0	20
Sulfate	1.00E9	mg/L	Q4	1.500	153	NR	80-120	0	20
Fluoride	1.45	mg/L		1.500	ND	97	80-120	1	20
Matrix Spike Dup (B424892-MSD2)	**Sample: HA03925-05**			Prepared & Analyzed: 02/06/24					
Fluoride	1.35	mg/L	Q2	1.500	0.268	72	80-120	0.7	20

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike Dup (B424892-MSD2)	**Sample: HA03925-05**			Prepared & Analyzed: 02/06/24					
Chloride	1.0E9	mg/L	Q4	1.500	16	NR	80-120	0	20
Matrix Spike Dup (B424892-MSD3)	**Sample: HA03925-06**			Prepared & Analyzed: 02/06/24					
Fluoride	1.38	mg/L	Q2	1.500	0.226	77	80-120	3	20
Sulfate	1.00E9	mg/L	Q4	1.500	39.2	NR	80-120	0	20
Batch B424971 - SW 3015 - EPA 6020A									
Blank (B424971-BLK1)				Prepared: 02/08/24 Analyzed: 02/16/24					
Boron	< 10	ug/L							
Calcium	< 0.20	mg/L							
Magnesium	< 0.10	mg/L							
Potassium	< 0.10	mg/L							
Sodium	< 0.10	mg/L							
LCS (B424971-BS1)				Prepared: 02/08/24 Analyzed: 02/16/24					
Boron	502	ug/L		555.6		90	80-120		
Calcium	5.64	mg/L		5.556		102	80-120		
Magnesium	5.74	mg/L		5.556		103	80-120		
Potassium	5.47	mg/L		5.556		98	80-120		
Sodium	5.69	mg/L		5.556		102	80-120		
Batch B425127 - No Prep - SM 2540C									
Blank (B425127-BLK1)				Prepared & Analyzed: 02/09/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B425127-BS1)				Prepared & Analyzed: 02/09/24					
Solids - total dissolved solids (TDS)	953	mg/L		1000		95	84.9-109		
Duplicate (B425127-DUP1)	**Sample: HB00518-01**			Prepared & Analyzed: 02/09/24					
Solids - total dissolved solids (TDS)	375	mg/L	M		335			11	5
Duplicate (B425127-DUP2)	**Sample: HB00518-02**			Prepared & Analyzed: 02/09/24					
Solids - total dissolved solids (TDS)	1040	mg/L	M		1140			8	5
Batch B425397 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B425397-CCB1)				Prepared & Analyzed: 02/12/24					
Chloride	0.00	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B425397-CCV1)				Prepared & Analyzed: 02/12/24					
Chloride	5.03	mg/L		5.000		101	90-110		
Sulfate	5.17	mg/L		5.000		103	90-110		
Fluoride	5.20	mg/L		5.000		104	90-110		
Matrix Spike (B425397-MS3)	**Sample: HB00518-01**			Prepared & Analyzed: 02/12/24					
Chloride	7.9	mg/L	Q3	1.500	5.8	141	80-120		
Fluoride	0.597	mg/L	Q3	1.500	6.79	NR	80-120		
Sulfate	2.39	mg/L		1.500	0.889	100	80-120		
Matrix Spike Dup (B425397-MSD3)	**Sample: HB00518-01**			Prepared & Analyzed: 02/13/24					
Fluoride	0.602	mg/L	Q3	1.500	6.79	NR	80-120	0.8	20
Sulfate	2.39	mg/L		1.500	0.889	100	80-120	0.2	20
Chloride	8.0	mg/L	Q3	1.500	5.8	147	80-120	1	20

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

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

Qualifiers

BS1	Blank Spike recovery exceeds the acceptance criteria. Sample result is less than the method reporting limit.
M	Analyte failed to meet the required acceptance criteria for duplicate analysis.
Q1	Matrix Spike failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
Q2	Matrix Spike Duplicate failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
Q3	Matrix Spike/Matrix Spike Duplicate both 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

HA03720

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	BAR2	WT	G	1/25/24	1439		4	X		X																		
2	BAR3				1325		4	X		X																		
3	BAR3L				1219		4	X		X																		
4	GbOL			12/5/24 due	~~1332~~ 1332		5	X		X																		
5	GbOS				1222		5	X		X																		
6	GbZL			1/25/24 due	~~1407~~ 1515		5	X		X																		
7	GbZS				1440		5	X		X																		
8	Gb5S				1120		4	X		X																		
9	GbZS				1252		4	X		X																		
10	OR030				1451		11	X	X	X																		
11	OM21				1340		11	X	X	X																		
12	OM22D				1440		11	X	X	X																		
13	OM23D				1236		11	X	X	X																		
14	EB/5				1515		11	X	X	X																		
15	EB/6				1530		5	X		X																		
16																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
DC-24Q1 Rev 0	Austin Moore / Pace	01/25/24	1633		1/25/24	1633

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
5.8	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: AM, AP, JR, AW, JB

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 01/25/24

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

HA03925 ZC

CHAIN-OF-CUSTODY / Analytical Request Document

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

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ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206			Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	BA01	WT	G	1/26/24	1222		4	X		X																			
2	BA01 Dup	WT	G	1/26/24	1222		4	X		X																			
3	BA04	WT	G	1/26/24	1338		4	X		X																			
4	BA06	WT	G	1/26/24	1453		4	X		X																			
5	G125	WT	G	1/26/24	1247		3	X		X																			
6	G155	WT	G	1/26/24	1150		3	X		X																			
7	G532	WT	G	1/26/24	1140		4	X		X																			
8	G535	WT	G	1/26/24	1244		4	X		X																			
9	G575	WT	G	1/26/24	1424		5	X		X																			
10	L103	WT	G	1/26/24	1059		2	X		X																			
11	OM07	WT	G	1/26/24	1354		11	X	X	X																			
12	OR11	WT	G	1/26/24	1210		11	X	X	X																			
13	OR11 Dup	WT	G	1/26/24	1210		11	X	X	X																			
14	OR20	WT	G	1/26/24	1300		11	X	X	X																			
15	R37L	WT	G	1/26/24	1403		2	X		X																			
16	Equipment Blank 1	WT	G	1/26/24	1430		11	X	X	X																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
DC-24Q1 Rev 0		1/26/24	1604			
					1/26/24	1604

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
5.8	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Pemberton

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 01/26/24

Confidential

HB000518

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 10

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	BA02L	WT	G	2/5/24	1440		4	X		X																		
2	BA05	WT	G	2/5/24	1329		4	X		X																		
3	OM17	WT	G	2/5/24	1127		11	X	X	X																		
4	~~POSL~~	~~WT~~	~~G~~	~~2/5/24~~	~~1200~~		↓			X																		
5	EB 13	WT	G	2/5/24	1500		12	X	X	X																		
6																												
7																												
8																												
9																												
10																												
11																												
12																												
13																												
14																												
15																												
16																												

Requested Analysis Filtered (Y/N)

Resampled in wrong bottle. Recollected 2/6/24 Lab 2/6/24

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
DC-24Q1 Rev 0		2/5/24	1526		2/5/24	1630	Temp in °C: 2.5	Received on Ice (Y/N): Y	Custody Sealed Cooler (Y/N): Y	Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Anderson

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 02/05/24

COURIER

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ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: DC
Event: DC-24Q1 Rev 0

Well	Unique ID	Unit Numl	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
BA01C	DC-BA01!C	205	BAB	1/17/24	1019	13.50		LR
BA01L	DC-BA01!L	205	BAB	1/17/24	1021	12.43		LR
G02D	DC-G02&D	204	LF	1/24/24	1342	22.10		LR
G02L	DC-G02!L	204	LF	1/24/24	1338	6.63		LR
G03L	DC-G03!L	204	LF	1/17/24	1227	5.05		AM
G03S	DC-G03#S	204	LF	1/17/24	1228	5.08		AM
G04L	DC-G04!L	204	LF	1/24/24	1318	15.02		BCa
G04S	DC-G04#S	204	LF	1/24/24	1319	14.48		LR
G06L	DC-G06!L	204	LF	1/17/24	1441	20.64		AM
G06S	DC-G06#S	204	LF	1/17/24	1439	20.64		AM
G07L	DC-G07!L	204	LF	1/17/24	1442	20.42		AM
G08L	DC-G08!L	204	LF	1/17/24	1445	20.07		AM
G09L	DC-G09!L	204	LF	1/17/24	1424	20.60		LR
G09S	DC-G09#S	204	LF	1/17/24	1426	20.39		LR
G12L	DC-G12!L	204	LF	1/17/24	1411	23.31		LR
G12S	DC-G12#S	204	LF	1/17/24	1409	23.98		LR
G14L	DC-G14!L	204	LF	1/17/24	1402	26.44		LR
G15L	DC-G15!L	204	LF	1/17/24	1350	32.22		LR
G15S	DC-G15#S	204	LF	1/17/24	1348	32.31		LR
G16L	DC-G16!L	204	LF	1/17/24	1344	29.65		LR
G50L	DC-G50!L	203	GMF	1/17/24	1017	10.85		JB
G51L	DC-G51!L	203	GMF	1/17/24	1005	10.48	Pump removed	JB
G52L	DC-G52!L	203	GMF	1/17/24	0951	24.78		JB
G54C	DC-G54!C	203	GMF	1/17/24	~~1505~~ 0945 APP 1/18/24	37.14		JB

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: DC
Event: DC-24Q1 Rev 0

Well	Unique ID	Unit Numl	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
G52S	DC-G52#S	203	GMF	01/17/24	09:55	29.85		JB
G53L	DC-G53!L	203	GMF	01/17/24	10:31	11.76		JB
G53S	DC-G53#S	203	GMF	01/17/24	10:31	13.35		JB
G55L	DC-G55!L	203	GMF	01/17/24	15:13	20.95		JB
G55S	DC-G55#S	203	GMF	01/17/24	15:13	21.78		JB
G56L	DC-G56!L	203	GMF	01/17/24	13:57	19.98	Not locked on arrival	JB
G56S	DC-G56#S	203	GMF	01/17/24	13:57	20.15		JB
G57L	DC-G57!L	203	GMF	01/17/24	13:48	23.8	Not locked on arrival	JB
G58L	DC-G58!L	203	GMF	01/17/24	13:39	28.3	Not locked on arrival	JB
G58S	DC-G58#S	203	GMF	01/17/24	13:39	28.06		JB
G59L	DC-G59!L	203	GMF	01/17/24	13:33	31.33	Not locked on arrival	JB
G59S	DC-G59#S	203	GMF	01/17/24	13:33	33.44		JB
G61S	DC-G61#S	203	GMF	01/17/24	11:42	22.43		JB
G62L	DC-G62!L	203	GMF	01/17/24	11:18	23.46		JB
G63L	DC-G63!L	203	GMF	01/17/24	10:55	25.32		JB
G63S	DC-G63#S	203	GMF	01/17/24	10:55	25.51		JB
G65L	DC-G65!L	203	GMF	01/17/24	14:20	19.74		JB
G65S	DC-G65#S	203	GMF	01/17/24	14:20	20.03		JB
G66L	DC-G66!L	203	GMF	01/17/24	14:09	13.79	Pump removed	JB
G66S	DC-G66#S	203	GMF	01/17/24	14:09	14.09		JB
G67L	DC-G67!L	203	GMF	01/17/24	14:05	12.41		JB
G67S	DC-G67#S	203	GMF	01/17/24	14:05	13.25		JB
G68L	DC-G68!L	203	GMF	01/17/24	15:05	12.97		JB

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: DC
Event: DC-24Q1 Rev 0

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
G68S	DC-G68#S	203	GMF	1/17/24	1505	13.78		JB
G69L	DC-G69!L	203	GMF	1/17/24	1507	13.67		JB
G69S	DC-G69#S	203	GMF	1/17/24	1507	16.62		AW
G70L	DC-G70!L	203	GMF	1/17/24	1456	16.18		JB
G71L	DC-G71!L	203	GMF	1/17/24	1449	18.58		JB
G71S	DC-G71#S	203	GMF	1/17/24	1445	19.45		JB
G72L	DC-G72!L	203	GMF	1/17/24	1441	20.32		AW
G73L	DC-G73!L	203	GMF	1/17/24	1438	26.50		JB
L103	DC-L103	204	LF	1/18/24	1024	1.97		JR
OM05S	DC-OM05#S	201-202	AP1/2	1/18/24	1034	22.67		AP
OM08	DC-OM08	201-202	AP1/2	1/18/24	1111	14.39		LR
OM09	DC-OM09	201-202	AP1/2	1/17/24	1315	3.40		AP
OM10	DC-OM10	201-202	AP1/2	1/17/24	1125	13.15		AP
OM15	DC-OM15	201-202	AP1/2	1/18/24	1200	27.34		JR
OM22S	DC-OM22#S	201-202	AP1/2	1/17/24	1331	20.10		AP
OM23S	DC-OM23#S	201-202	AP1/2	1/17/24	1411	42.06		AP
OM25D	DC-OM25&D	201-202	AP1/2	1/17/24	1446	57.95		AP
OR03S	DC-OR03#S	201-202	AP1/2	1/18/24	1042	45.64		LR
OR05D	DC-OR05&D	201-202	AP1/2	1/18/24	1032	22.07		AP
OR14S	DC-OR14#S	201-202	AP1/2	1/18/24	1055	6.72		AP
OR18	DC-OR18	201-202	AP1/2	1/17/24	1031	20.07		AP
P01I	DC-P01$I	204	LF	1/24/24	1354	8.26		LR
P01L	DC-P01!L	204	LF	1/24/24	1353	6.89		LR

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: DC
Event: DC-24Q1 Rev 0

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
P01S	DC-P01#S	204	LF	1/24/24	1352	6.82		LR
P02S	DC-P02#S	204	LF	1/24/24	1340	7.40		LR
P04S	DC-P04#S	204	LF	1/24/24	1319	14.48	GOLS	LR
P05D	DC-P05&D	204	LF	1/24/24	1313	5.70		LR
P05L	DC-P05!L	204	LF	1/24/24	1309	4.37		LR
P05S	DC-P05#S	204	LF	1/24/24	1311	4.53	GOSL	LR
P36D	DC-P36&D	204	LF	1/17/24	1515	11.14		LR
P36L	DC-P36!L	204	LF	1/17/24	1517	10.24		LR
P36S	DC-P36#S	204	LF	1/17/24	1519	10.45		LR
P37D	DC-P37&D	204	LF	1/17/24	1422	15.35		LR
P37L	DC-P37!L	204	LF	1/17/24	1420	13.77		LR
P38L	DC-P38!L	204	LF	1/17/24	1358	19.49		LR
P38S	DC-P38#S	204	LF	1/17/24	1356	19.11		LR
P39D	DC-P39&D	204	LF	1/17/24	1333	13.70		LR
P39L	DC-P39!L	204	LF	1/17/24	1337	4.49		LR
P39S	DC-P39#S	204	LF	1/17/24	1335	4.63		LR
P40L	DC-P40!L	204	LF	1/17/24	1138	8.50		LR
P40S	DC-P40#S	204	LF	~~1/17/24~~	~~1136~~	~~4.81~~	4.77 2/6/24 1339 AP	~~LR~~ BG 2/7/24
P41D	DC-P41&D	204	LF	1/17/24	1110	37.21		LR
P41L	DC-P41!L	204	LF	1/17/24	1114	7.08		LR
P41S	DC-P41#S	204	LF	1/17/24	1112	9.45		LR
P42D	DC-P42&D	204	LF	1/17/24	1120	38.35		LR
P42I1	DC-P42$I1	204	LF	1/17/24	1122	5.60		LR

SAR-3: Episodic Depth to Groundwater Measurements
All DTWs on SAR-3 must be collected within 24 hours.
Plant: DC
Event: DC-24Q1 Rev 0

Well	Unique ID	Unit Numl	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments	Initials
P42I2	DC-P42%I2	204	LF	1/17/24	1124	33.06		LR
P42L	DC-P42!L	204	LF	1/17/24	1126	4.68		LR
P42S	DC-P42#S	204	LF	1/17/24	1128	5.43		LR
P52	DC-P52	203	GMF	1/17/24	1352	15.91		JB
P57L	DC-P57!L	203	GMF	1/17/24	1429	17.26		JB
P57S	DC-P57#S	203	GMF	1/17/24	1429	16.91		JB
P60	DC-P60	203	GMF	1/17/24	1210	27.84		JB
P61	DC-P61	203	GMF	1/17/24	1144	12.34		JB
P62	DC-P62	203	GMF	1/17/24	1114	13.59		JB
P63	DC-P63	203	GMF	1/17/24	1056	16.16		JB
P64	DC-P64	203	GMF	1/17/24	1132	14.66		JB
R10L	DC-R10!L	204	LF	1/17/24	1418	22.00		LR
R11L	DC-R11!L	204	LF	1/17/24	1416	22.60		LR
R13L	DC-R13!L	204	LF	1/17/24	1406	22.96		LR
R61L	DC-R61!L	203	GMF	1/17/24	1141	22.23	locK Broke	JB
R72S	DC-R72#S	203	GMF	1/17/24	1441	20.18		JB
T43L	DC-T43!L	204	LF	1/17/24	1428	6.65		LR
T44L	DC-T44!L	204	LF	1/17/24	1451	10.01		LR
T45L	DC-T45!L	204	LF	1/17/24	1453	5.70		LR
T46L	DC-T46!L	204	LF	1/17/24	1511	6.45		LR
X301	DC-X301-leachate	203	GMF	1/18/24	1219	–	no measuring point	JB
XTPW02	DC-XTPW02-pore	203	GMF	1/18/24	1208	6.90	DRY	LR

U:6/19/23 GKJ

SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All DTWs on SAR-4 form may be collected at anytime during the sampling event.
Plant: DC
Event: DC-24Q1 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 Logger Serial No. Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L/R)		
BA01	DC-BA01	205	BAB	1/17/24	1017	14.07	21615533	yes	573.36	yes	H		LR
BA02	DC-BA02	205	BAB	1/17/24	1007	8.89	21615636	yes	571.85	yes	H		LR
BA02L	DC-BA02!L	205	BAB	1/17/24	1009	8.70	21615682	yes	4.63	yes	H		LR
BA03	DC-BA03	205	BAB	1/17/24	0955	5.92	21615637	yes	572.77	yes	H		LR
BA03L	DC-BA03!L	205	BAB	1/17/24	0953	5.49	21615687	yes	572.47	yes	H		LR
BA04	DC-BA04	205	BAB	1/17/24	1030	6.16	21615631	yes	572.21	yes	H		LR
BA05	DC-BA05#	205	BAB	1/17/24	1047	17.45	21615540	yes	578.28	yes	H		LR
BA06	DC-BA06	205	BAB	1/17/24	1044	20.05	21615525	yes	575.09	yes	H		LR
G02S	DC-G02#S	204	LF	1/24/24	1340	7.40	21615554	Yes	614.32	Yes	H		JR
G50S	DC-G50#S	203	GMF	1/17/24	1016	12.02	21615535	yes	611.78	yes	H		JB
G51S	DC-G51#S	203	GMF	1/17/24	1000	9.86	21615691	yes	609.78	yes	H		JB
G54L	DC-G54!L	203	GMF	1/17/24	0937	22.85	21615690	yes	600.07	yes	H		JB
G54S	DC-G54#S	203	GMF	1/17/24	0938	24.11	21615684	yes	599.18	yes	H		JB
G57S	DC-G57#S	203	GMF	1/17/24	1344	23.45	21615683	yes	599.15	yes	H		JB
G60L	DC-G60!L	203	GMF	1/17/24	1209	14.99	21615678	yes	600.23	yes	H		JB
G60S	DC-G60#S	203	GMF	1/17/24	1209	24.56	21615677	yes	590.35	yes	H		JB
G64L	DC-G64!L	203	GMF	1/17/24	1050	23.83	21615688	yes	598.56	yes	H		JB
G64S	DC-G64#S	203	GMF	1/17/24	1050	24.73	21615632	yes	598.39	yes	H		JB

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SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All DTWs on SAR-4 form may be collected at anytime during the sampling event.
Plant: DC
Event: DC-24Q1 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 Logger Serial No. Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L/R)		
OM01	DC-OM01	201-202	AP1/2	1/17/24	1350	12.60	21615685	yes	582.62	yes	H		AP
OM04S	DC-OM04#S	201-202	AP1/2	1/18/24	1042	21.10	21615542	yes	586.08	yes	H		LR
OM07	DC-OM07	201-202	AP1/2	1/18/24	1011	13.24	21615541	-	-	-	-	No transducer	~~AP~~
OM12	DC-OM12	201-202	AP1/2	1/18/24	1107	17.73	21615527	-	-	-	-	No transducer	JR
OM16	DC-OM16	201-202	AP1/2	1/17/24	1050	28.25	21615539	yes	579.60	yes	H		AP
OM17	DC-OM17	201-202	AP1/2	1/17/24	1104	11.72	21615693	yes	580.02	yes	H		AP
OM21	DC-OM21	201-202	AP1/2	1/18/24	1103	11.88	21615593	yes	594.52	yes	H		AP
OM22D	DC-OM22&D	201-202	AP1/2	1/17/24	1332	19.94	21615592	yes	579.24	yes	H		AP
OM23D	DC-OM23&D	201-202	AP1/2	1/17/24	1413	39.30	21615591	yes	573.94	yes	H		AP
OM24D	DC-OM24&D	201-202	AP1/2	1/17/24	1459	3.63	21615522	yes	573.28	yes	H		AP
OM25S	DC-OM25#S	201-202	AP1/2	1/17/24	1449	58.19	21615681	yes	570.76	yes	H		AP
OR02	DC-OR02	201-202	AP1/2	1/17/24	1437	5.42	21615679	yes	595.83	yes	H		AP
OR03D	DC-OR03&D	201-202	AP1/2	1/18/24	1045	45.13	21615577	yes	582.76	yes	H		LR
OR04D	DC-OR04&D	201-202	AP1/2	1/18/24	1040	21.81	21615570	yes	585.80	yes	H		LR
OR06A	DC-OR06!A	201-202	AP1/2	1/18/24	1024	14.10	21615692	yes	581.30	yes	H		AP
OR11	DC-OR11	201-202	AP1/2	1/18/24	1051	31.24	21615686	yes	564.96	yes	H		SR
OR13S	DC-OR13#S	201-202	AP1/2	1/18/24	1039	12.97	21615676	yes	584.55	yes	H		AP
OR13D	DC-OR13&D	201-202	AP1/2	1/18/24	1042	13.62	21564135	yes	588.89	yes	H		AP

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SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All DTWs on SAR-4 form may be collected at anytime during the sampling event.
Plant: DC
Event: DC-24Q1 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 Logger Serial No. Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L/R)		
OR14D	DC-OR14&D	201-202	AP1/2	1/18/24	1055	10.48	21615611	yes	566.64	yes	H		AP
OR19	DC-OR19	201-202	AP1/2	1/18/24	1123	24.66	21615634	yes	573.06	yes	H		JR
OR20	DC-OR20	201-202	AP1/2	1/18/24	1040	21.49	21615610	yes	566.01	yes	H		JR

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

Duck Creek

WELL/SAMPLE POINT BA01 + Dup **Purge Method:** Bladder

Date: 1/26/24 Start Time: 1059 Finish/Sample Time: 1222

Well Depth (Bottom) From MP: Pump ft Min. Purge Volume: 1.6 Gal (L) mL

Depth to Water From MP: 13.41 ft Total Purge Volume: 1.6 Gal (L) mL 2.2 L

Water Column Length: _____ ft

Well Water Volume: _____ Gal / L Total Drawdown: JR 1/26/24 ~~13~~ ft 0.08 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	1118	13.41	~~100~~ 200	6.93	1010	10.73	-6	1.65	1.5
2	1120	13.41	~~100~~ 200	6.90	1010	~~10.70~~	-6	1.55	0.9
3	1122	13.41	~~100~~ 200	6.90	1010	10:70 10:65	-7	1.44	0.7
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	X	
Casing locked/secure	X	
Well cap fits securely.	X	
Good seal/drainage	X	
Well has weep holes	X	

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+1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1+1	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1+1	Rad (P, 2.5L, HNO3)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2S04)
1+1	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 13.49 ft

Comments **Check pH if reading is below 6.9** checked/compared with Oatten

Duplicate taken here

Sampler's Signature: Joseph R Rul

Duck Creek

WELL/SAMPLE POINT BA02 **Purge Method:** Bladder

Date: 1/25/24 Start Time: 1329 Finish/Sample Time: 1439

Well Depth (Bottom) From MP: pump ft Min. Purge Volume: 1.0 Gal / L / mL

Depth to Water From MP: 8.37 ft Total Purge Volume: 1.6 Gal / L / mL

Water Column Length: — ft

Well Water Volume: — Gal / L Total Drawdown: 2.54 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	1340	9.44	100	7.13	863	10.40	175	3.20	39.5
2	1342	9.65	100	7.14	865	10.29	175	3.24	39.3
3	1344	9.71	100	7.15	864	10.25	175	3.16	37.3
4						50.45			
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	X	
Casing locked/secure	X	
Well cap fits securely.	X	
Good seal/drainage	X	
Well has weep holes	X	

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, H2S04)
1	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 10.91 ft

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

Sampler's Signature: Joseph R Reed

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024 **Duck Creek**
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

WELL/SAMPLE POINT BA02L **Purge Method:** peristaltic

Date: 2/5/2024 Start Time: 1337 Finish/Sample Time: 1440

Well Depth (Bottom) From MP: 13.74 ft Min. Purge Volume: 1000 Gal / L / mL

Depth to Water From MP: 6.74 ft Total Purge Volume: 1000 Gal / L / mL

Water Column Length: 7.00 ft

Well Water Volume: 4.23 Gal / L Total Drawdown: 0.16 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	1346	7.84	100	7.28	868	10.56	-118	1.32	147
2	1352	7.98	100	7.25	861	10.62	-118	1.29	145
3	1355	8.15	100	7.23	856	10.64	-118	1.25	142
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)
1	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, H2S04)
1	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

