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BY ELECTRONIC MAIL

January 31, 2025

Ms. Shannon George, P.G.
Virginia Department of Environmental Quality – Valley Regional Office
Attn: Division of Land Protection and Revitalization
4411 Early Road
Harrisonburg, Virginia 22801
shannon.george@deq.virginia.gov

RE: Bremo Power Station West Pond, Solid Waste Permit No. 618:
2024 Annual Groundwater Monitoring and Corrective Action Report

Dear Ms. George:

In accordance with Solid Waste Permit No. 618 Module XI.J.1.a, Virginia Electric and Power Company (Dominion Energy) is providing the attached 2024 Annual Groundwater Monitoring Report for the Bremo Power Station West Pond. The 2024 second semi-annual groundwater sampling event was conducted on August 26-29, 2024, and analytical results were received on November 8, 2024.

If you have any questions regarding this report, please contact Kelly Hicks at (804) 273-4903 or via email at kelly.a.hicks@dominionenergy.com.

Sincerely,

Dennis A. Slade
Manager, Environmental

Attachments

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2024 Annual Groundwater Monitoring Report

Bremo Power Station
West Pond
Solid Waste Permit No. 618

Prepared for:

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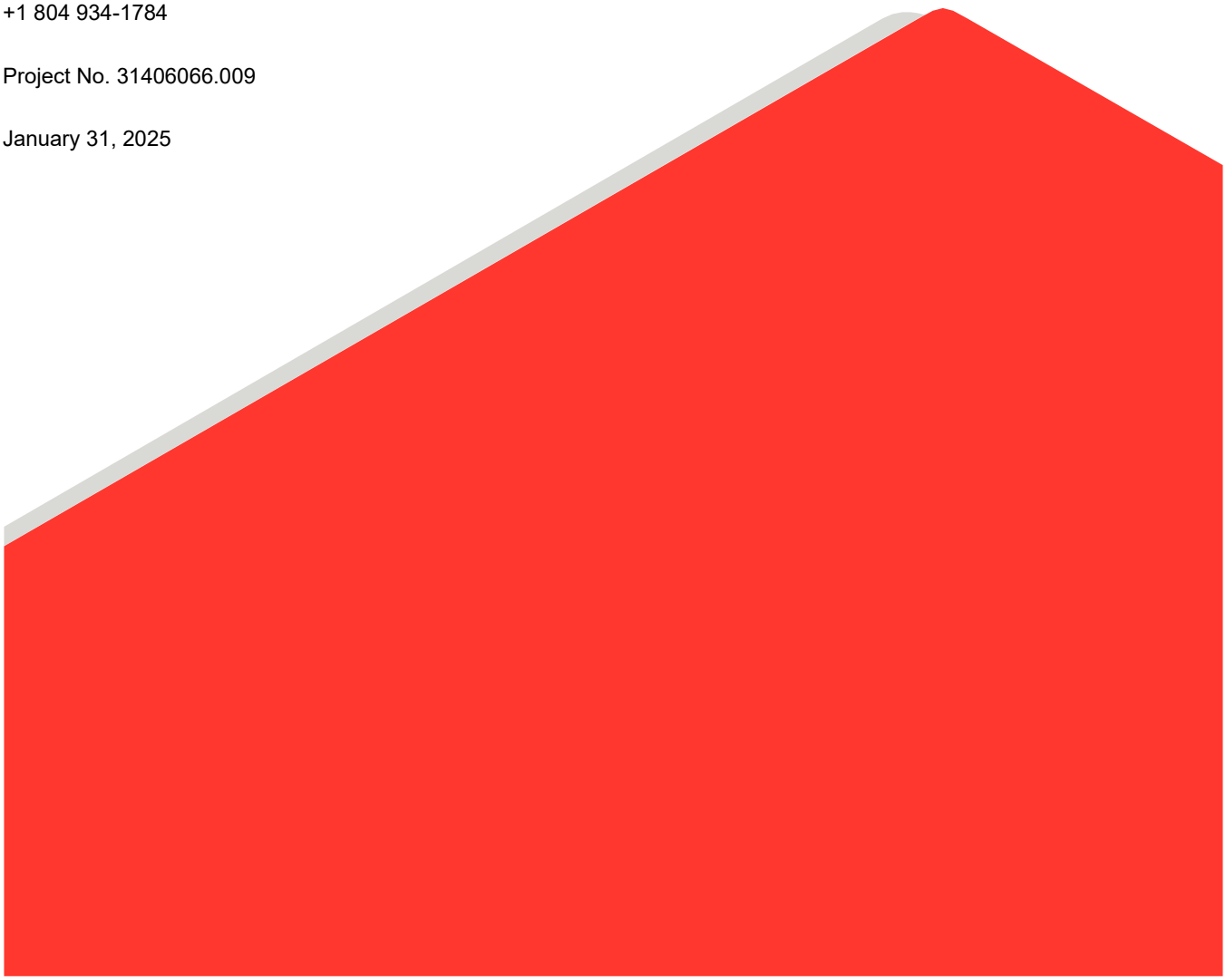
January 31, 2025



EXECUTIVE SUMMARY

The collection, analysis, and evaluation of semi-annual groundwater monitoring data in 2024 at the West Pond (Unit) at the Bremo Power Station (Station) resulted in the following determinations for the calendar year:

- The overall direction of groundwater flow at the Unit generally follows topography and flows south at an estimated horizontal velocity of 32 to 33 feet/year in the alluvium, 145 to 153 feet/year in the slate/phyllite bedrock, and at an estimated horizontal velocity of 347 to 369 feet/year in the underlying gneiss bedrock. This flow rate is consistent with historical calculations of the groundwater flow rate at the Unit;
- The monitoring well network functioned as designed and had the ability to determine the Unit's impact on the quality of the groundwater in the uppermost aquifer;
- Monitoring results from the first and second semi-annual events were consistent with historical data and did not indicate any significant changes in groundwater quality;
- Value-to-value comparison indicated that there were detections present at statistically significant concentrations above background for barium, boron, calcium, chloride, cobalt, copper, fluoride, nickel, radium 226 and 228 (combined), sulfate, and total dissolved solids in one (1) or more compliance wells during 2024;
- Value-to-value comparison indicated that there were concentrations above the established downgradient groundwater protection standards (GPS) for nickel in downgradient well MW-13 during the first semi-annual event and in downgradient well MW-31 during both semi-annual events during 2024; and
- A Corrective Action Plan and associated Corrective Action Monitoring Plan were submitted to DEQ on December 23, 2024.

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1.0 INTRODUCTION

This *2024 Annual Groundwater Monitoring Report* (Report) was prepared by WSP USA Inc. (WSP) on behalf of Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy) for the West Pond (Unit) at the Bremo Power Station (Station). Historically, the Station operated the Unit as an unlined surface impoundment for management of Coal Combustion Residuals (CCR) generated at the Station. The Unit was considered an inactive CCR surface impoundment and was subject to the groundwater monitoring requirements in Title 40 Code of Federal Regulations (CFR) Part 257 Subpart D, Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments (CCR Rule). On December 3, 2023, Dominion Energy placed the Closure Completion Certification for the Unit in the operating record; consequently, the Unit is no longer regulated under the CCR Rule.

The Unit remains subject to regulation under the Virginia Solid Waste Management Regulations (VSWMR; Title 9, Virginia Administrative Code, Agency 20, Chapter 81 *et seq*.) and Solid Waste Permit (SWP) No. 618 issued by the Virginia Department of Environmental Quality (DEQ) on June 5, 2019 (DEQ, 2019). The SWP requires the submission of an Annual Report by January 31st of each calendar year or within 120 days of completing the laboratory analyses for the second semi-annual event of the previous year, whichever occurs first. A completed copy of the DEQ's annual report checklist is presented in Appendix A.

WSP has prepared this Report in accordance with the SWP and VSWMR requirements. Specifically, this Report documents the status of the groundwater monitoring program for the Unit, summarizes key actions completed, describes issues encountered and actions to resolve identified issues, and key project activities for the upcoming year. More specifically, this Report describes the performance of the Modified Assessment Monitoring Program (AMP) consistent with the Unit's SWP, activities performed to comply with the Unit's SWP requirements, and the progression of future sampling activities pursuant to the Unit's SWP.

2.0 SITE DESCRIPTION

2.1 Site Background

The Bremo Power Station is owned and maintained by Dominion Energy. Power generation activities at the Station were initiated in the late 1930s. In 2014, the Station converted from a coal-fired power plant to a natural gas-fired power plant and was placed in cold storage in 2018. Decommissioning of the Station commenced in 2020 and was completed in 2023.

CCR from historical power generation activities was stored in the three on-site CCR surface impoundments (East Pond, North Pond, and West Pond). The West Pond covers approximately 17 acres. Placement of CCR into the Unit began in the early 1980s, using a wet sluice process, and ceased after the conversion to a natural gas-fired plant. No newly generated CCR has been placed in this Unit since the conversion to a gas-fired plant. The CCR materials in the Unit were moved to the North Pond as part of the closure by removal process which concluded in 2020. The West Pond is currently being used as a storage basin for filtered dewatering water from the North Pond.

2.2 Physical Setting

The Station is located at 1038 Bremo Road, Bremo Bluff, Virginia (Fluvanna County) on the east side of State Route 15 (James Madison Highway) and north of the James River. A site location map is presented as Figure 1. The Station property consists of wooded, open, and developed land just north of the James River. The Station's northern, eastern, and western boundaries are bordered by primarily undeveloped parcels, and the Station is bordered to the south by a CSX rail line and the James River. Land use surrounding the Station is classified as "A-1 Agricultural," and consists of undeveloped wooded and agricultural properties within a rural residential setting.

2.3 Geology and Hydrogeology

A summary of the geology and hydrogeology for the Station is presented in the following sections.

2.3.1 Geology

The Station is in the central part of the Piedmont physiographic province on the Chopawamsic Terrane (Bailey and Owens, 2012; VDMR, 1993). The surrounding area is characterized by undulating terrain incised by a number of dendritically patterned, intermittent and perennial stream channels flowing in a generally southern direction towards the James River. The Piedmont physiographic province is characterized by igneous and metamorphic rock formations of Precambrian (Catoctin Formation) to Ordovician geologic age. The province consists of a mosaic of accreted terrain and has been folded and faulted near the end of Ordovician time.

Site observations and regional mapping indicate that portions of the Station near the James River are underlain by unconsolidated Quaternary-age alluvial sediments. Locally, a basal stratum is observed to overlie competent

bedrock or saprolite and is generally characterized as a gravel or cobble deposit of variable thickness. The gravel is in turn overlain by fine-grained sediments that appear to be associated with fluvial overbank deposits.

2.3.2 Hydrogeology

The uppermost aquifer beneath the Unit is unconfined and found in the surficially exposed overburden (alluvium) and bedrock (slate and gneiss). Locally, the groundwater flow direction in the uppermost aquifer is from the north to the south across the Unit towards the James River.

Locally, the fractured bedrock aquifer is used as a source of potable water for some properties. As of this time of this Report, WSP is not aware of any downgradient properties in the immediate vicinity of the Unit that use the bedrock aquifer as a source of potable water.

2.4 Groundwater Monitoring History

Key dates for the groundwater monitoring program are summarized below:

- Historically, groundwater at the Station was monitored under Virginia Pollutant Discharge Elimination System (VPDES) Permit (Permit No. VA0004138). Upon issuance of SWP No. 618, groundwater monitoring was no longer required for this permit.
- The DEQ-issued SWP No. 618 on June 5, 2019. The SWP initiated the Modified Assessment Monitoring Program (AMP) for groundwater and includes provisions for closure, groundwater monitoring, and surface water monitoring requirements for the Unit;
- The *West Ash Pond Facility Background Determination Report* (Golder, 2019) was submitted to the DEQ on August 15, 2019 (revised November 2019). The report included proposed SWP Groundwater Protection Standards (GPS);
- Received a letter from DEQ on March 12, 2020, approving the November 2019 proposed background-based SWP GPS for the Unit;
- An Assessment of Corrective Measures (ACM) under VSWMR was initiated for boron on August 12, 2020, with the notification of initiation submitted to the DEQ on the same day;
- Completed the VSWMR Nature and Extent Study (NES) and ACM for boron and submitted it to the DEQ on November 10, 2020 (Golder, 2020a; Golder, 2020b);
- The *2021 Updated Facility Background Determination Report* (Golder, 2021a) was submitted to the DEQ on March 3, 2021. The report included proposed updated SWP GPS which were approved by DEQ on September 7, 2021;
- The *Facility Background Determination Report Addendum* (Golder, 2021b) was submitted to the DEQ on July 30, 2021. The report included proposed the background concentration for hexavalent chromium pursuant to Section X.I.G.3 of the SWP;
- The *Alternate Source Demonstration for Cobalt – MW-13* (Golder, 2021c) was submitted to the DEQ on August 12, 2021. DEQ approval was received on March 25, 2022;

- Submitted an ACM Addendum to include public participation documentation to the DEQ on January 12, 2022;
- The Station was issued a minor modification to SWP No. 618 on March 3, 2023, allowing the use of alternate GPS for cobalt, lead, lithium, and molybdenum as established in the 2018 amendment to the CCR Rule. In addition, the permit modification allows for the use of an alternate GPS for boron per the Virginia Unified Risk Assessment Model (VURAM);
- The *2023 Updated Facility Background Determination Report* (WSP, 2023) was submitted to the DEQ on March 2, 2023. The report included updated SWP GPS which were approved by DEQ on May 26, 2023;
- Conducted the 2024 first semi-annual Modified AMP compliance event February 12-14, 2024, and completed analysis on April 1, 2024, pursuant to the Unit's SWP;
- Completed a revised NES and ACM Report (WSP, 2024a, 2024b) on April 25, 2024, in response to a SWP GPS exceedance for nickel;
- Notification of first semi-annual 2024 SWP GPS exceedances was submitted to the DEQ on May 15, 2024;
- Received a letter from DEQ on June 28, 2024, indicating that no further revisions to the NES/ACM reports were required and directed Dominion Energy to move forward with preparation of a Corrective Action Plan in accordance with the timeframes of 9VAC20-81-260.C.3.d;
- Submitted the 2024 First Semi-Annual Groundwater Monitoring Report to the DEQ on July 30, 2024, in accordance with the SWP;
- Conducted the 2024 second semi-annual Modified AMP compliance event on August 26-29, 2024, and completed analysis on November 8, 2024, pursuant to the Unit's SWP. A resampling event was conducted on November 14, 2024, due to hold time exceedances of hexavalent chromium samples;
- Notification of second semi-annual 2024 SWP GPS exceedances was submitted to the DEQ on December 20, 2024; and
- Submitted a Corrective Action Plan and Corrective Action Monitoring Plan to DEQ on December 23, 2024.

2.5 Variances

The Unit currently does not have any variance related to the groundwater monitoring programs.

2.6 Monitoring Well Network

The updated GMP (Golder, 2021a) details the design of the Unit's SWP groundwater monitoring network. As presented in the GMP, the monitoring network is comprised of four (4) upgradient wells (MW-1, MW-11, MW-32S, and MW-32D) and six (6) downgradient monitoring wells (MW-12, MW-13, MW-31, MW-37, MW-39S, and MW-39D) designed to monitor the uppermost aquifer beneath the Unit. The groundwater monitoring well locations relative to the Unit are shown on Figure 2.

2.6.1 Monitoring Well Installation and Decommissioning Activities

No groundwater monitoring wells associated with the Unit's compliance monitoring network were installed or decommissioned in calendar year 2024.

2.6.2 Annual Review of Monitoring Network

Wells were inspected during each sampling event and were determined to be functioning appropriately, and no wells require replacement.

3.0 HYDROLOGIC EVALUATION

3.1 Potentiometric Surface Evaluation

The purpose of this evaluation is to determine the groundwater flow direction beneath the Unit by generating potentiometric surface contour maps using groundwater elevations from the compliance well network. The maps are used to determine if the monitoring wells are properly located to monitor the groundwater at the Unit. Historical static water level data for the Unit are summarized in Appendix B.

The Groundwater Potentiometric Surface Map presented as Figure 2 was prepared using static water level data obtained during the first semi-annual 2024 Modified AMP compliance event on February 12, 2024. The Groundwater Potentiometric Surface Map presented as Figure 3 was prepared using static water level data obtained during the second semi-annual 2024 Modified AMP compliance event on August 26, 2024. The interpreted data indicates that the groundwater gradient and flow direction remain consistent (south) with previous monitoring events. Consequently, the groundwater monitoring network continues to adequately monitor the uppermost aquifer in accordance with provisions of the VSWMR (9VAC20-81-250.A.3).

3.2 Groundwater Flow Rate Calculation

The rate and direction of groundwater flow within the uppermost aquifer beneath the Unit was determined after each semi-annual compliance sampling event. Appendix C presents the equations used to calculate the approximate horizontal rate of groundwater flow in the uppermost aquifer beneath the Unit during the two compliance events conducted in 2024. As presented, the average groundwater flow rate in the uppermost aquifer beneath the Unit is approximately 32 to 33 feet per year for the alluvium, 145 to 153 feet per year in the slate/phyllite bedrock, and approximately 347 to 369 feet per year for the gneiss bedrock. The resulting groundwater flow rates are consistent with previous results based on the current Site Conceptual Model.

With respect to the variable groundwater flow rates observed between the alluvium and underlying bedrock, the estimated average hydraulic conductivity values for the alluvium and underlying bedrock are based on the geometric mean of the assorted slug testing results that have been generated for the lithologies at the Unit as outlined in the GMP submitted to DEQ on January 5, 2021 (Golder, 2021a). As presented in the updated 2021 GMP, the average hydraulic conductivity for the alluvium is currently estimated at 1.11E-05 feet per second [ft/s; range of 6.14E-07 ft/s to 6.59E-05 ft/s is currently observed)]. The average hydraulic conductivity for the slate/phyllite bedrock is currently estimated at 6.35E-06 ft/s with significant variability observed in the results on a well-by-well basis (range of 1.46E-06 ft/s to 2.66E-05 ft/s is currently observed). The average hydraulic conductivity for the lower gneiss bedrock is currently estimated at 1.53E-05 ft/s with significant variability observed in the results on a well-by-well basis (range of 1.56E-08 ft/s to 5.09E-04 ft/s is currently observed). These average values are consistent with published values for fractured igneous and metamorphic rocks as well as clayey/silty soils (Freeze, 1979; Heath, 1983). Thus, the estimated average hydraulic conductivity values for the alluvium and underlying bedrock

are close. Therefore, the difference between the calculated groundwater flow rates between the alluvium and underlying fractured gneiss bedrock is primarily associated with the estimated whole-rock porosity that is assumed for the fractured bedrock 2.5% versus the higher effective porosity that is assumed for the physically and chemically weathered overlying alluvium (20%). The estimated whole rock porosity is consistent with field observations for recovered rock cores at the Station [rock cores generally have a very high rock quality designations (RQDs)], as well as published effective porosity values for fractured rock (Barari, 1985; Fetter, 1988). While a higher flow rate is generally calculated for the bedrock due to fracture flow, the total volume of water flux in the alluvium and fractured bedrock on a cross-sectional flow area basis are essentially the same since the flow cross-sectional area is less.

3.3 Annual Review of Monitoring Network

Based on this evaluation and previous evaluations completed for the Unit, the Unit's permitted groundwater monitoring system as constructed continues to adequately monitor the uppermost aquifer beneath the Unit in accordance with requirements of 9VAC20-81-250.A.3 and 9VAC20-81-250.E.2.a.(2)(e).

4.0 FIELD ACTIVITIES

Compliance groundwater sampling activities that occurred during 2024 are summarized in the following sections.

4.1 First Semi-Annual 2024 Compliance Sampling Event

Pursuant to the requirements in the SWP, a semi-annual Modified AMP monitoring event was completed for the Unit for the constituents and parameters listed in Appendices III and IV of the CCR Rule and the additional constituents and parameters listed in the SWP.

During the 2024 first semi-annual Modified AMP sampling event, the compliance monitoring wells were sampled in accordance with the procedures presented in the Station's GMP. Samples collected during the first semi-annual Modified AMP event were couriered by WSP personnel on ice in secured coolers under chain of custody control to Pace Analytical, LLC (Pace) in Charlotte, North Carolina on February 13 and 14, 2024. The samples were distributed between the Asheville, North Carolina; Charlotte, North Carolina; and Mount Juliet, Tennessee locations for analysis. Pace is a Virginia Environmental Laboratory Accreditation Program (VELAP) accredited laboratories for the analyses performed as required under the federal and state regulations as outlined in the GMP and SWP. The corresponding VELAP certifications for the Pace locations are as follows: Asheville, North Carolina (#460222); Charlotte, North Carolina (#460221); and Mount Juliet, Tennessee (#110033). The field data sheets for the first semi-annual 2024 Modified AMP sampling events are included in Appendix D.1. A summary of the first semi-annual 2024 Modified AMP sampling event is presented in the following table:

Monitoring Event	Sample Date(s)	Final Laboratory Package Receipt Date
First Semi-Annual Modified AMP Event	February 12-13, 2024	April 1, 2024 (revised April 25, 2024)

4.2 Second Semi-Annual 2024 Compliance Sampling Event

Pursuant to the requirements in the SWP, a semi-annual Modified AMP monitoring event was completed for the Unit for the constituents and parameters listed Appendices III and IV of the CCR Rule and the constituents and parameters listed the SWP.

During the 2024 second semi-annual Modified AMP sampling event, the compliance monitoring wells were sampled in accordance with the procedures presented in the Station's GMP. Samples collected during the first semi-annual Modified AMP event were shipped on ice in secured coolers under chain of custody control to Pace in Charlotte, North Carolina on August 27-30, 2024. The samples were then distributed to the Charlotte, North Carolina; Asheville, North Carolina; and Mount Juliet, Tennessee locations of Pace for analysis. The field data sheets for the second semi-annual 2024 Modified AMP sampling events are included in Appendix D.2.

A hexavalent resample event was conducted on November 14, 2024, to recollect samples that were analyzed past the analytical method hold time. These samples were shipped on ice in secured coolers under chain of custody

control to Pace in Charlotte, North Carolina on November 15, 2024. The samples remained at the Charlotte, North Carolina location of Pace for analysis. The field data sheets for the resampling event are included in Appendix D.3.

A summary of the second semi-annual 2024 Modified AMP sampling event is presented in the following table:

Monitoring Event	Sample Date(s)	Final Laboratory Package Receipt Date
Second Semi-Annual Modified AMP Event	August 26-29, 2024 November 14, 2024 (Cr6+ resample)	November 8, 2024 November 21, 2024 (Cr6+ resample)

5.0 LABORATORY ANALYTICAL RESULTS

Laboratory analytical results from the sampling events conducted in 2024 are summarized in the following sections.

5.1 First Semi-Annual 2024 Modified Assessment Monitoring Program Event

Groundwater samples collected during the first semi-annual 2024 Modified AMP event were analyzed for the presence and concentrations of the constituents and parameters listed in Appendices III and IV of the CCR Rule as well as additional SWP-required constituents (VSWMR Table 3.1 metals not included in the CCR Rule, former Virginia Pollutant Discharge Elimination System [VPDES] constituents, and hexavalent chromium). The laboratory certificates of analysis and chain-of-custody forms for the sampling event are presented in Appendix E.1. A summary of the sampling data for the event is presented in Table 1.

5.2 Second Semi-Annual 2024 Modified Assessment Monitoring Program Event

Groundwater samples collected during the second semi-annual 2024 Modified AMP event were analyzed for the constituents and parameters listed in Appendices III and IV of the CCR Rule as well as additional SWP-required constituents. The laboratory certificates of analysis and chain-of-custody forms for the sampling event are presented in Appendix E.2 and E.3. A summary of the CCR sampling data for the event is presented in Table 2.

5.3 Review of Prior Detections

A summary of historically detected constituents for each well is presented in Appendix F.

6.0 GROUNDWATER EVALUATION

During 2024, groundwater samples were analyzed for constituents and parameters listed in Appendices III and IV of the CCR Rule, as well as additional SWP-required constituents. The analytical results from these 2024 sampling events are discussed in the following sections.

6.1 Ammonia

Ammonia was detected at estimated concentrations above the analytical laboratory method detection limit (MDL) in both semi-annual samples collected from downgradient well MW-12 and in the first semi-annual sample collected from downgradient well MW-13. Ammonia was detected at quantified concentrations above the analytical laboratory reporting limit (RL) in both semi-annual samples collected from MW-39D, in the first semi-annual sample collected from MW-39S, and in the second semi-annual sample collected from MW-13 at concentrations ranging from 0.11 milligrams per liter (mg/L) in the second semi-annual sample collected from MW-39D to 0.50 mg/L in the second semi-annual sample collected from MW-13.

6.2 Antimony

Antimony was not detected in 2024 samples.

6.3 Arsenic

Arsenic was not detected in 2024 samples.

6.4 Barium

Barium was detected at estimated concentrations above the MDL in both semi-annual samples collected from upgradient well MW-11. Barium was detected at quantified concentrations above the RL in the remaining 2024 samples at concentrations ranging from 5.3 micrograms per liter (µg/L) in the first semi-annual sample collected from MW-32D to 131 µg/L in the second semi-annual sample collected from MW-13.

6.5 Beryllium

Beryllium was not detected in 2024 samples.

6.6 Boron

Boron was detected at estimated concentrations above the MDL in the second semi-annual event samples collected from downgradient wells MW-13, MW-31 and at MW-39D. Boron was detected at quantified concentrations above the RL in both semi-annual samples collected from downgradient wells MW-12, MW-37 and MW-39S at concentrations ranging from 93.0 µg/L in the second semi-annual sample collected from MW-37 to 1,210 µg/L in the first semi-annual sample collected from MW-12.

6.7 Cadmium

Cadmium was detected at an estimated concentration above the MDL in the first semi-annual sample collected from downgradient well MW-13. Cadmium was not detected above the RL in 2024 samples.