APP 2/5/24

Final DTW: 6.90 ft

Comments **Check pH if reading is below 6.9 or above 7.7**
Water level recharge during bottle filling

Sampler's Signature:

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024 **Duck Creek**
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

WELL/SAMPLE POINT BA03 **Purge Method:** Bladder

Date: 1/25/24 Start Time: 1223 Finish/Sample Time: 1325

Well Depth (Bottom) From MP: pump ft Min. Purge Volume: 1.0 Gal / L / mL

Depth to Water From MP: 4.35 ft Total Purge Volume: 1.6 Gal / L / mL

Water Column Length: — ft

Well Water Volume: — Gal / L Total Drawdown: 0.65 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	1239	4.73	100	6.97	836	10.80	131	1.46	71.6
2	1241	4.75	100	6.95	836	10.78	131	1.30	67.8
3	1243	4.79	100	6.94	836	10.75	131	1.30	65.1
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	X	
Casing locked/secure	X	
Well cap fits securely.	X	
Good seal/drainage	X	
Well has weep holes	X	

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, H2S04)
1	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 5.00 ft

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

Sampler's Signature: Joseph R Reed

WELL/SAMPLE POINT BA03L **Purge Method:** Bladder

Date: 1/25/24 Start Time: 1119 Finish/Sample Time: 1219

Well Depth (Bottom) From MP: pump ft Min. Purge Volume: 1.0 Gal (L) mL

Depth to Water From MP: 3.95 ft Total Purge Volume: 1.6 Gal (L) mL

Water Column Length: — ft

Well Water Volume: — Gal / L Total Drawdown: 0.10 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	4.10	100	6.68	1640	9.65	188	3.45	40.0
2	1133	4.10	100	6.70	1690	9.60	188	3.50	42.0
3	1135	4.10	100	6.71	1630	9.55	188	3.50	40.1
4									
5						1219			
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	X	
Casing locked/secure	X	
Well cap fits securely.	X	
Good seal/drainage	X	
Well has weep holes	X	

BOTTLE INFORMATION:

Unfiltered Qty	Unfiltered 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	Filtered Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2S04)
1	General (P,500mL)
	General (P, 1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 4.05 ft

Comments **Check pH if reading is below 6.9** ← checked w/ Oakton

Sampler's Signature: Joseph R Reid

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024 **Duck Creek**
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

WELL/SAMPLE POINT BA04 **Purge Method:** Bladder

Date: 1/26/24 Start Time: 1234 Finish/Sample Time: 1338

Well Depth (Bottom) From MP: Pump ft Min. Purge Volume: 1.0 Gal / L / mL

Depth to Water From MP: 5.65 ft Total Purge Volume: 1.6 Gal / L / mL

Water Column Length: — ft

Well Water Volume: — Gal / L Total Drawdown: 0.10 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	1251	5.66	100	6.94	1120	10.97	-16	0.80	0.0
2	1253	5.68	100	6.93	1120	10.84	-15	0.68	0.0
3	1255	5.68	100	6.93	1120	10.80	-15	0.50	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	X	
Casing locked/secure	X	
Well cap fits securely.	X	
Good seal/drainage	X	
Well has weep holes	X	

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, H2S04)
1	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 5.75 ft

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

Sampler's Signature: Joseph A Rea

Duck Creek

WELL/SAMPLE POINT BA05 **Purge Method:** Bladder

Date: 2/5/2024 Start Time: 1220 Finish/Sample Time: 1329

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

Depth to Water From MP: 16.15 ft Total Purge Volume: 1000 Gal / L / (mL)

Water Column Length: _____ ft

Well Water Volume: _____ Gal / L Total Drawdown: 3.27 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	1232	17.60	100	7.40	1520	11.50	-80	0.57	161
2	1235	17.87	100	7.32	1520	11.46	-82	0.33	147
3	1238	18.08	100	7.16	1510	11.44	-86	0.00	172
4	1241	18.24	100	7.10	1510	11.42	-89	0.00	243
5	1244	18.40	100	7.06	1510	11.38	-91	0.00	258
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: YSI ProPlus

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, H2S04)
1	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 19.42 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:** Bladder

Date: 1/26/24 Start Time: 1350 Finish/Sample Time: 1453

Well Depth (Bottom) From MP: Pump ft Min. Purge Volume: 1.0 Gal / L / mL

Depth to Water From MP: 19.51 ft Total Purge Volume: 1.6 Gal / L / mL

Water Column Length: — ft

Well Water Volume: — Gal / L AW 1/26/24 2090 Total Drawdown: 5.87 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	14:09	21.69	100	6.70	~~2900~~	11.29	-14	1.04	349
2	14:10	21.82	100	6.67	2091	11.19	-15	0.93	347
3	14:11	21.97	100	6.66	2091	11.11	-17	0.84	352
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)

5

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2S04)
	General (P,500mL)
1	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Ferrous Iron - Over Range mg/L

Final DTW: 25.38 ft

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

Sampler's Signature: Joseph R Rust

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck creek
Weather:	30°F partly cloudy wind NE 5mph	Environment:	Snow, grass, mud

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	WU6 83C85	
Water Level Meter	Make: Heron	Model: Dipper 2	Serial Number:	19FF2111192HB	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	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.			—	MSI	023051-02	2/21/2025
pH 10.00a	10.09	s.u.	±0.1 s.u.			—	MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm			—	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2010	µS/cm	±5%			—	Geotech	3GF1197	Jun-24
ORP	248	mV	±15 mV			—	InSitu	~~3GB927~~	~~Jan-24~~
DO (Zero pt)	0.08	mg/L	±0.1			—	Macron	#000228049	8/26/2025
DO (Saturated)	98.6	%	97-100%			—	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	—	—	—	Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3GB1011
BG
1/23/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 1250			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	—	Geotech	3GB1049	Feb-25
pH 7.00b	6.87	s.u.	±0.15 s.u.		—	Geotech	2GF113	Jun-24
pH 10.00b	9.99	s.u.	±0.15 s.u.		—	Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%		—	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1540				
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	7.05	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.09	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	1010	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.07	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU			—	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:	[signature]	Date:	1/18/2024

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore	Location:	duck creek
Weather:	30°-12° cloudy wind NNE 5 MPH	Environment:	Snow

Multiparameter Water Meter	Make: Horriba	Model: U-5000	Serial Number:	PW2GYJD3	
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	3.99	s.u.	±0.1 s.u.	P	N	N/A	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 Zero (DI)	0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2040	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	246	mV	±15 mV				InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.07	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	99.4	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3G11011
BG
1/23/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) Time: 1252

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	7.08	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	10.06	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1020	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time: 1540

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	N	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.04	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	998	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.06	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0	NTU	<2 NTU				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: Austin Moore Date: 18-Jan-24

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordan Bohannan	Location:	Duck Creek
Weather:	29°F, 3mph wind, Partly Cloudy	Environment:	Snowy, Landfill

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number: AGJTK4XG		
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	4.09	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.99	s.u.	±0.1 s.u.	P	No	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.33	s.u.	±0.1 s.u.	F	Yes	10.00	MSI	022361-01	12/27/2024
SC Zero (DI)	11.4	µS/cm	0<25 µS/cm	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1950	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	352	mV	±15 mV	P	No	NA	InSitu	~~3GB927~~	~~Jan-24~~
DO (Zero pt)	~~5.47~~ 0.00	mg/L	±0.1	~~F~~ P	~~Yes~~ 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)	1.3	NTU	<2 NTU	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

01/18 JB

Exp. 6/24
Lot* 3G11011
BG 1/23/24

ICV (Initial Calibration Verification)					Time: 11:59			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.62	s.u.	±0.15 s.u.	F	Calibrated: 7.00	Geotech	3GB1049	Feb-25
pH 7.00b	6.97	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	987	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 15:42				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.94	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	No	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.15	s.u.	±0.1 s.u.	F	Yes	10.01	MSI	022361-01	12/27/2024
SC 1000	993	µS/cm	±5%	P	No	N/A	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	mg/L	±0.1 mg/L	P	No	N/A	Macron	#000228049	8/26/2025
Turbidity (DI)	1.7	NTU	<2 NTU	P	No	N/A	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: ORP taken at 0°C

Signature:	JBohannan	Date:	01/18/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordan Bohannan	Location:	Duck Creek
Weather:	7°F, 15mph winds, mostly sunny	Environment:	Snow Drifts, Pond

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number: PW2GYJD3		
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	5.61	s.u.	±0.1 s.u.	F	Yes	3.99	MSI	023067-01	3/14/2025
pH 7.00a	6.74	s.u.	±0.1 s.u.	F	Yes	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.08	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC Zero (DI)	14	µS/cm	0<25 µS/cm	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1989	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	233	mV	±15 mV	P	No	N/A	InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.03	mg/L	±0.1	P	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	98.8%	%	97-100%	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.3	NTU	<2 NTU	P	No		Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24 lot # 3G11011 BG 1/23/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 10:05

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.96	s.u.	±0.15 s.u.	P	None	Geotech	3GB1049	Feb-25
pH 7.00b	6.97	s.u.	±0.15 s.u.	P	None	Geotech	2GF113	Jun-24
pH 10.00b	10.06	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25
SC 1000	993	µS/cm	±5%	P	None	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

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: Only one well done

Signature:	JBohannan	Date:	01/19/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore	Location:	duck creek
Weather:	16-0° sunny wind WNW 16mph	Environment:	snow

Multiparameter Water Meter	Make: Horriba	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	4.03	s.u.	±0.1 s.u.	P	N	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.01	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)	0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2020	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	236	mV	±15 mV				InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.0	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	99.6	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU			—	Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3GF1197
BG 1/23/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) Time: 1030

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.06	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	7.01	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	9.92	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1020	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time: 1230

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	N	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.96	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	1018	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU				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: [signature] Date: 19-Jan-24

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP AW	Location:	Duck creek
Weather:	Wind NW 0-1 Temp 5°C sunny	Environment:	grass, snow

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	WJ6 83 C85	
Water Level Meter	Make: Heron	Model: Dipper T	Serial Number:	19FF21111 92HB	

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	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.08	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.02	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1960	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	242	mV	±15 mV				InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.00	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.22	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.10	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3GI1011
BG 1/23/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 1010

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	7.00	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	9.96	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1020	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):

Time: 1250

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P	NO	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.03	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.04	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	1030	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.01	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU				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: [signature] Date: 1/19/~~2023~~ 2024

AP 1/19/24

Serial #: 19FF21111 92HB

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore	Location:	Duck Creek
Weather:	37°-32° cloudy/Rain wind 53mph	Environment:	Ice, mud, snow

Multiparameter Water Meter	Make: Aquatroll	Model: V-6000	Serial Number:	AW2GYJD3	
Water Level Meter	Make: WT	Model: Itecon	Serial Number:	11FF-22093 05ML	

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	N	N	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	10.01	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1.90	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	240	mV	±15 mV				InSitu	~~3GB927~~	~~Jan-24~~
DO (Zero pt)	0.00	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	99.9	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3G11011
BG
1/24/24

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	4.00	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	7.01	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	10.03	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 1544

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	N	N	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	9.98	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	990	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0	NTU	<2 NTU				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:	Austin M	Date:	23-Jan-24

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordan Bohannan			Location:	Duck Creek
Weather:	36°F, Rain, 4mph wind, Cloudy			Environment:	Icedover, Snow covered
Multiparameter Water Meter	Make: Horiba	Model: U-5000		Serial Number:	WUG83C85
Water Level Meter	Make: Heron	Model: DipperT		Serial Number:	3717-T

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.84	s.u.	±0.1 s.u.	F	Yes	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.02	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC Zero (DI)	7.8	µS/cm	0<25 µS/cm	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2050	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	227	mV	±15 mV	P	No	N/A	InSitu	~~3GD027~~	~~Jan-24~~
DO (Zero pt)	0.07	mg/L	±0.1	P	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	98.3%	%	97-100%	P	NO	N/A	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0	NTU	<2 NTU	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24 lot # 3G11011 BG 1/24/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 09:24			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.93	s.u.	±0.15 s.u.	P	None	Geotech	3GB1049	Feb-25
pH 7.00b	6.86	s.u.	±0.15 s.u.	P	None	Geotech	2GF113	Jun-24
pH 10.00b	9.99	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25
SC 1000	987	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 13:38			
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	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.01	s.u.	±0.1 s.u.	P	No	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.02	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC 1000	987	µS/cm	±5%	P	No	N/A	Ricca	4209A12	Aug-24
DO (Zero pt)	0	mg/L	±0.1 mg/L	P	NO	N/A	Macron	#000228049	8/26/2025
Turbidity (DI)	0	NTU	<2 NTU	P	No	N/A	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: ORP Taken at 1.67°C

Signature:	JBohannan	Date:	01/23/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Andrew Weteska, Joe Reed	Location:	Duck Creek
Weather:	35°F, Rain, 4mph wind, Cloudy	Environment:	Iced over, Snow covered
Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number: AGJTK4KG
Water Level Meter	Make: Heron	Model: Series 1900	Serial Number: 19FF211192HB

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	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.99	s.u.	±0.1 s.u.	P	NO	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.05	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC Zero (DI)	10	µS/cm	0<25 µS/cm	P	NO	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1990	µS/cm	±5%	P	NO	N/A	Geotech	3GF1197	Jun-24
ORP	248	mV	±15 mV	P	No	N/A	InSitu	~~3GB927~~	~~Jan-24~~
DO (Zero pt)	0.0	mg/L	±0.1	P	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	99.5	%	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)

Exp. 6/24
Lot# BG11011
BG
1/24/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 10:24

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.00	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	6.95	s.u.	±0.15 s.u.	P		Geotech	2GF113	Jun-24
pH 10.00b	9.99	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: 1550

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.99	s.u.	±0.1 s.u.	P	N		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	10.01	s.u.	±0.1 s.u.	P			MSI	022361-01	12/27/2024
SC 1000	1020	µS/cm	±5%	P			Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	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:	Joseph R Reed	Date:	1/23/24

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordan Bohannan	Location:	Duck Creek
Weather:	36°F, Drizzle, 6mph wind	Environment:	Snow, Slush, Ice

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number:	WUG83C85	
Water Level Meter	Make: Heron	Model: Dipper T	Serial Number:	19FF21111 92HB	

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	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.86	s.u.	±0.1 s.u.	F	Yes	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.23	s.u.	±0.1 s.u.	F	Yes	10.01	MSI	022361-01	12/27/2024
SC Zero (DI)	75	µS/cm	0<25 µS/cm	F	Yes	1.7	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1950	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	215	mV	±15 mV	P	No		InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.00	mg/L	±0.1	P	No		Macron	#000228049	8/26/2025
DO (Saturated)	97%	%	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)

Exp. 6/24
Lot# 3GI1021
BG
1/25/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 09:34

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.04	s.u.	±0.15 s.u.	P	None	Geotech	3GB1049	Feb-25
pH 7.00b	6.84	s.u.	±0.15 s.u.	F	Calibrated → 7.00	Geotech	2GF113	Jun-24
pH 10.00b	10.03	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25
SC 1000	974	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 14:38

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	6.94	s.u.	±0.1 s.u.	P	No	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.07	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC 1000	987	µS/cm	±5%	P	No	N/A	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	mg/L	±0.1 mg/L	P	No	N/A	Macron	#000228049	8/26/2025
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

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:	JBohannan	Date:	07/24/24

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck creek
Weather:	37°-40°F cloudy rain Wind NE 6mph	Environment:	Snow, grass, mud

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	PW26YJ03	
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	4.00	s.u.	±0.1 s.u.	P	Yes	4.00	MSI	023067-01	3/14/2025
pH 7.00a	6.87	s.u.	±0.1 s.u.	P	Yes	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.07	s.u.	±0.1 s.u.	P	Yes	10.01	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	2040	µS/cm	±5%	P	No	—	Geotech	3GF1197	Jun-24
ORP	300	mV	±15 mV	P	Yes	250	InSitu	~~3GD027~~	~~Jan-24~~
DO (Zero pt)	0.00	mg/L	±0.1	P	No	—	Macron	#000228049	8/26/2025
DO (Saturated)	98.7	%	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

249 @ 10°C

Exp. 6/24 Lot# 3GB1021 ~~BG~~ 1/25/24

ICV (Initial Calibration Verification)

Time: 1031

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.97	s.u.	±0.15 s.u.	P	—	Geotech	3GB1049	Feb-25
pH 7.00b	7.00	s.u.	±0.15 s.u.	P	—	Geotech	2GF113	Jun-24
pH 10.00b	10.05	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: 1509

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	7.08	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.06	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)	0.00	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:		Date:	1/24/2024

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	JR, LR	Location:	DUCK CREEK
Weather:	35-38° cloudy/rainy	Environment:	Wet snow/rain

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number:	AGJTK4XG	
Water Level Meter	Make: Heron	Model: Series 1100	Serial Number:	19FF21111 92HB	

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		MSI	023067-01	3/14/2025
pH 7.00a	6.99	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.00	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.4	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2050	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	249	mV	±15 mV				InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.00	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.9	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3GI2011
BG 1/25/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 945

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	7.00	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	9.97	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000		µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 1456

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	N	N	MSI	023067-01	3/14/2025
pH 7.00a	6.92	s.u.	±0.1 s.u.	P	N	N	MSI	023051-02	2/21/2025
pH 10.00a	10.03	s.u.	±0.1 s.u.	P	N	N	MSI	022361-01	12/27/2024
SC 1000	990	µS/cm	±5%	P	N	N	Ricca	4209A12	Aug-24
DO (Zero pt)	0	mg/L	±0.1 mg/L	P	N	N	Macron	#000228049	8/26/2025
Turbidity (DI)	0	NTU	<2 NTU	P	N	N	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:	Joseph R Reed	Date:	1/24/24

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck Creek
Weather:	37°-40° F cloudy Wind NE 4mph	Environment:	snow, grass, mud

Multiparameter Water Meter	Make:	Horiba	Model:	U-5000	Serial Number:	WVG83C85	
Water Level Meter	Make:	Heron	Model:	Dipper T	Serial Number:	19FF21111492HB	

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	NO	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.95	s.u.	±0.1 s.u.	P	NO		MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.	P	NO		MSI	022361-01	12/27/2024
SC Zero (DI)	23	µS/cm	0<25 µS/cm	P	NO		Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2040	µS/cm	±5%	P	NO		Geotech	3GF1197	Jun-24
ORP	243	mV	±15 mV	P	NO		InSitu	~~3GD923~~	~~Jan-24~~
DO (Zero pt)	0.07	mg/L	±0.1	P	NO		Macron	#000228049	8/26/2025
DO (Saturated)	100%	%	97-100%	P	NO		Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.2	NTU	<2 NTU	P	NO		Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3GF1211
BG
1/26/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 0941

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.05	s.u.	±0.15 s.u.	P	NO	Geotech	3GB1049	Feb-25
pH 7.00b	7.01	s.u.	±0.15 s.u.	P		Geotech	2GF113	Jun-24
pH 10.00b	10.04	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: 1503

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	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.	P	NO	NA	MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.	P	NO	NA	MSI	022361-01	12/27/2024
SC 1000	1030	µS/cm	±5%	P	NO	NA	Ricca	4209A12	Aug-24
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	P	NO	NA	Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	NA	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:		Date:	1/25/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Joe Reed	Location:	Duck Creek (Vistra
Weather:	Cloudy/sprinkles 36-38°F wind 4mph	Environment:	Slushy / wet

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	KL9KJ9HA	
Water Level Meter	Make: Solinst	Model: model 101	Serial Number:	33459	

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		MSI	023067-01	3/14/2025
pH 7.00a	6.99	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	9.99	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.10	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2050	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	245	mV	±15 mV				InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.0	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.9	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24 Lot # 3GI1011 BG 11/26/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 1015			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	6.98	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	9.98	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 15				
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		MSI	023067-01	3/14/2025
pH 7.00a	7.00	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	990	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.01	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU				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:	Joseph R Reed	Date:	1/25/24

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordon Bohannan	Location:	Duck Creek
Weather:	38°F, Cloudy, 5mph wind	Environment:	Slush, snow, ice

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	3.65	s.u.	±0.1 s.u.	Fail	Yes	4.00	MSI	023067-01	3/14/2025
pH 7.00a	7.13	s.u.	±0.1 s.u.	Fail	Yes	7.01	MSI	023051-02	2/21/2025
pH 10.00a	10.18	s.u.	±0.1 s.u.	Fail	Yes	10.01	MSI	022361-01	12/27/2024
SC Zero (DI)	18	µS/cm	0<25 µS/cm	Pass	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2080	µS/cm	±5%	Pass	No	N/A	Geotech	3GF1197	Jun-24
ORP	235	mV	±15 mV	Pass	No	N/A	InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.00	mg/L	±0.1	Pass	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	100%	%	97-100%	Pass	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	Pass	No	N/A	Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot ~~A~~
3GB1011
BG
1/26/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 10:15			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.93	s.u.	±0.15 s.u.	P	None	Geotech	3GB1049	Feb-25
pH 7.00b	6.91	s.u.	±0.15 s.u.	P	None	Geotech	2GF113	Jun-24
pH 10.00b	10.13	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 14:51			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.93	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	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.00	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC 1000	987	µS/cm	±5%	P	No	N/A	Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L	P	No	N/A	Macron	#000228049	8/26/2025
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

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:	JBohannan	Date:	01/25/24

QC

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore	Location:	Duck Creek
Weather:	37°-32 Cloudy Wind NE 6 mph	Environment:	Snow, mud

Multiparameter Water Meter	Make: Horriba	Model: U-5000	Serial Number:	PW26YJD3	
Water Level Meter	Make: WT	Model: Heron	Serial Number:	19FF2111192HB	

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	N	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.04	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	9.94	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2020	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	243	mV	±15 mV				InSitu	~~SGD927~~	~~Jan-24~~
DO (Zero pt)	0.0	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.7	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU			—	Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot # 3GF1197
3GA1134
3GB1049
1/26/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 1014			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.03	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	7.01	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	10.06	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1520				
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	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.03	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 1000	990	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU			—	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:	Austin M	Date:	29-Jan-24

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordan Bohannon	Location:	Duck Creek
Weather:	43°-32°F Cloudy, 4 mph wind	Environment:	mud, slush, snow, ice

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number:	WUG83C85	
Water Level Meter	Make: Heron	Model: Dipper T	Serial Number:	19FF2111192HB	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.94	s.u.	±0.1 s.u.	Pass	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.75	s.u.	±0.1 s.u.	Fail	Yes	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.05	s.u.	±0.1 s.u.	Pass	No	N/A	MSI	022361-01	12/27/2024
SC Zero (DI)	0.00	µS/cm	0<25 µS/cm	Pass	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	3040	µS/cm	±5%	Pass	No	N/A	Geotech	3GF1197	Jun-24
ORP	248★	mV	±15 mV	Pass	No	N/A	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.00	mg/L	±0.1	Pass	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	98.5%	%	97-100%	Pass	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	Pass	No	N/A	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 09:49

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.87	s.u.	±0.15 s.u.	Pass	None	Geotech	3GB1049	Feb-25
pH 7.00b	6.85	s.u.	±0.15 s.u.	Pass	None	Geotech	2GF113	Jun-24
pH 10.00b	10.04	s.u.	±0.15 s.u.	Pass	None	Geotech	3GA1134	Jan-25
SC 1000	976	µS/cm	±5%	Pass	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 14:35

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	6.97	s.u.	±0.1 s.u.	P	No	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC 1000	992	µS/cm	±5%	P	No	N/A	Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L	P	No	N/A	Macron	#000228049	8/26/2025
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

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: ★ ORP Taken at 19.05°C

Signature: JBohannon — Date: 01/26/~~2025~~ 2024

JB 1/26

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck Creek
Weather:	32°-46°F cloudy windy 12 mph NE	Environment:	snow, wood, 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	3.84	s.u.	±0.1 s.u.	F	YES	4.00	MSI	023067-01	3/14/2025
pH 7.00a	7.10	s.u.	±0.1 s.u.	P	NO	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.02	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	2030	µS/cm	±5%	P			Geotech	3GF1197	Jun-24
ORP	242	mV	±15 mV	P			InSitu	3GI1011	Jun-24
DO (Zero pt)	0.0	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)	0.0	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: 1030

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	NO	Geotech	3GB1049	Feb-25
pH 7.00b	6.96	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	1010	µS/cm	±5%	P	NO	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time: 1410

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	7.06	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	1030	µS/cm	±5%	P	NO	—	Ricca	4209A12	Aug-24
DO (Zero pt)	0.07	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:	[signature]	Date:	1/26/2024

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	LR AM	Location:	DUCK CREEK
Weather:	FOG/CLOUDY	Environment:	SNOW/MUD/GRASSLAND
Multiparameter Water Meter	Make: HORIBA	Model: U5000	Serial Number: PW2G4JD3
Water Level Meter	Make: Heron	Model: Dipper-T	Serial Number: 11FF220930SML

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.91	s.u.	±0.1 s.u.	P	N	N	MSI	023067-01	3/14/2025
pH 7.00a	6.96	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	9.97	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1990	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	254	mV	±15 mV				InSitu	~~3GD927~~	~~Jan-24~~
DO (Zero pt)	0.0	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.1	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU		N	N	Pace Labs	N/A (DI)	N/A (DI)