6.8 Calcium

Calcium was detected at quantified concentrations above the RL in both semi-annual samples collected from each compliance well at concentrations ranging from 2,970 µg/L in the first semi-annual sample collected from upgradient well MW-1 to 52,000 µg/L in the first semi-annual sample collected from MW-13.

6.9 Chloride

Chloride was detected at an estimated concentration above the MDL in the first semi-annual sample collected from MW-39S. Chloride was detected at quantified concentrations above the RL in the remaining 2024 samples at concentrations ranging from 1.9 mg/L in the second semi-annual sample collected from MW-39S to 70.2 mg/L in the second semi-annual sample collected from MW-13.

6.10 Chromium

Chromium was detected at an estimated concentration above the MDL in the both semi-annual samples collected from upgradient well MW-32S and downgradient well MW-39S and in the first semi-annual sample collected from MW-31. Chromium was not detected above the RL in 2024 samples.

6.11 Hexavalent Chromium

Hexavalent chromium was detected at estimated concentrations above the RL in the second semi-annual samples collected from upgradient wells MW-1 and MW-11 and downgradient well MW-31. Hexavalent chromium was detected at quantified concentrations at or above the RL in the first semi-annual samples collected from upgradient wells MW-1, MW-11, and MW-32S and downgradient wells MW-31 and MW-39S and from the second semi-annual sample collected from MW-37. Hexavalent chromium concentrations ranged from 0.025 µg/L in the first semi-annual sample collected from upgradient well MW-1 to 1.6 µg/L in the second semi-annual sample collected from MW-31.

6.12 Cobalt

Cobalt was detected at estimated concentrations above the MDL in both semi-annual samples collected from upgradient well MW-11 and at downgradient well MW-39S, in the first semi-annual samples collected from MW-12 and MW-39D, and in the second semi-annual sample collected from MW-13. Cobalt was detected at quantified concentrations above the RL in both semi-annual samples collected from upgradient well MW-1 and downgradient wells MW-31 and MW-37 and in the first semi-annual sample collected from MW-13. Cobalt was detected at

concentrations ranging from 1.1 µg/L in the first semi-annual sample collected from upgradient well MW-1 to 4.8 µg/L in the second semi-annual sample collected from MW-31.

6.13 Copper

Copper was detected at estimated concentrations above the MDL in both semi-annual samples collected from upgradient well MW-11 and downgradient wells MW-37 and MW-39S and in the first semi-annual samples collected from upgradient well MW-1 and downgradient wells MW-13 and MW-39D. Copper was detected at quantified concentrations above the RL in both semi-annual samples collected from upgradient well MW-31 at concentrations of 9.4 µg/L and 5.8 µg/L, respectively.

6.14 Fluoride

Fluoride was detected in each compliance well (except at MW-11) at concentrations ranging from estimated values below the RL to an estimated concentration above the RL of 0.26 mg/L in the second semi-annual sample collected from upgradient well MW-1.

6.15 Hardness

Hardness was detected at quantified concentrations above the RL in both semi-annual samples collected from each compliance well at concentrations ranging from 15,200 µg/L in the first semi-annual sample collected from upgradient well MW-1 to 171,000 µg/L in the first semi-annual sample collected from MW-13.

6.16 Iron

Iron was detected at an estimated concentration above the MDL in the first semi-annual sample collected from MW-37. Iron was detected at quantified concentrations above the RL in the remaining 2024 samples at concentrations ranging from 41.9 µg/L in the second semi-annual sample collected from downgradient well MW-37 to 32,500 µg/L in the second semi-annual sample collected from MW-13.

6.17 Lead

Lead was detected at estimated concentrations above the MDL in the first semi-annual samples collected from upgradient well MW-32S and downgradient well MW-39S. Lead was not detected above the RL in 2024 samples.

6.18 Lithium

Lithium was detected at estimated concentrations above the MDL in both semi-annual samples collected from downgradient wells MW-12, MW-13, MW-31, MW-37 and MW-39S and in the second semi-annual samples collected from upgradient well MW-11 and downgradient wells MW-32S, MW-32D, and MW-39D. Lithium was

detected at a quantified concentration at or above the laboratory RL in the first semi-annual samples collected from upgradient well MW-32D and downgradient well MW-39D at concentrations of 2.5 µg/L and 2.6 µg/L, respectively.

6.19 Manganese

Manganese was detected at quantified concentrations above the RL in both semi-annual samples from each compliance well at concentrations ranging from 2.5 µg/L in the first semi-annual sample collected from upgradient well MW-32S to 947 µg/L in the first semi-annual sample collected from MW-13.

6.20 Mercury

Mercury was not detected in 2024 samples.

6.21 Molybdenum

Molybdenum was detected at an estimated concentration above the MDL in the second semi-annual sample collected from MW-37. Molybdenum was not detected above the RL in 2024 samples.

6.22 Nickel

Nickel was detected at estimated concentrations above the MDL in both semi-annual samples collected from wells MW-12, MW-37 and MW-39S; in the first semi-annual sample collected from MW-39D; and in the second semi-annual sample collected from MW-13. Nickel was detected at quantified concentrations above the RL in both semi-annual samples collected from MW-31 and in the first semi-annual sample collected from downgradient well MW-13. Nickel was detected at concentrations ranging from 6.5 µg/L in the first semi-annual sample collected from MW-31 to 9.0 µg/L in the first semi-annual sample collected from MW-13.

6.23 Nitrate

Nitrate was detected at estimated concentrations above the MDL in the first semi-annual samples collected from upgradient wells MW-11 and MW-32D. Nitrate was detected at an estimated concentration above the RL in the second semi-annual sample collected from upgradient well MW-1. Nitrate was detected at quantified concentrations at or above the RL in both semi-annual samples collected from upgradient well MW-32S and downgradient wells MW-13, MW-37 and MW-39S; in the first semi-annual samples collected from upgradient well MW-1 and downgradient well MW-31; and in the second semi-annual sample collected from upgradient well MW-32D. Nitrate concentrations were detected ranging from 0.10 mg/L in the first semi-annual sample collected from upgradient well MW-1 to 1.3 mg/L in the first semi-annual sample collected from MW-39S.

6.24 pH

For 2024, pH measurements ranged from 4.61 Standard Units (S.U.) in the first semi-annual sample collected from upgradient well MW-1 to 6.79 S.U. in the second semi-annual sample collected from upgradient well MW-32D.

6.25 Radium 226 and 228 (combined)

Radium 226 and 228 (combined) was detected at estimated concentrations above the Minimum Detectable Concentration (MDC) in both semi-annual samples collected at downgradient wells MW-12 and MW-39D; in the first semi-annual sample collected from downgradient well MW-39S; and in the second semi-annual samples collected from upgradient wells MW-1 and MW-32D and downgradient well MW-37. Radium 226 and 228 (combined) was detected at concentrations ranging from 0.358 picoCuries per liter (pCi/L) in the second semi-annual sample collected from MW-37 to 3.23 pCi/L in the second semi-annual sample collected from MW-39D.

6.26 Selenium

Selenium was not detected in 2024 samples.

6.27 Silver

Silver was detected at estimated concentrations above the MDL in the first semi-annual samples collected from upgradient well MW-32S and MW-39D and in the second semi-annual sample collected from MW-39S. Silver was not detected in quantified concentrations the remaining 2024 samples.

6.28 Sulfate

Sulfate was detected at concentrations above the RL in both semi-annual samples collected from each well except the first semi-annual sample collected from downgradient well MW-37. Sulfate concentrations ranged from 2.4 mg/L in the first semi-annual sample collected from upgradient well MW-32S to 158 mg/L in the first semi-annual sample collected from MW-13.

6.29 Thallium

Thallium was not detected in 2024 samples.

6.30 Tin

Tin was not detected in 2024 samples.

6.31 Total Dissolved Solids

Total dissolved solids (TDS) were detected at quantified concentrations above the RL in both semi-annual samples collected from each well at concentrations ranging from 46.4 mg/L in the first semi-annual sample collected from upgradient well MW-1 to 366 mg/L in the second semi-annual sample collected from MW-13.

6.32 Vanadium

Vanadium was detected at quantified concentrations above the RL in both semi-annual samples collected from upgradient well MW-11 at concentrations of 15.9 µg/L and 11.2 µg/L, respectively.

6.33 Zinc

Zinc was detected at estimated concentrations above the MDL in both semi-annual samples collected from upgradient well MW-1 and downgradient wells MW-31, MW-37, MW-39S; in the first semi-annual sample collected from MW-39D; and in the second semi-annual sample collected from MW-13. Zinc was detected at a quantified concentration above the RL in the first semi-annual sample collected from MW-13 at a concentration of 10.9 µg/L.

7.0 DATA QUALITY VALIDATION

The Quality Assurance (QA) and quality control (QC) data provided by the laboratory for the 2024 semi-annual sampling events were reviewed to ensure that the analytical results met the project's data quality objectives as outlined in the Station's GMP. The review process was performed by Environmental Standards, Inc. (ESI) in general accordance with procedures outlined in the *National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017* (EPA, 2017).

7.1 First Semi-Annual 2024 Data Validation

The laboratory and field QA/QC data for the first semi-annual 2024 monitoring event samples collected February 12-14, 2024, were reviewed in accordance with EPA protocol by ESI consistent with Section XI.L.4 of the SWP. The field QA/QC samples for this event included a field blank that was collected at the Unit on February 12, 2024, and a duplicate sample that was collected from MW-31 on February 12, 2024. These QA/QC samples were analyzed for the same constituents as the groundwater samples. A description of the laboratory QA/QC data associated with the February 2024 groundwater monitoring event is presented in Appendix G.1.

As presented in Appendix G.1, laboratory QC results (with exceptions listed below) were within acceptable limits. It is noted that the several reported results for combined radium were qualified as not detected (U) or estimated (J) based on field duplicate imprecision, field blank and/or laboratory blank contamination, and/or chemical yield outside of acceptance limits. Additionally, select reported boron results were qualified as U due to field blank contamination. Select sulfate and fluoride results were flagged as J or estimated, biased low (J-) due to matrix spike/matrix spike duplicate (MS/MSD) imprecision and/or recoveries outside of acceptable limits. Based on ESI's review of the analytical results and laboratory-provided QC data, the laboratory results meet the project data quality objectives and are suitable for use with the provided data qualifiers.

7.2 Second Semi-Annual 2024 Data Validation

The laboratory and field QA/QC data for the second semi-annual 2024 monitoring event samples collected August 26-29, 2024, were reviewed in accordance with EPA protocol by ESI. The field QA/QC samples for this event included a field blank that was collected at the Unit on August 26, 2024, and a duplicate sample that was collected from MW-39D on August 29, 2024. These QA/QC sampled were analyzed for the same constituents as the groundwater samples. A description of the laboratory QA/QC data associated with the August 2024 groundwater monitoring event is presented in Appendix G.2.

As presented in Appendix G.2, laboratory QC results (with exceptions listed below) were within acceptable limits. It is noted that several reported results for combined radium were qualified as J based on field duplicate imprecision and/or chemical yield outside of acceptance limits. Select reported results for fluoride and sulfate were qualified as J, J-, or estimated, biased high (J+) due to MS/MSD recoveries outside of acceptance limits and/or MS/MSD

imprecision. Several reported results for hexavalent chromium and nitrate were qualified as J, U, or estimated non-detect (UJ) based on exceedance of hold times and/or field blank contamination. In accordance with ESI data validation protocol, sample results analyzed more than twice the method-required holding time (*e.g.*, > 48 hours for hexavalent chromium) would be considered unusable; however, the hexavalent chromium results are considered usable (with qualification), as the samples were analyzed within twice the method holding time. The reported hexavalent chromium results for MW-39D and the field duplicate were rejected (R) due to being analyzed more than twice the method holding time. A resample event was conducted for the hexavalent chromium at MW-39D. Based on ESI's review of the analytical results and laboratory-provided QC data, the laboratory results meet the project data quality objectives and are suitable for use with the provided data qualifiers.

7.2.1 Second Semi-Annual 2024 Resample Data Validation

The laboratory and field QA/QC data for the second semi-annual 2024 hexavalent chromium resample event samples collected November 14, 2024, were reviewed in accordance with EPA protocol by ESI. The field QA/QC samples for this event included a field blank that was collected at the Unit on November 14, 2024. These QA/QC sampled were analyzed for the same constituents as the groundwater samples. A description of the laboratory QA/QC data associated with the November 2024 groundwater monitoring event is presented in Appendix G.3.

As presented in Appendix G.3, laboratory QC results (with exceptions listed below) were within acceptable limits. It is noted that the reported result for hexavalent chromium at MW-39D was qualified as U based on field blank contamination. Based on ESI's review of the analytical results and laboratory-provided QC data, the laboratory results meet the project data quality objectives and are suitable for use with the provided data qualifiers.

8.0 STATISTICAL EVALUATION

This section presents a statistical evaluation for the semi-annual groundwater data according to the requirements of the SWP. Two (2) types of statistical analyses have been conducted as follows:

- Data have been evaluated with respect to background data; this evaluation identifies statistically significant increases (SSIs) in downgradient wells over site-specific background using a value-to-value comparison; and
- Data have been evaluated with respect to GPS using a value-to-standard comparison.

8.1 Site-Specific Background Evaluation

8.1.1 First Semi-Annual 2024 Modified AMP Event

Consistent with XI.H.2 of the SWP, WSP evaluated the Modified AMP constituent detections against established site-specific background. The evaluation was performed with the background values submitted to the DEQ in the March 2, 2023, *2023 Updated Facility Background Determination Report* (WSP, 2023). Site-specific background values were approved by the DEQ on May 26, 2023. Based on the value-to-value evaluation, the following SSIs over background were identified during the 2024 first semi-annual groundwater monitoring event (see Table 1):

- Barium (MW-12, MW-13, MW-31, MW-37, MW-39S, MW-39D)
- Boron (MW-12, MW-37, MW-39S)
- Calcium (MW-12, MW-13, MW-37, MW-39S)
- Chloride (MW-11 [upgradient], MW-13, MW-39D)
- Cobalt (MW-13, MW-31, MW-37)
- Copper (MW-31)
- Nickel (MW-13, MW-31)
- Sulfate (MW-12, MW-13, MW-31, MW-39S, MW-39D)
- Total Dissolved Solids (MW-12, MW-13, MW-37, MW-39D)

A notification of these background SSIs was submitted to the DEQ on May 15, 2024, pursuant to Section XI.H.4.a of the SWP.

8.1.2 Second Semi-Annual 2024 Modified AMP Event

Consistent with XI.H.2 of the Unit's SWP, WSP evaluated the Modified AMP constituent detections against established site-specific background. The evaluation was performed with the background values submitted to the

DEQ in the March 2, 2023, *2023 Updated Facility Background Determination Report* (WSP, 2023). Site-specific background values were approved by the DEQ on May 26, 2023. Based on the value-to-value evaluation, the following SSIs over background were identified during the 2024 second semi-annual groundwater monitoring event (see Table 2:

- Barium (MW-12, MW-13, MW-31, MW-37, MW-39S, MW-39D)
- Boron (MW-12, MW-37, MW-39S)
- Calcium (MW-12, MW-13, MW-37, MW-39S, MW-39D)
- Chloride (MW-11 [upgradient], MW-13, MW-37, MW-39D)
- Cobalt (MW-1, MW-31, MW-37)
- Copper (MW-31)
- Fluoride (MW-1 [upgradient], MW-39D)
- Nickel (MW-31)
- Radium 226 and 228 (MW-39D)
- Sulfate (MW-12, MW-13, MW-31, MW-37, MW-39S, MW-39D)
- Total Dissolved Solids (MW-12, MW-13, MW-37, MW-39S, MW-39D)

A notification of these SSIs was submitted to the DEQ on December 20, 2024, pursuant to Section XI.H.4.a of the SWP.

8.2 Groundwater Protection Standard Evaluation

8.2.1 First Semi-Annual 2024 Modified AMP Event

Consistent with XI.H.2 of the Unit's SWP, WSP evaluated the Modified AMP constituents against approved SWP GPS. These evaluations were performed with the March 2, 2023, *2023 Updated Facility Background Determination Report*. Based on the value-to-standard comparison evaluation, the following SWP GPS SSIs were identified during the 2024 first semi-annual groundwater monitoring event (see Table 1).

Constituent	SWP Groundwater Protection Standard	Assessment Monitoring Well	1SA 2024 Concentration
Nickel (µg/L)	QL	MW-13	9.0
		MW-31	6.5

Note: µg/L = microgram per liter
QL = Quantitation Limit

A notification of these SWP GPS exceedances was submitted to the DEQ on May 15, 2024, pursuant to Section XI.H.4.a of the SWP. In response to previous SWP GPS SSIs for nickel, Dominion Energy completed a revised NES and ACM Report on April 25, 2024.

8.2.2 Second Semi-Annual 2024 Modified AMP Event

Consistent with XI.H.2 of the Unit's SWP, WSP evaluated the Modified AMP constituents against approved SWP GPS. These evaluations were performed with the March 2, 2023, *2023 Updated Facility Background Determination Report*. Based on the value-to-standard comparison evaluation, the following SWP GPS SSIs were identified during the 2024 second semi-annual groundwater monitoring event (see Table 2).

Constituent	SWP Groundwater Protection Standard	Assessment Monitoring Well	2SA 2024 Concentration
Nickel (µg/L)	QL	MW-31	7.2

Notes: µg/L = Microgram per liter QL = Quantitation Limit

A notification of these SWP GPS exceedances was submitted to the DEQ on December 20, 2024, pursuant to Section XI.H.4.a of the SWP. In response to previous SWP GPS SSIs for nickel, Dominion Energy completed a revised NES and ACM Report on April 25, 2024.

9.0 CONCLUSIONS

The following conclusions are presented based on the results of the groundwater monitoring activities conducted at the Unit in 2024:

9.1 Summary of Findings

- The overall direction of groundwater flow at the Unit generally follows topography and flows south at an estimated horizontal velocity of 32 to 33 feet/year in the alluvium, 145 to 153 feet/year in the slate/phyllite bedrock, and at an estimated horizontal velocity of 347 to 369 feet/year in the underlying gneiss bedrock;
- Downgradient wells are located close to the Unit boundary and are able to determine groundwater quality downgradient to the Unit;
- During 2024, the monitoring well network functioned as designed and had the ability to determine the Unit's impact on the quality of the groundwater in the uppermost aquifer;
- Review of the current potentiometric map indicates the monitoring wells network fulfills the requirements of 9VAC20-81-250.A.3;
- Review of the 2024 monitoring data did not indicate any significant changes in the groundwater quality;
- Background SSIs were identified for barium, boron, calcium, chloride, cobalt, copper, fluoride, nickel, radium 226 and 228 (combined), sulfate, and total dissolved solids in one (1) or more compliance wells;
- GPS SSIs were identified for nickel in two compliance wells during 2024; and
- A Corrective Action Plan and associated Corrective Action Monitoring Plan were submitted to DEQ on December 23, 2024.

9.2 Planned Activities

Based on the results from the 2024 compliance sampling, Dominion Energy intends to continue with the Modified AMP in 2025 consistent with the Unit's SWP. Dominion Energy will also continue with the corrective action program process in accordance with 9VAC20-81-260.

10.0 REFERENCES

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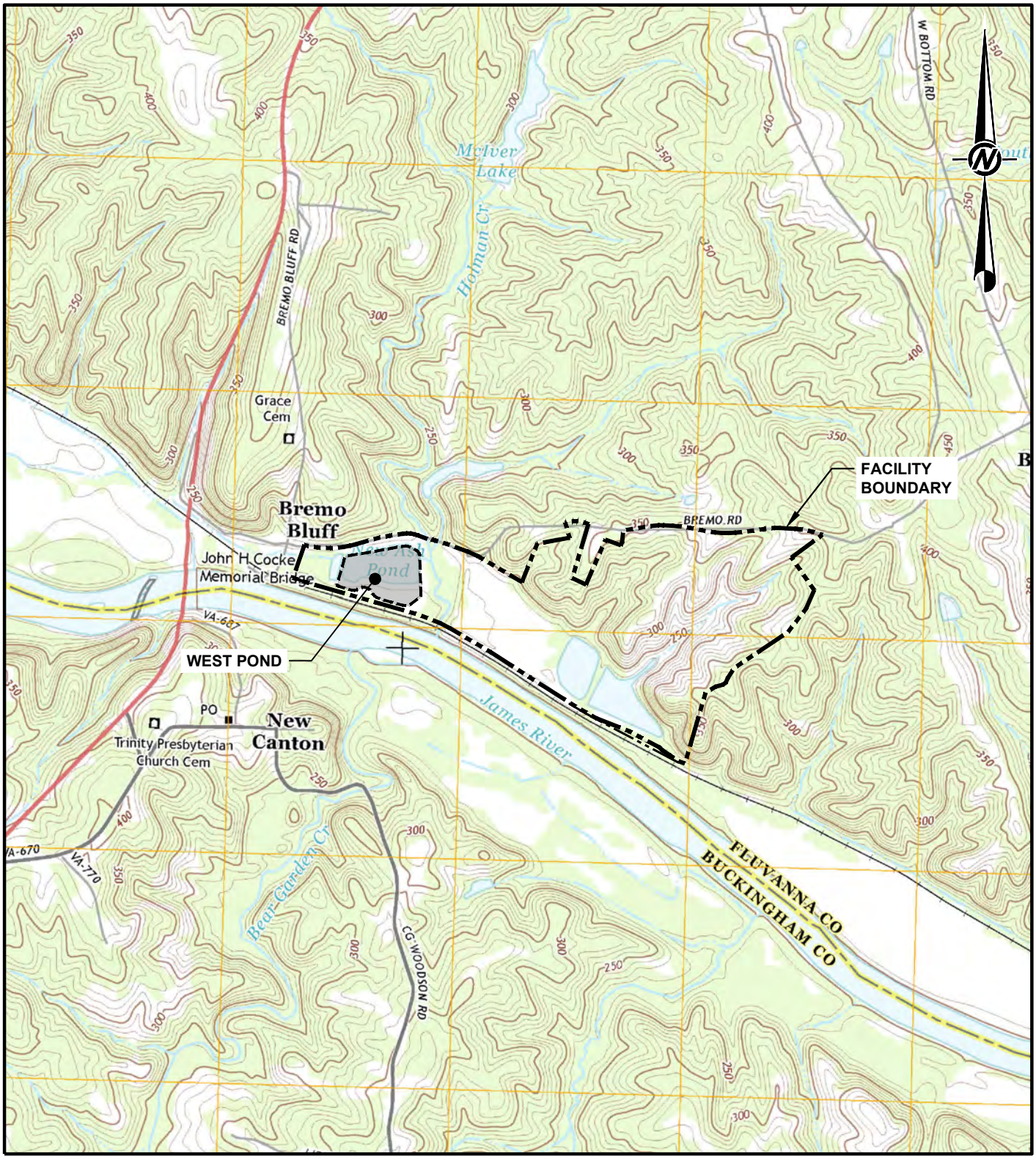
11.0 SIGNATURE SECTION

This *2024 Annual Groundwater Monitoring Report* (Report) has been prepared by qualified groundwater scientists and engineers on behalf of Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy) for the Unit at the Station in Bremo Bluff, Virginia. This document was prepared by scientists and engineers who have received baccalaureate and/or post-graduate degrees in the natural sciences and/or engineering and who have sufficient training and experience in groundwater hydrology, engineering, statistical evaluations, and related fields as demonstrated by state professional registrations and completion of an accredited university program that enables sound professional judgments consistent with the industry standard of care for groundwater monitoring, contaminant fate and transport, environmental corrective actions, and cost estimate development. This Report also satisfies the reporting requirements specified in 9VAC20-81-250.E.2.a of the VSWMR (VWMB, 2024) and the DEQ SWP No. 618 (DEQ, 2019).

Signature	Name & Title
COMMONWEALTH OF VIRGINIA CATHERINE A. PEZZARO Lic. No. 2323 1/31/2025 CERTIFIED PROFESSIONAL GEOLOGIST	Catherine Pezzaro, PG Senior Consultant, Geologist
	Crystal Shadle Assistant Vice President, Geologist

https://wsponlinenam.sharepoint.com/sites/us-rvadominion/shared documents/bremo/31406066.009 bremo gw 2024/6 deliverables/2025-xx-xx 2024 west pond amr/2024-01-31 bremo west pond vswmr agwmr.docx

FIGURES



REFERENCE

BASE MAP CONSISTS OF 7.5-MINUTE USGS TOPOGRAPHIC QUADRANGLE NAMED ARVONIA, VIRGINIA, DATED 2013.

2000 0 2000
SCALE FEET

CLIENT
DOMINION ENERGY

CONSULTANT
wsp

YYYY-MM-DD	2024-04-15
DESIGNED	ALR
PREPARED	SIB
REVIEWED	CKS
APPROVED	CKS

PROJECT
BREMO POWER STATION
WEST POND
FLUVANNA COUNTY, VIRGINIA

TITLE
SITE LOCATION MAP

PROJECT NO. 31-406066
REV. 0
FIGURE 1

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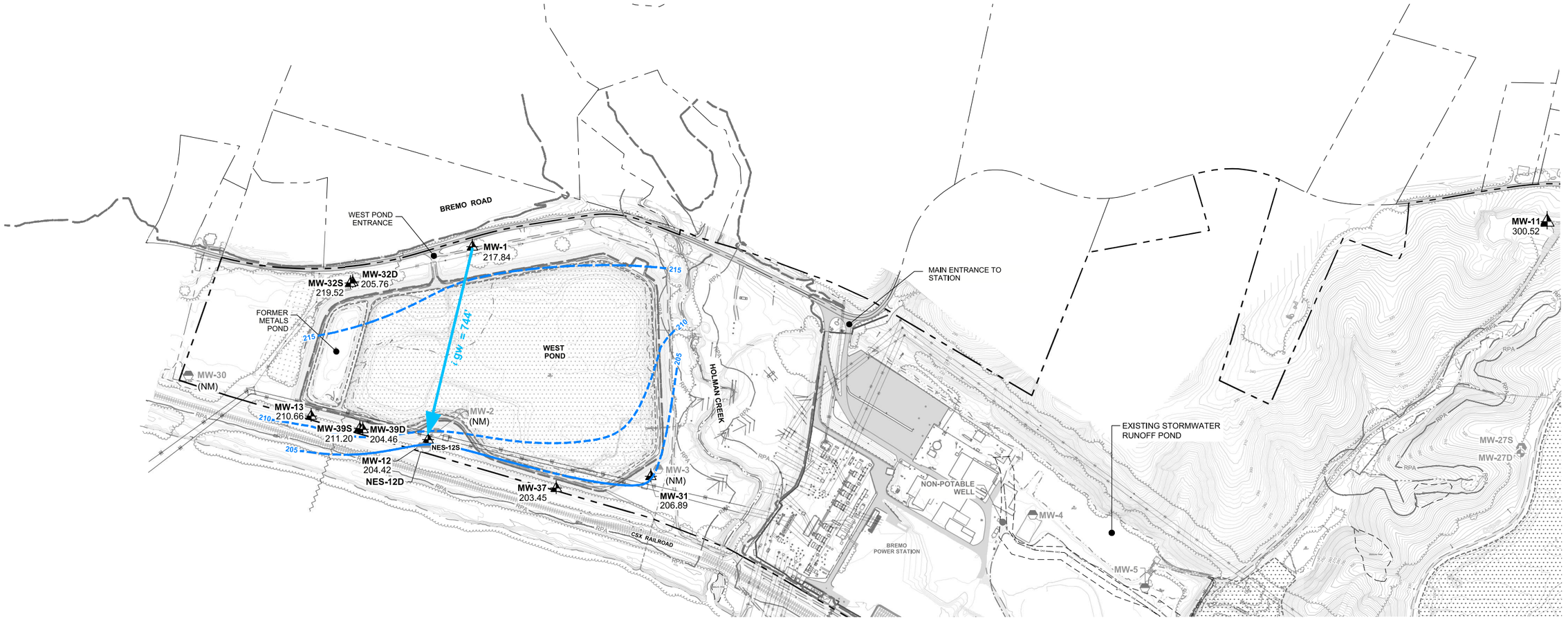

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS) (FROM AERIAL SURVEY - SEE NOTE 6)
- GROUNDWATER CONTOURS
- WETLANDS
- SURFACE WATER BOUNDARY
- APPROXIMATE LIMITS OF EXISTING PONDS
- LIMITS OF 100-YR FLOOD PLAIN
- MW-1 — FEDERAL CCR RULE COMPLIANCE WELL LOCATION AND IDENTIFICATION - WEST POND
- MW-27S — STATE GROUNDWATER COMPLIANCE WELL LOCATION AND IDENTIFICATION
- MW-2 — GROUNDWATER OBSERVATION WELL LOCATION AND IDENTIFICATION
- MW-33 — FEDERAL CCR RULE COMPLIANCE WELL LOCATION AND IDENTIFICATION - NORTH POND
- 215.95 — STATIC GROUNDWATER ELEVATION [FEET ABOVE MEAN SEA LEVEL (ASML)]
- (NM) — NOT MEASURED
- APPROXIMATE GROUNDWATER FLOW LINE
- i gw = 744' — GROUNDWATER FLOW PATH LENGTH (FEET)

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 FEET
2. GROUNDWATER SURFACE CONTOUR INTERVAL = 5 FEET
3. STATIC WATER LEVELS MEASURED ON FEBRUARY 12, 2024.
4. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
5. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.
6. BASEMAP INFORMATION (e.g., EXISTING TOPOGRAPHY, ROADS, TREE LINES, FENCE LINES) TAKEN FROM AERIAL SURVEY PREPARED BY McKENZIE SNYDER. DATE OF AERIAL PHOTOGRAPHY: FEBRUARY 18, 2017.
7. NON-POTABLE WELL LOCATION IS TO BE CONSIDERED APPROXIMATE.
8. MW-12, MW-32D & MW-39D ARE DEEP WELLS NOT USED TO EVALUATE THE WATER TABLE SURFACE.

200 0 200 400
SCALE FEET

CLIENT
DOMINION ENERGY
BREMO POWER STATION
FLUVANNA COUNTY, VIRGINIA

PROJECT
MODIFIED ASSESSMENT PROGRAM
1ST SEMI-ANNUAL 2024 SAMPLING EVENT
BREMO POWER STATION, WEST POND

TITLE
GROUNDWATER POTENTIOMETRIC SURFACE MAP
FEBRUARY 12, 2024

CONSULTANT

YYYY-MM-DD	2025-01-29
DESIGNED	MK
PREPARED	SIB
REVIEWED	CKS
APPROVED	CKS

PROJECT NO. 31-406066.009 | REV. 0 | FIGURE 2

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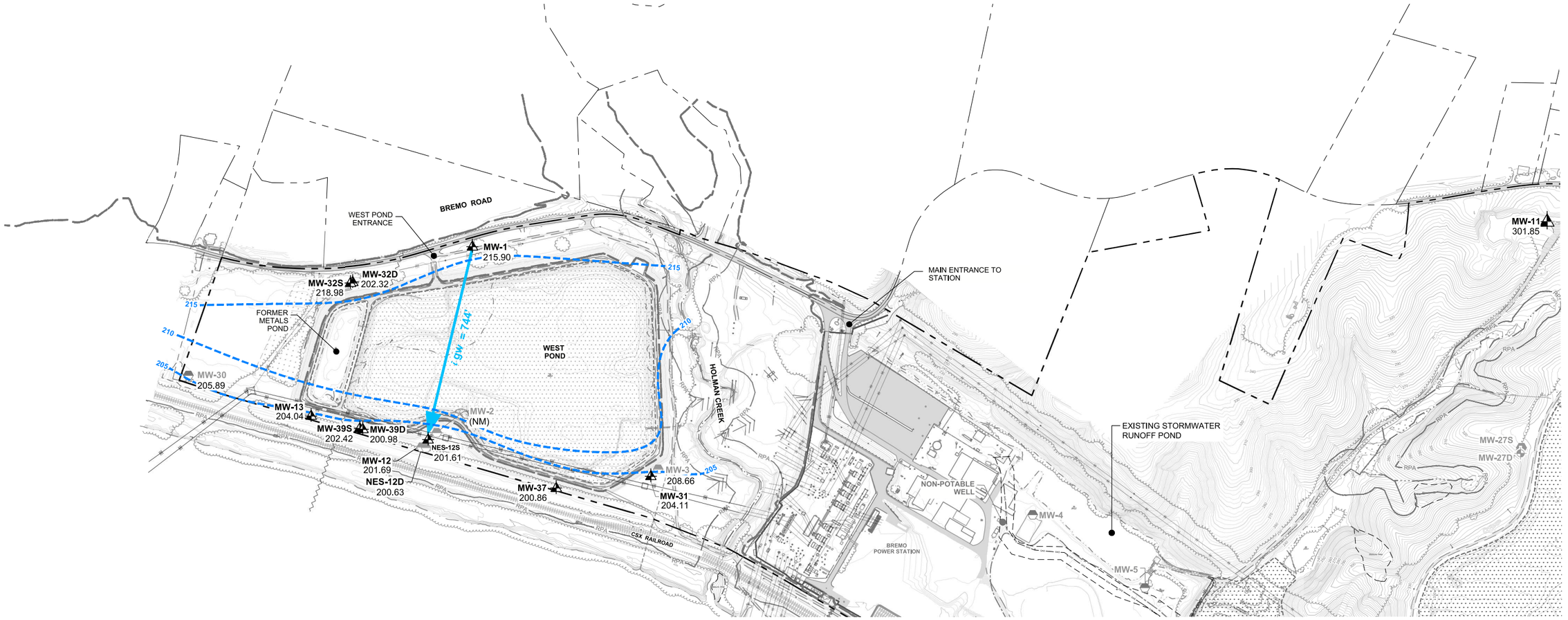

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS) (FROM AERIAL SURVEY - SEE NOTE 6)
- GROUNDWATER CONTOURS
- WETLANDS
- SURFACE WATER BOUNDARY
- APPROXIMATE LIMITS OF EXISTING PONDS
- LIMITS OF 100-YR FLOOD PLAIN
- MW-1 — FEDERAL CCR RULE COMPLIANCE WELL LOCATION AND IDENTIFICATION - WEST POND
- MW-27S — STATE GROUNDWATER COMPLIANCE WELL LOCATION AND IDENTIFICATION
- MW-2 — GROUNDWATER OBSERVATION WELL LOCATION AND IDENTIFICATION
- MW-33 — FEDERAL CCR RULE COMPLIANCE WELL LOCATION AND IDENTIFICATION - NORTH POND
- 215.95 — STATIC GROUNDWATER ELEVATION [FEET ABOVE MEAN SEA LEVEL (ASML)]
- (NM) — NOT MEASURED
- APPROXIMATE GROUNDWATER FLOW LINE
- *i* gw = 744' — GROUNDWATER FLOW PATH LENGTH (FEET)

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 FEET
2. GROUNDWATER SURFACE CONTOUR INTERVAL = 5 FEET
3. STATIC WATER LEVELS MEASURED ON AUGUST 26, 2024.
4. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
5. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.
6. BASEMAP INFORMATION (e.g., EXISTING TOPOGRAPHY, ROADS, TREE LINES, FENCE LINES) TAKEN FROM AERIAL SURVEY PREPARED BY McKENZIE SNYDER. DATE OF AERIAL PHOTOGRAPHY: FEBRUARY 18, 2017.
7. NON-POTABLE WELL LOCATION IS TO BE CONSIDERED APPROXIMATE.
8. MW-12, MW-32D & MW-39D ARE DEEP WELLS NOT USED TO EVALUATE THE WATER TABLE SURFACE.

N

200 0 200 400
SCALE FEET

CLIENT
DOMINION ENERGY
BREMO POWER STATION
FLUVANNA COUNTY, VIRGINIA

PROJECT
MODIFIED ASSESSMENT PROGRAM
2ND SEMI-ANNUAL 2024 SAMPLING EVENT
BREMO POWER STATION, WEST POND

TITLE
GROUNDWATER POTENTIOMETRIC SURFACE MAP
AUGUST 26, 2024

CONSULTANT
wsp

YYYY-MM-DD	2025-01-29
DESIGNED	JWD
PREPARED	SIB
REVIEWED	CKS
APPROVED	CKS

PROJECT NO. 31-406066.009 | REV. 0 | FIGURE 3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

Path: G:\Plan Production Data Files\Drawing Data Files\31-406066\060_Bremo-GW\Active Drawings\20243140606 6_2024_21.dwg

TABLES

Table 1
Summary of First Semi-Annual Modified Assessment Monitoring Program Sampling Event Data (Feburary 2024)
West Pond, Bremo Power Station
Permit No. 618

				Background Wells																Downgradient Wells							
		Sample ID:		MW-1				MW-11				MW-32S				MW-32D				MW-12				MW-13			
		Sample Date:		2/13/2024				2/12/2024				2/12/2024				2/12/2024				2/13/2024				2/12/2024			
Parameter Name	Units	Site Specific Background[1]	SWP GPS[1]	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL
CCR Appendix III Constituents																											
Boron	µg/L	QL	4000	< 4.0	U	4.0	50.0	< 4.0	U	4.0	50.0	< 9.0	U	9.0	50.0	< 4.0	U	4.0	50.0	**1210**		4.0	50.0	< 24.0	U	24.0	50.0
Calcium	µg/L	32900	--	**2970**		14.7	100	**19900**		14.7	100	**4390**		14.7	100	**27300**		14.7	100	**34500**		14.7	100	**52000**		14.7	100
Chloride	mg/L	9.9	--	**2.6**		0.60	1.0	**11.4**		0.60	1.0	**3.3**		0.60	1.0	**3.0**		0.60	1.0	**3.6**		0.60	1.0	**10.1**		0.60	1.0
Fluoride	mg/L	0.15	--	**0.070**	J	0.050	0.10	< 0.050	U	0.050	0.10	**0.072**	J	0.050	0.10	**0.14**	J	0.050	0.10	**0.055**	J	0.050	0.10	< 0.050	UJ	0.050	0.10
pH	SU	3.37-8.13	--	4.61		--	--	5.02		--	--	5.49		--	--	6.79		--	--	5.70		--	--	5.05		--	--
Sulfate	mg/L	15.7	--	**3.1**		0.50	1.0	**6.3**		0.50	1.0	**2.4**	J-	0.50	1.0	**11.0**	J-	0.50	1.0	**86.7**		0.50	1.0	**158**	J-	1.5	3.0
Total Dissolved Solids	mg/L	174	--	**46.4**		10.0	10.0	**149**		10.0	10.0	**54.0**		10.0	10.0	**128**		10.0	10.0	**214**		10.0	10.0	**299**		10.0	10.0
CCR Appendix IV Constituents																											
Antimony	µg/L	QL	6	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0
Arsenic	µg/L	QL	10	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0
Barium	µg/L	19.5	2000	**13.0**		0.79	5.0	**3.3**	J	0.79	5.0	**11.2**		0.79	5.0	**5.3**		0.79	5.0	**63.0**		0.79	5.0	**57.2**		0.79	5.0
Beryllium	µg/L	QL	4	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0
Cadmium	µg/L	QL	5	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	**0.71**	J	0.29	1.0
Chromium	µg/L	QL	100	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	**0.64**	J	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0
Cobalt	µg/L	2.2	6	**1.1**		0.050	1.0	**0.34**	J	0.050	1.0	< 0.050	U	0.050	1.0	< 0.050	U	0.050	1.0	**0.053**	J	0.050	1.0	**4.6**		0.050	1.0
Fluoride	mg/L	0.15	4	**0.070**	J	0.050	0.10	< 0.050	U	0.050	0.10	**0.072**	J	0.050	0.10	**0.14**	J	0.050	0.10	**0.055**	J	0.050	0.10	< 0.050	UJ	0.050	0.10
Lead	µg/L	QL	15	< 0.077	U	0.077	1.0	< 0.077	U	0.077	1.0	**0.081**	J	0.077	1.0	< 0.077	U	0.077	1.0	< 0.077	U	0.077	1.0	< 0.077	U	0.077	1.0
Lithium	µg/L	3.1	40	< 0.50	U	0.50	2.5	< 0.50	U	0.50	2.5	<0.50	U	0.50	2.5	**2.5**		0.50	2.5	**0.62**	J	0.50	2.5	**1.9**	J	0.50	2.5
Mercury	µg/L	QL	2	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20
Molybdenum	µg/L	QL	100	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0
Selenium	µg/L	QL	50	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0
Thallium	µg/L	QL	2	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.0505	U	0.050	0.20
Radium 226 and 228 (combined)	pCi/L	2.39	5	0.152	U	--	--	0.717	U	--	--	0.232	U	--	--	0.904	U	--	--	**1.22**	J	--	--	0.490	U	--	--
VSWMR Constituents																											
Copper	µg/L	QL	1300	**0.97**	J	0.62	5.0	**2.5**	J	0.62	5.0	< 0.62	U	0.62	5.0	< 0.62	U	0.62	5.0	< 0.62	U	0.62	5.0	**1.2**	J	0.62	5.0
Nickel	µg/L	QL	QL	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	**1.3**	J	0.88	5.0	**9.0**		0.88	5.0
Silver	µg/L	QL	QL	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	**1.7**	J	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0
Tin	µg/L	3.1	3.1	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0
Vanadium	µg/L	19.1	19.1	< 1.6	U	1.6	5.0	**15.9**		1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0
Zinc	µg/L	19.6	19.6	**4.0**	J	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	**10.9**		3.0	10.0
Speciation of Chromium																											
Chromium, Hexavalent	µg/L	6	--	**0.025**		0.025	0.025	**0.085**		0.025	0.025	**0.089**		0.025	0.025	< 0.025	U	0.025	0.025	< 0.025	U	0.025	0.025	< 0.025	U	0.025	0.025
Former VPDES Constituents																											
Ammonia	mg/L	--	--	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	**0.060**	J	0.031	0.10	**0.034**	J	0.031	0.10
Hardness	µg/L	--	--	**15200**		36.8	662	**103000**		36.8	662	**22200**		36.8	662	**85600**		36.8	662	**119000**		36.8	662	**171000**		36.8	662
Iron	µg/L	--	--	**149**		20.9	50.0	**313**		20.9	50.0	**182**		20.9	50.0	**227**		20.9	50.0	**3430**		20.9	50.0	**1180**		20.9	50.0
Manganese	µg/L	--	--	**37.3**		1.0	2.0	**3.0**		1.0	2.0	**2.5**		1.0	2.0	**45.4**		1.0	2.0	**343**		3.1	6.0	**947**		10.2	20.0
Nitrate	mg/L	--	--	**0.10**		0.060	0.10	**0.061**	J	0.060	0.10	**0.91**		0.060	0.10	**0.087**	J	0.060	0.10	< 0.060	U	0.060	0.10	**0.15**		0.060	0.10
Field Parameters																											
Conductivity	µS/cm	--	--	60.5		0.1	0.1	241.4		0.1	0.1	76.1		0.1	0.1	222.6		0.1	0.1	303.4		0.1	0.1	442.3		0.1	0.1
Dissolved Oxygen	mg/L	--	--	2.63		0.01	0.01	3.76		0.01	0.01	4.33		0.01	0.01	0.35		0.01	0.01	0.30		0.01	0.01	0.33		0.01	0.01
Oxidation Reduction Potential	millivolts	--	--	245.6		0.1	0.1	239.7		0.1	0.1	203.5		0.1	0.1	20.9		0.1	0.1	46.4		0.1	0.1	195.4		0.1	0.1
Temperature	C	--	--	15.6		0.1	0.1	14.5		0.1	0.1	14.3		0.1	0.1	14.8		0.1	0.1	15.4		0.1	0.1	13.6		0.1	0.1
Turbidity	NTU	--	--	5.4		0.1	0.1	9.6		0.1	0.1	9.7		0.1	0.1	3.2		0.1	0.1	3.84		0.1	0.1	7.94		0.1	0.1

Notes:

MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
pCi/L = picoCurie per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit
MDC = Minimum Detection Concentration
CCR = Coal Combustion Residuals
SWP = Solid Waste Permit

QL = Laboratory quantitation limit
GPS = Groundwater Protection Standards
VPDES = Virginia Pollutant Discharge Elimination System
VSWMR = Virginia Solid Waste Management Regulations
Bold font = Detected constituent
[1]Site-specific background and GPS values for CCR constituents were calculated in the March 2, 2023, *2023 Updated Facility Background Determination Report* West Pond

J = Quantitation is approximate due to limitations identified during data validation
U = The analyte was not detected above the level of the sample reporting limit
J- = Quantitation is approximate due to limitations identified during data validation; result may be biased low
UJ = The analyte was not detected; the reporting limit may or may not be higher due to bias identified during data validation

= Concentration greater than site-specific background

= Concentration greater than SWP GPS and site-specific background

Table 1
Summary of First Semi-Annual Modified Assessment Monitoring Program Sampling Event Data (Feburary 2024)
West Pond, Bremo Power Station
Permit No. 618

				Downgradient Wells																Field Quality Control Samples							
		Sample ID:		MW-31				MW-37				MW-39S				MW-39D				Field Duplicate (MW-31)				Field Blank			
		Sample Date:		2/12/2024				2/12/2024				2/13/2024				2/13/2024				2/12/2024				2/12/2024			
Parameter Name	Units	Site Specific Background[1]	SWP GPS[1]	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL
CCR Appendix III Constituents																											
Boron	µg/L	QL	4000	< 10.2	U	10.2	50.0	**142**		4.0	50.0	**614**		4.0	50.0	< 39.5	U	39.5	50.0	< 9.8	U	9.8	50.0	**24.0**	J	4.0	50.0
Calcium	µg/L	32900	--	**11700**		14.7	100	**35400**		14.7	100	**33500**		14.7	100	**32200**		14.7	100	**11300**		14.7	100	< 14.7	U	14.7	100
Chloride	mg/L	9.9	--	**2.0**		0.60	1.0	**8.7**		0.60	1.0	**0.87**	J	0.60	1.0	**25.9**		0.60	1.0	**2.0**		0.60	1.0	< 0.60	U	0.60	1.0
Fluoride	mg/L	0.15	--	< 0.050	UJ	0.050	0.10	**0.076**	J	0.050	0.10	**0.050**	J	0.050	0.10	**0.12**		0.050	0.10	< 0.050	UJ	0.050	0.10	< 0.050	UJ	0.050	0.10
pH	SU	3.37-8.13	--	5.33		--	--	5.94		--	--	5.81		--	--	5.89		--	--	--		--	--	--		--	--
Sulfate	mg/L	15.7	--	**46.1**	J-	0.50	1.0	< 0.50	U	0.50	1.0	**51.9**		0.50	1.0	**47.5**		0.50	1.0	**45.9**	J-	0.50	1.0	< 0.50	U	0.50	1.0
Total Dissolved Solids	mg/L	174	--	**120**		10.0	10.0	**192**		10.0	10.0	**171**		10.0	10.0	**209**		10.0	10.0	**122**		10.0	10.0	< 10.0	U	10.0	10.0
CCR Appendix IV Constituents																											
Antimony	µg/L	QL	6	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0
Arsenic	µg/L	QL	10	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0
Barium	µg/L	19.5	2000	**58.1**		0.79	5.0	**75.1**		0.79	5.0	**42.7**		0.79	5.0	**23.4**		0.79	5.0	**56.0**		0.79	5.0	< 0.79	U	0.79	5.0
Beryllium	µg/L	QL	4	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0
Cadmium	µg/L	QL	5	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0
Chromium	µg/L	QL	100	**0.70**	J	0.63	5.0	< 0.63	U	0.63	5.0	**0.78**	J	0.63	5.0	< 0.63	U	0.63	5.0	**0.76**	J	0.63	5.0	< 0.63	U	0.63	5.0
Cobalt	µg/L	2.2	6	**3.6**		0.050	1.0	**2.5**		0.050	1.0	**0.10**	J	0.050	1.0	**0.064**	J	0.050	1.0	**3.6**		0.050	1.0	< 0.050	U	0.050	1.0
Fluoride	mg/L	0.15	4	< 0.050	UJ	0.050	0.10	**0.076**	J	0.050	0.10	**0.050**	J	0.050	0.10	**0.12**		0.050	0.10	< 0.050	UJ	0.050	0.10	< 0.050	UJ	0.050	0.10
Lead	µg/L	QL	15	< 0.077	U	0.077	1.0	< 0.077	U	0.077	1.0	**0.17**	J	0.077	1.0	< 0.077	U	0.077	1.0	< 0.077	U	0.077	1.0	< 0.077	U	0.077	1.0
Lithium	µg/L	3.1	40	**1.9**	J	0.50	2.5	**1.2**	J	0.50	2.5	**1.1**	J	0.50	2.5	**2.6**		0.50	2.5	**1.9**	J	0.50	2.5	< 0.50	U	0.50	2.5
Mercury	µg/L	QL	2	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20
Molybdenum	µg/L	QL	100	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0
Selenium	µg/L	QL	50	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0
Thallium	µg/L	QL	2	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20	< 0.050	U	0.050	0.20
Radium 226 and 228 (combined)	pCi/L	2.39	5	0.283	U	--	--	0.235	U	--	--	**0.748**	J	--	--	**2.25**	J	--	--	0.762	U	--	--	**0.841**	J	--	--
VSWMR Constituents																											
Copper	µg/L	QL	1300	**9.4**		0.62	5.0	**1.0**	J	0.62	5.0	**1.2**	J	0.62	5.0	**0.77**	J	0.62	5.0	**9.3**		0.62	5.0	< 0.62	U	0.62	5.0
Nickel	µg/L	QL	QL	**6.5**		0.88	5.0	**2.4**	J	0.88	5.0	**1.4**	J	0.88	5.0	**1.8**	J	0.88	5.0	**6.1**		0.88	5.0	< 0.88	U	0.88	5.0
Silver	µg/L	QL	QL	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	**1.4**	J	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0
Tin	µg/L	3.1	3.1	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0	< 0.43	U	0.43	1.0
Vanadium	µg/L	19.1	19.1	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0
Zinc	µg/L	19.6	19.6	**8.9**	J	3.0	10.0	**4.3**	J	3.0	10.0	**3.2**	J	3.0	10.0	**4.6**	J	3.0	10.0	**9.2**	J	3.0	10.0	< 3.0	U	3.0	10.0
Speciation of Chromium																											
Chromium, Hexavalent	µg/L	6	--	**0.030**		0.025	0.025	< 0.025	U	0.025	0.025	**0.29**		0.050	0.050	< 0.025	U	0.025	0.025	< 0.025	U	0.025	0.025	< 0.025	U	0.025	0.025
Former VPDES Constituents																											
Ammonia	mg/L	--	--	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	**0.33**		0.031	0.10	**0.14**		0.031	0.10	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10
Hardness	µg/L	--	--	**46200**		36.8	662	**118000**		36.8	662	**107000**		36.8	662	**117000**		36.8	662	**44700**		36.8	662	< 36.8	U	36.8	662
Iron	µg/L	--	--	**353**		20.9	50.0	**31.8**	J	20.9	50.0	**318**		20.9	50.0	**11700**		62.8	150	**336**		20.9	50.0	< 20.9	U	20.9	50.0
Manganese	µg/L	--	--	**301**		3.1	6.0	**603**		5.1	10.0	**12.0**		1.0	2.0	**309**		3.1	6.0	**288**		3.1	6.0	< 1.0	U	1.0	2.0
Nitrate	mg/L	--	--	**0.23**		0.060	0.10	**0.79**		0.060	0.10	**1.3**		0.060	0.10	< 0.060	U	0.060	0.10	**0.16**		0.060	0.10	< 0.060	U	0.060	0.10
Field Parameters																											
Conductivity	µS/cm	--	--	167.2		0.1	0.1	302.9		0.1	0.1	245.8		0.1	0.1	318.4		0.1	0.1	--		--	--	--		--	--
Dissolved Oxygen	mg/L	--	--	1.16		0.01	0.01	0.93		0.01	0.01	1.50		0.01	0.01	0.12		0.01	0.01	--		--	--	--		--	--
Oxidation Reduction Potential	millivolts	--	--	217.8		0.1	0.1	184.9		0.1	0.1	198.2		0.1	0.1	2.7		0.1	0.1	--		--	--	--		--	--
Temperature	C	--	--	15.0		0.1	0.1	14.3		0.1	0.1	14.7		0.1	0.1	15.0		0.1	0.1	--		--	--	--		--	--
Turbidity	NTU	--	--	3.14		0.1	0.1	2.34		0.1	0.1	15.21		0.1	0.1	5.6		0.1	0.1	--		--	--	--		--	--