Exp. 6/24
Lot# 3G1101 1
BG 1/29/24

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 1030

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.98	s.u.	±0.15 s.u.	P	NA	Geotech	3GB1049	Feb-25
pH 7.00b	7.01	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	10.02	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%	P	NA	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):

Time: 1400

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	N	N	MSI	023067-01	3/14/2025
pH 7.00a	6.95	s.u.	±0.1 s.u.	P			MSI	023051-02	2/21/2025
pH 10.00a	10.07	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	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	0	NTU	<2 NTU	P	N	N	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: [signature] Date: 1/26/24

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	J Oldfield	Location:	Duck Creek
Weather:	Cloudy 35-38°F	Environment:	Foggy / Wet

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number:	YLAKJ9H4	
Water Level Meter	Make: Solinst	Model: Model 101	Serial Number:	33459	

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		MSI	023067-01	3/14/2025
pH 7.00a	7.01	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.04	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	0.1	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2040	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	243	mV	±15 mV				InSitu	3GI1011	Jun-24
DO (Zero pt)	0.01	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.1	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.1	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 1015			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	6.98	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	9.98	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	996	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1503				
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	N		MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.02	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	1000	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.01	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU				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:	Joseph E. Reed	Date:	1/26/24

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Multiparameter Meter Field Calibration Checklist

Field Personnel:	Jordan Bohannan	Location:	Duck Creek
Weather:	34°F, 7mph wind, mostly cloudy	Environment:	Fog, Mud, Snow

Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number: AGJTK4XG		
Water Level Meter	Make: Heron	Model: DipperT	Serial Number: 11FF2209305ML		

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.93	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.14	s.u.	±0.1 s.u.	F	Yes	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.34	s.u.	±0.1 s.u.	F	Yes	10.07	MSI	022361-01	12/27/2024
SC Zero (DI)	0	µS/cm	0<25 µS/cm	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1992	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	263★	mV	±15 mV	P	No	N/A	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.0	mg/L	±0.1	P	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	97%	%	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: 09:47			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.84	s.u.	±0.15 s.u.	F	Cal -> 4.00	Geotech	3GB1049	Feb-25
pH 7.00b	6.87	s.u.	±0.15 s.u.	P	None	Geotech	2GF113	Jun-24
pH 10.00b	10.10	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25
SC 1000	994	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 14:49				
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	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.01	s.u.	±0.1 s.u.	P	No	N/A	MSI	023051-02	2/21/2025
pH 10.00a	10.02	s.u.	±0.1 s.u.	P	No	N/A	MSI	022361-01	12/27/2024
SC 1000	998	µS/cm	±5%	P	No	N/A	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	mg/L	±0.1 mg/L	P	No	N/A	Macron	#000228049	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU	P	No	N/A	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: ★ ORP Taken at ~10°C

Signature:	JBohannan	Date:	01/29/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck creek
Weather:	35°-47°F windy SW 7mph	Environment:	grass, snow, mud, weeds

Multiparameter Water Meter	Make: Horiba	Model: VS000	Serial Number:	WV6830855	
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	4.11	s.u.	±0.1 s.u.	F	Yes	4.00	MSI	023067-01	3/14/2025
pH 7.00a	6.92	s.u.	±0.1 s.u.	P	No	—	MSI	023051-02	2/21/2025
pH 10.00a	9.92	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	1940	µS/cm	±5%	P	No	—	Geotech	3GF1197	Jun-24
ORP	242	mV	±15 mV	P	No	—	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.00	mg/L	±0.1	P	No	—	Macron	#000228049	8/26/2025
DO (Saturated)	99.9	%	97-100%	P	No	—	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	.8	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: 0832

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	10.03	s.u.	±0.15 s.u.	P	—	Geotech	3GA1134	Jan-25
SC 1000	1010	µS/cm	±5%	P	—	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	4.03	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	10.08	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)	0.00	mg/L	±0.1 mg/L	P	No	—	Macron	#000228049	8/26/2025
Turbidity (DI)	0.8	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: [signature] Date: 1/29/2024

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck creek
Weather:	37° - 42°C Cloudy Wind NW 11mph	Environment:	grass, mud, snow, woods

Multiparameter Water Meter	Make: Hor:ba	Model: U5000	Serial Number:	AGJTH4X6	
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	3.53	s.u.	±0.1 s.u.	F	Yes	4.00	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.	P	No	-	MSI	023051-02	2/21/2025
pH 10.00a	10.01	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	2050	µS/cm	±5%	P	No	-	Geotech	3GF1197	Jun-24
ORP	274	mV	±15 mV	P	Yes	242	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.00	mg/L	±0.1	P	No	-	Macron	#000228049	8/26/2025
DO (Saturated)	96.6	%	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

242 @ 15°C

ICV (Initial Calibration Verification)					Time: 1012			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.94	s.u.	±0.15 s.u.	P	-	Geotech	3GB1049	Feb-25
pH 7.00b	6.92	s.u.	±0.15 s.u.	P	-	Geotech	2GF113	Jun-24
pH 10.00b	10.03	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: 1530				
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	-	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.	P	No	-	MSI	023051-02	2/21/2025
pH 10.00a	10.09	s.u.	±0.1 s.u.	P	No	-	MSI	022361-01	12/27/2024
SC 1000	1000	µS/cm	±5%	P	No	-	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	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:		Date:	1/30/2024

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore	Location:	Duck Creek
Weather:	39-32 Cloudy wind WNW 4mph	Environment:	Mud

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	WV683C85	
Water Level Meter	Make: Heron	Model: Dipper	Serial Number:	19FT-2 1111924HB	

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	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	6.86	s.u.	±0.1 s.u.	P	Y	7.00	MSI	023051-02	2/21/2025
pH 10.00a	9.96	s.u.	±0.1 s.u.	P	N	NA	MSI	022361-01	12/27/2024
SC Zero (DI)	0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1994	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	252	mV	±15 mV				InSitu	3GD927	Jan-24
DO (Zero pt)	0.0	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.2	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 1010			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	N	Geotech	3GB1049	Feb-25
pH 7.00b	7.01	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	10.06	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	1028	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1541				
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	N	NSA	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	1028	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU				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:	Austin Moore	Date:	30-Jan-24

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck Creek
Weather:	35°-48°F cloudy Wind W at 6mph	Environment:	grass, mud

Multiparameter Water Meter	Make: Yoriba	Model: U50xD	Serial Number:	AGJTHUXG	
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	4.06	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	10.02	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	238	mV	±15 mV	P	NO	–	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.00	mg/L	±0.1	P	NO	–	Macron	#000228049	8/26/2025
DO (Saturated)	98.7	%	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

2#2@15°C

ICV (Initial Calibration Verification)					Time: 0920			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.04	s.u.	±0.15 s.u.	P	–	Geotech	3GB1049	Feb-25
pH 7.00b	6.91	s.u.	±0.15 s.u.	P	–	Geotech	2GF113	Jun-24
pH 10.00b	10.04	s.u.	±0.15 s.u.	P	–	Geotech	3GA1134	Jan-25
SC 1000	991	µS/cm	±5%	P	–	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1523				
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	–	MSI	023067-01	3/14/2025
pH 7.00a	7.05	s.u.	±0.1 s.u.	P	NO	–	MSI	023051-02	2/21/2025
pH 10.00a	10.04	s.u.	±0.1 s.u.	P	NO	–	MSI	022361-01	12/27/2024
SC 1000	992	µS/cm	±5%	P	NO	–	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	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:	[signature]	Date:	1/31/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck creek
Weather:	41°-58° partly cloudy wind SW 6mph	Environment:	mud, grass
Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number: AGJTK4XG
Water Level Meter	Make: Interon	Model: D:Mart	Serial Number: 3717-T

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	7.07	s.u.	±0.1 s.u.	P	NO	-	MSI	023051-02	2/21/2025
pH 10.00a	10.09	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	2050	µS/cm	±5%	P	NO	-	Geotech	3GF1197	Jun-24
ORP	236	mV	±15 mV	P	NO	-	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.03	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

242 @ 15°C

ICV (Initial Calibration Verification)

Time: 0852

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	6.91	s.u.	±0.15 s.u.	P	-	Geotech	2GF113	Jun-24
pH 10.00b	10.06	s.u.	±0.15 s.u.	P	-	Geotech	3GA1134	Jan-25
SC 1000	984	µS/cm	±5%	P	-	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	-	MSI	023067-01	3/14/2025
pH 7.00a	7.04	s.u.	±0.1 s.u.	P	NO	-	MSI	023051-02	2/21/2025
pH 10.00a	10.09	s.u.	±0.1 s.u.	P	NO	-	MSI	022361-01	12/27/2024
SC 1000	1010	µS/cm	±5%	P	NO	-	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	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:		Date:	2/1/2024

BG

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck Creek
Weather:	30-51° Wind Sunny NE 7mph	Environment:	Woods, grass, mud

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	AGJTKHX6	
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	4.06	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	10.01	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	1990	µS/cm	±5%	P	NO	—	Geotech	3GF1197	Jun-24
ORP	231	mV	±15 mV	P	NO	—	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.00	mg/L	±0.1	P	NO	—	Macron	#000228049	8/26/2025
DO (Saturated)	100.0	%	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

238 @ 18°C

ICV (Initial Calibration Verification)

Time: 0951

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.07	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	10.04	s.u.	±0.15 s.u.	P	—	Geotech	3GA1134	Jan-25
SC 1000	967	µS/cm	±5%	P	—	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	—	MSI	023067-01	3/14/2025
pH 7.00a	7.04	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.	P	NO	—	MSI	022361-01	12/27/2024
SC 1000	999	µS/cm	±5%	P	NO	—	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	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:	[signature]	Date:	2/5/2024

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Duck creek
Weather:	Fog 34°-50°C wind SE3mph	Environment:	grass, mud

Multiparameter Water Meter	Make: Horiba	Model: U5000	Serial Number:	PW26VJD3	
Water Level Meter	Make: Heron	Model: Dipper-T	Serial Number:	3717-7	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.95	s.u.	±0.1 s.u.	P	NO	—	MSI	023067-01	3/14/2025
pH 7.00a	6.95	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.02	s.u.	±0.1 s.u.	P	NO	—	MSI	022361-01	12/27/2024
SC Zero (DI)	19	µS/cm	0<25 µS/cm	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2020	µS/cm	±5%	P	NO	—	Geotech	3GF1197	Jun-24
ORP	229	mV	±15 mV	P	yes	249	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.09	mg/L	±0.1	P	NO	—	Macron	#000228049	8/26/2025
DO (Saturated)	100.0	%	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

249 @ 10°C

ICV (Initial Calibration Verification)					Time: 1021			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.97	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	10.03	s.u.	±0.15 s.u.	P	—	Geotech	3GA1134	Jan-25
SC 1000	1020	µS/cm	±5%	P	—	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1420				
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	—	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.08	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)	0.10	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:		Date:	2/6/2024

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

March 15, 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.

Diane Billings
Project Manager

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

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order HA02920

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

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

Work Order HA03444

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

Pace Analytical Services, LLC
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Peoria, IL 61615
(800)752-6651

Work Order HA03724

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

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

Work Order HA03941

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

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

Work Order HA04059

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

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

Work Order HA04294

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

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

Work Order HA04485

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

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

Work Order HB00520

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

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

Work Order HB00823

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

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

Work Order HB01644

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
YES	Zero headspace, <6 mm present in VOA vials
YES	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

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

ANALYTICAL RESULTS

Sample: HA02920-01 **Sampled:** 01/19/24 11:55
Name: G50S **Received:** 01/19/24 14:02
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.22	pCi/L			1	0.591	02/03/24 13:02	PACE	904.0 903.0

Sample: HA02920-02 **Sampled:** 01/19/24 12:00
Name: G51S **Received:** 01/19/24 14:02
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.482 J	pCi/L			1	0.629	02/03/24 13:02	PACE	904.0 903.0

Sample: HA02920-03 **Sampled:** 01/19/24 12:03
Name: G54S **Received:** 01/19/24 14:02
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.32	pCi/L			1	1.05	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03444-01 **Sampled:** 01/24/24 14:35
Name: OR14D **Received:** 01/24/24 16:15
Matrix: Waste Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	3.51	pCi/L			1	0.999	02/03/24 13:02	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03444-02 **Sampled:** 01/24/24 12:54
Name: OR04D **Received:** 01/24/24 16:15
Matrix: Waste Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.43	pCi/L			1	1.15	02/03/24 13:02	PACE	904.0 903.0

Sample: HA03444-03 **Sampled:** 01/24/24 12:10
Name: OM04S **Received:** 01/24/24 16:15
Matrix: Waste Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.53	pCi/L			1	0.616	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03444-04 **Sampled:** 01/24/24 14:56
Name: EB #3 **Received:** 01/24/24 16:15
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.688	pCi/L			1	0.489	02/03/24 13:02	PACE	904.0 903.0

Sample: HA03444-05 **Sampled:** 01/24/24 15:05
Name: EB #4 **Received:** 01/24/24 16:15
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.76	pCi/L			1	0.686	02/03/24 13:02	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03444-06 **Sampled:** 01/24/24 11:29
Name: R61L **Received:** 01/24/24 16:15
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.33	pCi/L			1	0.498	02/03/24 13:02	PACE	904.0 903.0

Sample: HA03444-07 **Sampled:** 01/24/24 11:43
Name: G61S **Received:** 01/24/24 16:15
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.35	pCi/L			1	0.608	02/03/24 13:02	PACE	904.0 903.0

Sample: HA03724-01 **Sampled:** 01/25/24 14:39
Name: BA02 **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.16	pCi/L			1	0.719	02/07/24 17:35	PACE	904.0 903.0

Sample: HA03724-02 **Sampled:** 01/25/24 13:25
Name: BA03 **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.28	pCi/L			1	0.429	02/07/24 17:35	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03724-03 **Sampled:** 01/25/24 12:19
Name: BA03L **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.83	pCi/L			1	0.729	02/07/24 17:35	PACE	904.0 903.0

Sample: HA03724-04 **Sampled:** 01/25/24 13:32
Name: G60L **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.16	pCi/L			1	0.418	02/07/24 17:35	PACE	904.0 903.0

Sample: HA03724-05 **Sampled:** 01/25/24 12:22
Name: G60S **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	6.32	pCi/L			1	1.01	02/07/24 17:35	PACE	904.0 903.0

Sample: HA03724-06 **Sampled:** 01/25/24 15:15
Name: G62L **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.27	pCi/L			1	0.533	02/08/24 17:08	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03724-07 **Sampled:** 01/25/24 14:40
Name: G64S **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.52	pCi/L			1	0.505	02/08/24 17:08	PACE	904.0 903.0

Sample: HA03724-08 **Sampled:** 01/25/24 14:51
Name: OR03D **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	3.51	pCi/L			1	0.977	02/08/24 17:08	PACE	904.0 903.0

Sample: HA03724-09 **Sampled:** 01/25/24 13:40
Name: OM21 **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.56	pCi/L			1	1.1	02/08/24 17:08	PACE	904.0 903.0

Sample: HA03724-10 **Sampled:** 01/25/24 11:40
Name: OM22D **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.71	pCi/L			1	1.14	02/08/24 17:08	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03724-11 **Sampled:** 01/25/24 12:36
Name: OM23D **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.07	pCi/L			1	0.614	02/08/24 17:08	PACE	904.0 903.0

Sample: HA03724-12 **Sampled:** 01/25/24 15:15
Name: EB #5 **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.28	pCi/L			1	0.689	02/08/24 17:08	PACE	904.0 903.0

Sample: HA03724-13 **Sampled:** 01/25/24 15:30
Name: EB #6 **Received:** 01/25/24 16:33
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.873	pCi/L			1	0.541	02/08/24 17:08	PACE	904.0 903.0

Sample: HA03941-01 **Sampled:** 01/26/24 12:22
Name: BA01 **Received:** 01/26/24 16:04
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.09	pCi/L			1	0.558	02/05/24 16:52	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03941-02
Name: BA01 DUP
Matrix: Ground Water - Grab
Sampled: 01/26/24 12:22
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.47	pCi/L			1	0.585	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03941-03
Name: BA04
Matrix: Ground Water - Grab
Sampled: 01/26/24 13:38
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.32	pCi/L			1	0.63	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03941-04
Name: BA06
Matrix: Ground Water - Grab
Sampled: 01/26/24 14:53
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	4.69	pCi/L			1	1.13	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03941-05
Name: G57S
Matrix: Ground Water - Grab
Sampled: 01/26/24 14:24
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.788	pCi/L			1	0.61	02/05/24 16:52	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03941-06 **Sampled:** 01/26/24 13:54
Name: OM07 **Received:** 01/26/24 16:04
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.44	pCi/L			1	0.711	02/03/24 13:02	PACE	904.0 903.0

Sample: HA03941-07 **Sampled:** 01/26/24 12:10
Name: OR11 **Received:** 01/26/24 16:04
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.84	pCi/L			1	0.617	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03941-08 **Sampled:** 01/26/24 12:10
Name: OR11 DUP **Received:** 01/26/24 16:04
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.04	pCi/L			1	0.549	02/05/24 16:52	PACE	904.0 903.0

Sample: HA03941-09 **Sampled:** 01/26/24 13:00
Name: OR20 **Received:** 01/26/24 16:04
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.25	pCi/L			1	1.12	02/05/24 16:52	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA03941-10
Name: EB #7
Matrix: Ground Water - Grab

Sampled: 01/26/24 14:30
Received: 01/26/24 16:04
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.551	pCi/L			1	0.529	02/05/24 16:52	PACE	904.0 903.0

Sample: HA04059-01
Name: G02S
Matrix: Ground Water - Grab

Sampled: 01/29/24 14:33
Received: 01/29/24 16:29
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.01	pCi/L			1	0.499	02/09/24 16:57	PACE	904.0 903.0

Sample: HA04059-02
Name: OM12
Matrix: Ground Water - Grab

Sampled: 01/29/24 13:00
Received: 01/29/24 16:29
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.65	pCi/L			1	0.572	02/09/24 16:57	PACE	904.0 903.0

Sample: HA04059-03
Name: OM16
Matrix: Ground Water - Grab

Sampled: 01/29/24 11:50
Received: 01/29/24 16:29
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.72	pCi/L			1	0.71	02/09/24 16:57	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA04059-04
Name: OR13S
Matrix: Ground Water - Grab

Sampled: 01/29/24 15:00
Received: 01/29/24 16:29
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.69	pCi/L			1	0.522	02/09/24 16:57	PACE	904.0 903.0

Sample: HA04059-05
Name: OR19
Matrix: Ground Water - Grab

Sampled: 01/29/24 14:00
Received: 01/29/24 16:29
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.36	pCi/L			1	0.537	02/09/24 16:57	PACE	904.0 903.0

Sample: HA04059-06
Name: EB #8
Matrix: Ground Water - Grab

Sampled: 01/29/24 15:15
Received: 01/29/24 16:29
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.178 U	pCi/L			1	0.529	02/09/24 16:57	PACE	904.0 903.0

Sample: HA04294-01
Name: G54L
Matrix: Ground Water - Grab

Sampled: 01/30/24 14:27
Received: 01/30/24 17:03

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.696	pCi/L			1	0.438	02/09/24 21:10	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA04294-02 **Sampled:** 01/30/24 14:05
Name: OM24D **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.430 J	pCi/L			1	0.534	02/09/24 21:10	PACE	904.0 903.0

Sample: HA04294-03 **Sampled:** 01/30/24 14:05
Name: OM24D DUP **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.967	pCi/L			1	0.449	02/09/24 21:10	PACE	904.0 903.0

Sample: HA04294-04 **Sampled:** 01/30/24 15:06
Name: OM25S **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.13	pCi/L			1	1.18	02/09/24 21:10	PACE	904.0 903.0

Sample: HA04294-05 **Sampled:** 01/30/24 15:31
Name: OR02 **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.46	pCi/L			1	0.557	02/09/24 21:10	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA04294-06 **Sampled:** 01/30/24 11:36
Name: OR13D **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.42	pCi/L			1	0.476	02/09/24 21:10	PACE	904.0 903.0

Sample: HA04294-07 **Sampled:** 01/30/24 15:55
Name: EB # 9 **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.613	pCi/L			1	0.488	02/09/24 21:10	PACE	904.0 903.0

Sample: HA04294-08 **Sampled:** 01/30/24 15:55
Name: EB # 10 **Received:** 01/30/24 17:03
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.346 J	pCi/L			1	0.544	02/09/24 21:10	PACE	904.0 903.0

Sample: HA04485-01 **Sampled:** 01/31/24 10:50
Name: P60 **Received:** 01/31/24 16:24
Matrix: Ground Water - Grab **PO #:** 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.25	pCi/L			1	0.437	02/09/24 16:57	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HA04485-02
Name: EB #11
Matrix: Ground Water - Grab

Sampled: 01/31/24 15:15
Received: 01/31/24 16:24
PO #: 1728919

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.595	pCi/L			1	0.527	02/09/24 16:57	PACE	904.0 903.0

Sample: HB00520-01
Name: BA02L
Matrix: Ground Water - Grab

Sampled: 02/05/24 14:40
Received: 02/05/24 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.29	pCi/L			1	0.832	02/19/24 22:20	PACE	904.0 903.0

Sample: HB00520-02
Name: BA05
Matrix: Ground Water - Grab

Sampled: 02/05/24 13:29
Received: 02/05/24 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	2.17	pCi/L			1	0.715	02/19/24 22:20	PACE	904.0 903.0

Sample: HB00520-03
Name: OM17
Matrix: Ground Water - Grab

Sampled: 02/05/24 11:27
Received: 02/05/24 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.290 J	pCi/L			1	0.526	02/19/24 22:20	PACE	904.0 903.0

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ANALYTICAL RESULTS

Sample: HB00520-04 **Sampled:** 02/05/24 15:00
Name: EB #13 **Received:** 02/05/24 16:30
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.423 J	pCi/L			1	0.627	02/19/24 22:20	PACE	904.0 903.0

Sample: HB00823-01 **Sampled:** 02/06/24 12:30
Name: OM01 **Received:** 02/06/24 17:01
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	1.38	pCi/L			1	0.524	02/20/24 22:23	PACE	904.0 903.0

Sample: HB00823-02 **Sampled:** 02/06/24 11:53
Name: OR06A **Received:** 02/06/24 17:01
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.844	pCi/L			1	0.385	02/20/24 22:23	PACE	904.0 903.0

Sample: HB01644-01 **Sampled:** 02/08/24 12:18
Name: G64L **Received:** 02/08/24 18:43
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.724	pCi/L			1	0.381	02/28/24 21:29	PACE	904.0 903.0

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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

February 08, 2024

Pace IR - Peoria, IL

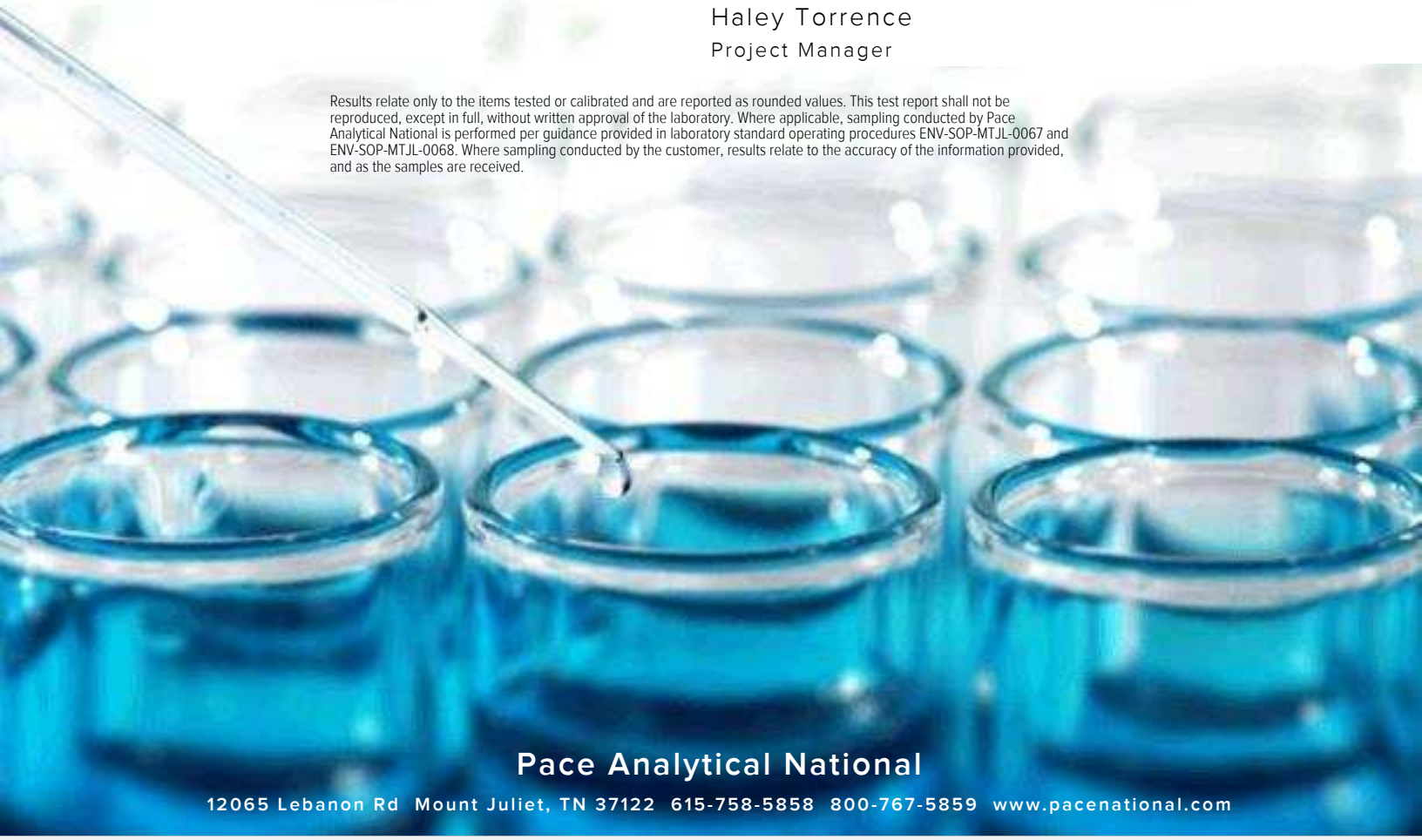
Sample Delivery Group:	L1699188
Samples Received:	01/26/2024
Project Number:	
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

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.