Notes:

MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
pCi/L = picoCurie per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit
MDC = Minimum Detection Concentration
CCR = Coal Combustion Residuals
SWP = Solid Waste Permit

QL = Laboratory quantitation limit
GPS = Groundwater Protection Standards
VPDES = Virginia Pollutant Discharge Elimination System
VSWMR = Virginia Solid Waste Management Regulations
Bold font = Detected constituent
[1]Site-specific background and GPS values for CCR constituents were calculated in the March 2, 2023, *2023 Updated Facility Background Determination Report* West Pond

J = Quantitation is approximate due to limitations identified during data validation
U = The analyte was not detected above the level of the sample reporting limit
J- = Quantitation is approximate due to limitations identified during data validation; result may be biased low
UJ = The analyte was not detected; the reporting limit may or may not be higher due to bias identified during data validation

= Concentration greater than site-specific background

= Concentration greater than SWP GPS and site-specific background

Table 2
Summary of Second Semi-Annual Modified Assessment Monitoring Program Sampling Event Data (August 2024)
West Pond, Bremo Power Station
Permit No. 618

				Background Wells																Downgradient Wells											
			Sample ID:	MW-1				MW-11				MW-32S				MW-32D				MW-12				MW-13				MW-31			
			Sample Date:	8/28/2024				8/26/2024				8/29/2024				8/29/2024				8/28/2024				8/29/2024				8/28/2024			
Parameter Name	Units	Site Specific Background[1]	SWP GPS[1]	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL
CCR Appendix III Constituents																															
Boron	µg/L	QL	4000	< 4.0	U	4.0	50.0	< 4.0	U	4.0	50.0	< 4.0	U	4.0	50.0	< 4.0	U	4.0	50.0	**986**		4.0	50.0	**7.4**	J	4.0	50.0	**9.2**	J	4.0	50.0
Calcium	µg/L	32900	--	**3370**		14.7	100	**20300**		14.7	100	**4620**		14.7	100	**26200**		14.7	100	**36500**		14.7	100	**45100**		14.7	100	**11700**		14.7	100
Chloride	mg/L	9.9	--	**2.1**		0.60	1.0	**11.2**		0.60	1.0	**3.6**		0.60	1.0	**2.9**		0.60	1.0	**5.0**		0.60	1.0	**70.2**		0.60	1.0	**2.4**		0.60	1.0
Fluoride	mg/L	0.15	4	**0.26**	J+	0.050	0.10	< 0.050	U	0.050	0.10	**0.12**	J+	0.050	0.10	**0.13**		0.050	0.10	**0.13**	J+	0.050	0.10	**0.050**	J	0.050	0.10	**0.079**	J	0.050	0.10
pH	SU	3.37-8.13	--	4.85		0.01	0.01	5.14		0.01	0.01	5.68		0.01	0.01	6.57		0.01	0.01	5.76		0.01	0.01	5.42		0.01	0.01	5.27		0.01	0.01
Sulfate	mg/L	15.7	--	**2.9**	J	0.50	1.0	**5.0**		0.50	1.0	**2.6**	J	0.50	1.0	**8.1**		0.50	1.0	**85.3**	J	0.50	1.0	**58.4**		0.50	1.0	**43.9**	J	0.50	1.0
Total Dissolved Solids	mg/L	174	--	**63.0**		25.0	25.0	**152**		25.0	25.0	**58.0**		25.0	25.0	**135**		25.0	25.0	**209**		25.0	25.0	**366**		10.0	10.0	**124**		25.0	25.0
CCR Appendix IV Constituents																															
Antimony	µg/L	QL	6	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0
Arsenic	µg/L	QL	10	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0
Barium	µg/L	19.5	2000	**12.9**		0.79	5.0	**3.0**	J	0.79	5.0	**11.5**		0.79	5.0	**5.8**		0.79	5.0	**66.9**		0.79	5.0	**131**		0.79	5.0	**56.2**		0.79	5.0
Beryllium	µg/L	QL	4	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0
Cadmium	µg/L	QL	5	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0
Chromium	µg/L	QL	100	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	**0.64**	J	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0
Cobalt	µg/L	2.2	6	**4.0**		0.14	1.0	**0.39**	J	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	**0.78**	J	0.14	1.0	**4.8**		0.14	1.0
Fluoride	mg/L	0.15	4	**0.26**	J+	0.050	0.10	< 0.050	U	0.050	0.10	**0.12**	J+	0.050	0.10	**0.13**		0.050	0.10	**0.13**	J+	0.050	0.10	**0.050**	J	0.050	0.10	**0.079**	J	0.050	0.10
Lead	µg/L	QL	15	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0
Lithium	µg/L	3.1	40	< 0.33	U	0.33	2.5	**0.44**	J	0.33	2.5	**0.46**	J	0.33	2.5	**2.2**	J	0.33	2.5	**0.53**	J	0.33	2.5	**1.6**	J	0.33	2.5	**1.7**	J	0.33	2.5
Mercury	µg/L	QL	2	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20
Molybdenum	µg/L	QL	100	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0
Selenium	µg/L	QL	50	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0
Thallium	µg/L	QL	2	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20
Radium 226 and 228 (combined)	pCi/L	2.39	5	**0.664**	J	--	--	0.590	U	--	--	0.314	U	--	--	**0.691**	J	--	--	**0.717**	J	--	--	0.319	U	--	--	0.141	U	--	--
VSWMR Constituents																															
Copper	µg/L	QL	1300	< 0.62	U	0.62	5.0	**0.76**	J	0.62	5.0	< 0.62	U	0.62	5.0	< 0.62	U	0.62	5.0	< 0.62	U	0.62	5.0	< 0.62	U	0.62	5.0	**5.8**		0.62	5.0
Nickel	µg/L	QL	QL	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	**0.91**	J	0.88	5.0	**1.3**	J	0.88	5.0	**7.2**		0.88	5.0
Silver	µg/L	QL	QL	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0
Tin	µg/L	3.1	3.1	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0
Vanadium	µg/L	19.1	19.1	< 1.6	U	1.6	5.0	**11.2**		1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0
Zinc	µg/L	19.6	19.6	**3.7**	J	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	**5.3**	J	3.0	10.0	**8.3**	J	3.0	10.0
Speciation of Chromium																															
Chromium, Hexavalent*	µg/L	6	--	**0.23**	J	0.0043	0.025	**1.1**	J	0.086	0.50	< 0.11	U	0.11	0.11	< 0.0043	U	0.0043	0.025	< 0.0050	U	0.0050	0.025	< 0.098	U	0.098	0.098	**1.6**	J	0.043	0.25
Former VPDES Constituents																															
Ammonia	mg/L	--	--	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	**0.048**	J	0.031	0.10	**0.50**		0.031	0.10	< 0.031	U	0.031	0.10
Hardness	µg/L	--	--	**17100**		36.8	662	**103000**		36.8	662	**22900**		36.8	662	**82800**		36.8	662	**123000**		36.8	662	**165000**		36.8	662	**45900**		36.8	662
Iron	µg/L	--	--	**51.9**		3.0	20.0	**393**		3.0	20.0	**210**		3.0	20.0	**194**		3.0	20.0	**5480**		3.0	20.0	**32500**		14.9	100	**178**		3.0	20.0
Manganese	µg/L	--	--	**84.3**		0.24	2.0	**3.7**		0.24	2.0	**2.7**		0.24	2.0	**34.8**		0.24	2.0	**446**		0.71	6.0	**830**		1.2	10.0	**407**		0.71	6.0
Nitrate	mg/L	--	--	**0.27**	J	0.060	0.10	< 0.060	UJ	0.060	0.10	**0.93**		0.060	0.10	**0.20**		0.060	0.10	< 0.060	UJ	0.060	0.10	**0.13**		0.060	0.10	< 0.060	UJ	0.060	0.10
Field Parameters																															
Conductivity	µS/cm	--	--	139.4		0.1	0.1	272.9		0.1	0.1	104.5		0.1	0.1	208.0		0.1	0.1	319.1		0.1	0.1	532		0.1	0.1	285.2		0.1	0.1
Dissolved Oxygen	mg/L	--	--	0.35		0.01	0.01	4.50		0.01	0.01	4.41		0.01	0.01	0.35		0.01	0.01	0.13		0.01	0.01	1.51		0.01	0.01	1.51		0.01	0.01
Oxidation Reduction Potential	millivolts	--	--	326.0		0.1	0.1	265.9		0.1	0.1	241.6		0.1	0.1	66.1		0.1	0.1	63.5		0.1	0.1	46.9		0.1	0.1	268.2		0.1	0.1
Temperature	C	--	--	19.4		0.1	0.1	16.6		0.1	0.1	17.8		0.1	0.1	17.1		0.1	0.1	16.2		0.1	0.1	22.3		0.1	0.1	16.8		0.1	0.1
Turbidity	NTU	--	--	1.12		0.1	0.1	5.17		0.1	0.1	8.89		0.1	0.1	1.90		0.1	0.1	8.41		0.1	0.1	21.6		0.1	0.1	2.54		0.1	0.1

Notes:

MDL = Method Detection Limit
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VPDES = Virginia Pollutant Discharge Elimination System
Bold font = Detected constituent
[1]Site-specific background and GPS values for CCR constituents were calculated in the March 2, 2023, *2023 Updated Facility Background Determination Report* West Pond

U = The analyte was not detected above the level of the sample reporting limit
UJ = The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise
J = Quantitation is approximate due to limitations identified during data validation
J+ = The result is an estimated quantity; the result may be biased high
J- = The result is an estimated quantity; the result may be biased low
R = Unreliable positive result; analyte may or may not be present in sample

= Concentration greater than site-specific background
= Concentration greater than SWP GPS and site-specific background

*Hexavalent chromium resample conducted on November 14, 2024, for MW-39D due to hold time exceedance; additional field blank collected on November 14, 2024, for hexavalent chromium.

Table 2
Summary of Second Semi-Annual Modified Assessment Monitoring Program Sampling Event Data (August 2024)
West Pond, Bremo Power Station
Permit No. 618

				Downgradient Wells												Field Quality Control Samples											
			Sample ID:	MW-37				MW-39S				MW-39D				Field Duplicate (MW-39D)				Field Blank				Field Blank			
			Sample Date:	8/29/2024				8/29/2024				8/29/2024				8/29/2024				8/26/2024				11/14/2024			
Parameter Name	Units	Site Specific Background[1]	SWP GPS[1]	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL	Result	Qualifier	MDL	RL
CCR Appendix III Constituents																											
Boron	µg/L	QL	4000	**93.0**		4.0	50.0	**776**		4.0	50.0	**32.7**	J	4.0	50.0	**33.1**	J	4.0	50.0	< 4.0	U	4.0	50.0	--		--	--
Calcium	µg/L	32900	--	**40000**		14.7	100	**36700**		14.7	100	**34400**		14.7	100	**36600**		14.7	100	< 14.7	U	14.7	100	--		--	--
Chloride	mg/L	9.9	--	**12.1**		0.60	1.0	**1.9**		0.60	1.0	**27.1**		0.60	1.0	**27.8**		0.60	1.0	< 0.60	U	0.60	1.0	--		--	--
Fluoride	mg/L	0.15	4	**0.11**		0.050	0.10	**0.090**	J	0.050	0.10	**0.20**		0.050	0.10	**0.11**		0.050	0.10	< 0.050	U	0.050	0.10	--		--	--
pH	SU	3.37-8.13	--	5.85		0.01	0.01	5.63		0.01	0.01	6.16		0.01	0.01	--		--	--	--		--	--	--		--	--
Sulfate	mg/L	15.7	--	**53.1**		0.50	1.0	**69.4**		0.50	1.0	**48.5**		0.50	1.0	**47.9**	J-	0.50	1.0	< 0.50	U	0.50	1.0	--		--	--
Total Dissolved Solids	mg/L	174	--	**197**		25.0	25.0	**184**		25.0	25.0	**242**		25.0	25.0	**238**		25.0	25.0	< 25.0	U	25.0	25.0	--		--	--
CCR Appendix IV Constituents																											
Antimony	µg/L	QL	6	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	< 3.6	U	3.6	5.0	--		--	--
Arsenic	µg/L	QL	10	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	< 2.5	U	2.5	10.0	--		--	--
Barium	µg/L	19.5	2000	**76.9**		0.79	5.0	**45.3**		0.79	5.0	**19.1**		0.79	5.0	**20.5**		0.79	5.0	< 0.79	U	0.79	5.0	--		--	--
Beryllium	µg/L	QL	4	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	< 0.16	U	0.16	1.0	--		--	--
Cadmium	µg/L	QL	5	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	< 0.29	U	0.29	1.0	--		--	--
Chromium	µg/L	QL	100	< 0.63	U	0.63	5.0	**0.76**	J	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	< 0.63	U	0.63	5.0	--		--	--
Cobalt	µg/L	2.2	6	**3.2**		0.14	1.0	**0.34**	J	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	--		--	--
Fluoride	mg/L	0.15	4	**0.11**		0.050	0.10	**0.090**	J	0.050	0.10	**0.20**		0.050	0.10	**0.11**		0.050	0.10	< 0.050	U	0.050	0.10	--		--	--
Lead	µg/L	QL	15	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	< 0.18	U	0.18	1.0	--		--	--
Lithium	µg/L	3.1	40	**1.3**	J	0.33	2.5	**1.1**	J	0.33	2.5	**2.4**	J	0.33	2.5	**2.5**		0.33	2.5	< 0.33	U	0.33	2.5	--		--	--
Mercury	µg/L	QL	2	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	< 0.12	U	0.12	0.20	--		--	--
Molybdenum	µg/L	QL	100	**2.8**	J	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	< 2.6	U	2.6	5.0	--		--	--
Selenium	µg/L	QL	50	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	< 4.1	U	4.1	10.0	--		--	--
Thallium	µg/L	QL	2	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	< 0.028	U	0.028	0.20	--		--	--
Radium 226 and 228 (combined)	pCi/L	2.39	5	**0.358**	J	--	--	0.134	U	--	--	**3.23**	J	--	--	**1.95**	J	--	--	0.285	U	--	--	--		--	--
VSWMR Constituents																											
Copper	µg/L	QL	1300	**0.85**	J	0.62	5.0	**1.3**	J	0.62	5.0	< 0.62	U	0.62	5.0	**0.64**	J	0.62	5.0	< 0.62	U	0.62	5.0	--		--	--
Nickel	µg/L	QL	QL	**2.8**	J	0.88	5.0	**3.0**	J	0.88	5.0	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	< 0.88	U	0.88	5.0	--		--	--
Silver	µg/L	QL	QL	< 0.49	U	0.49	5.0	**0.94**	J	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	< 0.49	U	0.49	5.0	--		--	--
Tin	µg/L	3.1	3.1	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	< 0.14	U	0.14	1.0	--		--	--
Vanadium	µg/L	19.1	19.1	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	< 1.6	U	1.6	5.0	--		--	--
Zinc	µg/L	19.6	19.6	**3.8**	J	3.0	10.0	**3.1**	J	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	< 3.0	U	3.0	10.0	--		--	--
Speciation of Chromium																											
Chromium, Hexavalent*	µg/L	6	--	**0.20**		0.0043	0.025	< 0.038	U	0.038	0.038	< 0.12	U	0.12	0.12	< 0.0043	R	0.0043	0.025	**0.025**		0.0043	0.025	**0.031**		0.0043	0.025
Former VPDES Constituents																											
Ammonia	mg/L	--	--	< 0.031	U	0.031	0.10	< 0.031	U	0.031	0.10	**0.11**		0.031	0.10	**0.099**	J	0.031	0.10	< 0.031	U	0.031	0.10	--		--	--
Hardness	µg/L	--	--	**130000**		36.8	662	**116000**		36.8	662	**120000**		36.8	662	**127000**		36.8	662	< 36.8	U	36.8	662	--		--	--
Iron	µg/L	--	--	**41.9**		3.0	20.0	**222**		3.0	20.0	**12700**		9.0	60.0	**11000**		9.0	60.0	< 3.0	U	3.0	20.0	--		--	--
Manganese	µg/L	--	--	**762**		1.2	10.0	**73.9**		0.24	2.0	**369**		0.71	6.0	**318**		0.71	6.0	< 0.24	U	0.24	2.0	--		--	--
Nitrate	mg/L	--	--	**0.17**		0.060	0.10	**0.39**		0.060	0.10	< 0.060	U	0.060	0.10	< 0.060	U	0.060	0.10	< 0.060	UJ	0.060	0.10	--		--	--
Field Parameters																											
Conductivity	µS/cm	--	--	293.0		0.1	0.1	324.9		0.1	0.1	305.1		0.1	0.1	--		--	--	--		--	--	--		--	--
Dissolved Oxygen	mg/L	--	--	1.05		0.01	0.01	1.21		0.01	0.01	0.49		0.01	0.01	--		--	--	--		--	--	--		--	--
Oxidation Reduction Potential	millivolts	--	--	197.7		0.1	0.1	205.7		0.1	0.1	-22.3		0.1	0.1	--		--	--	--		--	--	--		--	--
Temperature	C	--	--	18.2		0.1	0.1	21.8		0.1	0.1	17.2		0.1	0.1	--		--	--	--		--	--	--		--	--
Turbidity	NTU	--	--	3.57		0.1	0.1	0.81		0.1	0.1	3.38		0.1	0.1	--		--	--	--		--	--	--		--	--

Notes:

MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
pCi/L = picoCurie per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit

QL = Laboratory quantitation limit
SWP = Solid Waste Permit
GPS = Groundwater Protection Standards
CCR = Coal Combustion Residuals
VSWMR = Virginia Solid Waste Management Regulations
VPDES = Virginia Pollutant Discharge Elimination System
Bold font = Detected constituent
[1]Site-specific background and GPS values for CCR constituents were calculated in the March 2, 2023, *2023 Updated Facility Background Determination Report* West Pond

U = The analyte was not detected above the level of the sample reporting limit
UJ = The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise
J = Quantitation is approximate due to limitations identified during data validation
J+ = The result is an estimated quantity; the result may be biased high
J- = The result is an estimated quantity; the result may be biased low
R = Unreliable positive result; analyte may or may not be present in sample

= Concentration greater than site-specific background

= Concentration greater than SWP GPS and site-specific background

*Hexavalent chromium resample conducted on November 14, 2024, for MW-39D due to hold time exceedance; additional field blank collected on November 14, 2024, for hexavalent chromium.

APPENDIX A
DEQ FORM ARSC-01

Annual Report QA/QC Submission Checklist
(DEQ Form ARSC-01)

INCLUDED IN FINAL REPORT?	YES		NO
Signature of a qualified groundwater professional	X		
Solid waste facility permit number & facility name	X		
Name of current owner/operator & type of facility	X		
Dates LF began operations and was deemed closed (if applicable)	X		
Date of last waste receipt (if applicable) [2.b]	X		
Identified if site is lined or unlined [2.b]	X		
Identified waste disposal method (trench fill/area fill/etc.) [2.b]	X		
Total site acreage, and acreage used for waste disposal [2.b]	X		
Adjoining land use described including any aquifer users [2.c]	X		
Topographic map included as *Figure 1* [2.a]	X		
Figure 1 shows facility location, includes a bar scale, and north arrow	X		
Discuss the type, name & age of the geologic unit(s) on site [2.d]	X		
Description of general site topography [2.d]	X		
Name of nearest permanent water body, perennial stream, etc. [2.d]	X		
Description of the uppermost aquifer [2.d]	X		
Description of the aquifer type (confined vs unconfined) [2.d]	X		
Date facility entered detection or phase I monitoring [2.b]	X		
Date facility entered assessment or phase II monitoring [2.b]	X		
Identified if the facility monitors groundwater under a variance	X		
Identified the dates of any groundwater variance approvals	N/A		
Approval date for wetlands demonstration (if applicable)	N/A		
Identified all upgradient and downgradient monitoring wells [2.e]	X		
Identified if all monitoring wells were sampled during the year [2.e]	X		
Identified reasons for failure to sample (if applicable) [2.e]	N/A		
Identified if any monitoring wells have been abandoned [2.e]	X		
Identified if any wells require replacement [2.e]	X		
Included network performance certification statement [2.e]	X		
Identified groundwater sampling dates during past year [2.f]	X		
Included site plan drawing as *Figure 2* [2.h]	X		
Figure 2 contains current topographic contours	X		
Figure 2 contains facility and waste management unit boundaries	X		
Figure 2 includes all monitoring wells	X		
Figure 2 includes potentiometric surface contours	X		
Figure 2 includes groundwater flow direction arrows	X		

Annual Report Submission Checklist, DEQ Form ARSC-01 (11/01 – Revised 07/11)

Annual Report QA/QC Submission Checklist
(DEQ Form ARSC-01)

INCLUDED IN FINAL REPORT?	YES		NO
Figure 2 includes all surface water bodies	X		
Figure 2 includes all structures on site, a bar scale, and north arrow	X		
Listing of groundwater elevation readings in past year [2.h]	X		
Table of historical groundwater elevation data as *Appendix B*	X		
Calculated rate of groundwater flow (distance/year) [2.h]	X		
Flow rate calculations included as *Appendix C*	X		
Identified the name of the analytical laboratory [2.h]	X		
Identified whether lab was DCLS certified	X		
Identified type of analytical methods used [2.h]	X		
Identified those constituents found above the LOD and LOQ	X		
Identified if verification sampling was used during any event	X		
Identified statistical methods used to analyze groundwater data as Section 7.0	X		
Identified any SSI's noted during prior year of monitoring	X		
Table of prior detected constituent concentrations in each well [2.g] as *Appendix F*	X		
Field data sheet copies included as *Appendix D*	X		
Laboratory results & certificates of analysis as CDROM in *Appendix E*	X		
Included historical summary of laboratory results in *Appendix F*	X		
Full list of References	X		
Copy of this QA/QC checklist	X		

Notes:
(1) N/A = Not Applicable

APPENDIX B
SUMMARY OF HISTORICAL VSWMR STATIC WATER LEVEL DATA

Appendix B
Summary of Historical CCR and VSWMR Static Water Level Data
Bremo Power Station, West Pond
Solid Waste Permit No. 618

Well Identification	Top of Casing Elevation (feet AMSL)	Measurement Date	Depth to Water (feet below top of casing)	Groundwater Elevation (feet AMSL)
MW-1*	221.76	10/23/17	9.19	212.57
		12/05/17	8.55	213.21
		02/14/18	4.90	216.86
		03/26/18	6.20	215.56
		05/14/18	5.49	216.27
	222.05	06/25/18	4.13	217.92
		08/15/18	5.51	216.54
		10/15/18	3.39	218.66
		03/19/19	4.34	217.71
		09/09/19	6.33	215.72
		11/18/19	6.07	215.98
		03/04/20	5.95	216.10
		06/02/20	5.80	216.25
		08/24/20	4.85	217.20
		10/30/20	2.65	219.40
		12/01/20	2.71	219.34
		02/23/21	2.48	219.57
		06/07/21	5.39	216.66
		08/30/21	5.97	216.08
		02/07/22	5.58	216.47
		08/29/22	6.25	215.80
		02/13/23	2.17	219.88
		08/21/23	6.10	215.95
		02/12/24	4.21	217.84
		08/26/24	6.15	215.90
MW-3	218.9	08/26/24	10.24	208.66
MW-11	330.52	10/23/17	NM	--
		12/05/17	30.30	300.22
		02/14/18	30.62	299.90
		03/26/18	30.60	299.92
		05/14/18	29.78	300.74
		06/25/18	27.70	302.82
		08/15/18	28.05	302.47
		10/15/18	28.06	302.46
		03/18/19	22.43	308.09
		09/09/19	24.98	305.54
		11/18/19	26.75	303.77
		03/04/20	27.32	303.20
		06/02/20	26.42	304.10
		08/24/20	28.21	302.31
		10/30/20	28.58	301.94
		12/01/20	27.34	303.18
		02/23/21	23.79	306.73
		06/07/21	23.14	307.38
		08/30/21	25.79	304.73
		02/07/22	28.68	301.84
		08/29/22	29.03	301.49
		02/13/23	30.19	300.33
		08/21/23	30.12	300.40
		02/12/24	30.00	300.52
		08/26/24	28.67	301.85
MW-30	222.22	08/26/24	16.33	205.89

Appendix B
Summary of Historical CCR and VSWMR Static Water Level Data
Bremo Power Station, West Pond
Solid Waste Permit No. 618

Well Identification	Top of Casing Elevation (feet AMSL)	Measurement Date	Depth to Water (feet below top of casing)	Groundwater Elevation (feet AMSL)
MW-32D	221.61	12/05/17	19.02	202.59
(formerly OW-32D)		03/19/19	15.48	206.13
		09/10/19	19.09	202.52
		11/18/19	17.80	203.81
		03/04/20	16.50	205.11
		06/02/20	14.83	206.78
		08/24/20	15.73	205.88
		10/30/20	10.40	211.21
		12/01/20	10.27	211.34
		02/23/21	11.87	209.74
		06/07/21	17.86	203.75
		08/30/21	18.45	203.16
		02/07/22	14.80	206.81
		08/29/22	18.39	203.22
		02/13/23	14.25	207.36
		08/21/23	18.22	203.39
		02/12/24	15.85	205.76
		08/26/24	19.29	202.32
MW-32S	221.94	12/05/17	3.80	218.14
(formerly OW-32S)		03/19/19	1.50	220.44
		09/10/19	2.68	219.26
		11/18/19	2.78	219.16
		03/04/20	3.24	218.70
		06/02/20	2.97	218.97
		08/24/20	2.43	219.51
		10/30/20	2.14	219.80
		12/01/20	2.02	219.92
		02/23/21	1.48	220.46
		06/07/21	2.16	219.78
		08/30/21	2.45	219.49
		02/07/22	2.56	219.38
		08/29/22	3.24	218.70
		02/13/23	2.40	219.54
		08/21/23	3.23	218.71
		02/12/24	2.42	219.52
		08/26/24	2.96	218.98
NES-12S	218.10	08/26/24	16.49	201.61
NES-12D	218.51	08/26/24	17.88	200.63
MW-12	219.13	10/23/17	19.26	199.87
		12/05/17	19.11	200.02
		02/14/18	12.37	206.76
		03/26/18	15.32	203.81
		05/14/18	15.06	204.07
		06/25/18	15.18	203.95
		08/15/18	17.50	201.63
		10/15/18	12.84	206.29
		03/19/19	14.50	204.63
		09/10/19	18.91	200.22
		11/18/19	18.59	200.54
		03/04/20	15.53	203.60
		06/02/20	14.81	204.32
		08/24/20	16.10	203.03
		10/30/20	8.46	210.67
		12/01/20	10.01	209.12
		02/23/21	10.97	208.16
		06/07/21	16.80	202.33
		08/30/21	17.39	201.74
		02/07/22	13.25	205.88
		08/29/22	17.06	202.07
		02/13/23	13.45	205.68
		08/21/23	17.11	202.02
		02/12/24	14.71	204.42
		08/26/24	17.44	201.69

Appendix B
Summary of Historical CCR and VSWMR Static Water Level Data
Bremo Power Station, West Pond
Solid Waste Permit No. 618

Well Identification	Top of Casing Elevation (feet AMSL)	Measurement Date	Depth to Water (feet below top of casing)	Groundwater Elevation (feet AMSL)
MW-13	218.84	10/23/17	15.50	203.34
		12/05/17	14.51	204.33
		02/14/18	8.61	210.23
		03/26/18	9.23	209.61
		05/14/18	9.71	209.13
		06/25/18	9.81	209.03
		08/15/18	12.75	206.09
		10/15/18	3.20	215.64
		03/19/19	6.50	212.34
		09/09/19	14.29	204.55
		11/18/19	12.84	206.00
		03/04/20	10.32	208.52
		06/02/20	9.59	209.25
		08/24/20	7.85	210.99
		09/30/20	7.02	211.82
		10/30/20	3.54	215.30
		12/01/20	3.46	215.38
		02/23/21	3.49	215.35
		04/16/21	9.80	209.04
		06/07/21	13.41	205.43
		08/30/21	13.59	205.25
		02/07/22	8.90	209.94
		04/13/22	9.73	209.11
		08/29/22	14.33	204.51
		02/13/23	6.35	212.49
		08/21/23	14.20	204.64
		02/12/24	8.18	210.66
		08/26/24	14.80	204.04
MW-31	218.94	10/23/17	17.89	201.05
		12/05/17	17.68	201.26
		02/14/18	10.75	208.19
		03/26/18	13.84	205.10
		05/14/18	14.54	204.40
		06/25/18	13.77	205.17
		08/15/18	15.50	203.44
		10/15/18	11.24	207.70
		03/19/19	12.90	206.04
		09/09/19	17.16	201.78
		11/18/19	16.99	201.95
		03/04/20	14.50	204.44
		06/02/20	13.39	205.55
		08/24/20	13.56	205.38
		10/30/20	9.34	209.60
		12/01/20	9.33	209.61
		02/23/21	9.38	209.56
		06/07/21	14.34	204.60
		08/30/21	15.01	203.93
		02/07/22	10.88	208.06
		08/29/22	14.23	204.71
		02/13/23	11.28	207.66
		08/21/23	14.00	204.94
		02/12/24	12.05	206.89
		08/26/24	14.83	204.11
MW-37	222.15	06/02/20	18.90	203.25
		08/24/20	19.42	202.73
		10/30/20	11.23	210.92
		12/01/20	13.50	208.65
		02/23/21	14.70	207.45
		06/07/21	15.34	206.81
		08/30/21	21.74	200.41
		11/29/21	22.08	200.07
		02/07/22	16.84	205.31
		08/29/22	21.21	200.94
		02/13/23	17.33	204.82
		08/21/23	21.28	200.87
		02/12/24	18.70	203.45
		08/26/24	21.29	200.86

Appendix B
Summary of Historical CCR and VSWMR Static Water Level Data
Bremo Power Station, West Pond
Solid Waste Permit No. 618

Well Identification	Top of Casing Elevation (feet AMSL)	Measurement Date	Depth to Water (feet below top of casing)	Groundwater Elevation (feet AMSL)
MW-39S	218.22	06/02/20	12.05	206.17
		08/24/20	12.89	205.33
		10/30/20	5.65	212.57
		12/01/20	6.15	212.07
		01/08/21	8.20	210.02
		02/23/21	6.49	211.73
		06/07/21	15.83	202.39
		08/30/21	16.35	201.87
		11/29/21	17.24	200.98
		02/07/22	9.95	208.27
		08/29/22	16.79	201.43
		02/13/23	5.70	212.52
		08/21/23	15.18	203.04
		02/12/24	7.02	211.20
		08/26/24	15.80	202.42
MW-39D	218.10	06/02/20	13.61	204.49
		08/24/20	14.59	203.51
		09/30/20	14.55	203.55
		10/30/20	6.79	211.31
		12/01/20	8.31	209.79
		02/23/21	9.59	208.51
		06/07/21	16.20	201.90
		08/30/21	16.71	201.39
		11/29/21	16.95	201.15
		02/07/22	12.55	205.55
		04/13/22	13.42	204.68
		08/29/22	16.66	201.44
		02/13/23	12.26	205.84
		08/21/23	16.56	201.54
		02/12/24	13.64	204.46
		08/26/24	17.12	200.98

Notes:
CCR = Coal Combustion Residuals
VSWMR = Virginia Solid Waste Management Regulations
ft = feet
AMSL = Above Mean Sea Level
NM = Not Measured
* - Resurveyed May 2018

APPENDIX C
GROUNDWATER FLOW RATE CALCULATIONS

Appendix C.1

Groundwater Flow Rate Calculations
Bremo Power Station, West Pond
Solid Waste Permit #618

First Semi-Annual Groundwater Monitoring Event (February 2024)

The average hydraulic gradient for the Unit along the ideal flow line beneath the Unit was calculated using the following equation:

$$i = {}^{h_L}/_{L}$$

Where: i = hydraulic gradient (unitless)
h_L = head loss (elevation difference in feet)
L = length (horizontal distance in feet)

The groundwater flow rate was calculated using the following formula:

$$V = {}^{ki}/_{\theta}$$

Where: V = Groundwater Velocity (ft/s)
k = hydraulic conductivity (ft/s)
i = hydraulic gradient (unitless)
θ = assumed porosity (unitless)

Groundwater Flow	Aquifer Formation	Hydraulic Conductivity (k, ft/s)	Change in Elevation (feet amsl)	Flow Length (feet)	Average Gradient (i)	Assumed Porosity (Ø)	Estimated Groundwater Velocity	
							(ft/s)	(feet/year)
Vgw	Alluvium	1.11E-05	217.84-204.42	744	1.80E-02	0.20	1.0E-06	32
	Slate/Phyllite Bedrock	6.35E-06	217.84-204.42	744	1.80E-02	0.025	4.6E-06	145
	Gneiss Bedrock	1.53E-05	217.84-204.42	744	1.80E-02	0.025	1.1E-05	347

Notes:
ft/s = feet per second
amsl = above mean sea level
θ = estimated value based on properties of the lithologies comprising the uppermost aquifer

Appendix C.2
Groundwater Flow Rate Calculations
Bremo Power Station, West Pond
Solid Waste Permit #618

Second Semi-Annual Groundwater Monitoring Event (August 2024)

The average hydraulic gradient for the Unit along the ideal flow line beneath the Unit was calculated using the following equation:

$$i = {}^{h_L}/_{L}$$

Where: i = hydraulic gradient (unitless)
h_L = head loss (elevation difference in feet)
L = length (horizontal distance in feet)

The groundwater flow rate was calculated using the following formula:

$$V = {}^{ki}/_{\theta}$$

Where: V = Groundwater Velocity (ft/s)
k = hydraulic conductivity (ft/s)
i = hydraulic gradient (unitless)
θ = assumed porosity (unitless)

Groundwater Flow	Aquifer Formation	Hydraulic Conductivity (k, ft/s)	Change in Elevation (feet amsl)	Flow Length (feet)	Gradient (i)	Assumed Porosity (Ø)	Estimated Groundwater Velocity	
							(ft/s)	(feet/year)
Vgw	Alluvium	1.11E-05	215.90-201.69	744	1.91E-02	0.20	1.06E-06	33
	Slate/Phyllite Bedrock	6.35E-06	215.90-201.69	744	1.91E-02	0.025	4.85E-06	153
	Gneiss Bedrock	1.53E-05	215.90-201.69	744	1.91E-02	0.025	1.17E-05	369

Notes:
ft/s = feet per second
amsl = above mean sea level
θ = estimated value based on properties of the lithologies comprising the uppermost aquifer

APPENDIX D
FIELD DATA SHEETS

APPENDIX D.1
FIELD DATA SHEETS
FIRST SEMI-ANNUAL GROUNDWATER MONITORING EVENT
(FEBRUARY 2024)

Date: 02/12/2024

WELL GAUGING LOG

Project Name: 1SA24 Groundwater

Project No./Task No. 31406066.009

Sampler(s): J.Davis, M.Knez & Z. Mondshine

Equipment: Water Level Indicator

Well ID	Personnel (initials)	Time	DTW (feet)	DTB (feet)	Well Condition Summary				
					Protective Casing	Well Casing	Label	Lock	Pad Condition
MW-28	MK/ZM	1035	41.15	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☐ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-27S	MK/ZM	1039	44.63	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-27D	MK/ZM	1040	43.31	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-33	MK/ZM	1043	94.44	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-34	MK/ZM	1046	94.51	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-35	MK/ZM	1049	104.99	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-12	MK/ZM	1111	14.71	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-13	MK/ZM	1115	8.18	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-39S	MK/ZM	1117	7.02	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-39D	MK/ZM	1118	13.64	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-37	MK/ZM	1122	18.70	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-31	MK/ZM	1127	12.05	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-1	MK/ZM	1132	4.21	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-32S	MK/ZM	1137	2.42	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-32D	MK/ZM	1138	15.85	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-24	JD	1035	84.69	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-25D	JD	1040	48.95	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged

Observations/Notes: _____

Signature: _____ Date: 02/15/2024

QA/QC Signature: _____ Date: 02/15/2024

wsp

Date: 02/12/2024

WELL GAUGING LOG

Project Name: 1SA24 Groundwater Project No./Task No. 31406066.009

Sampler(s): J.Davis, M.Knez & Z. Mondshine

Equipment: Water Level Indicator

Well ID	Personnel (initials)	Time	DTW (feet)	DTB (feet)	Well Condition Summary				
					Protective Casing	Well Casing	Label	Lock	Pad Condition
MW-25S	JD	1042	48.37	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-26S	JD	1045	60.88	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-26D	JD	1047	60.60	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-19	JD	1100	~~27.08~~ ZM 2/15/24 27.03	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-20S	JD	1105	27.01	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-20D	JD	1107	25.55	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-23	JD	1113	23.28	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-22	JD	1116	~~21.08~~ ZM 21.08 2/15/24 ZM	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-21	JD	1124	25.02	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-29S	JD	1229	44.14	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-29D	ZM	1228	45.33	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-11	MK	1219	30.00	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
				--	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged
				--	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged
				--	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged
				--	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged
				--	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged

Observations/Notes: _____

Signature: _____ Date: 02/15/2024

QA/QC Signature: _____ Date: 02/15/2024

MICROPURGE SAMPLING LOG

Date: 2/12/2024 ~~M. Knez~~
Weather: cloudy, 50's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): M. Knez
Well ID: MW-11
Field Calibration Completed: 2/12/2024 @ 0945
Well Diameter: 2.0 inches
Initial Depth to Water: 30.00 feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [x] YSI Pro DSS 24C103134
- [ ] In-Situ
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ]

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1235	~~5.14~~ 5.14 MA	240.9	24.1	4.49	14.7	204.4	31.29	~200
1240	5.05	211.9	30.4	4.08	14.7	212.2	31.45	~200
1245	5.02	237.3	38.1	~~3.87~~ 3.87 MA	14.8	220.9	31.23	~200
1250	4.97	237.1	32.2	3.75	14.8	227.1	31.47	~300
1255	4.94	238.1	33.6	3.53	14.8	231.3	31.82	~300
1300	4.95	239.0	19.6	3.65	14.8	234.0	32.41	~300
1305	4.96	238.7	18.2	3.75	14.8	236.7	31.91	~300
1310	5.00	239.3	14.9	3.78	14.8	238.3	32.11	~300
1315	5.02	241.4	9.6	3.76	14.5	239.7	31.92	~300
1320				SAMPLE				
1335	4.98	249.5	9.2	3.93	14.2	242.2	32.07	~300

Purge Cycle (End): 15 / 15 @ 30 psi
Flow Rate (ml/min End): ~300
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): ~0.27
Total Purge Volume (Gallons): ~4.5
Purge Water Management: on-site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1229
Sample Time: 1320
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 44.91
Sample ID: 021224NMW11

Sampler Signature: M. Knez Date: 2/12/24
QA/QC Signature: Date: 02/15/2024

MICROPURGE SAMPLING LOG

Date: 2/13/24
Weather: sunny, 50's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): M. Knez
Well ID: MW-1
Field Calibration Completed: 2/13/24 @ 0815
Well Diameter: 2.0 inches
Initial Depth to Water: 3.45 feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [ ] Turbidity Meter
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI ProDSS22C103134
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ —
- [ ] MP-10 Controller Box
- [x] ~~MP-15~~ Controller Box
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1240	5.22	59.0	14.0	3.21	15.5	150.7	~~6.61~~	~400
~~1243~~ 1245	4.88	59.5	8.7	3.35	15.3	190.7	7.70	~400
~~1246~~ 1250	4.71	60.1	5.2	3.10	15.5	222.9	9.13	~400
1255	4.66	60.2	4.9	3.00	15.5	236.6	9.74	~400
1300	4.64	60.3	4.8	2.81	15.5	241.3	9.99	~400
1305	4.61	60.5	5.4	2.63	15.6	245.6	9.89	~400
1310	—	—	—	SAMPLE	—	—	—	—
1340	4.75	60.9	6.6	1.82	16.0	250.5	~~9.79~~	~400

Purge Cycle (End): 25/5 @ 20 psi
Flow Rate (ml/min End): ~400
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.20
Total Purge Volume (Gallons): ~4.75
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample, MS/MSD taken
Purge time: 1235
Sample Time: 1310
Field Filtered (0.45um): [ ] Yes [ ] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 44.0
Sample ID: 021324NMW1 / 021324NWPMS / 021324NWPMSD

Sampler Signature: ~~2/13/24 MK~~ M. Knez Date: 2/13/24 Page 1 of 1
QA/QC Signature: [signature] Date: 02/15/2024

MICROPURGE SAMPLING LOG

Date: 2/13/24

Weather: ~~partly sunny, 40s~~

Project Name: Bremo Power Station | Project No./Task No.: 31406066.009

Event: 1SA24 GW | Sampler(s): Z. Mondshine

Well ID: MW-12 | Field Calibration Completed: 0815 on 2/13/24

Well Diameter: 2.0 inches | Initial Depth to Water: 14.34 feet

Depth to Bottom: — feet | Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS16L103994
- [ ] In-Situ —
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1130	5.68	308.8	230.84	0.65	15.4	43.3	15.14	~500
1135	5.69	307.5	228.73	0.49	15.5	44.1	15.21	~500
1140	5.69	305.7	268.17	0.41	15.6	45.8	15.28	~500
1145	5.68	305.1	7.25	0.37	15.7	46.6	15.34	~500
1148	5.69	304.9	9.72	0.37	15.5	46.4	15.37	~500
1151	5.70	304.3	8.78	0.33	15.5	46.4	15.42	~500
1154	5.70	304.1	5.66	0.32	15.5	46.3	15.45	~500
1157	5.70	303.4	3.84	0.30	15.4	46.4	15.49	~500
1200	—	—	— SAMPLE —				—	—
1210	5.70	301.7	7.21	0.30	15.4	46.7	15.51	~500

with 03 min readings

Purge Cycle (End): 24/6 @ ~20 psi | Flow Rate (ml/min End): ~500

Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.17

Total Purge Volume (Gallons): ~7.25 | Purge Water Management: on site containment

Purge Observations (color, odor, turbidity, sheen): clear grab sample

Purge time: 1115

Sample Time: 1200 | Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 28.12

Sample ID: 021324NMW12

Sampler Signature: [signature] Date: 02/13/24 | Page 1 of 1

QA/QC Signature: M. Kuy Date: 2/15/24

MICROPURGE SAMPLING LOG

Date: 02/12/24
Weather: overcast, 40s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): Z. Mondshine
Well ID: MW13
Field Calibration Completed: 0945 on 2/12/24
Well Diameter: 2.0 inches
Initial Depth to Water: 8.21 feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [ ] Turbidity Meter
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI ProDSS 16C103994
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ —
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1520	4.86	400.7	56.95	0.64	13.4	230.6	10.12	~330
1525	4.90	402.8	47.22	0.48	13.4	224.8	10.35	~330
1530	4.95	407.7	43.02	0.42	13.5	218.5	10.43	~330
1535	4.99	413.8	45.92	0.40	13.5	214.0	10.52	~330
1540	5.02	420.6	39.46	0.38	13.6	209.4	10.52	~330
1545	5.03	423.4	43.89	0.36	13.6	207.9	10.53	~330
1550	5.04	425.5	34.88	0.35	13.6	206.4	10.55	~330
1555	5.04	428.0	24.97	0.31	13.7	204.7	10.56	~330
1605	5.03	432.7	27.83	0.39	13.7	205.5	10.52	~330
1610	5.04	432.8	31.57	0.40	13.6	198.7	10.54	~330
1615	5.06	437.3	32.25	0.36	13.6	194.3	10.57	~330
1620	5.07	439.5	17.87	0.35	13.6	195.1	10.61	~330
1625	5.07	441.3	13.46	0.35	13.6	194.9	10.66	~330
1630	5.05	441.9	11.18	0.34	13.6	196.0	10.68	~330
1635	5.05	442.3	7.94	0.33	13.6	195.4	10.69	~330
1640	—	—	— SAMPLE —	—	—	—	—	—
1650	5.03	442.7	5.89	0.58	13.3	199.3	10.71	~330

1500 - change air tank

Purge Cycle (End): 13/7 @ ~20 psi
Flow Rate (ml/min End): ~330
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.09
Total Purge Volume (Gallons): ~6.5
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1510
Sample Time: 1640
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 15.52
Sample ID: 021224NMW13

Sampler Signature: [signature] Date: 02/12/24
QA/QC Signature: M. Kurz Date: 2/15/24

MICROPURGE SAMPLING LOG

Date: 02/12/2024
Weather: cloudy 40's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): J. DAVIS
Well ID: MW-31
Field Calibration Completed: 02/12/2024 @ 0945
Well Diameter: 2.0 inches
Initial Depth to Water: 12.03 feet
Depth to Bottom: - feet
Water Column Thickness: - feet

Equipment Used:
- [x] WL Indicator
- [x] YSI Pro DSS 23J100253
- [ ] In-Situ -
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] -

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1500	5.30	165.8	9.72	1.51	15.0	218.4	15.67	~300
1505	5.31	166.1	3.13	1.26	15.0	220.0	16.43	~300
1510	5.32	166.6	2.96	1.20	15.0	219.4	16.97	~300
1515	5.33	167.2	3.14	1.16	15.0	217.8	17.11	~300
1520	-	S	A	M	P	L	E	-
1550			1.89	1.14	15.1	197.4	17.31	~300
	5.33	171.8						

Purge Cycle (End): 2614 @ ~30 psi
Flow Rate (ml/min End): ~300mL/min
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 27.77x.006 = ~
Total Purge Volume (Gallons): ~4.0
Purge Water Management: On site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1448
Sample Time: 1520
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP= 27.97
Sample ID: 021224NMW31

Sampler Signature: James Davis Date: 02/12/2024
QA/QC Signature: M. Kuf Date: 2/15/2024

MICROPURGE SAMPLING LOG

Date: 2/12/24
Weather: cloudy, 50's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): M. Knoz
Well ID: MW-32D
Field Calibration Completed: 2/12/24 @ 0945
Well Diameter: 2-0 inches
Initial Depth to Water: 16.01 feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS 22C103134
- [ ] In-Situ —
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1423	6.59	221.9	6.7	0.83	14.9	54.3	19.81	~310
1426	6.73	222.2	5.2	0.59	14.8	28.3	21.43	~310
1429	6.80	222.1	4.0	0.48	14.8	17.6	22.51	~310
~~1432~~ 1432	6.82	222.3	3.3	0.40	14.8	13.9	23.54	~310
1435	6.79	222.6	3.2	0.35	14.8	20.9	23.98	~310
1440	SAMPLE			SAMPLE				
1500	6.43	215.4	2.5	0.27	14.9	61.0	29.51	~310

Purge Cycle (End): 13/7 @ 40 psi
Flow Rate (ml/min End): ~310
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.608
Total Purge Volume (Gallons): ~2.5
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 14/4
Sample Time: 1440
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 101.45
Sample ID: 02122 4NMW32D

Sampler Signature: M. Knox Date: 02/12/24
QA/QC Signature: [signature] Date: 02/15/2024

MICROPURGE SAMPLING LOG

Date: 2/12/24
Weather: slight rain, 50's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): M. Knez
Well ID: MW-325
Field Calibration Completed: 02/12/24 @ 0945
Well Diameter: 2.0 inches
Initial Depth to Water: 2.43 feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS 22C 10313
- [ ] In-Situ —
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1516	5.62	76.7	21.9	4.27	14.3	160.4	2.89	~350
1519	5.57	76.5	25.6	4.44	14.1	170.2	2.95	~350
1522	5.56	76.7	25.7	4.46	14.1	171.1	2.98	~350
1525 ~~1525~~	~~5.55~~ 5.55	76.6	25.5	4.40	14.1	176.5	3.03	~350
1530	5.55	76.1	20.7	4.41	14.1	179.2	2.95	~350
1535	5.56	75.7	17.6	4.40	14.1	186.8	2.91	~350
1540	5.55	76.0	15.7	4.40	14.1	191.2	2.90	~350
1545	5.54	76.1	12.4	4.36	14.1	195.8	2.88	~350
1550	5.51	76.1	11.8	4.38	14.1	197.3	2.91	~350
1555	5.49	76.1	9.7	4.33	14.3	203.5	2.90	~350
1600	—	—	—	SAMPLE		—	—	—
1611	5.53	76.0	7.4	4.26	14.3	207.7	2.89	~350

Purge Cycle (End): 2515 @ 20 psi
Flow Rate (ml/min End): ~350
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.0947
Total Purge Volume (Gallons): 5.25
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1507
Sample Time: 1600
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 15.70
Sample ID: 021224 MW325

Sampler Signature: M. Knez Date: 02/12/24
QA/QC Signature: [signature] Date: 02/15/2024

MICROPURGE SAMPLING LOG

Date: 02/12/2024
Weather: rainy 40's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): J. DAVIS
Well ID: MW-37
Field Calibration Completed: 02/12/2024 @ 0945
Well Diameter: 2.0 inches
Initial Depth to Water: 18.93 feet
Depth to Bottom: - feet
Water Column Thickness: - feet

Equipment Used:
- [x] WL Indicator
- [ ] Turbidity Meter
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI Pro DSS 23310025S
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ ~
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] -

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1620	5.93	301.3	5.80	1.11	14.2	178.3	21.28	~200
1625	5.93	302.3	5.24	1.00	14.2	180.6	21.70	~200
1630	5.93	302.9	3.06	0.93	14.3	181.4	21.81	~200
1635	5.94	302.9	2.34	0.93	14.3	184.9	21.86	~200
1640	-	S	A	M	P	L	E	-
1655	5.95	302.2	3.02	0.98	14.2	190.3	21.93	~200

Purge Cycle (End): 2614 @ ~20 psi
Flow Rate (ml/min End): ~200 mL/min
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 23.73 x .006 = ~.142
Total Purge Volume (Gallons): ~30
Purge Water Management: on site
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1610
Sample Time: 1640
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] Hexavalent Chromium
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate

Other Observations / Equipment Operation Problems: DTP: 23.73
Sample ID: 021224NMW37

Sampler Signature: [signature] Date: 02/12/2024
QA/QC Signature: [signature] Date: 2/15/2024

MICROPURGE SAMPLING LOG

Date: 2/13/24
Weather: Sunny, 50s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): M. Knez
Well ID: MW-39D
Field Calibration Completed: 02/13/24 @ 0815
Well Diameter: 2.0 inches
Initial Depth to Water: 13.15 feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS22C103134
- [ ] In-Situ —
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1130	5.88	308.2	12.5	0.47	15.0	23.3	13.71	~360
1135	5.86	313.6	7.9	0.39	15.1	13.5	13.60	~360
1140	5.86	316.5	7.2	0.31	15.2	8.7	13.67	~360
1145	5.87	318.5	6.0	0.21	15.1	5.8	13.70	~360
1150	5.88	318.8	5.5	0.15	15.0	4.6	13.62	~360
1155	5.89	318.4	5.6	0.12	15.0	2.7	13.68	~360
1205	—	—	—	SAMPLE		—	—	—
1215	5.91	318.3	4.2	0.13	14.9	1.8	13.72	~360

Purge Cycle (End): 2 4 6 @ 40 psi
Flow Rate (ml/min End): ~360
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.37
Total Purge Volume (Gallons): 4.75
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): Clear grab sample
Purge time: 1119
Sample Time: 1205
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP: 61.98
Sample ID: 021324NMW39D