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SAMPLE SUMMARY

HA02920-01 L1699188-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/19/24 11:55	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA02920-02 L1699188-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/19/24 12:00	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA02920-03 L1699188-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/19/24 12:03	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	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.

Haley Torrence
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	1.06		0.279	0.871	0.507	0.264	02/03/2024 13:02	WG2216557
(T) Barium	*106*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*114*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.22		0.351	0.591	02/03/2024 13:02	WG2215215

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	0.163	J	0.213	0.0964	0.304	0.211	01/30/2024 23:13	WG2215215
(T) Barium-133	*98.1*					*30.0-143*	*01/30/2024 23:13*	WG2215215

HA02920-02 SAMPLE RESULTS - 02

Collected date/time: 01/19/24 12:00 L1699188

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	-1.10	U	0.282	0.892	0.571	0.296	02/03/2024 13:02	WG2216557
(T) Barium	*115*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*97.0*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.482	J	0.408	0.629	02/03/2024 13:02	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.482		0.295	0.141	0.265	0.193	01/30/2024 23:13	WG2215215
(T) Barium-133	*95.2*					*30.0-143*	*01/30/2024 23:13*	WG2215215

SAMPLE RESULTS - 03

HA02920-03
Collected date/time: 01/19/24 12:03
L1699188

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		0.528	1.84	1.00	0.526	02/05/2024 16:52	WG2216557
(T) Barium	*112*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*92.8*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.32		0.580	1.05	02/05/2024 16:52	WG2215215

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	0.238	J	0.239	0.108	0.310	0.209	01/30/2024 23:13	WG2215215
(T) Barium-133	*96.8*					*30.0-143*	*01/30/2024 23:13*	WG2215215

Method Blank (MB)

(MB) R4031133-1 02/03/24 13:02

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.811		0.141	0.243	0.129
(T) Barium	*119*		*119*		
(T) Yttrium	*98.7*		*98.7*		

L1699186-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1699186-05 02/03/24 13:02 • (DUP) R4031133-4 02/03/24 13:02

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	1.59	0.347	0.619	0.324	0.705	0.348	0.649	0.340	77.1	1.80		20	3
(T) Barium	*113*				*108*	*108*							
(T) Yttrium	*100*				*95.5*	*95.5*							

Laboratory Control Sample (LCS)

(LCS) R4031133-5 02/05/24 16:52

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.35	107	80.0-120	
(T) Barium			*118*		
(T) Yttrium			*99.3*		

L1700201-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700201-06 02/03/24 13:02 • (MS) R4031133-2 02/03/24 13:02 • (MSD) R4031133-3 02/03/24 13:02

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	16.7	1.26	18.7	16.3	104	89.8	1	70.0-130			13.7		20
(T) Barium		*105*			*107*	*110*							
(T) Yttrium		*102*			*105*	*99.9*							

Method Blank (MB)

(MB) R4028230-1 01/30/24 23:13

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0297	U	0.0557	0.0859	0.0562
(T) Barium-133	*96.9*		*96.9*		

L1698779-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1698779-01 01/30/24 23:13 • (DUP) R4028230-5 01/30/24 23:13

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-226	0.350	0.243	0.254	0.178	0.145	0.200	0.293	0.207	82.7	0.650	J	20	3
(T) Barium-133	*96.2*				*88.8*	*88.8*							

Laboratory Control Sample (LCS)

(LCS) R4028230-2 01/30/24 23:13

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.33	107	80.0-120	
(T) Barium-133			*93.2*		

L1699186-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1699186-04 01/30/24 23:13 • (MS) R4028230-3 01/30/24 23:13 • (MSD) R4028230-4 01/30/24 23:13

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-226	20.0	-0.0115	17.2	18.2	85.9	90.8	1	75.0-125			5.55		20
(T) Barium-133		*103*			*94.9*	*90.9*							

GLOSSARY OF TERMS

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	LAO000356
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 D003

HA02920

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

L1699188

Sample: HA02920-01 **Name:** G50S
Sampled: 01/19/24 11:55 **Matrix:** Ground Water **Preservative:** HNO3, pH <2 -01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/01/24 16:00	07/17/24 11:55	10 Day TAT Required

Sample: HA02920-02 **Name:** G51S
Sampled: 01/19/24 12:00 **Matrix:** Ground Water **Preservative:** HNO3, pH <2 -02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/01/24 16:00	07/17/24 12:00	10 Day TAT Required

Sample: HA02920-03 **Name:** G54S
Sampled: 01/19/24 12:03 **Matrix:** Ground Water **Preservative:** HNO3, pH <2 -03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/01/24 16:00	07/17/24 12:03	10 Day TAT Required

14.4±0.4 14.4 DP AS

Sample Receipt Checklist

		If Applicable	
COC Seal Present/Intact:	Y N	VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N	Pres. Correct/Check:	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		

7003 7812 0525

Please email results to Diane Billing

Date Shipped: 1/25/24 Total # of Containers: 3 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1/25/24 0730		
		[signature]	1/26/24 0900

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

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-206

ANALYTICAL REPORT

February 08, 2024

Pace IR - Peoria, IL

Sample Delivery Group:	L1699186
Samples Received:	01/26/2024
Project Number:	
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

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 www.pacenational.com

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SAMPLE SUMMARY

HA03444-01 L1699186-01 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				01/24/24 14:35	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA03444-02 L1699186-02 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				01/24/24 12:54	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA03444-03 L1699186-03 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				01/24/24 12:10	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA03444-04 L1699186-04 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				01/24/24 14:56	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA03444-05 L1699186-05 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				01/24/24 15:05	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

HA03444-06 L1699186-06 Non-Potable Water

			Collected by	Collected date/time	Received date/time
				01/24/24 11:29	01/26/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	ZRG	Mt. Juliet, TN

SAMPLE SUMMARY

Collected by	Collected date/time	Received date/time
	01/24/24 11:43	01/26/24 09:00

HA03444-07 L1699186-07 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2215215	1	01/29/24 09:15	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2215215	1	01/29/24 09:15	01/30/24 23:13	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.

Haley Torrence
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	1.92		0.534	1.39	0.968	0.509	02/03/2024 13:02	WG2216557
(T) Barium	*94.1*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*108*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.51		0.716	0.999	02/03/2024 13:02	WG2215215

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	1.59		0.477	0.250	0.246	0.176	01/30/2024 23:13	WG2215215
(T) Barium-133	*100*					*30.0-143*	*01/30/2024 23:13*	WG2215215

SAMPLE RESULTS - 02

HA03444-02 L1699186

Collected date/time: 01/24/24 12:54

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.56		0.610	1.62	1.13	0.589	02/03/2024 13:02	WG2216557
(T) Barium	*102*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*109*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.43		0.709	1.15	02/03/2024 13:02	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.868		0.361	0.157	0.215	0.163	01/30/2024 23:13	WG2215215
(T) Barium-133	*84.1*					*30.0-143*	*01/30/2024 23:13*	WG2215215

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SAMPLE RESULTS - 03

HA03444-03
Collected date/time: 01/24/24 12:10
L1699186

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.06		0.292	0.976	0.538	0.282	02/05/2024 16:52	WG2216557
(T) Barium	*81.2*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*112*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.53		0.417	0.616	02/05/2024 16:52	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.466		0.298	0.137	0.299	0.207	01/30/2024 23:13	WG2215215
(T) Barium-133	*93.3*					*30.0-143*	*01/30/2024 23:13*	WG2215215

SAMPLE RESULTS - 04

HA03444-04 L1699186
Collected date/time: 01/24/24 14:56

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.688		0.252	1.01	0.465	0.243	02/03/2024 13:02	WG2216557
(T) Barium	*118*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*100*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.688		0.255	0.489	02/03/2024 13:02	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0115	U	0.0357	0.00816	0.152	0.119	01/30/2024 23:13	WG2215215
(T) Barium-133	*103*					*30.0-143*	*01/30/2024 23:13*	WG2215215

HA03444-05 SAMPLE RESULTS - 05

Collected date/time: 01/24/24 15:05 L1699186

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.59		0.347	0.923	0.619	0.324	02/03/2024 13:02	WG2216557
(T) Barium	*113*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*100*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.76		0.406	0.686	02/03/2024 13:02	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.170	J	0.211	0.0961	0.296	0.197	01/30/2024 23:13	WG2215215
(T) Barium-133	*102*					*30.0-143*	*01/30/2024 23:13*	WG2215215

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.03		0.253	0.832	0.456	0.238	02/03/2024 13:02	WG2216557
(T) Barium	*110*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*123*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.33		0.329	0.498	02/03/2024 13:02	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.292		0.211	0.104	0.201	0.153	01/30/2024 23:13	WG2215215
(T) Barium-133	*98.6*					*30.0-143*	*01/30/2024 23:13*	WG2215215

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.842		0.257	0.927	0.469	0.245	02/03/2024 13:02	WG2216557
(T) Barium	*99.3*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*102*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.35		0.431	0.608	02/03/2024 13:02	WG2215215

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.505		0.346	0.158	0.387	0.254	01/30/2024 23:13	WG2215215
(T) Barium-133	*95.2*					*30.0-143*	*01/30/2024 23:13*	WG2215215

QUALITY CONTROL SUMMARY

L1699186-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R4031133-1 02/03/24 13:02

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.811		0.141	0.243	0.129
(T) Barium	*119*		*119*		
(T) Yttrium	*98.7*		*98.7*		

L1699186-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1699186-05 02/03/24 13:02 • (DUP) R4031133-4 02/03/24 13:02

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	1.59	0.347	0.619	0.324	0.705	0.348	0.649	0.340	77.1	1.80		20	3
(T) Barium	*113*				*108*	*108*							
(T) Yttrium	*100*				*95.5*	*95.5*							

Laboratory Control Sample (LCS)

(LCS) R4031133-5 02/05/24 16:52

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.35	107	80.0-120	
(T) Barium			*118*		
(T) Yttrium			*99.3*		

L1700201-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700201-06 02/03/24 13:02 • (MS) R4031133-2 02/03/24 13:02 • (MSD) R4031133-3 02/03/24 13:02

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	16.7	1.26	18.7	16.3	104	89.8	1	70.0-130			13.7		20
(T) Barium		*105*			*107*	*110*							
(T) Yttrium		*102*			*105*	*99.9*							

WG2215215

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY

L1699186-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R4028230-1 01/30/24 23:13

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0297	U	0.0557	0.0859	0.0562
(T) Barium-133	*96.9*		*96.9*		

L1698779-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1698779-01 01/30/24 23:13 • (DUP) R4028230-5 01/30/24 23:13

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-226	0.350	0.243	0.254	0.178	0.145	0.200	0.293	0.207	82.7	0.650	J	20	3
(T) Barium-133	*96.2*				*88.8*	*88.8*							

Laboratory Control Sample (LCS)

(LCS) R4028230-2 01/30/24 23:13

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.33	107	80.0-120	
(T) Barium-133			*93.2*		

L1699186-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1699186-04 01/30/24 23:13 • (MS) R4028230-3 01/30/24 23:13 • (MSD) R4028230-4 01/30/24 23:13

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-226	20.0	-0.0115	17.2	18.2	85.9	90.8	1	75.0-125			5.55		20
(T) Barium-133		*103*			*94.9*	*90.9*							

GLOSSARY OF TERMS

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	LAO000356
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
HA03444

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

D004

L1699186

Sample: HA03444-01
Name: OR14D

Sampled: 01/24/24 14:35
Matrix: Waste Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/22/24 14:35	10 Day TAT Required

Sample: HA03444-02
Name: OR04D

Sampled: 01/24/24 12:54
Matrix: Waste Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/22/24 12:54	10 Day TAT Required

Sample: HA03444-03
Name: OM04S

Sampled: 01/24/24 12:10
Matrix: Waste Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/22/24 12:10	10 Day TAT Required

Sample: HA03444-04
Name: EB #3

1/24/24 1456
dab 1/24/24

Sampled: ~~01/23/24 00:00~~
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/21/24 00:00	10 Day TAT Required

Sample: HA03444-05
Name: EB # 4

1/24/24 1505
dab 1/24/24

Sampled: 01/23/24 00:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/21/24 00:00	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03444

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

L1699186

Sample: HA03444-06
Name: R61L

Sampled: 01/24/24 11:29
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/22/24 11:29	10 Day TAT Required

Sample: HA03444-07
Name: G61S

Sampled: 01/24/24 11:43
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/06/24 16:00	07/22/24 11:43	10 Day TAT Required

Sample Receipt Checklist 14.4±0=14.4 DP AA

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

7003 7812 0525

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

Date Shipped: 1/25/24 Total # of Containers: 7 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
	1/25/24 0730		
			1/26/24 0700

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

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Pace Analytical®

ANALYTICAL REPORT

March 14, 2024

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group:	L1700204
Samples Received:	01/30/2024
Project Number:	HA03724
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

Haley Torrence
Project Manager

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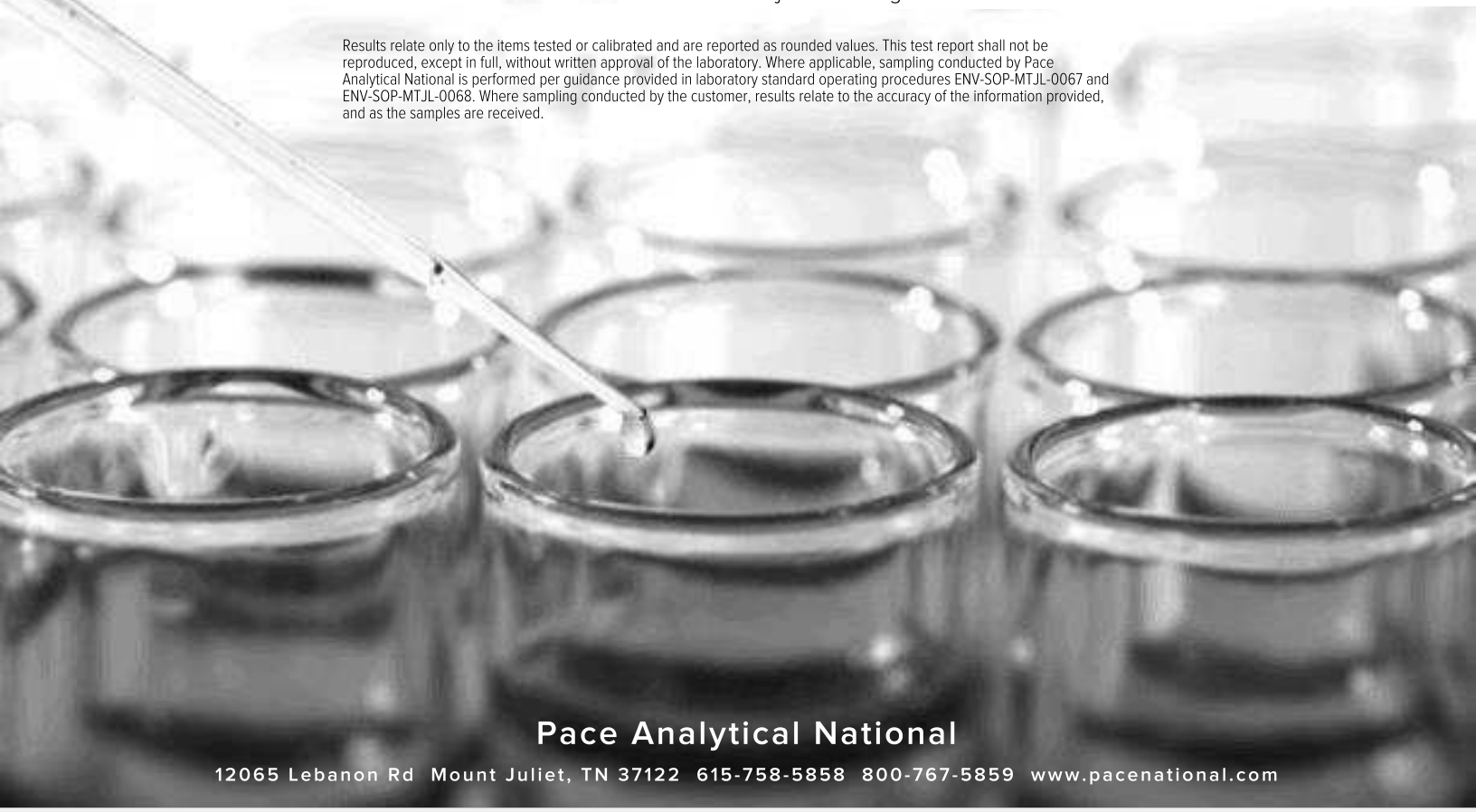

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SAMPLE SUMMARY

HA03724-01 L1700204-01 Non-Potable Water

Collected by | Collected date/time 01/25/24 14:39 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/07/24 17:35	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/07/24 17:35	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	ZRG	Mt. Juliet, TN

HA03724-02 L1700204-02 Non-Potable Water

Collected by | Collected date/time 01/25/24 13:25 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/07/24 17:35	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/07/24 17:35	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	ZRG	Mt. Juliet, TN

HA03724-03 L1700204-03 Non-Potable Water

Collected by | Collected date/time 01/25/24 12:19 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/07/24 17:35	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/07/24 17:35	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	ZRG	Mt. Juliet, TN

HA03724-04 L1700204-04 Non-Potable Water

Collected by | Collected date/time 01/25/24 13:32 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/07/24 17:35	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/07/24 17:35	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA03724-05 L1700204-05 Non-Potable Water

Collected by | Collected date/time 01/25/24 12:22 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/07/24 17:35	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/07/24 17:35	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/05/24 23:58	ZRG	Mt. Juliet, TN

HA03724-06 L1700204-06 Non-Potable Water

Collected by | Collected date/time 01/25/24 15:15 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/05/24 23:58	ZRG	Mt. Juliet, TN

SAMPLE SUMMARY

HA03724-07 L1700204-07 Non-Potable Water

Collected by | Collected date/time 01/25/24 14:40 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA03724-08 L1700204-08 Non-Potable Water

Collected by | Collected date/time 01/25/24 14:51 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA03724-09 L1700204-09 Non-Potable Water

Collected by | Collected date/time 01/25/24 13:40 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA03724-10 L1700204-10 Non-Potable Water

Collected by | Collected date/time 01/25/24 11:40 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA03724-11 L1700204-11 Non-Potable Water

Collected by | Collected date/time 01/25/24 12:36 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA03724-12 L1700204-12 Non-Potable Water

Collected by | Collected date/time 01/25/24 15:15 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

SAMPLE SUMMARY

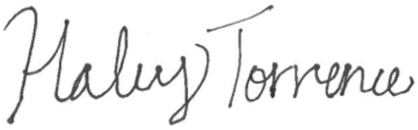
HA03724-13 L1700204-13 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/25/24 15:30	01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2217310	1	02/02/24 22:16	02/08/24 17:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/08/24 17:08	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	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.



Haley Torrence
Project Manager

Report Revision History

Level II Report - Version 1: 02/12/24 15:53

Project Narrative

HA03724-01 SAMPLE RESULTS - 01

Collected date/time: 01/25/24 14:39 L1700204

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.931		0.331	1.21	0.595	0.312	02/07/2024 17:35	WG2217310
(T) Barium	*118*					*30.0-143*	*02/07/2024 17:35*	WG2217310
(T) Yttrium	*107*					*30.0-136*	*02/07/2024 17:35*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.16		0.438	0.719	02/07/2024 17:35	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.232	J	0.287	0.115	0.403	0.269	02/02/2024 21:13	WG2216812
(T) Barium-133	*87.5*					*30.0-143*	*02/02/2024 21:13*	WG2216812

HA03724-02 SAMPLE RESULTS - 02

Collected date/time: 01/25/24 13:25 L1700204

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.958		0.206	0.787	0.355	0.188	02/07/2024 17:35	WG2217310
(T) Barium	*119*					*30.0-143*	*02/07/2024 17:35*	WG2217310
(T) Yttrium	*115*					*30.0-136*	*02/07/2024 17:35*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.28		0.315	0.429	02/07/2024 17:35	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.317		0.238	0.116	0.241	0.179	02/02/2024 21:13	WG2216812
(T) Barium-133	*98.8*					*30.0-143*	*02/02/2024 21:13*	WG2216812

HA03724-03 SAMPLE RESULTS - 03

Collected date/time: 01/25/24 12:19 L1700204

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.24		0.381	1.11	0.680	0.354	02/07/2024 17:35	WG2217310
(T) Barium	*106*					*30.0-143*	*02/07/2024 17:35*	WG2217310
(T) Yttrium	*109*					*30.0-136*	*02/07/2024 17:35*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.83		0.503	0.729	02/07/2024 17:35	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.598		0.328	0.152	0.262	0.194	02/02/2024 21:13	WG2216812
(T) Barium-133	*91.9*					*30.0-143*	*02/02/2024 21:13*	WG2216812

HA03724-04 SAMPLE RESULTS - 04

Collected date/time: 01/25/24 13:32 L1700204

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.09		0.223	0.766	0.384	0.202	02/07/2024 17:35	WG2217310
(T) Barium	*113*					*30.0-143*	*02/07/2024 17:35*	WG2217310
(T) Yttrium	*100*					*30.0-136*	*02/07/2024 17:35*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.16		0.246	0.418	02/07/2024 17:35	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0647	J	0.105	0.0487	0.166	0.137	02/06/2024 18:07	WG2219995
(T) Barium-133	*94.7*					*30.0-143*	*02/06/2024 18:07*	WG2219995

HA03724-05 SAMPLE RESULTS - 05

Collected date/time: 01/25/24 13:22 L1700204

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	3.83		0.593	1.03	0.996	0.523	02/07/2024 17:35	WG2217310
(T) Barium	*113*					*30.0-143*	*02/07/2024 17:35*	WG2217310
(T) Yttrium	*115*					*30.0-136*	*02/07/2024 17:35*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.32		0.853	1.01	02/07/2024 17:35	WG2219995

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	2.49		0.613	0.280	0.180	0.149	02/05/2024 23:58	WG2219995
(T) Barium-133	*85.5*					*30.0-143*	*02/05/2024 23:58*	WG2219995

HA03724-06 SAMPLE RESULTS - 06

Collected date/time: 01/25/24 15:15 L1700204

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.39		0.281	0.881	0.505	0.267	02/08/2024 17:08	WG2217310
(T) Barium	*118*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*117*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.27		0.456	0.533	02/08/2024 17:08	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.886		0.359	0.170	0.172	0.142	02/05/2024 23:58	WG2219995
(T) Barium-133	*91.5*					*30.0-143*	*02/05/2024 23:58*	WG2219995

HA03724-07 SAMPLE RESULTS - 07

Collected date/time: 01/25/24 14:40 L1700204

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.15		0.254	0.783	0.463	0.242	02/08/2024 17:08	WG2217310
(T) Barium	*118*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*105*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.52		0.351	0.505	02/08/2024 17:08	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.367		0.242	0.110	0.202	0.158	02/06/2024 18:07	WG2219995
(T) Barium-133	*89.5*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	2.43		0.520	1.17	0.944	0.496	02/08/2024 17:08	WG2217310
(T) Barium	*107*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*107*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.51		0.707	0.977	02/08/2024 17:08	WG2219995

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		0.479	0.151	0.251	0.207	02/06/2024 18:07	WG2219995
(T) Barium-133	*61.0*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	1.20		0.568	1.74	1.08	0.564	02/08/2024 17:08	WG2217310
(T) Barium	*110*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*106*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.56		0.622	1.10	02/08/2024 17:08	WG2219995

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	0.363		0.254	0.101	0.223	0.175	02/06/2024 18:07	WG2219995
(T) Barium-133	*78.9*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	1.70		0.594	1.51	1.12	0.582	02/08/2024 17:08	WG2217310
(T) Barium	*98.8*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*105*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.71		0.732	1.14	02/08/2024 17:08	WG2219995

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	1.01		0.428	0.160	0.214	0.176	02/06/2024 18:07	WG2219995
(T) Barium-133	*72.3*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	1.85		0.329	0.821	0.587	0.308	02/08/2024 17:08	WG2217310
(T) Barium	*110*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*109*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.07		0.381	0.614	02/08/2024 17:08	WG2219995

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	0.228		0.192	0.0804	0.181	0.150	02/06/2024 18:07	WG2219995
(T) Barium-133	*82.9*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.13		0.352	1.11	0.658	0.344	02/08/2024 17:08	WG2217310
(T) Barium	*125*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*97.1*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.28		0.387	0.689	02/08/2024 17:08	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.154	J	0.162	0.0732	0.203	0.154	02/06/2024 18:07	WG2219995
(T) Barium-133	*92.1*					*30.0-143*	*02/06/2024 18:07*	WG2219995

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.839		0.269	0.956	0.503	0.262	02/08/2024 17:08	WG2217310
(T) Barium	*122*					*30.0-143*	*02/08/2024 17:08*	WG2217310
(T) Yttrium	*97.1*					*30.0-136*	*02/08/2024 17:08*	WG2217310