Sampler Signature: M. Knez Date: 2/13/24
QA/QC Signature: [signature] Date: 02/15/2024

MICROPURGE SAMPLING LOG

Date: 02/13/2024
Weather: sunny 40's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): J.DAVIS
Well ID: MW-395
Field Calibration Completed: 02/13/2024 @ 0815
Well Diameter: 2.0 inches
Initial Depth to Water: 6.20 feet
Depth to Bottom: - feet
Water Column Thickness: - feet

Equipment Used:
- [x] WL Indicator
- [x] YSI Pro DSS 23310025 3
- [ ] In-Situ -
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] -

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1130	5.73	248.1	14.51	1.56	14.0	184.1	11.02	~300
1135	5.75	247.7	21.12	1.46	14.1	183.0	12.28	~300
1140	5.72	247.8	9.54	1.60	14.4	185.7	13.14	~300
1145	5.75	247.2	11.17	1.57	14.5	185.5	13.56	~300
1150	5.78	247.1	26.22	1.41	14.3	185.9	13.80	~300
1155	5.76	247.1	13.99	1.42	14.3	187.0	13.92	~300
1200	5.79	247.3	20.62	1.42	14.2	186.0	13.83	~300
1205	5.76	247.1	11.34	1.46	14.2	188.3	13.67	~300
1210	5.79	246.9	12.60	1.56	14.3	190.3	13.26	~300
1215	5.80	246.8	27.32	1.34	14.4	190.3	13.67	~300
1220	5.97	246.6	14.47	3.18	14.3	188.9	13.60	~300
1225	5.78	246.5	12.44	1.43	14.3	192.2	13.62	~300
1230	5.79	246.3	11.25	1.39	14.3	192.1	13.78	~300
1235	5.80	246.3	26.00	1.34	14.5	192.2	13.72	~300
1240	5.80	246.0	30.20	1.36	14.5	192.7	13.58	~200
1245	5.80	245.8	48.33	1.31	14.4	193.1	13.27	~200
1250	5.79	246.0	61.43	1.40	14.5	195.3	12.84	~200

Purge Cycle (End): 5515 @ -2.0 psi
Flow Rate (ml/min End): ~200 mL/min
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 17.92 x .006 = .107
Total Purge Volume (Gallons): 120
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1120 * drain flow cell, 1240 5317 → 5515
Sample Time: 1325
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems: DTP= 17.92
Sample ID: 021324NMW395

Sampler Signature: Jenny Davis Date: 02/13/2024
QA/QC Signature: M. Kurz Date: 2/15/24

MICROPURGE SAMPLING LOG

Date: 02/13/2024
Weather: Sunny 40's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): J. DAVIS
Well ID: MW-395
Field Calibration Completed: 02/13/2024 @ 0815
Well Diameter: 2.0 inches
Initial Depth to Water: 6.20 feet
Depth to Bottom: - feet
Water Column Thickness: - feet

Equipment Used:
- [x] WL Indicator
- [ ] Turbidity Meter
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI Pro DSS 23J100253
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ -
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] -

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1255	5.81	245.8	28.11	1.29	14.6	194.2	12.72	~200
1300	5.79	246.1	25.23	1.47	14.8	195.7	12.60	~200
1305	5.81	245.6	27.33	1.32	14.6	195.4	12.13	~200
1310	5.90	245.5	15.53	1.39	14.5	196.4	12.01	~200
1315	5.81	245.8	16.62	1.34	14.7	196.4	11.91	~200
1320	5.81	245.8	15.21	1.50	14.7	198.2	11.83	~200
1325	5.80	S	A	M	P	L	E	-
1340	5.79	246.0	15.04	1.76	14.8	193.4	11.71	~200

Purge Cycle (End): 5515 @ ~20 psi
Flow Rate (ml/min End): ~200 mL/min
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft):
Total Purge Volume (Gallons): ~12.0
Purge Water Management: On site containment
Purge Observations (color, odor, turbidity, sheen): Clear grab sample
Purge time: 1120
Sample Time: 1325
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] Hexavalent Chromium
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate

Other Observations / Equipment Operation Problems: DTP = 17.92
Sample ID: 021324NMW395

Sampler Signature: James Davis Date: 02/13/2024
QA/QC Signature: M. Kuy Date: 2/15/2024

MICROPURGE SAMPLING LOG

Date: 02/12/2024
Weather: cloudy 40's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 1SA24 GW
Sampler(s): J. DAVIS
Well ID: WP - Field Dup.
Field Calibration Completed: –
Well Diameter: – inches
Initial Depth to Water: – feet
Depth to Bottom: – feet
Water Column Thickness: – feet

Equipment Used:
- [x] ~~WL Indicator~~ JD 2/12/24
- [x] ~~YSI~~ JD 2/12/24
- [ ] In-Situ –
- [ ] Turbidity Meter
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [ ] ~~MP-15 Controller Box~~ JD 02/14/24
- [x] ~~Dedicated Bladder Pump~~ JD 2/12/24
- [ ] Non-dedicated BP
- [ ] –

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1530	✓	S	A	M	P	L	E	–

Purge Cycle (End): – @ – psi
Flow Rate (ml/min End): –
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): –
Total Purge Volume (Gallons): –
Purge Water Management: –
Purge Observations (color, odor, turbidity, sheen): Clear grab sample taken from MW-31
Purge time: –
Sample Time: 1530
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems:
Sample ID: 021224NWPFDDUPLICATE

Sampler Signature: [signature] Date: 02/12/2024
QA/QC Signature: M. Kelly Date: 2/15/24

APPENDIX D.2
FIELD DATA SHEETS
SECOND SEMI-ANNUAL GROUNDWATER MONITORING EVENT
(AUGUST 2024)

wsp

Date: 08/26/2024

WELL GAUGING LOG

Project Name: 2SA24 Groundwater West Pond Project No./Task No. 31406066.009

Sampler(s): J.Davis & Z. Mondshine

Equipment: Water Level Indicator

Well ID	Personnel (initials)	Time	DTW (feet)	DTB (feet)	Well Condition Summary				
					Protective Casing	Well Casing	Label	Lock	Pad Condition
MW-3	JD	0934	10.24	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-31	JD	0936	14.83	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-37	JD	0938	21.29	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-12	JD	0940	17.44	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
NES-12D	JD	0945	17.88	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
NES-12S	ZM	0956	16.49	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-39D	JD	0950	17.12	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-39S	JD	0952	15.80	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-13	JD	0954	14.80	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-30	JD	0958	16.33	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-2	JD	1004	13.30	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-32D	ZM	0938	19.29	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-32S	ZM	0940	2.96	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-11	ZM	1132	28.67	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
MW-1	ZM	0933	6.15	--	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	☒ OK ☐ Damaged
					☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged
					☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No	☐ OK ☐ Damaged

Observations/Notes: —

Signature: [signature] Date: 09/03/2024

QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/28/24
Weather: sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z. Mondshine
Well ID: MW-1
Field Calibration Completed: 0815 on 08/28/24
Well Diameter: 2.0 inches
Initial Depth to Water: 6.22 feet
Depth to Bottom: 24.40 feet
Water Column Thickness: 18.18 feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS 18L104692
- [ ] In-Situ —
- [x] Turbidity Meter 19007
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1445	5.13	138.2	0.87	0.44	19.6	269.9	9.33	~400
1448 ZM 08/28/24	5.00	138.3	1.02	0.39	19.6	291.5	10.12	~400
1451	4.93	139.0	1.06	0.35	19.6	307.2	10.98	~400
1454	4.88	139.9	0.93	0.34	19.5	317.0	11.24	~400
1457	4.86	139.5	0.89 ZM 08/28/24	0.33	19.5	321.8	11.69	~400
1500	4.85	139.4	1.12	0.35	19.4	326.0	12.20	~400
1505	—	—	SAMPLE	—	—	—	—	—
1515	4.79	140.7	1.10	0.66	19.2	329.5	14.25	~400

Purge Cycle (End): 2515 seconds @ 20 psi
Flow Rate (ml/min End): ~400
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.26
Total Purge Volume (Gallons): ~3.0
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1438
Sample Time: 1505
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents
- [x] Hexavalent Chromium
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate

Other Observations / Equipment Operation Problems: ZM 08/28/24 DTP ~~44.00~~ 19.58
Sample ID: 082824NMW1

Sampler Signature: [signature] Date: 08/28/24
QA/QC Signature: [signature] Date: 09/04/2024

MICROPURGE SAMPLING LOG

Date: 08/28/2024
Weather: Sunny 90's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW West Pond
Sampler(s): J. DAVIS
Well ID: MW-12
Field Calibration Completed: 08/28/2024 @ 0815
Well Diameter: 2.0 inches
Initial Depth to Water: 17.45 feet
Depth to Bottom: 35.41 feet
Water Column Thickness: 17.96 feet

Equipment Used:
- [x] WL Indicator
- [x] Turbidity Meter 21022
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI Pro DSS 16M103153
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ -
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] -

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1500	5.75	317.2	38.6	0.20	15.7	64.1	18.07	~300
1505	5.78	318.9	21.7	0.21	16.2	61.8	18.05	~300
1510	5.78	318.8	25.4	0.17	16.3	63.1	18.02	~300
1515	5.77	318.7	11.0	0.15	16.2	63.2	18.00	~300
1520	5.77	319.0	8.95	0.14	16.2	63.3	18.02	~300
1525	5.76	318.5	8.62	0.14	16.4	63.3	18.04	~300
1530	5.76	319.1	8.41	0.13	16.2	63.5	18.05	~300
1535	-	S	A	M	P	L	E	-
1550	5.83	320.0	6.40	0.50	16.4	62.0	17.85	~300

Purge Cycle (End): 2515 seconds @ ~20 psi
Flow Rate (ml/min End): ~300
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 28.10 x .006 = .168
Total Purge Volume (Gallons): ~7.0
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1442 * 10110 → 2515, purge iron bacteria
Sample Time: 1535
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] Hexavalent Chromium
- [x] CCR Appendix III & Appendix IV
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate
- [x] Former VPDES Constituents

Other Observations / Equipment Operation Problems: DTP: 28.10
Sample ID: 082824NMW12

Sampler Signature: [signature] Date: 08/28/2024
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/2024
Weather: Sunny 90's

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW West pond
Sampler(s): J. DAVIS
Well ID: MW-13
Field Calibration Completed: 08/29/2024 @ 0810
Well Diameter: 2.0 inches
Initial Depth to Water: 14.88 feet
Depth to Bottom: 22.5 feet
Water Column Thickness: 7.62 feet

Equipment Used:
- [x] WL Indicator
- [x] YSI Pro DSS 16M103153
- [ ] In-Situ ~~22.JD~~ 8129124
- [x] Turbidity Meter 21022
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] ~

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1110	5.45	519	8.66	0.61	17.9	19.2	BTOP	~300
1115	PAUSE	PURGE						
1140	5.77	509	8.00	0.85	29.6	7.4	15.45	~100
1145	5.87	532	5.89	1.31	27.1	10.1	15.55	~100
* 1150	5.76	530	25.2	1.30	20.1	24.5	15.75	~100
1155	5.55	526	27.2	1.33	21.1	29.8	15.45	~100
1200	5.51	532	22.9	1.50	21.3	28.5	15.60	~100
1205	5.42	530	20.9	1.55	21.9	47.4	15.56	~100
1210	5.42	532	21.6	1.51	22.3	46.9	15.54	~100
1215	-	S	A	M	P	L	E	-
1320	5.53	545	22.5	1.99	25.6	52.0	15.60	~75

Purge Cycle (End): 5515 seconds @ ~20 psi
Flow Rate (ml/min End): ~75
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 15.92x.006=~.095
Total Purge Volume (Gallons): ~2.5
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1058 BTOP = below top of pump * = charge air tank
Sample Time: 1215
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents
- [x] Hexavalent Chromium
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate

Other Observations / Equipment Operation Problems: DTP: 15.92
Sample ID: 082924WMW13

Sampler Signature: [signature] Date: 08/29/2024
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/28/24
Weather: Sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z Mondshein
Well ID: MW31
Field Calibration Completed: 0815 on 08/28/24
Well Diameter: 20 inches
Initial Depth to Water: 14.79 feet
Depth to Bottom: 35.90 feet
Water Column Thickness: ~~11.11~~ MW 9/16/24 21.11 feet

Equipment Used:
- [x] WL Indicator
- [x] YSI 20A/551814/692
- [ ] In-Situ —
- [x] Turbidity Meter 19007
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute Int.)	pH (S.U.)	Sp. Cond. (uS/cm)oC	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1535	5.23	284.6	7.44	1.60	17.0	259.5	16.94	~250
1540	5.25	283.0	4.87	1.62	16.9	272.3	17.88	~250
1545	5.26	284.5	3.63	1.59	16.8	277.6	18.80	~250
1550	5.27	285.2	2.54	1.51	16.8	268.2	19.48	~250
1555	—	—	SAMPLE	—	—	—	—	—
1610	5.32	299.6	3.40	1.30	16.9	222.1	20.40	~250

Purge Cycle (End): 25/5 seconds @ 30 psi
Flow Rate (ml/min End): ~250
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.17
Total Purge Volume (Gallons): ~2.5
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): Clear grab sample
Purge Start Time: 1530
Sample Time: 1555
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents
- [x] Hexavalent Chromium
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate

Other Observations / Equipment Operation Problems: DTP: 27.99
Sample ID: 082824NMW31

Sampler Signature: [signature] Date: 08/28/24
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/2024
Weather: Sunny 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW West pond
Sampler(s): J. DAVIS
Well ID: MW-320
Field Calibration Completed: 08/29/2024 @ 0810
Well Diameter: 2.0 inches
Initial Depth to Water: 19.46 feet
Depth to Bottom: 108.23 feet
Water Column Thickness: 88.77 feet

Equipment Used:
- [x] WL Indicator
- [x] Turbidity Meter 2/022
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI Pro DSS 16M103153
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ -
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] -

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1350	6.99	209.2	2.77	0.93	17.0	23.7	23.95	~300
1355	6.94	209.5	2.36	0.56	17.2	21.5	26.43	~300
1400	6.90	210.0	1.93	0.47	17.2	33.8	28.14	~300
1405	6.69	209.7	2.04	0.41	17.0	47.1	29.21	~300
1410	6.61	209.4	1.94	0.38	17.3	52.8	30.04	~300
1415	6.53	208.2	2.03	0.36	17.2	64.2	31.15	~300
1420	6.57	208.0	1.90	0.35	17.1	66.1	31.46	~300
1425	-	S	A	M	P	L	E	-
1515	6.40	202.8	1.750 @1425	0.41	16.9	68.7	37.32	~300

Purge Cycle (End): 1317 seconds @ ~40 psi
Flow Rate (ml/min End): ~300
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 101.21 x .006 = ~.607
Total Purge Volume (Gallons): ~4.0
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1340 MS/MSD taken here
Sample Time: 1425
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] Hexavalent Chromium
- [x] CCR Appendix III & Appendix IV
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate
- [x] Former VPDES Constituents

Other Observations / Equipment Operation Problems: DTP: 101.21
Sample ID: 082924NMW32D, 092924WPMS, 082924WPMSD

Sampler Signature: Date: 08/29/2024
Page 1 of 1

QA/QC Signature: Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/24
Weather: sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z. Mondshein
Well ID: MW32S
Field Calibration Completed: 0810 on 08/29/24
Well Diameter: 2.0 inches
Initial Depth to Water: 3.06 feet
Depth to Bottom: 22.13 feet
Water Column Thickness: 19.07 feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS 18C104692
- [ ] In-Situ —
- [x] Turbidity Meter 19007
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1450	5.80	107.7	39.6	4.48	18.2	210.6	3.27	~350
1453	5.79	106.3	34.4	4.48	18.1	216.3	3.31	~350
1456	5.77	106.2	27.1	4.44	18.0	220.9	3.33	~350
1459	5.77	106.5	23.7	4.43	18.0	223.4	3.35	~350
1502	5.75	105.6	19.5	4.34	18.0	227.1	3.40	~350
1505	5.74	105.4	17.4	4.37	17.9	229.6	3.46	~350
1508	5.74	105.4	16.2	4.39	17.8	230.8	3.49	~350
1511	5.73	105.1	13.3	4.38	17.9	232.3	3.51	~350
1514	5.72	105.6	~~11.2~~ 12.6 3M 08/29/24	4.34	17.8	235.1	3.54	~350
1517	5.70	105.1	9.91	4.43	17.8	237.7	3.56	~350
1520	5.69	104.9	9.37	4.33	17.8	239.9	3.59	~350
1523	5.68	104.5	8.89	4.41	17.8	241.6	3.60	~350
1525	—	—	SAMPLE	—	—	—	—	~~350~~ 08/29/24
1540	5.70	104.2	7.62	4.50	17.9	230.8	3.66	~350

Purge Cycle (End): 2515 seconds @ 20 psi
Flow Rate (ml/min End): ~350
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.09
Total Purge Volume (Gallons): ~4.5
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1442
Sample Time: 1525
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents
- [x] Hexavalent Chromium
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate

Other Observations / Equipment Operation Problems: DTP: 15.70
Sample ID: 082924NMW32S

Sampler Signature: [signature] Date: 08/29/24
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/24
Weather: sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z. Mondshine
Well ID: MW37
Field Calibration Completed: 0810 on 08/29/24
Well Diameter: 2.0 inches
Initial Depth to Water: 21.25 feet
Depth to Bottom: 34.20 feet
Water Column Thickness: 12.95 feet

Equipment Used:
- [x] WL Indicator
- [x] Turbidity Meter 19007
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI Pro DSS 18J04692
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ —
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1345	5.87	282.7	4.56	2.31	17.8	190.9	22.76	~250
* 1350	5.82	278.3	1.28	1.68	17.8	189.1	~~23.60~~ BTOP	~~200~~ 2M 08/29/24 ~150
1355	5.82	287.0	2.67	1.58	18.0	193.2	~~BTOP~~ 23.60	~~200~~ 2M 08/29/24 ~150
1400	5.83	292.1	2.26	1.24	18.0	196.4	23.56	~~200~~ 2M 08/29/24 ~150
1405	5.85	293.0	3.57	1.05	18.2	197.7	23.27	~150
1410			SAMPLE					
1430	5.88	288.8	2.37	0.89	17.9	188.6	BTOP	~150

Purge Cycle (End): 2812 seconds @ 20 psi
Flow Rate (ml/min End): ~150
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.14
Total Purge Volume (Gallons): ~2.0
Purge Water Management: onsite containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1339 *lowered flow rate 26/4 → 28/2
Sample Time: 1410
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] Hexavalent Chromium
- [x] CCR Appendix III & Appendix IV
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate
- [x] Former VPDES Constituents

Other Observations / Equipment Operation Problems: DTP: ~~23.73~~ 23.68
Sample ID: 082924MW37
BTOP : below top of pump

Sampler Signature: [signature] Date: 08/29/24
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/24
Weather: Sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z. Mondshine
Well ID: MW39D
Field Calibration Completed: 0810 on 08/29/24
Well Diameter: 2.0 inches
Initial Depth to Water: 17.09 feet
Depth to Bottom: 71.64 feet
Water Column Thickness: 54.55 feet

Equipment Used:
- [x] WL Indicator
- [x] YSI RODS18L104692
- [ ] In-Situ —
- [x] Turbidity Meter 19007
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1253	6.29	318.5	~~7.78~~ 6.02	0.81	17.1	-26.5	17.60	~350
1256	6.21	312.4	3.85	0.59	17.1	-25.5	17.64	~350
1259	6.19	309.4	3.87	0.55	17.0	-24.1	17.66	~350
1302	6.16	305.1	3.38	0.49	17.2	-22.3	17.67	~350
1305			SAMPLE					
1330	6.16	291.0	4.01	0.42	17.1	-25.4	17.69	~350

Purge Cycle (End): 25/5 seconds @ 40 psi
Flow Rate (ml/min End): ~350
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.37
Total Purge Volume (Gallons): ~2.5
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 1243
Sample Time: 1305
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents
- [x] Hexavalent Chromium
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate

Other Observations / Equipment Operation Problems: DTP: 61.97
Sample ID: 082924MW39D Field Dup taken here @ 1315 (082924NWPFDUP)
Sampler Signature: [signature] Date: 08/29/24 Page 1 of 1
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/24
Weather: Sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z. Mondshine
Well ID: MW39S
Field Calibration Completed: 0810 on 08/29/24
Well Diameter: 2.0 inches
Initial Depth to Water: 15.85 feet
Depth to Bottom: 24.30 feet
Water Column Thickness: 8.45 feet

Equipment Used:
- [x] WL Indicator
- [x] YSI ProDSS 18404692
- [ ] In-Situ —
- [x] Turbidity Meter 19007
- [ ] Peristaltic Pump
- [ ] MP-10 Controller Box
- [ ] Air Tank
- [ ] Compressor
- [x] MP-15 Controller Box
- [x] Dedicated Bladder Pump
- [ ] Non-dedicated BP
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1105	5.62	306.6	0.81	3.75	17.8	222.2	BTOP	~200
1110	5.59	312.0	1.97	1.73	18.0	225.2	BTOP	~200
1115		pause purge						
1140		resume purge						~100 2M 08/29/24
* 1145	5.63	335.0	1.83	1.07	21.4	194.5	BTOP	~100
1150	5.62	326.0	1.12	0.89	21.4	199.9	BTOP	~100
1155	5.63	324.2	0.92	1.16	21.6	204.0	BTOP	~100
1200	5.63	324.9	0.81	1.21	21.8	205.7	BTOP	~100
1205			SAMPLE					
1235	5.63	318.5	2.85	1.66	21.2	192.2	BTOP	~100

Purge Cycle (End): 5812 seconds @ 20 psi
Flow Rate (ml/min End): ~100
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.11
Total Purge Volume (Gallons): ~2.0
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge Start Time: 10.55
*lowered flow rate 5614 ~~5617~~ → 5812 2M 08/29/24
Sample Time: 1205
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] CCR Appendix III & Appendix IV
- [x] Former VPDES Constituents
- [x] Hexavalent Chromium
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate

Other Observations / Equipment Operation Problems: DTP: 17.89 BTOP: below top of pump
Sample ID: 082924NMW39S

Sampler Signature: [signature] Date: 08/29/24
QA/QC Signature: [signature] Date: 09/03/2024

MICROPURGE SAMPLING LOG

Date: 08/29/24
Weather: sunny, 90s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: 2SA24 GW
Sampler(s): Z. Mondshine
Well ID: Field DUP-WP
Field Calibration Completed: —
Well Diameter: 2.0 inches
Initial Depth to Water: — feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] ~~WL Indicator~~ ZM 08/29/24
- [x] ~~Turbidity Meter~~ ZM 08/29/24
- [ ] Air Tank
- [x] Dedicated Bladder Pump ZM 08/29/24
- [x] ~~YSI~~ ZM 08/29/24
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ —
- [ ] MP-10 Controller Box
- [x] ~~MP-15 Controller Box~~ ZM 08/29/24
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm) °C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1315	—	—	SAMPLE	—	—	—	—	—

Purge Cycle (End): — seconds @ — psi
Flow Rate (ml/min End): —
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): —
Total Purge Volume (Gallons): —
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample taken from MW39D
Purge Start Time: —

Sample Time: 1315
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [x] VSWMR Table 3.1 Metals
- [x] Hexavalent Chromium
- [x] CCR Appendix III & Appendix IV
- [x] Ammonia, Hardness, Iron, Manganese & Nitrate
- [x] Former VPDES Constituents

Other Observations / Equipment Operation Problems: DTP: —
Sample ID: 082924NWPFDDuplicate

Sampler Signature: [signature] Date: 08/29/24
QA/QC Signature: [signature] Date: 09/03/2024

APPENDIX D.3
FIELD DATA SHEETS
SECOND SEMI-ANNUAL GROUNDWATER RESAMPLE EVENT
(NOVEMBER 2024)

MICROPURGE SAMPLING LOG

Date: 11/14/24
Weather: rainy, 50s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: MW-39D Resample
Sampler(s): Z. Mondsmne
Well ID: MW-39D
Field Calibration Completed: 1240 on 11/14/24
Well Diameter: 2.0 inches
Initial Depth to Water: 16.12 feet
Depth to Bottom: 71.64 feet
Water Column Thickness: 55.52 feet

Equipment Used:
- [x] WL Indicator
- [x] Turbidity Meter 22013729
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI 23F102676
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ —
- [ ] MP-10 Controller Box
- [x] MP-15 Controller Box
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1316	6.05	330	10.1	0.73	14.8	48.0	16.44	~350
1319	6.04	320	4.4	0.57	14.8	24.0	16.52	~350
1322	6.02	312	3.1	0.50	14.8	15.2	16.59	~350
1325	5.99	307	2.9	0.49	14.8	10.3	16.63	~350
1328	5.98	304	2.3	0.47	14.9	7.2	16.77	~350
1330	—	—	— SAMPLE —	—	—	—	—	—
1340	5.97	297	1.1	0.47	14.9	0.9	16.79	~350

Purge Cycle (End): 25/5 @ 40 psi
Flow Rate (ml/min End): ~350
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): 0.37
Total Purge Volume (Gallons): ~3.0
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample
Purge time: 1306

Sample Time: 1330
Field Filtered (0.45um): [ ] Yes [x] No

Sample Parameters/Analyte(s):
- [ ] VSWMR Table 3.1 Metals
- [ ] CCR Appendix III & Appendix IV
- [ ] Former VPDES Constituents:
- [x] Hexavalent Chromium

Ammonia, Hardness, Iron, Manganese, Nitrate

Other Observations / Equipment Operation Problems: DTP: 61.97
Sample ID: 111424NMW39D

Sampler Signature: [signature] Date: 11/14/24
QA/QC Signature: [signature] Date: 11/15/24

MICROPURGE SAMPLING LOG

Date: 11/14/24
Weather: rainy, 50s

Project Name: Bremo Power Station
Project No./Task No.: 31406066.009
Event: MW-39D Resample
Sampler(s): Z. Mondshine
Well ID: ~~MW-39D~~ ZM 11/14/24 FieldBlank
Field Calibration Completed: ~~1240 on 11/14/24~~ ZM 11/14/24
Well Diameter: 2.0 inches
Initial Depth to Water: — feet
Depth to Bottom: — feet
Water Column Thickness: — feet

Equipment Used:
- [x] WL Indicator
- [ ] Turbidity Meter
- [ ] Air Tank
- [x] Dedicated Bladder Pump
- [x] YSI —
- [ ] Peristaltic Pump
- [ ] Compressor
- [ ] Non-dedicated BP
- [ ] In-Situ —
- [ ] MP-10 Controller Box
- [ ] MP-15 Controller Box
- [ ] —

Time (5 minute int.)	pH (S.U.)	Sp. Cond. (uS/cm)^{oC}	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	DTW (feet)	Flow Rate (mL/min)
Stabilization	+/- 0.1	+/- 3%	if >10, +/- 10%	+/- 10%	+/- 1°C	+/- 10 mV	<0.3 feet	<500
1345	—	—	SAMPLE	—	—	—	—	—

Purge Cycle (End): — @ — psi
Flow Rate (ml/min End): —
Purge volume (gallons) prior to stabilization monitoring (3/8" I.D. Tube: Vol=Depth to Pump x 0.006 gal/ft): —
Total Purge Volume (Gallons): —
Purge Water Management: on site containment
Purge Observations (color, odor, turbidity, sheen): clear grab sample taken w/ lab supplied DI water near MW39D
Purge time: —
Sample Time: 1345
Field Filtered (0.45um): [ ] Yes [X] No

Sample Parameters/Analyte(s):
- [ ] VSWMR Table 3.1 Metals
- [ ] CCR Appendix III & Appendix IV
- [ ] Former VPDES Constituents: Ammonia, Hardness, Iron, Manganese, Nitrate
- [x] Hexavalent Chromium

Other Observations / Equipment Operation Problems:
Sample ID: 111424FBBlank

Sampler Signature: [signature] Date: 11/14/24
QA/QC Signature: [signature] Date: 11/15/24

APPENDIX E
LABORATORY ANALYTICAL RESULTS

APPENDIX E.1
LABORATORY ANALYTICAL RESULTS
FIRST SEMI-ANNUAL GROUNDWATER MONITORING EVENT
(FEBRUARY 2024)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 20, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on February 13, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

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CERTIFICATIONS

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
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SAMPLE SUMMARY

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92712987001	**021224NMW11**	Water	02/12/24 13:20	02/13/24 10:35

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SAMPLE ANALYTE COUNT

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92712987001	**021224NMW11**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	JMH1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712987001	**021224NMW11**					
EPA 7199	Chromium, Hexavalent	0.085	ug/L	0.025	02/13/24 11:57	
EPA 6010D	Barium	3.3J	ug/L	5.0	02/20/24 15:00	
EPA 6010D	Calcium	19900	ug/L	100	02/20/24 15:00	
EPA 6010D	Copper	2.5J	ug/L	5.0	02/20/24 15:00	
EPA 6010D	Hardness, Total(SM 2340B)	103000	ug/L	662	02/20/24 15:00	
EPA 6010D	Vanadium	15.9	ug/L	5.0	02/20/24 15:00	
EPA 6020B	Cobalt	0.34J	ug/L	1.0	02/14/24 20:36	
EPA 6020B	Iron	313	ug/L	50.0	02/14/24 20:36	
EPA 6020B	Manganese	3.0	ug/L	2.0	02/14/24 20:36	
SM 2540C-2015	Total Dissolved Solids	149	mg/L	10.0	02/15/24 10:30	
EPA 9056A	Chloride	11.4	mg/L	1.0	02/13/24 23:10	
EPA 9056A	Nitrate as N	0.061J	mg/L	0.10	02/13/24 23:10	
EPA 9056A	Sulfate	6.3	mg/L	1.0	02/13/24 23:10	

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 832077

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92712989001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4300171)
  - Fluoride
  - Sulfate
- MSD (Lab ID: 4300172)
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 4300172)
  - Fluoride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Sample: 021224NMW11 **Lab ID: 92712987001** Collected: 02/12/24 13:20 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.085**	ug/L	0.025	0.025	1		02/13/24 11:57	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:00	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:00	7440-38-2	
Barium	**3.3J**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:00	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:00	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:00	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:00	7440-43-9	
Calcium	**19900**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:00	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:00	7440-47-3	
Copper	**2.5J**	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:00	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:00	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:00	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:00	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:00	7440-22-4	
Hardness, Total(SM 2340B)	**103000**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:00		
Vanadium	**15.9**	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:00	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:00	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.34J**	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 20:36	7440-48-4	
Iron	**313**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 20:36	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 20:36	7439-92-1	
Lithium	ND	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 20:36	7439-93-2	
Manganese	**3.0**	ug/L	2.0	1.0	1	02/14/24 13:35	02/14/24 20:36	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 20:36	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 20:36	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/14/24 13:59	02/15/24 12:33	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**149**	mg/L	10.0	10.0	1		02/15/24 10:30		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/06/24 23:40	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Sample: 021224NMW11 **Lab ID: 92712987001** Collected: 02/12/24 13:20 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**11.4**	mg/L	1.0	0.60	1		02/13/24 23:10	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		02/13/24 23:10	16984-48-8	
Nitrate as N	**0.061J**	mg/L	0.10	0.060	1		02/13/24 23:10	14797-55-8	
Sulfate	**6.3**	mg/L	1.0	0.50	1		02/13/24 23:10	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 831931
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92712987001

METHOD BLANK: 4299279 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.025	02/13/24 16:40	

LABORATORY CONTROL SAMPLE: 4299280

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.11	109	85-115	

MATRIX SPIKE SAMPLE: 4299873

Parameter	Units	92712989003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.089	0.1	0.19	98	90-110	H1

SAMPLE DUPLICATE: 4299872

Parameter	Units	92712987001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.085	0.083	2	20	H1

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 832173
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712987001

METHOD BLANK: 4300422 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	02/15/24 11:51	

LABORATORY CONTROL SAMPLE: 4300423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300424 4300425

Parameter	Units	92712351005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.5	98	97	75-125	1	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 832303
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712987001

METHOD BLANK: 4301221 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	02/20/24 14:54	
Arsenic	ug/L	ND	10.0	2.5	02/20/24 14:54	
Barium	ug/L	ND	5.0	0.79	02/20/24 14:54	
Beryllium	ug/L	ND	1.0	0.16	02/20/24 14:54	
Boron	ug/L	ND	50.0	4.0	02/20/24 14:54	
Cadmium	ug/L	ND	1.0	0.29	02/20/24 14:54	
Calcium	ug/L	ND	100	14.7	02/20/24 14:54	
Chromium	ug/L	ND	5.0	0.63	02/20/24 14:54	
Copper	ug/L	ND	5.0	0.62	02/20/24 14:54	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	02/20/24 14:54	
Molybdenum	ug/L	ND	5.0	2.6	02/20/24 14:54	
Nickel	ug/L	ND	5.0	0.88	02/20/24 14:54	
Selenium	ug/L	ND	10.0	4.1	02/20/24 14:54	
Silver	ug/L	ND	5.0	0.49	02/20/24 14:54	
Vanadium	ug/L	ND	5.0	1.6	02/20/24 14:54	
Zinc	ug/L	ND	10.0	3.0	02/20/24 14:54	

LABORATORY CONTROL SAMPLE: 4301222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	474	95	80-120	
Arsenic	ug/L	500	482	96	80-120	
Barium	ug/L	500	472	94	80-120	
Beryllium	ug/L	500	479	96	80-120	
Boron	ug/L	500	482	96	80-120	
Cadmium	ug/L	500	466	93	80-120	
Calcium	ug/L	5000	4520	90	80-120	
Chromium	ug/L	500	468	94	80-120	
Copper	ug/L	500	471	94	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	30000	91	80-120	
Molybdenum	ug/L	500	478	96	80-120	
Nickel	ug/L	500	473	95	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	232	93	80-120	
Vanadium	ug/L	500	467	93	80-120	
Zinc	ug/L	500	478	96	80-120	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301223 4301224

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	501	505	100	101	75-125	1	20	
Arsenic	ug/L	ND	500	500	509	512	102	102	75-125	1	20	
Barium	ug/L	3.3J	500	500	495	510	98	101	75-125	3	20	
Beryllium	ug/L	ND	500	500	506	509	101	102	75-125	1	20	
Boron	ug/L	ND	500	500	509	513	102	103	75-125	1	20	
Cadmium	ug/L	ND	500	500	482	484	96	97	75-125	0	20	
Calcium	ug/L	19900	5000	5000	24800	25200	97	105	75-125	2	20	
Chromium	ug/L	ND	500	500	486	489	97	98	75-125	1	20	
Copper	ug/L	2.5J	500	500	493	495	98	99	75-125	0	20	
Hardness, Total(SM 2340B)	ug/L	103000	33100	33100	138000	139000	106	109	75-125	1	20	
Molybdenum	ug/L	ND	500	500	491	494	98	99	75-125	1	20	
Nickel	ug/L	ND	500	500	484	486	97	97	75-125	0	20	
Selenium	ug/L	ND	500	500	519	525	104	105	75-125	1	20	
Silver	ug/L	ND	250	250	244	245	98	98	75-125	1	20	
Vanadium	ug/L	15.9	500	500	506	506	98	98	75-125	0	20	
Zinc	ug/L	ND	500	500	491	493	98	98	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 832223
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712987001

METHOD BLANK: 4300574 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.050	02/14/24 20:27	
Iron	ug/L	ND	50.0	20.9	02/14/24 20:27	
Lead	ug/L	ND	1.0	0.077	02/14/24 20:27	
Lithium	ug/L	ND	2.5	0.50	02/14/24 20:27	
Manganese	ug/L	ND	2.0	1.0	02/14/24 20:27	
Thallium	ug/L	ND	0.20	0.050	02/14/24 20:27	
Tin	ug/L	ND	1.0	0.43	02/14/24 20:27	

LABORATORY CONTROL SAMPLE: 4300575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	50.6	101	80-120	
Iron	ug/L	1250	1300	104	80-120	
Lead	ug/L	50	50.1	100	80-120	
Lithium	ug/L	50	51.4	103	80-120	
Manganese	ug/L	50	50.9	102	80-120	
Thallium	ug/L	25	25.0	100	80-120	
Tin	ug/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300576 4300577

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	0.34J	50	50	51.3	51.9	102	103	75-125	1	20	
Iron	ug/L	313	1250	1250	1740	1760	114	115	75-125	1	20	
Lead	ug/L	ND	50	50	51.2	50.7	102	101	75-125	1	20	
Lithium	ug/L	ND	50	50	48.3	49.0	96	97	75-125	2	20	
Manganese	ug/L	3.0	50	50	55.9	55.5	106	105	75-125	1	20	
Thallium	ug/L	ND	25	25	25.6	25.6	102	102	75-125	0	20	
Tin	ug/L	ND	50	50	50.9	50.6	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 832204
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712987001

METHOD BLANK: 4300531 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	02/15/24 10:09	

LABORATORY CONTROL SAMPLE: 4300532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	274	110	80-120	

SAMPLE DUPLICATE: 4300533

Parameter	Units	92712623001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	126	125	1	25	

SAMPLE DUPLICATE: 4300534

Parameter	Units	92713208011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	84.0	85.2	1	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 837078
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712987001

METHOD BLANK: 4323787 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	03/06/24 23:35	

LABORATORY CONTROL SAMPLE: 4323788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323789 4323790

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.2	5.2	104	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323791 4323792

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.045J	5	5	5.1	5.1	100	100	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

QC Batch: 832077
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712987001

METHOD BLANK: 4300169 Matrix: Water
Associated Lab Samples: 92712987001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	02/13/24 21:29	
Fluoride	mg/L	ND	0.10	0.050	02/13/24 21:29	
Nitrate as N	mg/L	ND	0.10	0.060	02/13/24 21:29	
Sulfate	mg/L	ND	1.0	0.50	02/13/24 21:29	

LABORATORY CONTROL SAMPLE: 4300170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.7	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Nitrate as N	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	50	49.2	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300171 4300172

Parameter	Units	92712989001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	50	50	60.6	61.7	101	103	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	4.8	2.0	192	76	90-110	85	10	M1,R1
Nitrate as N	mg/L	0.15	2.5	2.5	2.6	2.7	98	100	90-110	2	10	
Sulfate	mg/L	158	50	50	185	185	54	56	90-110	0	10	M1

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QUALIFIERS

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_1SA2024_CCR&VSWMR_P_A
Pace Project No.: 92712987

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92712987001	**021224NMW11**	EPA 7199	831931		
92712987001	**021224NMW11**	EPA 3010A	832303	EPA 6010D	832444
92712987001	**021224NMW11**	EPA 3010A	832223	EPA 6020B	832433
92712987001	**021224NMW11**	EPA 7470A	832173	EPA 7470A	832399
92712987001	**021224NMW11**	SM 2540C-2015	832204		
92712987001	**021224NMW11**	EPA 350.1 Rev 2.0 1993	837078		
92712987001	**021224NMW11**	EPA 9056A	832077		

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Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO# : 92712987

92712987

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☑ Client

Carrier Tracking Number: NA

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** GCG 2/13/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T010 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.9 **Correction Factor: Add / Subtract (°C)** -0.1

Corrected Cooler Temp (°C): 1.7

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

		Comments/Discrepancy:
Chain of Custody Present?	☑ Yes ☐ No ☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes ☐ No ☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes ☐ No ☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes ☑ No ☐ N/A	4.
Sufficient Volume?	☑ Yes ☐ No ☐ N/A	5.
Correct Containers Used?	☑ Yes ☐ No ☐ N/A	6.
-Pace Containers Used?	☑ Yes ☐ No ☐ N/A	
Containers Intact?	☑ Yes ☐ No ☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes (Grey) ☐ No ☑ N/A	8.
Sample Labels Match COC?	☑ Yes ☐ No ☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT		
Headspace in VOA Vials (>5-6mm)?	☐ Yes ☐ No ☑ N/A	10.
Trip Blank Present?	☐ Yes ☐ No ☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

Qualtrax Document ID: 70677

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

***Check all unpreserved Nitrates for chlorine

Project # WO#:92712987

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1	1															—				2				
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	Crystal.Shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_A	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET

County / State origin of sample(s): Virginia

Data Deliverables: [✓] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/F/SO4/NO3	Radium 226	Radium 228 & Total Radium				Sample Comment	Preservation non-conformance identified for sample
0212 24NMW11	WT	G			2/12/24	1320	7			X	X	X	X	X	X	X				-All samples preserved on ice	

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) [illegible] (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Angela Baioni

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3059933

Additional Instructions from Pace®:

Collected By: (Printed Name) Michael Knez

Signature: M. Knez

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
M. Knez / WSP M. Knez	2/12/24 @ 1900	GCG Pace Ltr Va	2/13/24 1055
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ANALYTICAL REPORT

March 19, 2024

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1706899
Samples Received:	02/17/2024
Project Number:	92712987
Description:	Bremo_1SA2024_CCR&VSWMR_P_A
Site:	001
Report To:	Angela Baioni
	9800 Kincey Avenue, Suite 100
	Huntersville, NC 28078

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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021224NMW11 L1706899-01 5

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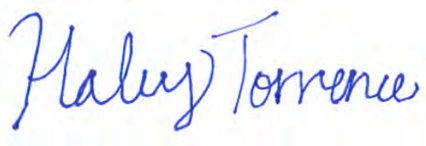
Sc: Sample Chain of Custody 10

021224NMW11 L1706899-01 Non-Potable Water			Collected by	Collected date/time 02/12/24 13:20	Received date/time 02/17/24 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 21:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 21:43	DDD	Mt. Juliet, TN

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

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.239	J	0.248		0.339		03/14/2024 21:43	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 21:43*	WG2236782

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	0.478	J	0.294	1.36	0.523	0.272	03/13/2024 17:03	WG2238285
(T) Barium	*118*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*106*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.717		0.385	0.623	03/14/2024 21:43	WG2236782

Method Blank (MB)

(MB) R4046646-1 03/14/24 20:12

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.142	J	0.117	0.170	
(T) Barium	*103*		*103*		

Laboratory Control Sample (LCS)

(LCS) R4046646-2 03/14/24 20:12

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.54	111	80.0-120	
(T) Barium			*102*		

L1706883-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706883-04 03/14/24 21:13 • (MS) R4046646-3 03/14/24 20:12 • (MSD) R4046646-5 03/14/24 20:42

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	0.630	23.2	20.5	113	99.2	1	75.0-125			12.5		20
(T) Barium		*104*			*102*	*103*							

L1706901-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706901-06 03/14/24 22:43 • (MS) R4046646-4 03/14/24 20:12 • (MSD) R4046646-6 03/14/24 20:42

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	0.152	21.5	22.1	107	110	1	75.0-125			2.89		20
(T) Barium		*104*			*103*	*104*							

Method Blank (MB)

(MB) R4047078-1 03/13/24 17:03

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.497		0.145	0.251	0.132
(T) Barium	*124*		*124*		
(T) Yttrium	*111*		*111*		

L1707769-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1707769-02 03/13/24 17:03 • (DUP) R4047078-5 03/13/24 17:03

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.92	0.374	0.625	0.328	1.34	0.390	0.676	0.352	35.9	1.08		20	3
(T) Barium	*134*				*109*	*109*							
(T) Yttrium	*100*				*106*	*106*							

Laboratory Control Sample (LCS)

(LCS) R4047078-2 03/13/24 17:03

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.67	113	80.0-120	
(T) Barium			*130*		
(T) Yttrium			*110*		

L1710452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1710452-01 03/13/24 17:03 • (MS) R4047078-3 03/13/24 17:03 • (MSD) R4047078-4 03/13/24 17:03

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	-0.188	17.5	18.3	104	110	1	70.0-130			4.97		20
(T) Barium		*126*			*124*	*116*							
(T) Yttrium		*99.2*			*119*	*108*							

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.

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.

Internal Transfer Chain of Custody

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: ☒ Yes ☐ No

Workorder: 92712987 Workorder Name: Bremo_1SA2024_CCR&VSWMR_P_A Owner Received Date: 2/13/2024 Results Requested By: 2/27/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

						Preserved Containers						Requested Analysis												
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3						Ra226, 903.0	Ra228, 904.0/Combined Ra											A241 4706899 LAB USE ONLY
1	021224NMW11	PS	2/12/2024 13:20	92712987001	Water	2						X	X											-01
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	2/16/24 1800	[illegible]	2/17/24 0900
2				
3				

Comments

Cooler Temperature on Receipt _____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

2.5+0-2.5 TCM

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:	N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N		

L1706899

INTER_LABORATORY WORK ORDER # 92712987

(To be completed by sending lab)

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Sending Project No:	92712987
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	02/16/24
REQUESTED COMPLETION DATE:	**2/27/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra226, 903.0	BP1N		HNO3	1	SI-38RAD	SUB PASI RAD
Ra228, 904.0/Combined Ra	BP1N		HNO3	1	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 25, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory between February 13, 2024 and February 14, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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(704)875-9092

CERTIFICATIONS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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Huntersville, NC 28078
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SAMPLE SUMMARY

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92712989001	**021224NMW13**	Water	02/12/24 16:40	02/13/24 10:35
92712989002	**021224NMW31**	Water	02/12/24 15:20	02/13/24 10:35
92712989003	**021224NMW32S**	Water	02/12/24 16:00	02/13/24 10:35
92712989004	**021224NMW32D**	Water	02/12/24 14:40	02/13/24 10:35
92712989005	**021224NWPFDDUPLICATE**	Water	02/12/24 15:20	02/13/24 10:35
92712989006	**021324NMW1**	Water	02/13/24 13:10	02/14/24 10:18
92712989007	**021324NMW12**	Water	02/13/24 12:00	02/14/24 10:18

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SAMPLE ANALYTE COUNT

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92712989001	**021224NMW13**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW, KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712989002	**021224NMW31**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW, KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712989003	**021224NMW32S**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712989004	**021224NMW32D**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712989005	**021224NWPFDDUPLICATE**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW, KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712989006	**021324NMW1**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A

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SAMPLE ANALYTE COUNT

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712989007	**021324NMW12**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	JAY	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

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Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712989001	**021224NMW13**					
EPA 6010D	Barium	57.2	ug/L	5.0	02/20/24 15:25	
EPA 6010D	Boron	24.0J	ug/L	50.0	02/20/24 15:25	
EPA 6010D	Cadmium	0.71J	ug/L	1.0	02/20/24 15:25	
EPA 6010D	Calcium	52000	ug/L	100	02/20/24 15:25	
EPA 6010D	Copper	1.2J	ug/L	5.0	02/20/24 15:25	
EPA 6010D	Nickel	9.0	ug/L	5.0	02/20/24 15:25	
EPA 6010D	Hardness, Total(SM 2340B)	171000	ug/L	662	02/20/24 15:25	
EPA 6010D	Zinc	10.9	ug/L	10.0	02/20/24 15:25	
EPA 6020B	Cobalt	4.6	ug/L	1.0	02/14/24 21:47	
EPA 6020B	Iron	1180	ug/L	50.0	02/14/24 21:47	
EPA 6020B	Lithium	1.9J	ug/L	2.5	02/14/24 21:47	
EPA 6020B	Manganese	947	ug/L	20.0	02/15/24 17:43	
SM 2540C-2015	Total Dissolved Solids	299	mg/L	10.0	02/17/24 01:17	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.034J	mg/L	0.10	03/06/24 23:44	
EPA 9056A	Chloride	10.1	mg/L	1.0	02/14/24 00:51	
EPA 9056A	Nitrate as N	0.15	mg/L	0.10	02/14/24 00:51	
EPA 9056A	Sulfate	158	mg/L	3.0	02/14/24 01:34	M1
92712989002	**021224NMW31**					
EPA 7199	Chromium, Hexavalent	0.030	ug/L	0.025	02/13/24 12:50	
EPA 6010D	Barium	58.1	ug/L	5.0	02/20/24 15:28	
EPA 6010D	Boron	10.2J	ug/L	50.0	02/20/24 15:28	
EPA 6010D	Calcium	11700	ug/L	100	02/20/24 15:28	
EPA 6010D	Chromium	0.70J	ug/L	5.0	02/20/24 15:28	
EPA 6010D	Copper	9.4	ug/L	5.0	02/20/24 15:28	
EPA 6010D	Nickel	6.5	ug/L	5.0	02/20/24 15:28	
EPA 6010D	Hardness, Total(SM 2340B)	46200	ug/L	662	02/20/24 15:28	
EPA 6010D	Zinc	8.9J	ug/L	10.0	02/20/24 15:28	
EPA 6020B	Cobalt	3.6	ug/L	1.0	02/14/24 21:52	
EPA 6020B	Iron	353	ug/L	50.0	02/14/24 21:52	
EPA 6020B	Lithium	1.9J	ug/L	2.5	02/14/24 21:52	
EPA 6020B	Manganese	301	ug/L	6.0	02/15/24 17:48	
SM 2540C-2015	Total Dissolved Solids	120	mg/L	10.0	02/17/24 01:18	
EPA 9056A	Chloride	2.0	mg/L	1.0	02/13/24 23:38	
EPA 9056A	Nitrate as N	0.23	mg/L	0.10	02/13/24 23:38	
EPA 9056A	Sulfate	46.1	mg/L	1.0	02/13/24 23:38	
92712989003	**021224NMW32S**					
EPA 7199	Chromium, Hexavalent	0.089	ug/L	0.025	02/13/24 13:25	
EPA 6010D	Barium	11.2	ug/L	5.0	02/20/24 15:31	
EPA 6010D	Boron	9.0J	ug/L	50.0	02/20/24 15:31	
EPA 6010D	Calcium	4390	ug/L	100	02/20/24 15:31	
EPA 6010D	Chromium	0.64J	ug/L	5.0	02/20/24 15:31	
EPA 6010D	Silver	1.7J	ug/L	5.0	02/20/24 15:31	
EPA 6010D	Hardness, Total(SM 2340B)	22200	ug/L	662	02/20/24 15:31	
EPA 6020B	Iron	182	ug/L	50.0	02/14/24 21:56	
EPA 6020B	Lead	0.081J	ug/L	1.0	02/14/24 21:56	
EPA 6020B	Manganese	2.5	ug/L	2.0	02/14/24 21:56	