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.873		0.285	0.541	02/08/2024 17:08	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0345	U	0.0927	0.0352	0.199	0.164	02/06/2024 18:07	WG2219995
(T) Barium-133	*79.8*					*30.0-143*	*02/06/2024 18:07*	WG2219995

Method Blank (MB)

(MB) R4031681-1 02/07/24 17:35

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.788		0.174	0.303	0.159
(T) Barium	*117*		*117*		
(T) Yttrium	*91.3*		*91.3*		

L1700204-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1700204-01 02/07/24 17:35 • (DUP) R4031681-5 02/07/24 17:35

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-228	0.931	0.331	0.595	0.312	0.500	0.366	0.673	0.351	60.2	0.873	J	20	3
(T) Barium	*118*				*123*	*123*							
(T) Yttrium	*107*				*109*	*109*							

Laboratory Control Sample (LCS)

(LCS) R4031681-2 02/07/24 17:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.33	86.7	80.0-120	
(T) Barium			*120*		
(T) Yttrium			*88.4*		

L1700204-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700204-12 02/08/24 17:08 • (MS) R4031681-3 02/07/24 17:35 • (MSD) R4031681-4 02/07/24 17:35

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-228	16.7	1.13	14.1	13.4	77.9	73.6	1	70.0-130			5.15		20
(T) Barium		*125*			*117*	*120*							
(T) Yttrium		*97.1*			*104*	*112*							

Method Blank (MB)

(MB) R4030093-1 02/02/24 16:48

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.00666	U	0.0351	0.0839	0.0587
(T) Barium-133	*85.7*		*85.7*		

L1700204-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1700204-01 02/02/24 21:13 • (DUP) R4030093-5 02/02/24 16:48

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-226	0.232	0.287	0.403	0.269	0.00889	0.210	0.401	0.268	185	0.627	U	20	3
(T) Barium-133	*87.5*				*87.8*	*87.8*							

Laboratory Control Sample (LCS)

(LCS) R4030093-2 02/02/24 16:48

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.35	107	80.0-120	
(T) Barium-133			*85.5*		

L1700201-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700201-05 02/02/24 16:48 • (MS) R4030093-3 02/02/24 16:48 • (MSD) R4030093-4 02/02/24 16:48

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.291	21.9	21.4	108	105	1	75.0-125			2.54		20
(T) Barium-133		*88.8*			*86.6*	*82.4*							

Method Blank (MB)

(MB) R4031193-1 02/06/24 18:07

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0133	U	0.0565	0.0997	0.0665
(T) Barium-133	*88.3*		*88.3*		

L1701283-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1701283-06 02/06/24 18:07 • (DUP) R4031193-5 02/06/24 18:07

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-226	0.178	0.165	0.171	0.141	0.0856	0.168	0.283	0.206	70.0	0.391	U	20	3
(T) Barium-133	*93.0*				*91.3*	*91.3*							

Laboratory Control Sample (LCS)

(LCS) R4031193-2 02/06/24 18:07

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.46	89.3	80.0-120	
(T) Barium-133			*85.1*		

L1700204-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700204-13 02/06/24 18:07 • (MS) R4031193-3 02/06/24 18:07 • (MSD) R4031193-4 02/06/24 18:07

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.0345	20.3	18.1	101	90.2	1	75.0-125			11.4		20
(T) Barium-133		*79.8*			*89.1*	*93.9*							

GLOSSARY OF TERMS

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	LAO000356
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
HA03724

A023

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

L1700204

Sample: HA03724-01
Name: BA02

Sampled: 01/25/24 14:39
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:39	10 Day TAT Required

Sample: HA03724-02
Name: BA03

Sampled: 01/25/24 13:25
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 13:25	10 Day TAT Required

-

Sample: HA03724-03
Name: BA03L

Sampled: 01/25/24 12:19
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:19	10 Day TAT Required

Sample: HA03724-04
Name: G60L

Sampled: 01/25/24 ~~15:32~~ 1332
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

1/25/24 DD

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 15:32	10 Day TAT Required

Sample: HA03724-05
Name: G60S

Sampled: 01/25/24 12:22
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:22	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HA03724

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RECEIVING LABORATORY

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

L1700204

Sample: HA03724-06
Name: G62L

Sampled: 01/25/24 ~~14:07~~ 1515 1/25/24
Matrix: Ground Water
Preservative: HNO3, pH <2 -06 06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:07	10 Day TAT Required

Sample: HA03724-07
Name: G64S

Sampled: 01/25/24 14:40
Matrix: Ground Water
Preservative: HNO3, pH <2 -07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:40	10 Day TAT Required

Sample: HA03724-08
Name: OR03D

Sampled: 01/25/24 11:20
Matrix: Ground Water
Preservative: HNO3, pH <2 -08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 11:20	10 Day TAT Required

Sample: HA03724-09
Name: OM21

Sampled: 01/25/24 12:52
Matrix: Ground Water
Preservative: HNO3, pH <2 -09

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:52	10 Day TAT Required

Sample: HA03724-10
Name: OM22D

Sampled: 01/25/24 14:51
Matrix: Ground Water
Preservative: HNO3, pH <2 -10

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:51	10 Day TAT Required

SUBCONTRACT ORDER

Chain of Custody

Pace Analytical Services, LLC

HA03724

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

L1700204

Sample: HA03724-06
Name: G62L

Sampled: 01/25/24 14:07
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:07	10 Day TAT Required

Sample: HA03724-07
Name: G64S

Sampled: 01/25/24 14:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:40	10 Day TAT Required

Sample: HA03724-08
Name: OR03D

Sampled: 01/25/24 ~~11:20~~ 1451 11/25/24 dd
Matrix: Ground Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 11:20	10 Day TAT Required

Sample: HA03724-09
Name: OM21

Sampled: 01/25/24 ~~12:52~~ 1340 11/25/24 dd
Matrix: Ground Water
Preservative: HNO3, pH <2

-09

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:52	10 Day TAT Required

Sample: HA03724-10
Name: OM22D

Sampled: 01/25/24 ~~14:51~~ 1140 11/25/24 dd
Matrix: Ground Water
Preservative: HNO3, pH <2

-10

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:51	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03724

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

LT000204

Sample: HA03724-11
Name: OM23D

Sampled: 01/25/24 ~~13:40~~ 1236
Matrix: Ground Water
Preservative: HNO3, pH <2

-11 1/25/24 dd

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 13:40	10 Day TAT Required

Sample: HA03724-12
Name: EB # 5

Sampled: 01/25/24 ~~11:40~~ 1515
Matrix: Ground Water
Preservative: HNO3, pH <2

-12 1/25/24 dd

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 11:40	10 Day TAT Required

Sample: HA03724-13
Name: EB # 6

Sampled: 01/25/24 15:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-13

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 15:30	10 Day TAT Required

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

Date Shipped: 1/29/24 Total # of Containers: 13 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
	1/29/24 1210		
			1/30/24 0900

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

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

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03724

A023

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

L1700204

Sample: HA03724-01
Name: BA02

Sampled: 01/25/24 14:39
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:39	10 Day TAT Required

Sample: HA03724-02
Name: BA03

Sampled: 01/25/24 13:25
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 13:25	10 Day TAT Required

-

Sample: HA03724-03
Name: BA03L

Sampled: 01/25/24 12:19
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:19	10 Day TAT Required

Sample: HA03724-04
Name: G60L

Sampled: 01/25/24 15:32
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 15:32	10 Day TAT Required

Sample: HA03724-05
Name: G60S

Sampled: 01/25/24 12:22
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:22	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03724

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

L1700204

Sample: HA03724-06
Name: G62L

Sampled: 01/25/24 14:07
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:07	10 Day TAT Required

Sample: HA03724-07
Name: G64S

Sampled: 01/25/24 14:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:40	10 Day TAT Required

Sample: HA03724-08
Name: OR03D

Sampled: 01/25/24 11:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 11:20	10 Day TAT Required

Sample: HA03724-09
Name: OM21

Sampled: 01/25/24 12:52
Matrix: Ground Water
Preservative: HNO3, pH <2

-09

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 12:52	10 Day TAT Required

Sample: HA03724-10
Name: OM22D

Sampled: 01/25/24 14:51
Matrix: Ground Water
Preservative: HNO3, pH <2

-10

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 14:51	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03724

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

L1700204

Sample: HA03724-11
Name: OM23D

Sampled: 01/25/24 13:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-11

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 13:40	10 Day TAT Required

Sample: HA03724-12
Name: EB #

Sampled: 01/25/24 11:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-12

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 11:40	10 Day TAT Required

Sample: HA03724-13
Name: EB #

Sampled: 01/25/24 15:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-13

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/07/24 16:00	07/23/24 15:30	10 Day TAT Required

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

Date Shipped: 1/29/24 Total # of Containers: 13 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
	1/29/24 1210		
			1/30/24 0900

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
Sample ... Hold Time Y or N

Sample Receipt Checklist

		If Applicable	
COC Seal Present/Intact:	Y N	VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N	Pres. Correct/Check:	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		

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

L1700204

Tracking Numbers	[redacted]	Temperature
700378122723		18.1
2686		12.0
2631		13.3

Name

Date

ANALYTICAL REPORT

February 08, 2024

Pace IR - Peoria, IL

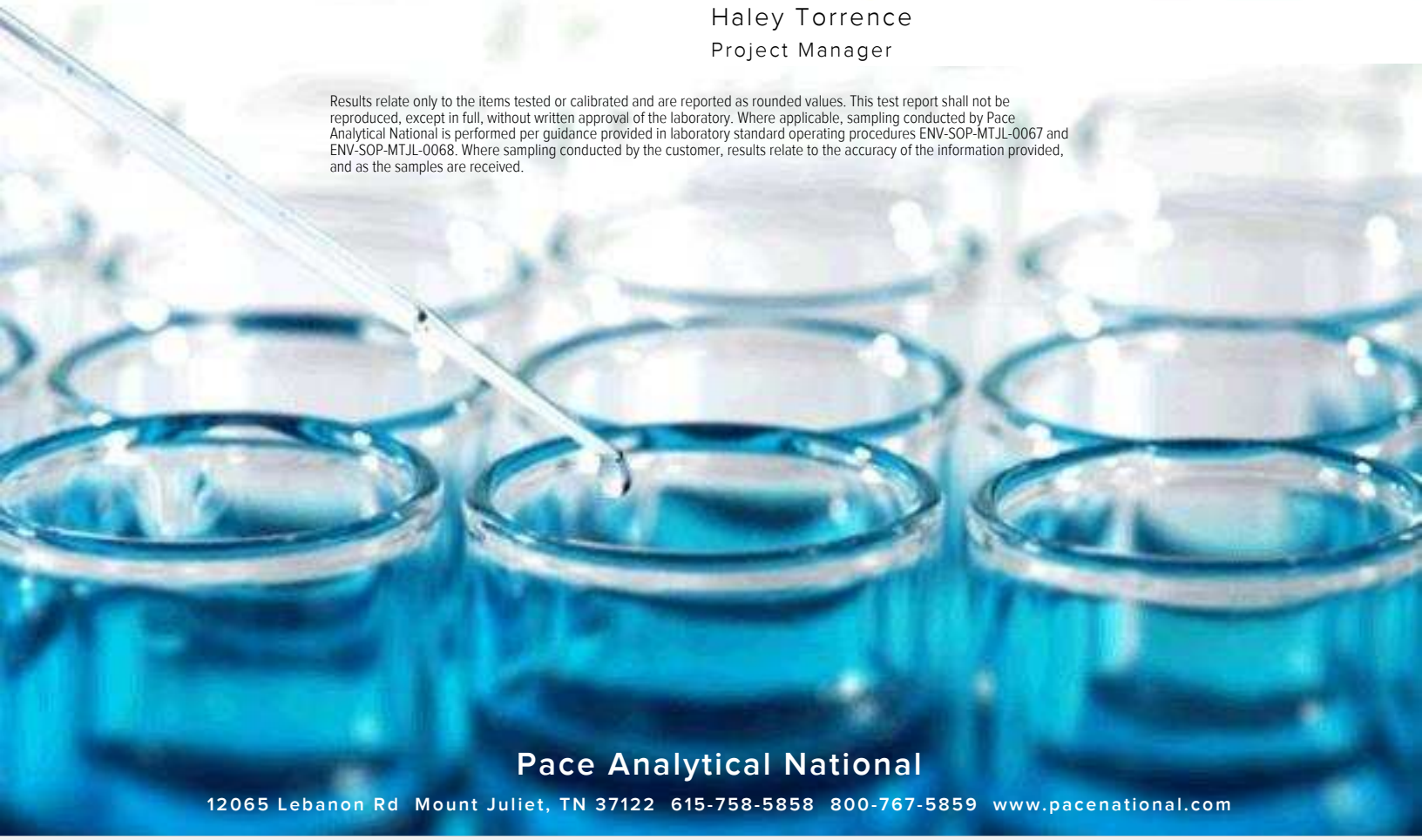
Sample Delivery Group:	L1700201
Samples Received:	01/30/2024
Project Number:	HA03941
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

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 www.pacenational.com

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SAMPLE SUMMARY

HA03941-01 L1700201-01 Non-Potable Water

Collected by | Collected date/time 01/26/24 12:22 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 16:48	ZRG	Mt. Juliet, TN

HA03941-02 L1700201-02 Non-Potable Water

Collected by | Collected date/time 01/26/24 12:22 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 16:48	ZRG	Mt. Juliet, TN

HA03941-03 L1700201-03 Non-Potable Water

Collected by | Collected date/time 01/26/24 13:38 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 16:48	ZRG	Mt. Juliet, TN

HA03941-04 L1700201-04 Non-Potable Water

Collected by | Collected date/time 01/26/24 14:53 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 16:48	ZRG	Mt. Juliet, TN

HA03941-05 L1700201-05 Non-Potable Water

Collected by | Collected date/time 01/26/24 14:24 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 16:48	ZRG	Mt. Juliet, TN

HA03941-06 L1700201-06 Non-Potable Water

Collected by | Collected date/time 01/26/24 13:54 | Received date/time 01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/03/24 13:02	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 16:48	ZRG	Mt. Juliet, TN

SAMPLE SUMMARY

HA03941-07 L1700201-07 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/26/24 12:10	01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	ZRG	Mt. Juliet, TN

HA03941-08 L1700201-08 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/26/24 12:10	01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	ZRG	Mt. Juliet, TN

HA03941-09 L1700201-09 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/26/24 13:00	01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	ZRG	Mt. Juliet, TN

HA03941-10 L1700201-10 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/26/24 14:30	01/30/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2216557	1	01/31/24 17:14	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2216812	1	01/31/24 10:22	02/05/24 16:52	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2216812	1	01/31/24 10:22	02/02/24 21:13	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.

Haley Torrence
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	0.659		0.263	1.10	0.493	0.258	02/05/2024 16:52	WG2216557
(T) Barium	*111*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*89.1*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.09		0.386	0.558	02/05/2024 16:52	WG2216812

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	0.429		0.283	0.129	0.261	0.194	02/02/2024 16:48	WG2216812
(T) Barium-133	*91.0*					*30.0-143*	*02/02/2024 16:48*	WG2216812

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.810		0.282	1.04	0.527	0.275	02/05/2024 16:52	WG2216557
(T) Barium	*110*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*87.9*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.47		0.441	0.585	02/05/2024 16:52	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.665		0.339	0.162	0.255	0.190	02/02/2024 16:48	WG2216812
(T) Barium-133	*94.3*					*30.0-143*	*02/02/2024 16:48*	WG2216812

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.316	J	0.272	1.64	0.522	0.273	02/05/2024 16:52	WG2216557
(T) Barium	*102*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*87.0*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.32		0.535	0.630	02/05/2024 16:52	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.00		0.461	0.189	0.353	0.250	02/02/2024 16:48	WG2216812
(T) Barium-133	*81.0*					*30.0-143*	*02/02/2024 16:48*	WG2216812

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	3.36		0.613	1.12	1.09	0.572	02/05/2024 16:52	WG2216557
(T) Barium	*93.5*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*97.6*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.69		0.784	1.13	02/05/2024 16:52	WG2216812

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	1.32		0.489	0.225	0.291	0.212	02/02/2024 16:48	WG2216812
(T) Barium-133	*88.5*					*30.0-143*	*02/02/2024 16:48*	WG2216812

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.497	J	0.280	1.30	0.532	0.277	02/05/2024 16:52	WG2216557
(T) Barium	*117*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*92.9*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.788		0.379	0.610	02/05/2024 16:52	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.291	J	0.255	0.110	0.298	0.213	02/02/2024 16:48	WG2216812
(T) Barium-133	*88.8*					*30.0-143*	*02/02/2024 16:48*	WG2216812

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.26		0.356	1.06	0.647	0.338	02/03/2024 13:02	WG2216557
(T) Barium	*105*					*30.0-143*	*02/03/2024 13:02*	WG2216557
(T) Yttrium	*102*					*30.0-136*	*02/03/2024 13:02*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.44		0.416	0.711	02/03/2024 13:02	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.179	J	0.215	0.0890	0.296	0.215	02/02/2024 16:48	WG2216812
(T) Barium-133	*86.9*					*30.0-143*	*02/02/2024 16:48*	WG2216812

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.528	J	0.279	1.28	0.529	0.276	02/05/2024 16:52	WG2216557
(T) Barium	*110*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*89.0*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.840		0.388	0.617	02/05/2024 16:52	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.312	J	0.269	0.117	0.318	0.223	02/02/2024 21:13	WG2216812
(T) Barium-133	*90.3*					*30.0-143*	*02/02/2024 21:13*	WG2216812

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.538		0.242	1.13	0.456	0.239	02/05/2024 16:52	WG2216557
(T) Barium	*108*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*110*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.04		0.396	0.549	02/05/2024 16:52	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.502		0.314	0.149	0.306	0.214	02/02/2024 21:13	WG2216812
(T) Barium-133	*96.2*					*30.0-143*	*02/02/2024 21:13*	WG2216812

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	1.84		0.569	1.42	1.05	0.552	02/05/2024 16:52	WG2216557
(T) Barium	*99.9*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*105*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.25		0.660	1.12	02/05/2024 16:52	WG2216812

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	0.412		0.334	0.130	0.391	0.266	02/02/2024 21:13	WG2216812
(T) Barium-133	*81.7*					*30.0-143*	*02/02/2024 21:13*	WG2216812

HA03941-10 SAMPLE RESULTS - 10

Collected date/time: 01/26/24 14:30 L1700201

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.541		0.203	1.02	0.379	0.200	02/05/2024 16:52	WG2216557
(T) Barium	*116*					*30.0-143*	*02/05/2024 16:52*	WG2216557
(T) Yttrium	*103*					*30.0-136*	*02/05/2024 16:52*	WG2216557

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.551		0.271	0.529	02/05/2024 16:52	WG2216812

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.00942	U	0.180	0.0600	0.369	0.256	02/02/2024 21:13	WG2216812
(T) Barium-133	*82.9*					*30.0-143*	*02/02/2024 21:13*	WG2216812

QUALITY CONTROL SUMMARY

L1700201-01,02,03,04,05,06,07,08,09,10

Method Blank (MB)

(MB) R4031133-1 02/03/24 13:02

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.811		0.141	0.243	0.129
(T) Barium	*119*		*119*		
(T) Yttrium	*98.7*		*98.7*		

L1699186-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1699186-05 02/03/24 13:02 • (DUP) R4031133-4 02/03/24 13:02

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	1.59	0.347	0.619	0.324	0.705	0.348	0.649	0.340	77.1	1.80		20	3
(T) Barium	*113*				*108*	*108*							
(T) Yttrium	*100*				*95.5*	*95.5*							

Laboratory Control Sample (LCS)

(LCS) R4031133-5 02/05/24 16:52

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.35	107	80.0-120	
(T) Barium			*118*		
(T) Yttrium			*99.3*		

L1700201-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700201-06 02/03/24 13:02 • (MS) R4031133-2 02/03/24 13:02 • (MSD) R4031133-3 02/03/24 13:02

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	16.7	1.26	18.7	16.3	104	89.8	1	70.0-130			13.7		20
(T) Barium		*105*			*107*	*110*							
(T) Yttrium		*102*			*105*	*99.9*							

QUALITY CONTROL SUMMARY

L1700201-01,02,03,04,05,06,07,08,09,10

Method Blank (MB)

(MB) R4030093-1 02/02/24 16:48

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.00666	U	0.0351	0.0839	0.0587
(T) Barium-133	*85.7*		*85.7*		

L1700204-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1700204-01 02/02/24 21:13 • (DUP) R4030093-5 02/02/24 16:48

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-226	0.232	0.287	0.403	0.269	0.00889	0.210	0.401	0.268	185	0.627	U	20	3
(T) Barium-133	*87.5*				*87.8*	*87.8*							

Laboratory Control Sample (LCS)

(LCS) R4030093-2 02/02/24 16:48

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.35	107	80.0-120	
(T) Barium-133			*85.5*		

L1700201-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700201-05 02/02/24 16:48 • (MS) R4030093-3 02/02/24 16:48 • (MSD) R4030093-4 02/02/24 16:48

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.291	21.9	21.4	108	105	1	75.0-125			2.54		20
(T) Barium-133		*88.8*			*86.6*	*82.4*							

GLOSSARY OF TERMS

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	LAO000356
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

HA03941

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

A022
L700201

Sample: HA03941-01
Name: BA01

Sampled: 01/26/24 12:22
Matrix: Ground Water
Preservative: HNO3, pH <2 -01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 12:22	10 Day TAT Required

Sample: HA03941-02
Name: BA01 DUP

Sampled: 01/26/24 12:22
Matrix: Ground Water
Preservative: HNO3, pH <2 -02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 12:22	10 Day TAT Required

Sample: HA03941-03
Name: BA04

Sampled: 01/26/24 13:38
Matrix: Ground Water
Preservative: HNO3, pH <2 -03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 13:38	10 Day TAT Required

Sample: HA03941-04
Name: BA06

Sampled: 01/26/24 14:53
Matrix: Ground Water
Preservative: HNO3, pH <2 -04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 14:53	10 Day TAT Required

Sample: HA03941-05
Name: G57S

Sampled: 01/26/24 14:24
Matrix: Ground Water
Preservative: HNO3, pH <2 -05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 14:24	10 Day TAT Required

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03941

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

L1700201

Sample: HA03941-06
Name: OM07

Sampled: 01/26/24 13:54
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 13:54	10 Day TAT Required

Sample: HA03941-07
Name: OR11

Sampled: 01/26/24 12:10
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 12:10	10 Day TAT Required

Sample: HA03941-08
Name: OR11 DUP

Sampled: 01/26/24 12:10
Matrix: Ground Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 12:10	10 Day TAT Required

Sample: HA03941-09
Name: OR20

Sampled: 01/26/24 13:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-09

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 13:00	10 Day TAT Required

Sample: HA03941-10
Name: EB #7

Sampled: 01/26/24 14:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-10

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/08/24 16:00	07/24/24 14:30	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA03941

L1700201

Sample Receipt Checklist

			If Applicable	
COC Seal Present/Intact:	Y N		VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N		Pres. Correct/Check:	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			

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

Date Shipped: 1/29/24 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
[signature]	1/29/24 1220		
		[signature]	1/30/24 0012

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

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

ANALYTICAL REPORT

February 14, 2024

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Pace IR - Peoria, IL

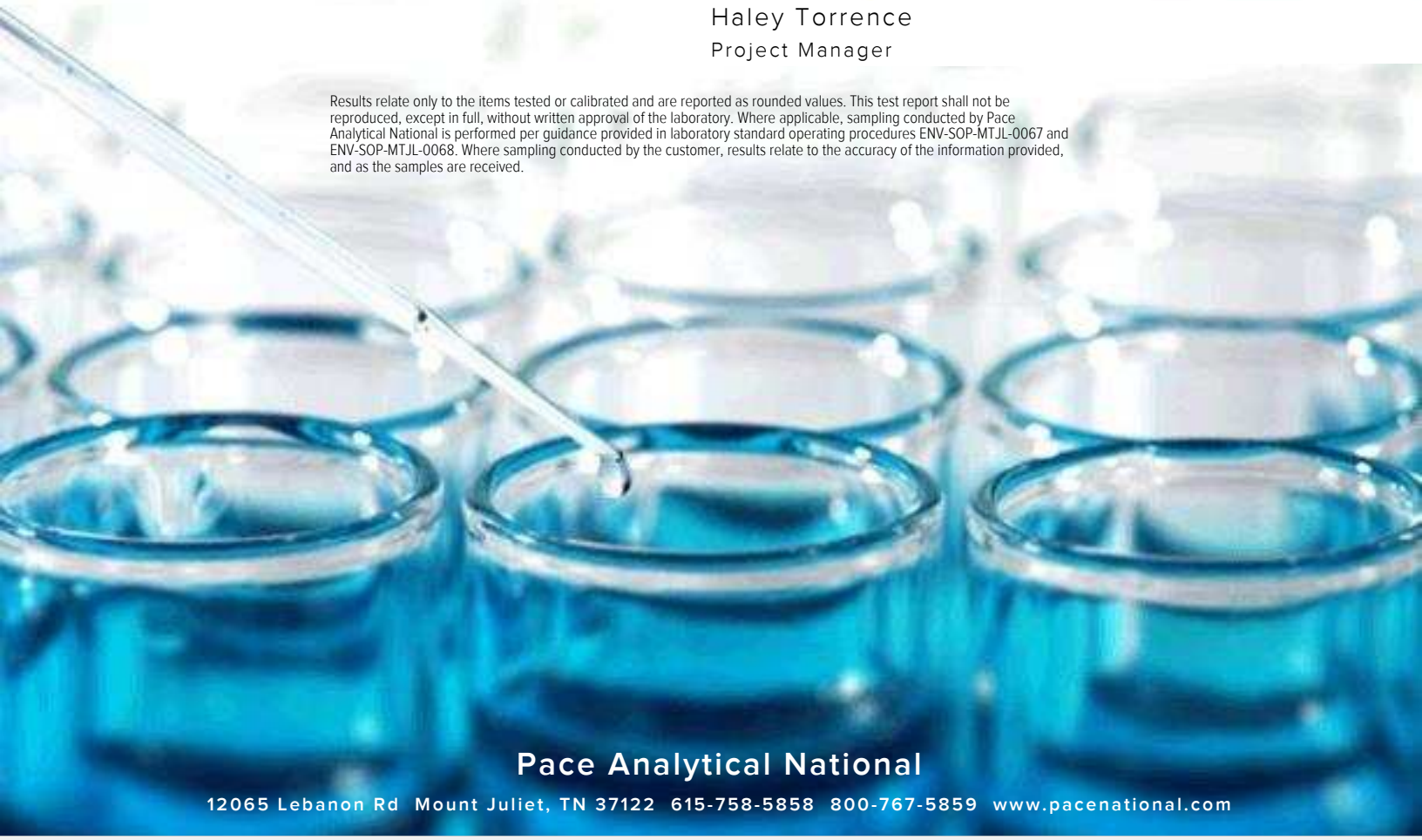
Sample Delivery Group:	L1701283
Samples Received:	01/31/2024
Project Number:	
Description:	

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.



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SAMPLE SUMMARY

HA04059-01 L1701283-01 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		01/29/24 14:33	01/31/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA04059-02 L1701283-02 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		01/29/24 13:00	01/31/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA04059-03 L1701283-03 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		01/29/24 11:50	01/31/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA04059-04 L1701283-04 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		01/29/24 15:00	01/31/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA04059-05 L1701283-05 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		01/29/24 14:00	01/31/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	ZRG	Mt. Juliet, TN

HA04059-06 L1701283-06 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		01/29/24 15:15	01/31/24 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2219995	1	02/05/24 11:15	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2219995	1	02/05/24 11:15	02/06/24 18:07	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.

Haley Torrence
Project Manager

SAMPLE RESULTS - 01

HA04059-01
Collected date/time: 01/29/24 14:33
L1701283

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	0.839		0.268	0.971	0.471	0.246	02/09/2024 16:57	WG2221106
(T) Barium	*104*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*98.0*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.01		0.312	0.499	02/09/2024 16:57	WG2219995

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	0.171		0.160	0.0772	0.165	0.136	02/06/2024 18:07	WG2219995
(T) Barium-133	*95.9*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.24		0.314	0.892	0.546	0.284	02/09/2024 16:57	WG2221106
(T) Barium	*102*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*92.9*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.65		0.398	0.572	02/09/2024 16:57	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.403		0.245	0.108	0.172	0.142	02/06/2024 18:07	WG2219995
(T) Barium-133	*86.6*					*30.0-143*	*02/06/2024 18:07*	WG2219995

HA04059-03 SAMPLE RESULTS - 03

Collected date/time: 01/29/24 11:50 L1701283

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.406	J	0.380	1.98	0.691	0.360	02/09/2024 16:57	WG2221106
(T) Barium	*107*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*101*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.720		0.435	0.710	02/09/2024 16:57	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.314		0.212	0.0999	0.164	0.136	02/06/2024 18:07	WG2219995
(T) Barium-133	*92.7*					*30.0-143*	*02/06/2024 18:07*	WG2219995

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.952		0.275	0.953	0.481	0.251	02/09/2024 16:57	WG2221106
(T) Barium	*97.3*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*97.8*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.69		0.450	0.522	02/09/2024 16:57	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.737		0.356	0.138	0.202	0.167	02/06/2024 18:07	WG2219995
(T) Barium-133	*75.2*					*30.0-143*	*02/06/2024 18:07*	WG2219995

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.32		0.296	0.865	0.510	0.267	02/09/2024 16:57	WG2221106
(T) Barium	*98.3*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*89.5*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.36		0.484	0.537	02/09/2024 16:57	WG2219995

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.04		0.383	0.184	0.167	0.138	02/06/2024 18:07	WG2219995
(T) Barium-133	*92.4*					*30.0-143*	*02/06/2024 18:07*	WG2219995

HA04059-06 SAMPLE RESULTS - 06

Collected date/time: 01/29/24 15:15 L1701283

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	-0.647	U	0.259	1.16	0.501	0.262	02/09/2024 16:57	WG2221106
(T) Barium	*190*	C1				*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*91.7*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.178	U	0.307	0.529	02/09/2024 16:57	WG2219995

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	0.178		0.165	0.0776	0.171	0.141	02/06/2024 18:07	WG2219995
(T) Barium-133	*93.0*					*30.0-143*	*02/06/2024 18:07*	WG2219995

WG2221106

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1701283-01,02,03,04,05,06

Method Blank (MB)

(MB) R4032807-1 02/09/24 16:57

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.380		0.145	0.257	0.135
(T) Barium	*119*		*119*		
(T) Yttrium	*102*		*102*		

L1701283-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1701283-02 02/09/24 16:57 • (DUP) R4032807-5 02/09/24 16:57

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	1.24	0.314	0.546	0.284	1.37	0.393	0.688	0.359	9.80	0.254		20	3
(T) Barium	*102*				*111*	*111*							
(T) Yttrium	*92.9*				*93.9*	*93.9*							

Laboratory Control Sample (LCS)

(LCS) R4032807-2 02/09/24 16:57

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.24	105	80.0-120	
(T) Barium			*124*		
(T) Yttrium			*99.2*		

L1702028-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702028-08 02/09/24 21:10 • (MS) R4032807-3 02/09/24 16:57 • (MSD) R4032807-4 02/09/24 16:57

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	16.7	0.318	16.7	16.9	98.2	99.1	1	70.0-130			0.893		20
(T) Barium		*120*			*125*	*113*							
(T) Yttrium		*97.7*			*95.5*	*97.8*							

WG2219992

Radiochemistry by Method SM7500Ra B,M

QUALITY CONTROL SUMMARY

L1701283-01,02,03,04,05,06

Method Blank (MB)

(MB) R4031193-1 02/06/24 18:07

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0133	U	0.0565	0.0997	0.0665
(T) Barium-133	*88.3*		*88.3*		

L1701283-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1701283-06 02/06/24 18:07 • (DUP) R4031193-5 02/06/24 18:07

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-226	0.178	0.165	0.171	0.141	0.0856	0.168	0.283	0.206	70.0	0.391	U	20	3
(T) Barium-133	*93.0*				*91.3*	*91.3*							

Laboratory Control Sample (LCS)

(LCS) R4031193-2 02/06/24 18:07

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.46	89.3	80.0-120	
(T) Barium-133			*85.1*		

L1700204-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1700204-13 02/06/24 18:07 • (MS) R4031193-3 02/06/24 18:07 • (MSD) R4031193-4 02/06/24 18:07

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.0345	20.3	18.1	101	90.2	1	75.0-125			11.4		20
(T) Barium-133		*79.8*			*89.1*	*93.9*							

GLOSSARY OF TERMS

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
C1	Tracer recovery limits have been exceeded; values are outside upper control limits.
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	LAO000356
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

M106

Pace Analytical Services, LLC

HA04059

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

L701283

Sample: HA04059-01
Name: G02S

Sampled: 01/29/24 14:33
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 14:33	10 Day TAT Required
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 14:33	10 Day TAT Required

Sample: HA04059-02
Name: OM12

Sampled: 01/29/24 13:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 13:00	10 Day TAT Required
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 13:00	10 Day TAT Required

Sample: HA04059-03
Name: OM16

Sampled: 01/29/24 11:50
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 11:50	10 Day TAT Required
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 11:50	10 Day TAT Required

Sample: HA04059-04
Name: OR13S

Sampled: 01/29/24 15:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 15:00	10 Day TAT Required
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 15:00	10 Day TAT Required

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HA04059

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

L701853

Sample: HA04059-05
Name: OR19

Sampled: 01/29/24 14:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 14:00	10 Day TAT Required
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 14:00	10 Day TAT Required

Sample: HA04059-06
Name: EB # 8

Sampled: 01/29/24 15:15
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 15:15	10 Day TAT Required
01-Radium 226/228 combined	02/09/24 16:00	07/27/24 15:15	10 Day TAT Required

7003 7812 3741

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	DPA-8	
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N	11.9+0=11.9	

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

Date Shipped: 1/30/24 Total # of Containers: 6 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1/30/24 1600		
		Caleb TRP	1/31/24 09:30

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

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT BOTTOM ASH BASIN (BAB)
DC-845-205

ANALYTICAL REPORT

February 20, 2024

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group:	L1702028
Samples Received:	02/03/2024
Project Number:	HA04294
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

Haley Torrence
Project Manager

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SAMPLE SUMMARY

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HA04294-01 L1702028-01 Non-Potable Water

			Collected by	Collected date/time	Received date/time	
				01/30/24 14:27	02/03/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

HA04294-02 L1702028-02 Non-Potable Water

			Collected by	Collected date/time	Received date/time	
				01/30/24 14:05	02/03/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

HA04294-03 L1702028-03 Non-Potable Water

			Collected by	Collected date/time	Received date/time	
				01/30/24 14:05	02/03/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

HA04294-04 L1702028-04 Non-Potable Water

			Collected by	Collected date/time	Received date/time	
				01/30/24 15:06	02/03/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

HA04294-05 L1702028-05 Non-Potable Water

			Collected by	Collected date/time	Received date/time	
				01/30/24 15:31	02/03/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

HA04294-06 L1702028-06 Non-Potable Water

			Collected by	Collected date/time	Received date/time	
				01/30/24 11:36	02/03/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

SAMPLE SUMMARY

Collected by	Collected date/time	Received date/time
	01/30/24 15:55	02/03/24 09:00

HA04294-07 L1702028-07 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
	01/30/24 15:55	02/03/24 09:00

HA04294-08 L1702028-08 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 21:10	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 21:10	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	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.

Haley Torrence
Project Manager

Report Revision History

Level II Report - Version 1: 02/14/24 15:44

Project Narrative

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.548		0.201	1.02	0.380	0.200	02/09/2024 21:10	WG2221106
(T) Barium	*118*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*96.0*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.696		0.263	0.438	02/09/2024 21:10	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.149	J	0.170	0.0675	0.218	0.171	02/09/2024 14:35	WG2220369
(T) Barium-133	*80.7*					*30.0-143*	*02/09/2024 14:35*	WG2220369

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.243	J	0.248	1.70	0.483	0.252	02/09/2024 21:10	WG2221106
(T) Barium	*109*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*104*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.430	J	0.317	0.534	02/09/2024 21:10	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.187	J	0.198	0.0675	0.227	0.188	02/09/2024 14:35	WG2220369
(T) Barium-133	*67.9*					*30.0-143*	*02/09/2024 14:35*	WG2220369

HA04294-03 SAMPLE RESULTS - 03

Collected date/time: 01/30/24 14:05 L1702028

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	0.668		0.213	0.948	0.400	0.210	02/09/2024 21:10	WG2221106
(T) Barium	*102*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*96.4*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.967		0.314	0.449	02/09/2024 21:10	WG2220369

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	0.299		0.231	0.0868	0.203	0.167	02/09/2024 14:35	WG2220369
(T) Barium-133	*74.1*					*30.0-143*	*02/09/2024 14:35*	WG2220369

HA04294-04 SAMPLE RESULTS - 04

Collected date/time: 01/30/24 15:06 L1702028

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	1.34		0.599	1.72	1.14	0.595	02/09/2024 21:10	WG2221106
(T) Barium	*118*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*95.6*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.13		0.726	1.18	02/09/2024 21:10	WG2220369

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	0.791		0.410	0.131	0.297	0.226	02/09/2024 14:35	WG2220369
(T) Barium-133	*62.8*					*30.0-143*	*02/09/2024 14:35*	WG2220369

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.04		0.280	0.909	0.521	0.272	02/09/2024 21:10	WG2221106
(T) Barium	*102*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*87.9*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.46		0.386	0.557	02/09/2024 21:10	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.416		0.266	0.110	0.196	0.162	02/09/2024 14:35	WG2220369
(T) Barium-133	*81.2*					*30.0-143*	*02/09/2024 14:35*	WG2220369

HA04294-06 SAMPLE RESULTS - 06

Collected date/time: 01/30/24 11:36 L1702028

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.17		0.238	0.740	0.432	0.226	02/09/2024 21:10	WG2221106
(T) Barium	*111*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*104*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.42		0.318	0.476	02/09/2024 21:10	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.251		0.211	0.0845	0.199	0.165	02/09/2024 14:35	WG2220369
(T) Barium-133	*79.2*					*30.0-143*	*02/09/2024 14:35*	WG2220369

HA04294-07 SAMPLE RESULTS - 07

Collected date/time: 01/30/24 15:55 L1702028

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	0.613		0.244	1.04	0.462	0.241	02/09/2024 21:10	WG2221106
(T) Barium	*118*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*104*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.613		0.246	0.488	02/09/2024 21:10	WG2220369

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	-0.00681	U	0.0298	0.00647	0.157	0.130	02/09/2024 14:35	WG2220369
(T) Barium-133	*95.0*					*30.0-143*	*02/09/2024 14:35*	WG2220369

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.318	J	0.268	1.55	0.519	0.270	02/09/2024 21:10	WG2221106
(T) Barium	*120*					*30.0-143*	*02/09/2024 21:10*	WG2221106
(T) Yttrium	*97.7*					*30.0-136*	*02/09/2024 21:10*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.346	J	0.278	0.544	02/09/2024 21:10	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0281	U	0.0753	0.0337	0.162	0.134	02/09/2024 14:35	WG2220369
(T) Barium-133	*94.1*					*30.0-143*	*02/09/2024 14:35*	WG2220369

WG2221106

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1702028-01,02,03,04,05,06,07,08

Method Blank (MB)

(MB) R4032807-1 02/09/24 16:57

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.380		0.145	0.257	0.135
(T) Barium	*119*		*119*		
(T) Yttrium	*102*		*102*		

L1701283-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1701283-02 02/09/24 16:57 • (DUP) R4032807-5 02/09/24 16:57

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	1.24	0.314	0.546	0.284	1.37	0.393	0.688	0.359	9.80	0.254		20	3
(T) Barium	*102*				*111*	*111*							
(T) Yttrium	*92.9*				*93.9*	*93.9*							

Laboratory Control Sample (LCS)

(LCS) R4032807-2 02/09/24 16:57

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.24	105	80.0-120	
(T) Barium			*124*		
(T) Yttrium			*99.2*		

L1702028-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702028-08 02/09/24 21:10 • (MS) R4032807-3 02/09/24 16:57 • (MSD) R4032807-4 02/09/24 16:57

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	16.7	0.318	16.7	16.9	98.2	99.1	1	70.0-130			0.893		20
(T) Barium		*120*			*125*	*113*							
(T) Yttrium		*97.7*			*95.5*	*97.8*							

Method Blank (MB)

(MB) R4033436-1 02/08/24 20:40

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.00234	U	0.0112	0.0274	0.0207
(T) Barium-133	*80.2*		*80.2*		

L1702023-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1702023-02 02/09/24 14:35 • (DUP) R4033436-5 02/09/24 14:35

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-226	0.372	0.251	0.195	0.161	0.0320	0.0858	0.184	0.152	168	1.28	U	20	3
(T) Barium-133	*78.5*				*85.0*	*85.0*							

Laboratory Control Sample (LCS)

(LCS) R4033436-2 02/09/24 14:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.63	92.6	80.0-120	
(T) Barium-133			*89.7*		

L1702028-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702028-07 02/09/24 14:35 • (MS) R4033436-3 02/09/24 14:35 • (MSD) R4033436-4 02/09/24 14:35

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-226	20.0	-0.00681	19.3	20.9	96.4	104	1	75.0-125			7.92		20
(T) Barium-133		*95.0*			*88.1*	*62.8*							

GLOSSARY OF TERMS

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

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	LAO000356
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

HA04294

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

L1702-28

Sample: HA04294-01
Name: G54L

Sampled: 01/30/24 14:27
Matrix: Ground Water
Preservative: HNO3, pH <2

01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 14:27	10 Day TAT Required

Sample: HA04294-02
Name: OM24D

Sampled: 01/30/24 14:05
Matrix: Ground Water
Preservative: HNO3, pH <2

02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 14:05	10 Day TAT Required

Sample: HA04294-03
Name: OM24D DUP

Sampled: 01/30/24 14:05
Matrix: Ground Water
Preservative: HNO3, pH <2

03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 14:05	10 Day TAT Required

Sample: HA04294-04
Name: OM25S

Sampled: 01/30/24 15:06
Matrix: Ground Water
Preservative: HNO3, pH <2

04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 15:06	10 Day TAT Required

Sample: HA04294-05
Name: OR02

Sampled: 01/30/24 ~~15:36~~ 1531
Matrix: Ground Water
Preservative: HNO3, pH <2

1/30/24

05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 15:36	10 Day TAT Required

Jmcam 2-3-24 0900

SUBCON
Transfer (

Pace Analy
H

Sample Receipt Checklist

			If Applicable	
COC Seal Present/Intact:	Y N		VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N		Pres. Correct/Check:	Y N
Bottles arrive intact:	Y N	AMB		
Correct bottles used:	Y N			
Sufficient volume sent:	Y N			
RA Screen <0.5 mR/hr:	Y N	7003 7812 4954		

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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

E245

L1702028

Sample: HA04294-06
Name: OR13D

Sampled: 01/30/24 11:36
Matrix: Ground Water
Preservative: HNO3, pH <2

06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 11:36	10 Day TAT Required

Sample: HA04294-07
Name: EB # 9

Sampled: 01/30/24 15:55
Matrix: Ground Water
Preservative: HNO3, pH <2

07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 15:55	10 Day TAT Required

Sample: HA04294-08
Name: EB # 10

Sampled: 01/30/24 15:55
Matrix: Ground Water
Preservative: HNO3, pH <2

08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/12/24 16:00	07/28/24 15:55	10 Day TAT Required

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

Date Shipped: 2/1/24 Total # of Containers: 8 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
[signature]	2/1/24 1200		
		[signature]	2-3-24 0900

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

February 14, 2024

Pace IR - Peoria, IL

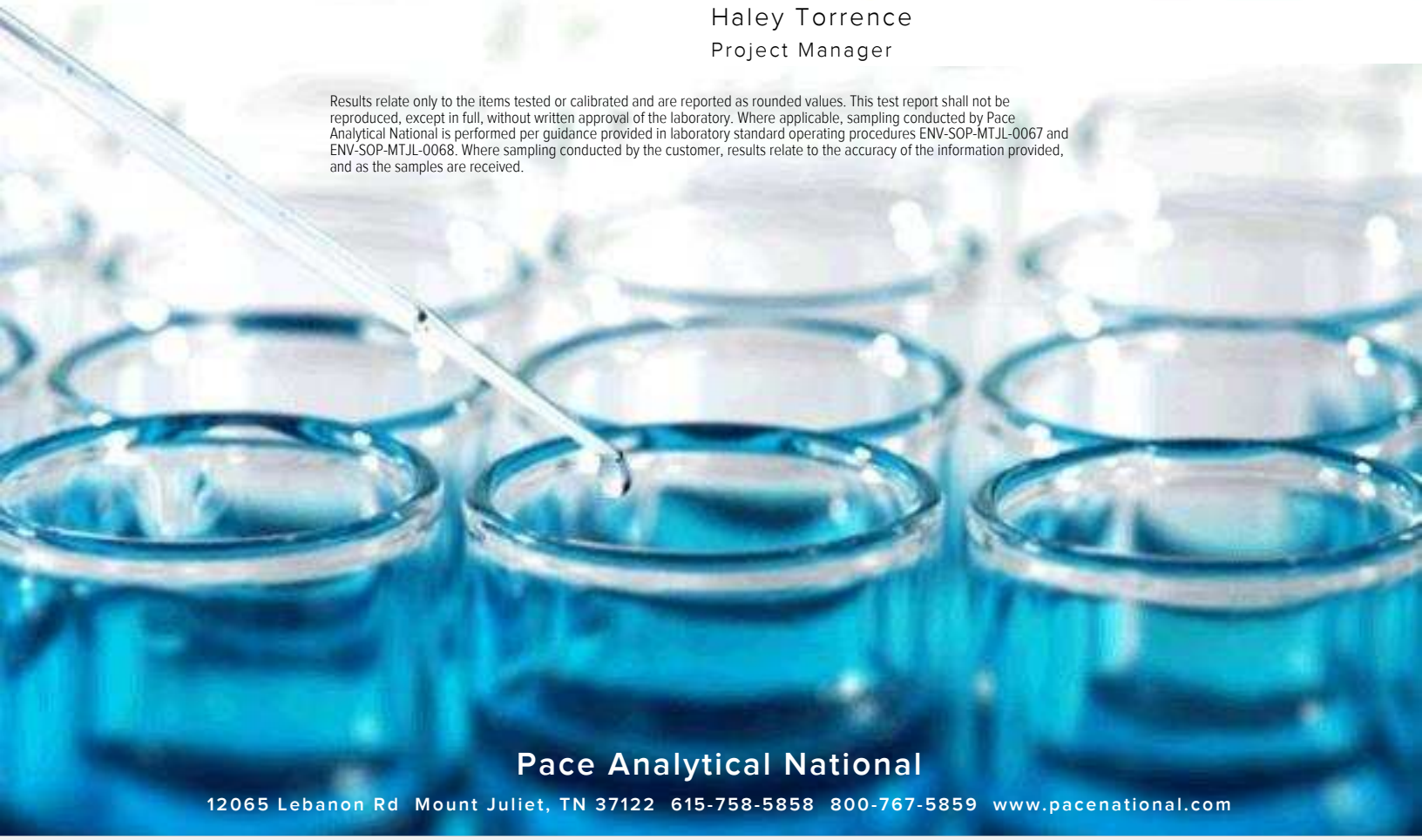
Sample Delivery Group:	L1702023
Samples Received:	02/03/2024
Project Number:	HA04485
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

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 www.pacenational.com

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Radiochemistry by Method SM7500Ra B M 8
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SAMPLE SUMMARY

	Collected by	Collected date/time	Received date/time
HA04485-01 L1702023-01 Non-Potable Water		01/31/24 10:50	02/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 16:57	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	ZRG	Mt. Juliet, TN

	Collected by	Collected date/time	Received date/time
HA04485-02 L1702023-02 Non-Potable Water		01/31/24 15:15	02/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2221106	1	02/06/24 19:38	02/09/24 16:57	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2220369	1	02/07/24 10:16	02/09/24 16:57	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2220369	1	02/07/24 10:16	02/09/24 14:35	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.

Haley Torrence
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.922		0.218	0.845	0.374	0.198	02/09/2024 16:57	WG2221106
(T) Barium	*109*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*96.9*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.25		0.327	0.437	02/09/2024 16:57	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.327		0.244	0.0979	0.227	0.178	02/09/2024 14:35	WG2220369
(T) Barium-133	*79.5*					*30.0-143*	*02/09/2024 14:35*	WG2220369

HA04485-02 SAMPLE RESULTS - 02

Collected date/time: 01/31/24 15:15 L1702023

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.223	J	0.268	1.98	0.490	0.256	02/09/2024 16:57	WG2221106
(T) Barium	*113*					*30.0-143*	*02/09/2024 16:57*	WG2221106
(T) Yttrium	*92.3*					*30.0-136*	*02/09/2024 16:57*	WG2221106

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.595		0.367	0.527	02/09/2024 16:57	WG2220369

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.372		0.251	0.100	0.195	0.161	02/09/2024 14:35	WG2220369
(T) Barium-133	*78.5*					*30.0-143*	*02/09/2024 14:35*	WG2220369

WG2221106

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1702023-01,02

Method Blank (MB)

(MB) R4032807-1 02/09/24 16:57

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.380		0.145	0.257	0.135
(T) Barium	*119*		*119*		
(T) Yttrium	*102*		*102*		

L1701283-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1701283-02 02/09/24 16:57 • (DUP) R4032807-5 02/09/24 16:57

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	1.24	0.314	0.546	0.284	1.37	0.393	0.688	0.359	9.80	0.254		20	3
(T) Barium	*102*				*111*	*111*							
(T) Yttrium	*92.9*				*93.9*	*93.9*							

Laboratory Control Sample (LCS)

(LCS) R4032807-2 02/09/24 16:57

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.24	105	80.0-120	
(T) Barium			*124*		
(T) Yttrium			*99.2*		

L1702028-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702028-08 02/09/24 21:10 • (MS) R4032807-3 02/09/24 16:57 • (MSD) R4032807-4 02/09/24 16:57

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	16.7	0.318	16.7	16.9	98.2	99.1	1	70.0-130			0.893		20
(T) Barium		*120*			*125*	*113*							
(T) Yttrium		*97.7*			*95.5*	*97.8*							

QUALITY CONTROL SUMMARY

L1702023-01,02

Radiochemistry by Method SM7500Ra B,M

Method Blank (MB)

(MB) R4033436-1 02/08/24 20:40

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.00234	U	0.0112	0.0274	0.0207
(T) Barium-133	*80.2*		*80.2*		

L1702023-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1702023-02 02/09/24 14:35 • (DUP) R4033436-5 02/09/24 14:35

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-226	0.372	0.251	0.195	0.161	0.0320	0.0858	0.184	0.152	168	1.28	U	20	3
(T) Barium-133	*78.5*				*85.0*	*85.0*							

Laboratory Control Sample (LCS)

(LCS) R4033436-2 02/09/24 14:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.63	92.6	80.0-120	
(T) Barium-133			*89.7*		

L1702028-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702028-07 02/09/24 14:35 • (MS) R4033436-3 02/09/24 14:35 • (MSD) R4033436-4 02/09/24 14:35

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-226	20.0	-0.00681	19.3	20.9	96.4	104	1	75.0-125			7.92		20
(T) Barium-133		*95.0*			*88.1*	*62.8*							

GLOSSARY OF TERMS

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.
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Qualifier	Description
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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	LAO000356
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

HA04485

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

E244

1/30 2023

Sample: HA04485-01
Name: P60

Sampled: 01/31/24 10:50
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/13/24 16:00	07/29/24 10:50	10 Day TAT Required

01

Sample: HA04485-02
Name: EB #11

Sampled: 01/31/24 15:15
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/13/24 16:00	07/29/24 15:15	10 Day TAT Required

02

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	AMB	
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N	7003 7512 4954	

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

Date Shipped: 2/1/24 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
[signature]	2/1/24 1200		
		[signature]	2-3-24 0900

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

February 23, 2024

Pace IR - Peoria, IL

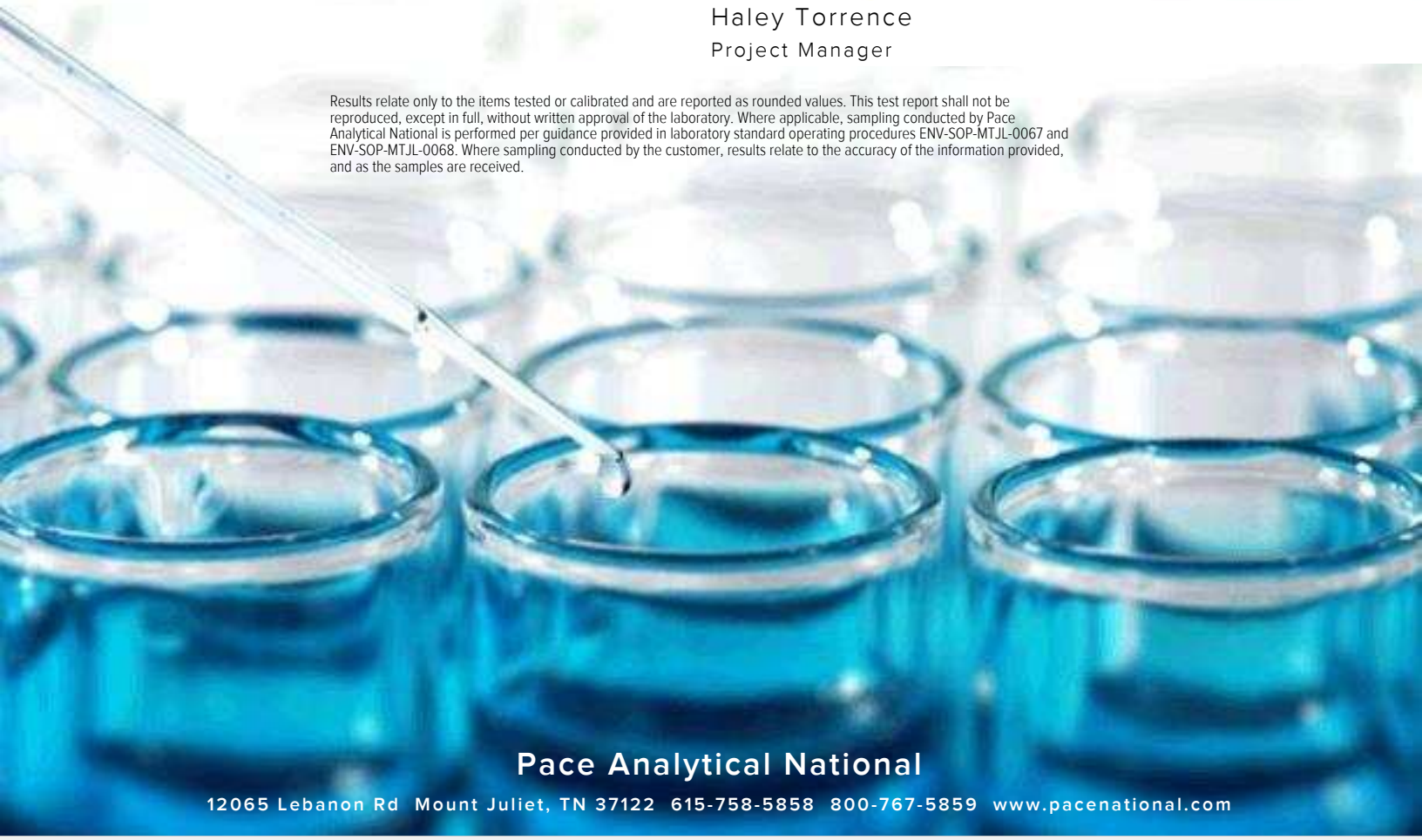
Sample Delivery Group:	L1703274
Samples Received:	02/07/2024
Project Number:	HB00520
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

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 www.pacenational.com

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SAMPLE SUMMARY

HB00520-01 L1703274-01 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		02/05/24 14:40	02/07/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2222935	1	02/09/24 15:55	02/19/24 22:20	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2223299	1	02/09/24 12:18	02/19/24 22:20	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2223299	1	02/09/24 12:18	02/12/24 22:35	ZRG	Mt. Juliet, TN

HB00520-02 L1703274-02 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		02/05/24 13:29	02/07/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2222935	1	02/09/24 15:55	02/19/24 22:20	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2223299	1	02/09/24 12:18	02/19/24 22:20	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2223299	1	02/09/24 12:18	02/12/24 22:35	ZRG	Mt. Juliet, TN

HB00520-03 L1703274-03 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		02/05/24 11:27	02/07/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2222935	1	02/09/24 15:55	02/19/24 22:20	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2223299	1	02/09/24 12:18	02/19/24 22:20	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2223299	1	02/09/24 12:18	02/12/24 22:35	ZRG	Mt. Juliet, TN

HB00520-04 L1703274-04 Non-Potable Water

	Collected by	Collected date/time	Received date/time
		02/05/24 15:00	02/07/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2222935	1	02/09/24 15:55	02/19/24 22:20	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2223299	1	02/09/24 12:18	02/19/24 22:20	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2223299	1	02/09/24 12:18	02/12/24 22:35	ZRG	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

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.

Haley Torrence
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.14		0.400	1.21	0.752	0.392	02/19/2024 22:20	WG2222935
(T) Barium	*94.6*					*30.0-143*	*02/19/2024 22:20*	WG2222935
(T) Yttrium	*95.9*					*30.0-136*	*02/19/2024 22:20*	WG2222935

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.29		0.463	0.832	02/19/2024 22:20	WG2223299

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.146	J	0.233	0.0889	0.357	0.247	02/12/2024 22:35	WG2223299
(T) Barium-133	*84.0*					*30.0-143*	*02/12/2024 22:35*	WG2223299

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

HB00520-02 SAMPLE RESULTS - 02

Collected date/time: 02/05/24 13:20 L1703274

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	1.47		0.350	0.960	0.645	0.337	02/19/2024 22:20	WG2222935
(T) Barium	*110*					*30.0-143*	*02/19/2024 22:20*	WG2222935
(T) Yttrium	*97.7*					*30.0-136*	*02/19/2024 22:20*	WG2222935

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.17		0.516	0.715	02/19/2024 22:20	WG2223299

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	0.703		0.379	0.156	0.309	0.225	02/12/2024 22:35	WG2223299
(T) Barium-133	*81.7*					*30.0-143*	*02/12/2024 22:35*	WG2223299

HB00520-03 SAMPLE RESULTS - 03

Collected date/time: 02/05/24 11:27 L1703274

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.0604	U	0.240	3.34	0.474	0.247	02/19/2024 22:20	WG2222935
(T) Barium	*124*					*30.0-143*	*02/19/2024 22:20*	WG2222935
(T) Yttrium	*97.8*					*30.0-136*	*02/19/2024 22:20*	WG2222935

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.290	J	0.330	0.526	02/19/2024 22:20	WG2223299

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.290		0.226	0.100	0.227	0.173	02/12/2024 22:35	WG2223299
(T) Barium-133	*89.1*					*30.0-143*	*02/12/2024 22:35*	WG2223299

HB00520-04 SAMPLE RESULTS - 04

Collected date/time: 02/05/24 15:00 L1703274

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.423	J	0.282	1.37	0.541	0.281	02/19/2024 22:20	WG2222935
(T) Barium	*107*					*30.0-143*	*02/19/2024 22:20*	WG2222935
(T) Yttrium	*109*					*30.0-136*	*02/19/2024 22:20*	WG2222935

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.423	J	0.300	0.627	02/19/2024 22:20	WG2223299

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0609	U	0.101	0.0200	0.316	0.224	02/12/2024 22:35	WG2223299
(T) Barium-133	*86.2*					*30.0-143*	*02/12/2024 22:35*	WG2223299

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

WG2222935

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1703274-01,02,03,04

Method Blank (MB)

(MB) R4036174-1 02/19/24 16:47

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.986		0.155	0.260	0.137
(T) Barium	*112*		*112*		
(T) Yttrium	*106*		*106*		

L1700636-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1700636-01 02/19/24 16:47 • (DUP) R4036174-5 02/19/24 16:47

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	1.76	0.362	0.635	0.332	1.42	0.384	0.686	0.358	21.5	0.648		20	3
(T) Barium					*113*	*113*							
(T) Yttrium					*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R4036174-2 02/19/24 16:47

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.74	115	80.0-120	
(T) Barium			*112*		
(T) Yttrium			*99.5*		

L1702038-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702038-04 02/19/24 22:20 • (MS) R4036174-3 02/19/24 16:47 • (MSD) R4036174-4 02/19/24 16:47

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	16.7	1.25	19.6	21.0	110	118	1	70.0-130			7.09		20
(T) Barium		*120*			*101*	*114*							
(T) Yttrium		*99.2*			*102*	*99.5*							

WG2223299

Radiochemistry by Method SM7500Ra B,M

QUALITY CONTROL SUMMARY

L1703274-01,02,03,04

Method Blank (MB)

(MB) R4035159-1 02/12/24 22:35

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0371	J	0.0308	0.0410	0.0261
(T) Barium-133	*91.6*		*91.6*		

L1703637-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1703637-01 02/12/24 22:35 • (DUP) R4035159-5 02/12/24 22:35

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-226	-0.0305	0.125	0.298	0.207	0.189	0.196	0.250	0.182	200	0.945	J	20	3
(T) Barium-133	*95.3*				*94.9*	*94.9*							

Laboratory Control Sample (LCS)

(LCS) R4035159-2 02/12/24 22:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.70	94.1	80.0-120	
(T) Barium-133			*92.8*		

L1703274-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1703274-04 02/12/24 22:35 • (MS) R4035159-3 02/12/24 22:35 • (MSD) R4035159-4 02/12/24 22:35

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-226	20.0	-0.0609	20.8	21.8	104	109	1	75.0-125			4.66		20
(T) Barium-133		*86.2*			*91.0*	*84.0*							

GLOSSARY OF TERMS

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	LAO000356
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

A048

Pace Analytical Services, LLC
HB00520

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

L703274

Sample: HB00520-01
Name: BA02L

Sampled: 02/05/24 14:40
Matrix: Ground Water
Preservative: HNO3, pH <2 C2 -01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 14:40	10 Day TAT Required
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 14:40	10 Day TAT Required

Sample: HB00520-02
Name: BA05

Sampled: 02/05/24 ~~13:20~~ 1320 2/5/24 dnb
Matrix: Ground Water
Preservative: HNO3, pH <2 C2 -02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 13:20	10 Day TAT Required
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 13:20	10 Day TAT Required

Sample: HB00520-03
Name: OM17

Sampled: 02/05/24 11:27
Matrix: Ground Water
Preservative: HNO3, pH <2 C2 -03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 11:27	10 Day TAT Required
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 11:27	10 Day TAT Required

Sample: HB00520-04
Name: EB #13

Sampled: 02/05/24 15:00
Matrix: Ground Water
Preservative: HNO3, pH <2 C2 -04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 15:00	10 Day TAT Required
01-Radium 226/228 combined	02/16/24 16:00	08/03/24 15:00	10 Day TAT Required

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HB00520

L1703274

Sample Receipt Checklist

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

PH-10BDH6021 TRC-2352362
CR6-20221V

5.2+0=5.2 DPAJ

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

Date Shipped: 2/6/24 Total # of Containers: 4 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
	2/6/24 0755		
		N. Fowler	2/7/24 0900

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

February 29, 2024

Pace IR - Peoria, IL

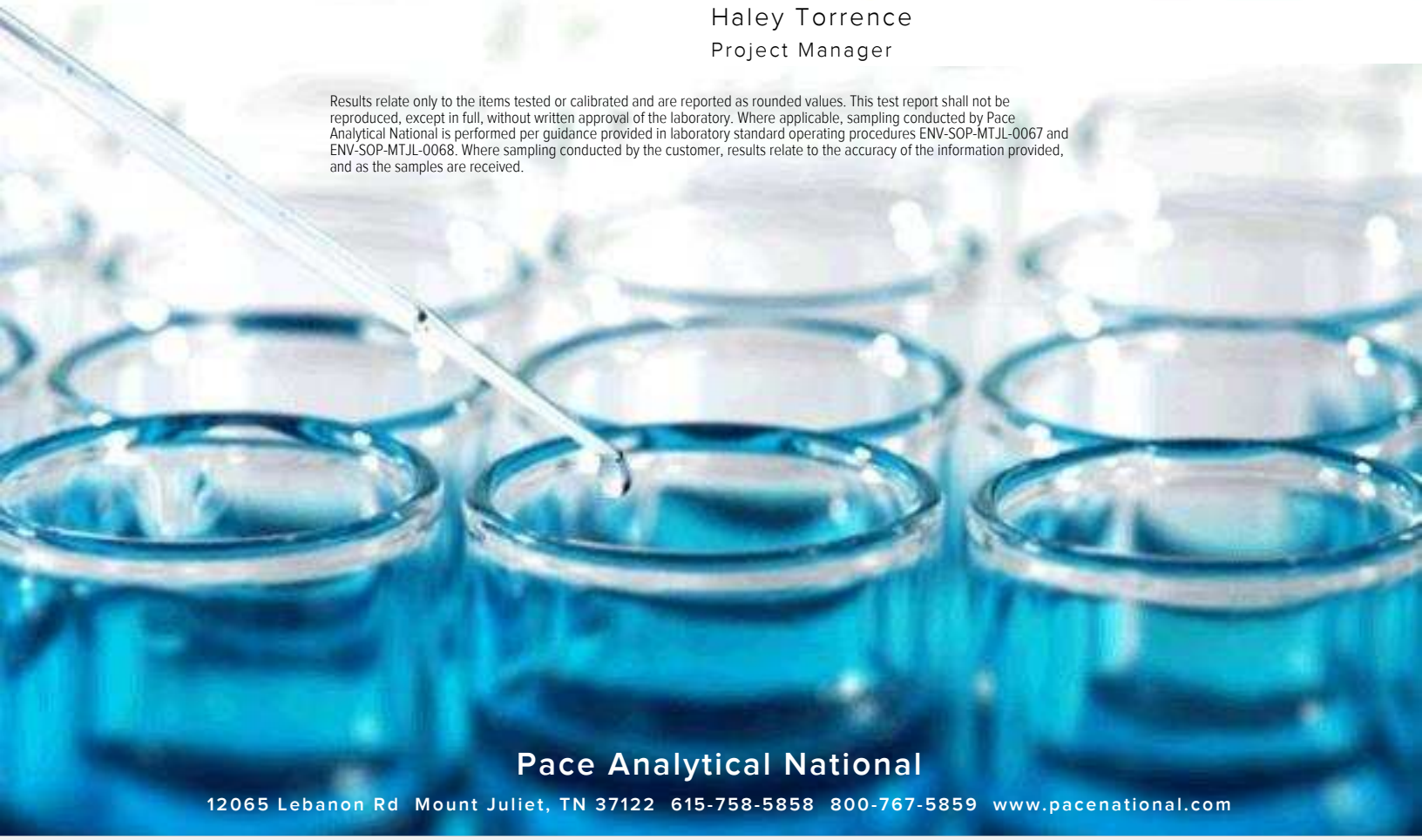
Sample Delivery Group:	L1704318
Samples Received:	02/09/2024
Project Number:	HB00823
Description:	

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.



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SAMPLE SUMMARY

	Collected by	Collected date/time	Received date/time
HB00823-01 L1704318-01 Non-Potable Water		02/06/24 12:30	02/09/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2224844	1	02/12/24 22:40	02/20/24 22:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2224808	1	02/13/24 13:12	02/20/24 22:23	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2224808	1	02/13/24 13:12	02/15/24 18:19	ZRG	Mt. Juliet, TN

	Collected by	Collected date/time	Received date/time
HB00823-02 L1704318-02 Non-Potable Water		02/06/24 11:53	02/09/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2224844	1	02/12/24 22:40	02/20/24 22:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2224808	1	02/13/24 13:12	02/20/24 22:23	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2224808	1	02/13/24 13:12	02/15/24 18:19	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.

Haley Torrence
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.18		0.265	0.929	0.486	0.257	02/20/2024 22:23	WG2224844
(T) Barium	*107*					*30.0-143*	*02/20/2024 22:23*	WG2224844
(T) Yttrium	*106*					*30.0-136*	*02/20/2024 22:23*	WG2224844

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.38		0.323	0.524	02/20/2024 22:23	WG2224808

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.209		0.185	0.0826	0.197	0.155	02/15/2024 18:19	WG2224808
(T) Barium-133	*89.2*					*30.0-143*	*02/15/2024 18:19*	WG2224808

HB00823-02 SAMPLE RESULTS - 02

Collected date/time: 02/06/24 11:53 L1704318

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.655		0.181	0.877	0.339	0.180	02/20/2024 22:23	WG2224844
(T) Barium	*108*					*30.0-143*	*02/20/2024 22:23*	WG2224844
(T) Yttrium	*109*					*30.0-136*	*02/20/2024 22:23*	WG2224844

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.844		0.252	0.385	02/20/2024 22:23	WG2224808

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.190		0.176	0.0755	0.182	0.150	02/15/2024 18:19	WG2224808
(T) Barium-133	*84.8*					*30.0-143*	*02/15/2024 18:19*	WG2224808

WG2224844

Radiochemistry by Method 904/9320

QUALITY CONTROL SUMMARY

L1704318-01,02

Method Blank (MB)

(MB) R4039029-1 02/20/24 18:02

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	-0.245	U	0.239	0.228	0.117
(T) Barium	*110*		*110*		
(T) Yttrium	*90.6*		*90.6*		

L1704318-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1704318-02 02/20/24 22:23 • (DUP) R4039029-5 02/20/24 18:02

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	0.655	0.181	0.339	0.180	1.45	0.291	0.511	0.270	75.3	2.31		20	3
(T) Barium	*108*				*117*	*117*							
(T) Yttrium	*109*				*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R4039029-2 02/20/24 18:02

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.32	106	80.0-120	
(T) Barium			*124*		
(T) Yttrium			*105*		

L1704318-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1704318-01 02/20/24 22:23 • (MS) R4039029-3 02/20/24 18:02 • (MSD) R4039029-4 02/20/24 18:02

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	16.7	1.18	16.4	15.3	91.0	84.5	1	70.0-130			6.88		20
(T) Barium		*107*			*109*	*112*							
(T) Yttrium		*106*			*112*	*107*							

WG2224808

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY

L1704318-01,02

Method Blank (MB)

(MB) R4035819-1 02/14/24 23:30

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0260	J	0.0368	0.0575	0.0366
(T) Barium-133	*75.0*		*75.0*		

L1704318-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1704318-01 02/15/24 18:19 • (DUP) R4035819-5 02/14/24 23:30

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-226	0.209	0.185	0.197	0.155	0.113	0.141	0.185	0.153	60.2	0.417	J	20	3
(T) Barium-133	*89.2*				*84.6*	*84.6*							

Laboratory Control Sample (LCS)

(LCS) R4035819-2 02/14/24 23:30

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.67	113	80.0-120	
(T) Barium-133			*72.3*		

L1704298-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1704298-01 02/14/24 23:30 • (MS) R4035819-3 02/14/24 23:30 • (MSD) R4035819-4 02/14/24 23:30

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-226	20.0	8.85	27.2	25.6	91.6	83.6	1	75.0-125			6.11		20
(T) Barium-133		*102*			*103*	*103*							

GLOSSARY OF TERMS

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	LAO000356
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

HB00823

C091

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

L1704318

Sample: HB00823-01
Name: OM01

Sampled: 02/06/24 12:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 12:30	10 Day TAT Required
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 12:30	10 Day TAT Required

Sample: HB00823-02
Name: OR06A

Sampled: 02/06/24 11:53
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 11:53	10 Day TAT Required
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 11:53	10 Day TAT Required

Sample Receipt Checklist

			If Applicable	
COC Seal Present/Intact:	Y N		VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N		Pres. Correct/Check:	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			

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

Date Shipped: 2/8/24 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
[signature]	2/8/24 1115		
		[signature]	2/9/24 0am

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

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HB00823

C091

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

L1704318

Sample: HB00823-01 -01
Name: OM01

Sampled: 02/06/24 12:30
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 12:30	10 Day TAT Required
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 12:30	10 Day TAT Required

Sample: HB00823-02 -02
Name: OR06A

Sampled: 02/06/24 11:53
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 11:53	10 Day TAT Required
01-Radium 226/228 combined	02/19/24 16:00	08/04/24 11:53	10 Day TAT Required

Sample Receipt Checklist

			If Applicable	
COC Seal Present/Intact:	Y N		VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N		Pres. Correct/Check:	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			

Amb

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

Date Shipped: 2/8/24 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
[signature]	2/8/24 1115		
		T. Shaw	2/9/24 0800

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

March 11, 2024

Pace IR - Peoria, IL

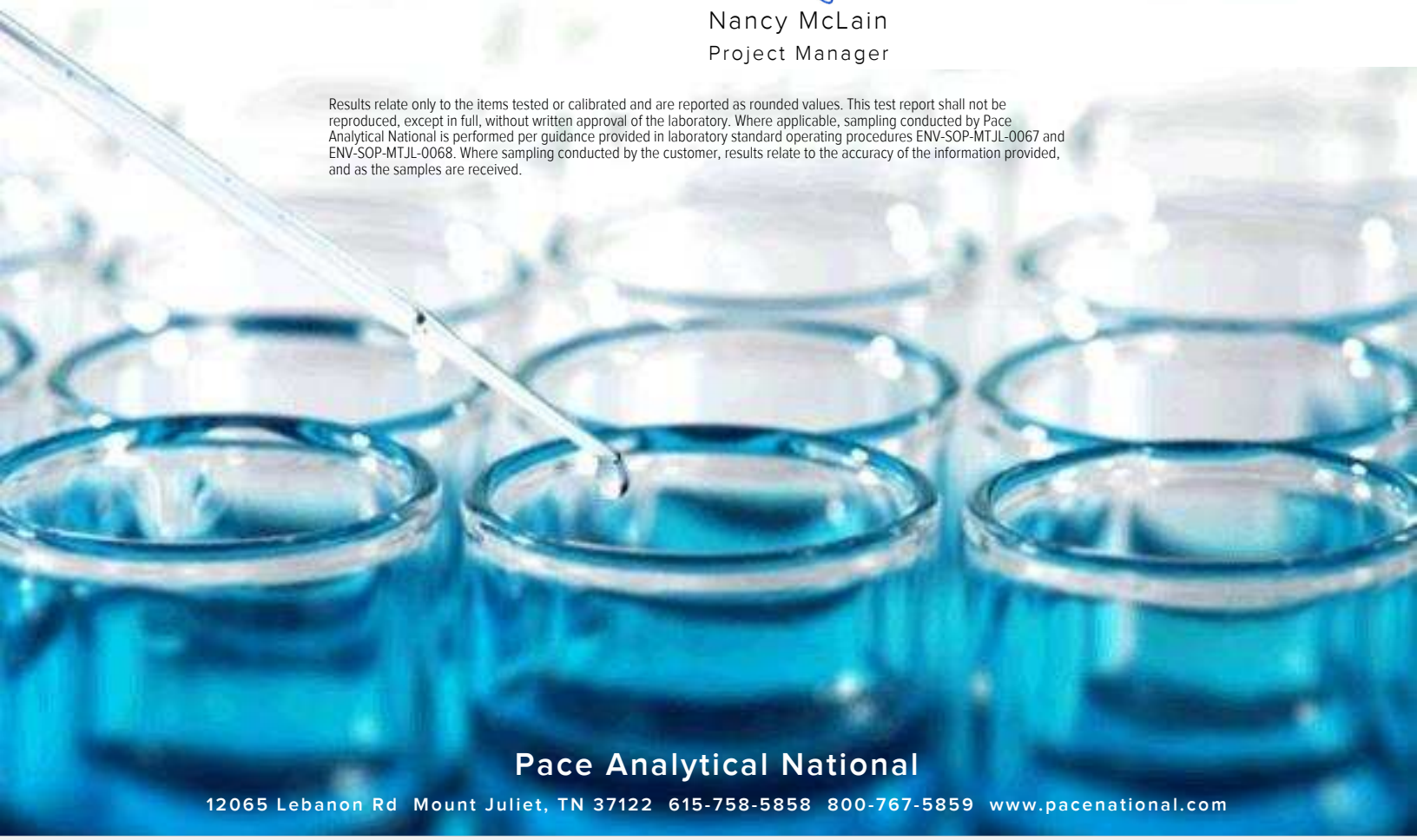
Sample Delivery Group:	L1705231
Samples Received:	02/13/2024
Project Number:	
Description:	

Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

Nancy McLain
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.



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Radiochemistry by Method SM7500Ra B M 7
Gl: Glossary of Terms 8
Al: Accreditations & Locations 9
Sc: Sample Chain of Custody 10

SAMPLE SUMMARY

HB01644-01 L1705231-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/24 12:18	02/13/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2231206	1	02/21/24 23:50	02/28/24 21:29	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2227301	1	02/19/24 11:45	02/28/24 21:29	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2227301	1	02/19/24 11:45	02/22/24 14:33	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.

Nancy McLain
Project Manager

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

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	0.717		0.281	1.15	0.237	0.123	02/28/2024 21:29	WG2231206
(T) Barium	*123*					*30.0-143*	*02/28/2024 21:29*	WG2231206
(T) Yttrium	*111*					*30.0-136*	*02/28/2024 21:29*	WG2231206

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.724		0.316	0.381	02/28/2024 21:29	WG2227301

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	0.00760	U	0.145	0.0451	0.298	0.206	02/22/2024 14:33	WG2227301
(T) Barium-133	*77.3*					*30.0-143*	*02/22/2024 14:33*	WG2227301

QUALITY CONTROL SUMMARY

L1705231-01

Method Blank (MB)

(MB) R4042409-1 02/28/24 21:29

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.384		0.182	0.155	
(T) Barium	*120*		*120*		
(T) Yttrium	*108*		*108*		

L1703250-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1703250-01 03/04/24 21:31 • (DUP) R4042409-6 03/04/24 21:31

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	299	1.97	0.631	0.331	384	2.22	0.548		24.7	28.5	J3	20	3
(T) Barium	*587*				*930*	*930*					C1		
(T) Yttrium	*101*				*99.2*	*99.2*							

Laboratory Control Sample (LCS)

(LCS) R4042409-2 02/28/24 21:29

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.81	96.2	80.0-120	
(T) Barium			*118*		
(T) Yttrium			*103*		

L1702038-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1702038-08 02/28/24 21:29 • (MS) R4042409-3 02/28/24 21:29 • (MSD) R4042409-4 02/28/24 21:29

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	1.26	16.4	15.6	90.7	85.6	1	70.0-130			5.26		20
(T) Barium		*126*			*127*	*126*							
(T) Yttrium		*97.8*			*108*	*101*							

WG2227301

Radiochemistry by Method SM7500Ra B M

QUALITY CONTROL SUMMARY

L1705231-01

Method Blank (MB)

(MB) R4038342-1 02/22/24 14:33

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.0133	U	0.0237	0.0768	0.0551
(T) Barium-133	*80.8*		*80.8*		

L1705233-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1705233-11 02/22/24 14:33 • (DUP) R4038342-5 02/22/24 14:33

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-226	0.000	0.112	0.268	0.195	0.0624	0.187	0.337	0.236	200	0.286	U	20	3
(T) Barium-133	*88.5*				*74.0*	*74.0*							

Laboratory Control Sample (LCS)

(LCS) R4038342-2 02/22/24 14:33

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.80	95.9	80.0-120	
(T) Barium-133			*75.0*		

L1705231-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1705231-01 02/22/24 14:33 • (MS) R4038342-3 02/22/24 14:33 • (MSD) R4038342-4 02/22/24 14:33

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-226	20.0	0.00760	19.3	19.9	96.4	99.4	1	75.0-125			3.06		20
(T) Barium-133		*77.3*			*62.7*	*67.3*							

GLOSSARY OF TERMS

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
C1	Tracer recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
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	LAO000356
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

HB01644

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

D046

L705231

Sample: HB01644-01
Name: G64L

Sampled: 02/08/24 12:18
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/21/24 16:00	08/06/24 12:18	10 Day TAT Required
01-Radium 226/228 combined	02/21/24 16:00	08/06/24 12:18	10 Day TAT Required

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		

7003 7812 8982

17.5+0=17.5 DPAS

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

Date Shipped: 2/9/24 Total # of Containers: 1 Sample Origin (State): IL PO #: _____

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

Relinquished By	Date/Time	Received By	Date/Time
	2/9/24 1145		
Relinquished By	Date/Time	Received By	Date/Time
		N. Dawn	2/13/24 0940

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

HA08920

CHAIN-OF-CUSTODY / Analytical Request Document

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

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911 Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY: NPDES: GROUND WATER: DRINKING WATER: UST: RCRA: OTHER:

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206			Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	GSOL	WT	G	1/19/24	1252		4	X		X																			
2	GSOS	WT	G	1/19/24	1155		5	X		X																			
3	GS15	WT	G	1/19/24	1200		5	X		X																			
4	GS21	WT	G	1/19/24	1240		5	X		X																			
5	GS45	WT	G	1/19/24	1303		5	X		X																			
6																													
7																													
8																													
9																													
10																													
11																													
12																													
13																													
14																													
15																													
16																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
DC-24Q1 Rev 0		1/19/24	1402		1/19/24	1402	3.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Pemberton

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 01/19/24

HA03433

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:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911 Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samuel.a.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	WT	G	1/24/24	1456		4	2		2																		
2	WT	G	1/24/24	1129	5	5	2		3																		
3	WT	G	1/24/24	1148	4	2			2																		
4	WT	G	1/24/24	1307	4	2			2																		
5	WT	G	1/24/24	1404	4	2			2																		
6	WT	G	1/24/24	1435	11	11	2	6	3																		
7	WT	G	1/24/24	1254		11	2	6	3																		
8	WT	G	1/24/24	1210		11	2	6	3																		
9	WT	G	1/24/24	1318		5	2		3																		
10	WT	G	1/24/24	1143		5	2		3																		
11			1/24/24	1505		11	2	6	3																		
12																											
13																											
14																											
15																											
16																											

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
DC-24Q1 Rev 0		1/24/24	1615							
					1/24/24	1613	2.6	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Logan Ross

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 1/24/24

Confidential

HA03720

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	BAR2	WT	G	1/25/24	1439		4	X		X																		
2	BAR3				1325		4	X		X																		
3	BAR3L				1219		4	X		X																		
4	GbOL			12/5/24 due	~~1332~~ 1332		5	X		X																		
5	GbOS				1222		5	X		X																		
6	GbZL			1/25/24 due	~~1407~~ 1515		5	X		X																		
7	GbZS				1440		5	X		X																		
8	Gb5S				1120		4	X		X																		
9	GbZS				1252		4	X		X																		
10	OR030				1451		11	X	X	X																		
11	OM21				1340		11	X	X	X																		
12	OM220				1440		11	X	X	X																		
13	OM230				1236		11	X	X	X																		
14	EB5				1515		11	X	X	X																		
15	EB6				1530		5	X		X																		
16																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
DC-24Q1 Rev 0	Austin Moore / Pace	01/25/24	1633		1/25/24	1633

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
5.8	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: AM, AP, JR, AW, JB

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 01/25/24

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

HA03941

CHAIN-OF-CUSTODY / Analytical Request Document

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

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Page: of

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911
Fax:	
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206			Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	BA01	WT	G	1/26/24	1222		4	X		X																			
2	BA01 Dup	WT	G	1/26/24	1222		4	X		X																			
3	BA04	WT	G	1/26/24	1338		4	X		X																			
4	BA06	WT	G	1/26/24	1453		4	X		X																			
5	G125	WT	G	1/26/24	1247		3	X		X																			
6	G155	WT	G	1/26/24	1150		3	X		X																			
7	G532	WT	G	1/26/24	1140		4	X		X																			
8	G535	WT	G	1/26/24	1240		4	X		X																			
9	G575	WT	G	1/26/24	1424		5	X		X																			
10	L103	WT	G	1/26/24	1059		2	X		X																			
11	OMC7	WT	G	1/26/24	1354		11	X	X	X																			
12	OR11	WT	G	1/26/24	1210		11	X	X	X																			
13	OR11 Dup	WT	G	1/26/24	1210		11	X	X	X																			
14	OR20	WT	G	1/26/24	1300		11	X	X	X																			
15	P374	WT	G	1/26/24	1403		2	X		X																			
16	Equipment Blank	WT	G	1/26/24	1430		11	X	X	X																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
DC-24Q1 Rev 0		1/26/24	1604		1/26/24	1604	5.8 / X / N / Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Pemberton

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 01/26/24

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Section A — **Required** Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	**10 day**

Section B — **Required** Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C — Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES **GROUND WATER** DRINKING WATER

UST RCRA OTHER

Site Location **STATE:** IL

Section D — **Required** Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206			Residual Chlorine (Y/N)	Project No./ Lab I.D.
																													RADS HA04059 1A2L
1	GO25	WT	G	1/29/24	1433		4	X		X																			
2	G55L	WT	G	1/29/24	1117		4	X		X																			
3	G67L	WT	G	1/29/24	1305		4	X		X																			
4	OM12	WT	G	1/29/24	1300		4	X	X	X																			
5	OM16	WT	G	1/29/24	1150		11	X	X	X																			
6	~~OR135~~ OR135	WT	G	1/29/24	1500		11	X	X	X																			
7	OR19	WT	G	1/29/24	1400		11	X	X	X																			
8	EB 8	WT	G	1/29/24	1515		11	X	X	X																			
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		1/29/24	1629							
					1/29/24	1629	5.4	Y	Y	Y

	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Lambertar

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 01/29/24

COURIER

HA042-94

~~HA042-77~~

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 10

Section A Required Client Information

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / , -)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	GSIL	WT	G	1/30/24	1225		4	X		X																	
2	GSIL Dup	WT	G	1/30/24	1225		4	X		X																	
3	GS4L	WT	G	1/30/24	1427		5	X		X																	
4	OM24D	WT	G	1/30/24	1405		11	X	X	X																	
5	OM24D Dup	WT	G	1/30/24	1405		11	X	X	X																	
6	OM25S	WT	G	1/30/24	1506		11	X	X	X																	
7	OB02	WT	G	1/30/24	1531		11	X	X	X																	
8	OB13D	WT	G	1/30/24	1136		11	X	X	X																	
9	EB 4	WT	G	1/30/24	1555		11	X	X	X																	
10	EB 10	WT	G	1/30/24	1555		12	X	X	X																	
11																											
12																											
13																											
14																											
15																											
16																											

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
DC-24Q1 Rev 0		1/30/24	1703							
					1/30/24	1703	6.8	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Pemberton

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 01/30/24

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ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

HA04485

HA04483 SAB

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 10

ATTACHMENT B:
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206			Residual Chlorine (Y/N)	Project No./ Lab I.D.
	Requested Analysis Filtered (Y/N)																													
1	GS6L	WT	G	1/31/24	1430		4	X		X																				
2	GS7L	WT	G	1/31/24	1338		4	X		X																				
3	GS8L	WT	G	1/31/24	1248		4	X		X																				
4	GS9L	WT	G	1/31/24	1200		4	X		X																				
5	GS9L DUP	WT	G	1/31/24	1200		4	X		X																				
6	GB5L	WT	G	1/31/24	1500		4	X		X																				
7	PBO	WT	G	1/31/24	1050		4	X		X																				
8	EB 11	WT	G	1/31/24	1515		6	X		X																				
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		1/31/24	1624		1/31/24	1624	
							4.5

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Henderson

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 01/31/24

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

HB000520 RADs

CHAIN-OF-CUSTODY / Analytical Request Document

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Page 1 of 10

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Section A Required Client Information

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton IL 61520
Email To:	
Phone:	(217) 753-8911
Fax:	
Requested Due Date/TAT:	10 day

Section B Required Project Information

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / -)
Sample IDs MUST BE UNIQUE

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	WT	G	2/5/24	1440		4	X		X																		
2	WT	G	2/5/24	1329		4	X		X																		
3	WT	G	2/5/24	1127		11	X	X	X																		
4	WT	G	2/5/24	1200		1			X																		
5	WT	G	2/5/24	1500		12	X	X	X																		
6																											
7																											
8																											
9																											
10																											
11																											
12																											
13																											
14																											
15																											
16																											

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
DC-24Q1 Rev 0		2/5/24	1526		2/5/24	16:30	2.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Amaran

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 02/05/24

COLLECTOR

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HB00823 DT
- RADS ONLY -

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 10

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845.205

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 Fax:	Project Name:		Project Manager:	
Requested Due Date/TAT:	10 day	Project Number:	2285	Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Requested Analysis Filtered (Y/N)

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N ↓: DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	OMO1	WT	G	2/6/24	1230		11	X	X	X																	
2	OR06A	WT	G	2/6/24	1153		11	X	X	X																	
3	POSL	WT	G	2/6/24	1326		1	X																			
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											
13																											
14																											
15																											
16																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
DC-24Q1 Rev 0		2/6/24	1701		2/6/24	1701	6.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: AP AW
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 02/06/24

COOL WORK

Confidential

HDO1644

CHAIN-OF-CUSTODY / Analytical Request Document

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ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 1, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN (BAB)
DC-845-205

Section A Required Client Information:

Company:	Vistra Corp-Duck Creek
Address:	17751 North Cilco Rd
	Canton, IL 61520
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	10 day

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Sam Davies: samantha.davies@vistracorp.com
	Daryl Johnson: Robert.Johnson@vistracorp.com
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Brian Voelker
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DC-257-203	DC-257-204	DC-257-205	DC-811-204	DC-845-201-202	DC-845-203	DC-845-205	DC-CLOSURE-201-202	DC-SUP-000	DC-WPCP-203-206		Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	G512	WT	G	2/8/24	1110		1																						
2	G642	WT	G	2/8/24	1218		1																						
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													
13																													
14																													
15																													
16																													

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
DC-24Q1 Rev 0	Joseph R Reed	2/8/24	1843		2/8/24	1847	9.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Joe Reed					
SIGNATURE of SAMPLER:	Joseph R Reed	DATE Signed (MM/DD/YY): 2/8/24				

1 x 2.5L HNO3

Confidential

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 1, 2024
845 QUARTERLY REPORT
DUCK 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	E004	Antimony, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.003	0.003
BA01	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/26/24	12	25	CI around mean	0.00035	0.0240
BA01	UA	E004	Barium, total	mg/L	02/05/16 - 01/26/24	12	0	CI around mean	0.133	0.480
BA01	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.00210
BA01	UA	E004	Boron, total	mg/L	02/05/16 - 01/26/24	24	0	CI around median	0.021	7.90
BA01	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.001
BA01	UA	E004	Chloride, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	11	700
BA01	UA	E004	Chromium, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.004	0.0730
BA01	UA	E004	Cobalt, total	mg/L	02/05/16 - 01/26/24	12	83	CI around median	0.002	0.0300
BA01	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/26/24	24	58	CI around median	0.25	0.461
BA01	UA	E004	Lead, total	mg/L	02/05/16 - 01/26/24	12	42	CI around geomean	0.00137	0.0420
BA01	UA	E004	Lithium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.02	0.0680
BA01	UA	E004	Mercury, total	mg/L	02/05/16 - 01/26/24	12	92	Most recent sample	0.0002	0.004
BA01	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/26/24	12	0	CI around geomean	0.00128	0.00550
BA01	UA	E004	pH (field)	SU	02/05/16 - 01/26/24	28	0	CI around median	6.8/7.0	6.4/7.5
BA01	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/26/24	12	0	CI around mean	0.454	7.27
BA01	UA	E004	Selenium, total	mg/L	02/05/16 - 01/26/24	11	100	All ND - Last	0.001	0.00230
BA01	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/26/24	24	0	CB around linear reg	136	890
BA01	UA	E004	Thallium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.001
BA01	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/26/24	24	0	CI around mean	538	2,590
BA02	UA	E004	Antimony, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.003	0.003
BA02	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/25/24	12	8	CI around mean	0.00197	0.0240
BA02	UA	E004	Barium, total	mg/L	02/05/16 - 01/25/24	12	0	CI around mean	0.193	0.480
BA02	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/25/24	12	92	CI around median	0.001	0.00210
BA02	UA	E004	Boron, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	0.0469	7.90
BA02	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.001
BA02	UA	E004	Chloride, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	9.3	700

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 1, 2024
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DUCK 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	E004	Chromium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.004	0.0730
BA02	UA	E004	Cobalt, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.002	0.0300
BA02	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/25/24	24	79	CI around median	0.25	0.461
BA02	UA	E004	Lead, total	mg/L	02/05/16 - 01/25/24	12	75	CI around median	0.001	0.0420
BA02	UA	E004	Lithium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.02	0.0680
BA02	UA	E004	Mercury, total	mg/L	02/05/16 - 01/25/24	12	92	CI around median	0.0002	0.004
BA02	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/25/24	12	0	CI around mean	0.00398	0.00550
BA02	UA	E004	pH (field)	SU	02/05/16 - 01/25/24	25	0	CI around median	6.9/7.2	6.4/7.5
BA02	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/25/24	12	0	CI around mean	0.421	7.27
BA02	UA	E004	Selenium, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.001	0.00230
BA02	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	11.4	890
BA02	UA	E004	Thallium, total	mg/L	02/05/16 - 01/25/24	12	92	Most recent sample	0.001	0.001
BA02	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	487	2,590
BA02L	UA/PMP	E004	Antimony, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.003	0.003
BA02L	UA/PMP	E004	Arsenic, total	mg/L	04/14/21 - 02/05/24	10	0	CI around mean	0.0104	0.0240
BA02L	UA/PMP	E004	Barium, total	mg/L	04/14/21 - 02/05/24	10	0	CI around median	0.046	0.480
BA02L	UA/PMP	E004	Beryllium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.00210
BA02L	UA/PMP	E004	Boron, total	mg/L	04/14/21 - 02/05/24	11	0	CI around mean	0.0755	7.90
BA02L	UA/PMP	E004	Cadmium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.001
BA02L	UA/PMP	E004	Chloride, total	mg/L	04/14/21 - 02/05/24	11	0	CB around linear reg	0.826	700
BA02L	UA/PMP	E004	Chromium, total	mg/L	04/14/21 - 02/05/24	10	90	CI around median	0.004	0.0730
BA02L	UA/PMP	E004	Cobalt, total	mg/L	04/14/21 - 02/05/24	10	80	CI around median	0.002	0.0300
BA02L	UA/PMP	E004	Fluoride, total	mg/L	04/14/21 - 02/05/24	11	0	CI around median	0.445	0.461
BA02L	UA/PMP	E004	Lead, total	mg/L	04/14/21 - 02/05/24	10	70	CI around median	0.001	0.0420
BA02L	UA/PMP	E004	Lithium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.02	0.0680
BA02L	UA/PMP	E004	Mercury, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.0002	0.004
BA02L	UA/PMP	E004	Molybdenum, total	mg/L	04/14/21 - 02/05/24	10	0	CI around mean	0.00704	0.00550

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 1, 2024
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DUCK 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	E004	pH (field)	SU	04/14/21 - 02/05/24	11	0	CI around mean	7.2/7.6	6.4/7.5
BA02L	UA/PMP	E004	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 02/05/24	9	0	CI around mean	0.148	7.27
BA02L	UA/PMP	E004	Selenium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.00230
BA02L	UA/PMP	E004	Sulfate, total	mg/L	04/14/21 - 02/05/24	11	9	CI around geomean	1.75	890
BA02L	UA/PMP	E004	Thallium, total	mg/L	04/14/21 - 02/05/24	10	100	All ND - Last	0.001	0.001
BA02L	UA/PMP	E004	Total Dissolved Solids	mg/L	04/14/21 - 02/05/24	11	0	CI around mean	198	2,590
BA03	UA	E004	Antimony, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.003	0.003
BA03	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.001	0.0240
BA03	UA	E004	Barium, total	mg/L	02/05/16 - 01/25/24	12	0	CB around linear reg	0.111	0.480
BA03	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.00210
BA03	UA	E004	Boron, total	mg/L	02/05/16 - 01/25/24	24	0	CI around mean	0.0256	7.90
BA03	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.001
BA03	UA	E004	Chloride, total	mg/L	02/05/16 - 01/25/24	24	0	CI around median	5.8	700
BA03	UA	E004	Chromium, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.004	0.0730
BA03	UA	E004	Cobalt, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.002	0.0300
BA03	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/25/24	24	54	CI around median	0.25	0.461
BA03	UA	E004	Lead, total	mg/L	02/05/16 - 01/25/24	12	67	CI around median	0.001	0.0420
BA03	UA	E004	Lithium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.02	0.0680
BA03	UA	E004	Mercury, total	mg/L	02/05/16 - 01/25/24	12	83	CI around median	0.0002	0.004
BA03	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/25/24	12	8	CB around linear reg	-0.00104	0.00550
BA03	UA	E004	pH (field)	SU	02/05/16 - 01/25/24	26	0	CB around linear reg	6.7/7.1	6.4/7.5
BA03	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/25/24	12	0	CI around mean	0.579	7.27
BA03	UA	E004	Selenium, total	mg/L	02/05/16 - 01/25/24	12	42	CI around median	0.001	0.00230
BA03	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	14.1	890
BA03	UA	E004	Thallium, total	mg/L	02/05/16 - 01/25/24	12	100	All ND - Last	0.001	0.001
BA03	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/25/24	24	0	CB around linear reg	438	2,590
BA03L	UA/PMP	E004	Antimony, total	mg/L	04/14/21 - 01/25/24	12	100	All ND - Last	0.003	0.003

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 1, 2024
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DUCK 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	E004	Arsenic, total	mg/L	04/14/21 - 01/25/24	12	75	CI around median	0.001	0.0240
BA03L	UA/PMP	E004	Barium, total	mg/L	04/14/21 - 01/25/24	12	0	CI around median	0.12	0.480
BA03L	UA/PMP	E004	Beryllium, total	mg/L	04/14/21 - 01/25/24	12	92	CI around median	0.001	0.00210
BA03L	UA/PMP	E004	Boron, total	mg/L	04/14/21 - 01/25/24	13	0	CB around T-S line	0.22	7.90
BA03L	UA/PMP	E004	Cadmium, total	mg/L	04/14/21 - 01/25/24	12	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E004	Chloride, total	mg/L	04/14/21 - 01/25/24	13	0	CI around mean	18.5	700
BA03L	UA/PMP	E004	Chromium, total	mg/L	04/14/21 - 01/25/24	12	42	CI around median	0.004	0.0730
BA03L	UA/PMP	E004	Cobalt, total	mg/L	04/14/21 - 01/25/24	12	83	CI around median	0.002	0.0300
BA03L	UA/PMP	E004	Fluoride, total	mg/L	04/14/21 - 01/25/24	13	77	CI around median	0.25	0.461
BA03L	UA/PMP	E004	Lead, total	mg/L	04/14/21 - 01/25/24	12	50	CI around median	0.001	0.0420
BA03L	UA/PMP	E004	Lithium, total	mg/L	04/14/21 - 01/25/24	12	92	CI around median	0.02	0.0680
BA03L	UA/PMP	E004	Mercury, total	mg/L	04/14/21 - 01/25/24	12	83	CI around median	0.0002	0.004
BA03L	UA/PMP	E004	Molybdenum, total	mg/L	04/14/21 - 01/25/24	12	33	CI around median	0.001	0.00550
BA03L	UA/PMP	E004	pH (field)	SU	04/14/21 - 01/25/24	13	0	CI around mean	6.7/6.9	6.4/7.5
BA03L	UA/PMP	E004	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 01/25/24	11	0	CI around mean	0.181	7.27
BA03L	UA/PMP	E004	Selenium, total	mg/L	04/14/21 - 01/25/24	12	92	CI around median	0.001	0.00230
BA03L	UA/PMP	E004	Sulfate, total	mg/L	04/14/21 - 01/25/24	13	0	CB around linear reg	374	890
BA03L	UA/PMP	E004	Thallium, total	mg/L	04/14/21 - 01/25/24	12	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E004	Total Dissolved Solids	mg/L	04/14/21 - 01/25/24	13	0	CI around median	990	2,590
BA04	UA	E004	Antimony, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.003	0.003
BA04	UA	E004	Arsenic, total	mg/L	02/05/16 - 01/26/24	12	83	CI around median	0.001	0.0240
BA04	UA	E004	Barium, total	mg/L	02/05/16 - 01/26/24	12	0	CI around mean	0.1	0.480
BA04	UA	E004	Beryllium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.00210
BA04	UA	E004	Boron, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	0.3	7.90
BA04	UA	E004	Cadmium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.001	0.001
BA04	UA	E004	Chloride, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	38.6	700
BA04	UA	E004	Chromium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.004	0.0730

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 1, 2024
845 QUARTERLY REPORT
DUCK 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	E004	Cobalt, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.002	0.0300
BA04	UA	E004	Fluoride, total	mg/L	02/05/16 - 01/26/24	24	25	CI around mean	0.275	0.461
BA04	UA	E004	Lead, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.001	0.0420
BA04	UA	E004	Lithium, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.02	0.0680
BA04	UA	E004	Mercury, total	mg/L	02/05/16 - 01/26/24	12	100	All ND - Last	0.0002	0.004
BA04	UA	E004	Molybdenum, total	mg/L	02/05/16 - 01/26/24	12	0	CI around geomean	0.00182	0.00550
BA04	UA	E004	pH (field)	SU	02/05/16 - 01/26/24	25	0	CB around T-S line	6.6/6.8	6.4/7.5
BA04	UA	E004	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 01/26/24	12	0	CI around mean	0.429	7.27
BA04	UA	E004	Selenium, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.001	0.00230
BA04	UA	E004	Sulfate, total	mg/L	02/05/16 - 01/26/24	24	0	CB around T-S line	147	890
BA04	UA	E004	Thallium, total	mg/L	02/05/16 - 01/26/24	12	92	CI around median	0.001	0.001
BA04	UA	E004	Total Dissolved Solids	mg/L	02/05/16 - 01/26/24	24	0	CB around linear reg	690	2,590

Notes:
Lower Confidence Limit (LCL) or Upper Confidence Limit (UCL) exceeded the statistical background value
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