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712989003	**021224NMW32S**					
SM 2540C-2015	Total Dissolved Solids	54.0	mg/L	10.0	02/17/24 01:19	
EPA 9056A	Chloride	3.3	mg/L	1.0	02/14/24 00:36	
EPA 9056A	Fluoride	0.072J	mg/L	0.10	02/14/24 00:36	
EPA 9056A	Nitrate as N	0.91	mg/L	0.10	02/14/24 00:36	
EPA 9056A	Sulfate	2.4	mg/L	1.0	02/14/24 00:36	
92712989004	**021224NMW32D**					
EPA 6010D	Barium	5.3	ug/L	5.0	02/20/24 15:34	
EPA 6010D	Calcium	27300	ug/L	100	02/20/24 15:34	
EPA 6010D	Hardness, Total(SM 2340B)	85600	ug/L	662	02/20/24 15:34	
EPA 6020B	Iron	227	ug/L	50.0	02/14/24 22:01	
EPA 6020B	Lithium	2.5J	ug/L	2.5	02/14/24 22:01	
EPA 6020B	Manganese	45.4	ug/L	2.0	02/14/24 22:01	
SM 2540C-2015	Total Dissolved Solids	128	mg/L	10.0	02/17/24 01:21	
EPA 9056A	Chloride	3.0	mg/L	1.0	02/13/24 23:24	
EPA 9056A	Fluoride	0.14	mg/L	0.10	02/13/24 23:24	
EPA 9056A	Nitrate as N	0.087J	mg/L	0.10	02/13/24 23:24	
EPA 9056A	Sulfate	11.0	mg/L	1.0	02/13/24 23:24	
92712989005	**021224NWPFDDUPLICATE**					
EPA 6010D	Barium	56.0	ug/L	5.0	02/20/24 15:37	
EPA 6010D	Boron	9.8J	ug/L	50.0	02/20/24 15:37	
EPA 6010D	Calcium	11300	ug/L	100	02/20/24 15:37	
EPA 6010D	Chromium	0.76J	ug/L	5.0	02/20/24 15:37	
EPA 6010D	Copper	9.3	ug/L	5.0	02/20/24 15:37	
EPA 6010D	Nickel	6.1	ug/L	5.0	02/20/24 15:37	
EPA 6010D	Hardness, Total(SM 2340B)	44700	ug/L	662	02/20/24 15:37	
EPA 6010D	Zinc	9.2J	ug/L	10.0	02/20/24 15:37	
EPA 6020B	Cobalt	3.6	ug/L	1.0	02/14/24 22:06	
EPA 6020B	Iron	336	ug/L	50.0	02/14/24 22:06	
EPA 6020B	Lithium	1.9J	ug/L	2.5	02/14/24 22:06	
EPA 6020B	Manganese	288	ug/L	6.0	02/15/24 17:53	
SM 2540C-2015	Total Dissolved Solids	122	mg/L	10.0	02/17/24 01:24	
EPA 9056A	Chloride	2.0	mg/L	1.0	02/14/24 00:22	
EPA 9056A	Nitrate as N	0.16	mg/L	0.10	02/14/24 00:22	
EPA 9056A	Sulfate	45.9	mg/L	1.0	02/14/24 00:22	
92712989006	**021324NMW1**					
EPA 7199	Chromium, Hexavalent	0.025	ug/L	0.025	02/14/24 11:49	
EPA 6010D	Barium	13.0	ug/L	5.0	02/22/24 13:22	
EPA 6010D	Calcium	2970	ug/L	100	02/22/24 13:22	
EPA 6010D	Copper	0.97J	ug/L	5.0	02/22/24 13:22	
EPA 6010D	Hardness, Total(SM 2340B)	15200	ug/L	662	02/22/24 13:22	
EPA 6010D	Zinc	4.0J	ug/L	10.0	02/22/24 13:22	
EPA 6020B	Cobalt	1.1	ug/L	1.0	02/15/24 23:27	
EPA 6020B	Iron	149	ug/L	50.0	02/15/24 23:27	
EPA 6020B	Manganese	37.3	ug/L	2.0	02/15/24 23:27	
SM 2540C-2015	Total Dissolved Solids	46.4	mg/L	10.0	02/17/24 01:29	
EPA 9056A	Chloride	2.6	mg/L	1.0	02/15/24 00:38	

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712989006	**021324NMW1**					
EPA 9056A	Fluoride	0.070J	mg/L	0.10	02/15/24 00:38	M1
EPA 9056A	Nitrate as N	0.10	mg/L	0.10	02/15/24 00:38	
EPA 9056A	Sulfate	3.1	mg/L	1.0	02/15/24 00:38	
92712989007	**021324NMW12**					
EPA 6010D	Barium	63.0	ug/L	5.0	02/22/24 13:36	
EPA 6010D	Boron	1210	ug/L	50.0	02/22/24 13:36	
EPA 6010D	Calcium	34500	ug/L	100	02/22/24 13:36	
EPA 6010D	Nickel	1.3J	ug/L	5.0	02/22/24 13:36	
EPA 6010D	Hardness, Total(SM 2340B)	119000	ug/L	662	02/22/24 13:36	
EPA 6020B	Cobalt	0.053J	ug/L	1.0	02/16/24 00:17	
EPA 6020B	Iron	3430	ug/L	50.0	02/16/24 00:17	
EPA 6020B	Lithium	0.62J	ug/L	2.5	02/16/24 00:17	
EPA 6020B	Manganese	343	ug/L	6.0	02/16/24 20:17	
SM 2540C-2015	Total Dissolved Solids	214	mg/L	10.0	02/20/24 15:33	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.060J	mg/L	0.10	03/06/24 23:58	
EPA 9056A	Chloride	3.6	mg/L	1.0	02/14/24 23:11	
EPA 9056A	Fluoride	0.055J	mg/L	0.10	02/14/24 23:11	
EPA 9056A	Sulfate	86.7	mg/L	1.0	02/14/24 23:11	

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: April 25, 2024

General Information:
7 samples were analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 832077

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92712989001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4300171)
  - Fluoride
  - Sulfate
- MSD (Lab ID: 4300172)
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 4300172)
  - Fluoride

QC Batch: 832355

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92712989006,92713247001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4301589)
  - Fluoride
- MS (Lab ID: 4301591)
  - Fluoride
- MSD (Lab ID: 4301590)
  - Fluoride
- MSD (Lab ID: 4301592)
  - Fluoride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW13 **Lab ID: 92712989001** Collected: 02/12/24 16:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/13/24 13:43	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:25	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:25	7440-38-2	
Barium	**57.2**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:25	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:25	7440-41-7	
Boron	**24.0J**	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:25	7440-42-8	
Cadmium	**0.71J**	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:25	7440-43-9	
Calcium	**52000**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:25	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:25	7440-47-3	
Copper	**1.2J**	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:25	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:25	7439-98-7	
Nickel	**9.0**	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:25	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:25	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:25	7440-22-4	
Hardness, Total(SM 2340B)	**171000**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:25		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:25	7440-62-2	
Zinc	**10.9**	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:25	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**4.6**	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 21:47	7440-48-4	
Iron	**1180**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 21:47	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 21:47	7439-92-1	
Lithium	**1.9J**	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 21:47	7439-93-2	
Manganese	**947**	ug/L	20.0	10.2	10	02/14/24 13:35	02/15/24 17:43	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 21:47	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 21:47	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/14/24 13:59	02/15/24 12:35	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**299**	mg/L	10.0	10.0	1		02/17/24 01:17		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.034J**	mg/L	0.10	0.031	1		03/06/24 23:44	7664-41-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW13 **Lab ID: 92712989001** Collected: 02/12/24 16:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**10.1**	mg/L	1.0	0.60	1		02/14/24 00:51	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		02/14/24 00:51	16984-48-8	M1,R1
Nitrate as N	**0.15**	mg/L	0.10	0.060	1		02/14/24 00:51	14797-55-8	
Sulfate	**158**	mg/L	3.0	1.5	3		02/14/24 01:34	14808-79-8	M1

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW31 **Lab ID: 92712989002** Collected: 02/12/24 15:20 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.030**	ug/L	0.025	0.025	1		02/13/24 12:50	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:28	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:28	7440-38-2	
Barium	**58.1**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:28	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:28	7440-41-7	
Boron	**10.2J**	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:28	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:28	7440-43-9	
Calcium	**11700**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:28	7440-70-2	
Chromium	**0.70J**	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:28	7440-47-3	
Copper	**9.4**	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:28	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:28	7439-98-7	
Nickel	**6.5**	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:28	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:28	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:28	7440-22-4	
Hardness, Total(SM 2340B)	**46200**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:28		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:28	7440-62-2	
Zinc	**8.9J**	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:28	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**3.6**	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 21:52	7440-48-4	
Iron	**353**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 21:52	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 21:52	7439-92-1	
Lithium	**1.9J**	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 21:52	7439-93-2	
Manganese	**301**	ug/L	6.0	3.1	3	02/14/24 13:35	02/15/24 17:48	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 21:52	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 21:52	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/14/24 13:59	02/15/24 12:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**120**	mg/L	10.0	10.0	1		02/17/24 01:18		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/06/24 23:45	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW31 **Lab ID: 92712989002** Collected: 02/12/24 15:20 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**2.0**	mg/L	1.0	0.60	1		02/13/24 23:38	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		02/13/24 23:38	16984-48-8	
Nitrate as N	**0.23**	mg/L	0.10	0.060	1		02/13/24 23:38	14797-55-8	
Sulfate	**46.1**	mg/L	1.0	0.50	1		02/13/24 23:38	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW32S **Lab ID: 92712989003** Collected: 02/12/24 16:00 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.089**	ug/L	0.025	0.025	1		02/13/24 13:25	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:31	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:31	7440-38-2	
Barium	**11.2**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:31	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:31	7440-41-7	
Boron	**9.0J**	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:31	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:31	7440-43-9	
Calcium	**4390**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:31	7440-70-2	
Chromium	**0.64J**	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:31	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:31	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:31	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:31	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:31	7782-49-2	
Silver	**1.7J**	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:31	7440-22-4	
Hardness, Total(SM 2340B)	**22200**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:31		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:31	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:31	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 21:56	7440-48-4	
Iron	**182**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 21:56	7439-89-6	
Lead	**0.081J**	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 21:56	7439-92-1	
Lithium	ND	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 21:56	7439-93-2	
Manganese	**2.5**	ug/L	2.0	1.0	1	02/14/24 13:35	02/14/24 21:56	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 21:56	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 21:56	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/14/24 13:59	02/15/24 12:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**54.0**	mg/L	10.0	10.0	1		02/17/24 01:19		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/06/24 23:47	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW32S **Lab ID: 92712989003** Collected: 02/12/24 16:00 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**3.3**	mg/L	1.0	0.60	1		02/14/24 00:36	16887-00-6	
Fluoride	**0.072J**	mg/L	0.10	0.050	1		02/14/24 00:36	16984-48-8	
Nitrate as N	**0.91**	mg/L	0.10	0.060	1		02/14/24 00:36	14797-55-8	
Sulfate	**2.4**	mg/L	1.0	0.50	1		02/14/24 00:36	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW32D **Lab ID: 92712989004** Collected: 02/12/24 14:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/13/24 12:32	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:34	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:34	7440-38-2	
Barium	**5.3**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:34	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:34	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:34	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:34	7440-43-9	
Calcium	**27300**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:34	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:34	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:34	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:34	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:34	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:34	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:34	7440-22-4	
Hardness, Total(SM 2340B)	**85600**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:34		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:34	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:34	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 22:01	7440-48-4	
Iron	**227**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 22:01	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 22:01	7439-92-1	
Lithium	**2.5J**	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 22:01	7439-93-2	
Manganese	**45.4**	ug/L	2.0	1.0	1	02/14/24 13:35	02/14/24 22:01	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 22:01	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 22:01	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/14/24 13:59	02/15/24 12:45	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**128**	mg/L	10.0	10.0	1		02/17/24 01:21		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/06/24 23:48	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NMW32D **Lab ID: 92712989004** Collected: 02/12/24 14:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**3.0**	mg/L	1.0	0.60	1		02/13/24 23:24	16887-00-6	
Fluoride	**0.14**	mg/L	0.10	0.050	1		02/13/24 23:24	16984-48-8	
Nitrate as N	**0.087J**	mg/L	0.10	0.060	1		02/13/24 23:24	14797-55-8	
Sulfate	**11.0**	mg/L	1.0	0.50	1		02/13/24 23:24	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NWPFDDUPLICATE **Lab ID: 92712989005** Collected: 02/12/24 15:20 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/13/24 13:08	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:37	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:37	7440-38-2	
Barium	**56.0**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:37	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:37	7440-41-7	
Boron	**9.8J**	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:37	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:37	7440-43-9	
Calcium	**11300**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:37	7440-70-2	
Chromium	**0.76J**	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:37	7440-47-3	
Copper	**9.3**	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:37	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:37	7439-98-7	
Nickel	**6.1**	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:37	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:37	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:37	7440-22-4	
Hardness, Total(SM 2340B)	**44700**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:37		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:37	7440-62-2	
Zinc	**9.2J**	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:37	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**3.6**	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 22:06	7440-48-4	
Iron	**336**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 22:06	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 22:06	7439-92-1	
Lithium	**1.9J**	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 22:06	7439-93-2	
Manganese	**288**	ug/L	6.0	3.1	3	02/14/24 13:35	02/15/24 17:53	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 22:06	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 22:06	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/14/24 13:59	02/15/24 12:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**122**	mg/L	10.0	10.0	1		02/17/24 01:24		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/06/24 23:52	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021224NWPFDDUPLICATE **Lab ID: 92712989005** Collected: 02/12/24 15:20 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**2.0**	mg/L	1.0	0.60	1		02/14/24 00:22	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		02/14/24 00:22	16984-48-8	
Nitrate as N	**0.16**	mg/L	0.10	0.060	1		02/14/24 00:22	14797-55-8	
Sulfate	**45.9**	mg/L	1.0	0.50	1		02/14/24 00:22	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021324NMW1 **Lab ID: 92712989006** Collected: 02/13/24 13:10 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.025**	ug/L	0.025	0.025	1		02/14/24 11:49	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/15/24 13:40	02/22/24 13:22	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/15/24 13:40	02/22/24 13:22	7440-38-2	
Barium	**13.0**	ug/L	5.0	0.79	1	02/15/24 13:40	02/22/24 13:22	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/15/24 13:40	02/22/24 13:22	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	02/15/24 13:40	02/22/24 13:22	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/15/24 13:40	02/22/24 13:22	7440-43-9	
Calcium	**2970**	ug/L	100	14.7	1	02/15/24 13:40	02/22/24 13:22	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/15/24 13:40	02/22/24 13:22	7440-47-3	
Copper	**0.97J**	ug/L	5.0	0.62	1	02/15/24 13:40	02/22/24 13:22	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/15/24 13:40	02/22/24 13:22	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	02/15/24 13:40	02/22/24 13:22	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/15/24 13:40	02/22/24 13:22	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/15/24 13:40	02/22/24 13:22	7440-22-4	
Hardness, Total(SM 2340B)	**15200**	ug/L	662	36.8	1	02/15/24 13:40	02/22/24 13:22		
Vanadium	ND	ug/L	5.0	1.6	1	02/15/24 13:40	02/22/24 13:22	7440-62-2	
Zinc	**4.0J**	ug/L	10.0	3.0	1	02/15/24 13:40	02/22/24 13:22	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**1.1**	ug/L	1.0	0.050	1	02/15/24 13:55	02/15/24 23:27	7440-48-4	
Iron	**149**	ug/L	50.0	20.9	1	02/15/24 13:55	02/15/24 23:27	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/15/24 13:55	02/15/24 23:27	7439-92-1	
Lithium	ND	ug/L	2.5	0.50	1	02/15/24 13:55	02/15/24 23:27	7439-93-2	
Manganese	**37.3**	ug/L	2.0	1.0	1	02/15/24 13:55	02/15/24 23:27	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/15/24 13:55	02/15/24 23:27	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/15/24 13:55	02/15/24 23:27	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/15/24 14:27	02/17/24 11:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**46.4**	mg/L	10.0	10.0	1		02/17/24 01:29		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/06/24 23:54	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021324NMW1 **Lab ID: 92712989006** Collected: 02/13/24 13:10 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**2.6**	mg/L	1.0	0.60	1		02/15/24 00:38	16887-00-6	
Fluoride	**0.070J**	mg/L	0.10	0.050	1		02/15/24 00:38	16984-48-8	M1
Nitrate as N	**0.10**	mg/L	0.10	0.060	1		02/15/24 00:38	14797-55-8	
Sulfate	**3.1**	mg/L	1.0	0.50	1		02/15/24 00:38	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021324NMW12 **Lab ID: 92712989007** Collected: 02/13/24 12:00 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/14/24 11:11	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/15/24 13:40	02/22/24 13:36	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/15/24 13:40	02/22/24 13:36	7440-38-2	
Barium	**63.0**	ug/L	5.0	0.79	1	02/15/24 13:40	02/22/24 13:36	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/15/24 13:40	02/22/24 13:36	7440-41-7	
Boron	**1210**	ug/L	50.0	4.0	1	02/15/24 13:40	02/22/24 13:36	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/15/24 13:40	02/22/24 13:36	7440-43-9	
Calcium	**34500**	ug/L	100	14.7	1	02/15/24 13:40	02/22/24 13:36	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/15/24 13:40	02/22/24 13:36	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	02/15/24 13:40	02/22/24 13:36	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/15/24 13:40	02/22/24 13:36	7439-98-7	
Nickel	**1.3J**	ug/L	5.0	0.88	1	02/15/24 13:40	02/22/24 13:36	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/15/24 13:40	02/22/24 13:36	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/15/24 13:40	02/22/24 13:36	7440-22-4	
Hardness, Total(SM 2340B)	**119000**	ug/L	662	36.8	1	02/15/24 13:40	02/22/24 13:36		
Vanadium	ND	ug/L	5.0	1.6	1	02/15/24 13:40	02/22/24 13:36	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	02/15/24 13:40	02/22/24 13:36	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.053J**	ug/L	1.0	0.050	1	02/15/24 13:55	02/16/24 00:17	7440-48-4	
Iron	**3430**	ug/L	50.0	20.9	1	02/15/24 13:55	02/16/24 00:17	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/15/24 13:55	02/16/24 00:17	7439-92-1	
Lithium	**0.62J**	ug/L	2.5	0.50	1	02/15/24 13:55	02/16/24 00:17	7439-93-2	
Manganese	**343**	ug/L	6.0	3.1	3	02/15/24 13:55	02/16/24 20:17	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/15/24 13:55	02/16/24 00:17	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/15/24 13:55	02/16/24 00:17	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/15/24 14:27	02/17/24 11:38	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**214**	mg/L	10.0	10.0	1		02/20/24 15:33		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.060J**	mg/L	0.10	0.031	1		03/06/24 23:58	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Sample: 021324NMW12 **Lab ID: 92712989007** Collected: 02/13/24 12:00 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**3.6**	mg/L	1.0	0.60	1		02/14/24 23:11	16887-00-6	
Fluoride	**0.055J**	mg/L	0.10	0.050	1		02/14/24 23:11	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		02/14/24 23:11	14797-55-8	
Sulfate	**86.7**	mg/L	1.0	0.50	1		02/14/24 23:11	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 831931
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

METHOD BLANK: 4299279 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.025	02/13/24 16:40	

LABORATORY CONTROL SAMPLE: 4299280

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.11	109	85-115	

MATRIX SPIKE SAMPLE: 4299873

Parameter	Units	92712989003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.089	0.1	0.19	98	90-110	H1

SAMPLE DUPLICATE: 4299872

Parameter	Units	92712987001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.085	0.083	2	20	H1

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832216
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92712989006, 92712989007

METHOD BLANK: 4300564 Matrix: Water
Associated Lab Samples: 92712989006, 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.025	02/14/24 21:21	

LABORATORY CONTROL SAMPLE: 4300565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.094	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300566 4300567

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.025	0.1	0.1	0.12	0.12	90	91	90-110	1	20	H1

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832173
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

METHOD BLANK: 4300422 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	02/15/24 11:51	

LABORATORY CONTROL SAMPLE: 4300423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300424 4300425

Parameter	Units	92712351005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.5	98	97	75-125	1	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832652
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989006, 92712989007

METHOD BLANK: 4302881 Matrix: Water
Associated Lab Samples: 92712989006, 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	02/17/24 11:09	

LABORATORY CONTROL SAMPLE: 4302882

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302883 4302884

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.4	2.5	96	97	75-125	1	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832303
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

METHOD BLANK: 4301221 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	02/20/24 14:54	
Arsenic	ug/L	ND	10.0	2.5	02/20/24 14:54	
Barium	ug/L	ND	5.0	0.79	02/20/24 14:54	
Beryllium	ug/L	ND	1.0	0.16	02/20/24 14:54	
Boron	ug/L	ND	50.0	4.0	02/20/24 14:54	
Cadmium	ug/L	ND	1.0	0.29	02/20/24 14:54	
Calcium	ug/L	ND	100	14.7	02/20/24 14:54	
Chromium	ug/L	ND	5.0	0.63	02/20/24 14:54	
Copper	ug/L	ND	5.0	0.62	02/20/24 14:54	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	02/20/24 14:54	
Molybdenum	ug/L	ND	5.0	2.6	02/20/24 14:54	
Nickel	ug/L	ND	5.0	0.88	02/20/24 14:54	
Selenium	ug/L	ND	10.0	4.1	02/20/24 14:54	
Silver	ug/L	ND	5.0	0.49	02/20/24 14:54	
Vanadium	ug/L	ND	5.0	1.6	02/20/24 14:54	
Zinc	ug/L	ND	10.0	3.0	02/20/24 14:54	

LABORATORY CONTROL SAMPLE: 4301222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	474	95	80-120	
Arsenic	ug/L	500	482	96	80-120	
Barium	ug/L	500	472	94	80-120	
Beryllium	ug/L	500	479	96	80-120	
Boron	ug/L	500	482	96	80-120	
Cadmium	ug/L	500	466	93	80-120	
Calcium	ug/L	5000	4520	90	80-120	
Chromium	ug/L	500	468	94	80-120	
Copper	ug/L	500	471	94	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	30000	91	80-120	
Molybdenum	ug/L	500	478	96	80-120	
Nickel	ug/L	500	473	95	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	232	93	80-120	
Vanadium	ug/L	500	467	93	80-120	
Zinc	ug/L	500	478	96	80-120	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301223 4301224

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	501	505	100	101	75-125	1	20	
Arsenic	ug/L	ND	500	500	509	512	102	102	75-125	1	20	
Barium	ug/L	3.3J	500	500	495	510	98	101	75-125	3	20	
Beryllium	ug/L	ND	500	500	506	509	101	102	75-125	1	20	
Boron	ug/L	ND	500	500	509	513	102	103	75-125	1	20	
Cadmium	ug/L	ND	500	500	482	484	96	97	75-125	0	20	
Calcium	ug/L	19900	5000	5000	24800	25200	97	105	75-125	2	20	
Chromium	ug/L	ND	500	500	486	489	97	98	75-125	1	20	
Copper	ug/L	2.5J	500	500	493	495	98	99	75-125	0	20	
Hardness, Total(SM 2340B)	ug/L	103000	33100	33100	138000	139000	106	109	75-125	1	20	
Molybdenum	ug/L	ND	500	500	491	494	98	99	75-125	1	20	
Nickel	ug/L	ND	500	500	484	486	97	97	75-125	0	20	
Selenium	ug/L	ND	500	500	519	525	104	105	75-125	1	20	
Silver	ug/L	ND	250	250	244	245	98	98	75-125	1	20	
Vanadium	ug/L	15.9	500	500	506	506	98	98	75-125	0	20	
Zinc	ug/L	ND	500	500	491	493	98	98	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832572
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989006, 92712989007

METHOD BLANK: 4302448 Matrix: Water
Associated Lab Samples: 92712989006, 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	02/22/24 13:16	
Arsenic	ug/L	ND	10.0	2.5	02/22/24 13:16	
Barium	ug/L	ND	5.0	0.79	02/22/24 13:16	
Beryllium	ug/L	ND	1.0	0.16	02/22/24 13:16	
Boron	ug/L	ND	50.0	4.0	02/22/24 13:16	
Cadmium	ug/L	ND	1.0	0.29	02/22/24 13:16	
Calcium	ug/L	ND	100	14.7	02/22/24 13:16	
Chromium	ug/L	ND	5.0	0.63	02/22/24 13:16	
Copper	ug/L	ND	5.0	0.62	02/22/24 13:16	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	02/22/24 13:16	
Molybdenum	ug/L	ND	5.0	2.6	02/22/24 13:16	
Nickel	ug/L	ND	5.0	0.88	02/22/24 13:16	
Selenium	ug/L	ND	10.0	4.1	02/22/24 13:16	
Silver	ug/L	ND	5.0	0.49	02/22/24 13:16	
Vanadium	ug/L	ND	5.0	1.6	02/22/24 13:16	
Zinc	ug/L	ND	10.0	3.0	02/22/24 13:16	

LABORATORY CONTROL SAMPLE: 4302449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	524	105	80-120	
Arsenic	ug/L	500	518	104	80-120	
Barium	ug/L	500	537	107	80-120	
Beryllium	ug/L	500	516	103	80-120	
Boron	ug/L	500	515	103	80-120	
Cadmium	ug/L	500	508	102	80-120	
Calcium	ug/L	5000	5180	104	80-120	
Chromium	ug/L	500	510	102	80-120	
Copper	ug/L	500	517	103	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	33300	101	80-120	
Molybdenum	ug/L	500	522	104	80-120	
Nickel	ug/L	500	509	102	80-120	
Selenium	ug/L	500	509	102	80-120	
Silver	ug/L	250	252	101	80-120	
Vanadium	ug/L	500	510	102	80-120	
Zinc	ug/L	500	515	103	80-120	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302450 4302451

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	541	547	108	109	75-125	1	20	
Arsenic	ug/L	ND	500	500	534	538	107	108	75-125	1	20	
Barium	ug/L	13.0	500	500	557	552	109	108	75-125	1	20	
Beryllium	ug/L	ND	500	500	538	542	108	108	75-125	1	20	
Boron	ug/L	ND	500	500	537	540	107	108	75-125	1	20	
Cadmium	ug/L	ND	500	500	520	524	104	105	75-125	1	20	
Calcium	ug/L	2970	5000	5000	8470	8150	110	104	75-125	4	20	
Chromium	ug/L	ND	500	500	525	529	105	106	75-125	1	20	
Copper	ug/L	0.97J	500	500	519	524	104	105	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	15200	33100	33100	50400	49900	107	105	75-125	1	20	
Molybdenum	ug/L	ND	500	500	527	532	105	106	75-125	1	20	
Nickel	ug/L	ND	500	500	518	523	104	104	75-125	1	20	
Selenium	ug/L	ND	500	500	546	551	109	110	75-125	1	20	
Silver	ug/L	ND	250	250	259	261	103	104	75-125	1	20	
Vanadium	ug/L	ND	500	500	521	525	104	105	75-125	1	20	
Zinc	ug/L	4.0J	500	500	531	535	105	106	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302452 4302453

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	559	554	112	111	75-125	1	20	
Arsenic	ug/L	ND	500	500	547	544	109	109	75-125	1	20	
Barium	ug/L	40.8	500	500	572	576	106	107	75-125	1	20	
Beryllium	ug/L	ND	500	500	549	543	110	109	75-125	1	20	
Boron	ug/L	1400	500	500	2000	1990	121	118	75-125	1	20	
Cadmium	ug/L	ND	500	500	520	516	104	103	75-125	1	20	
Calcium	ug/L	35300	5000	5000	40900	41300	112	119	75-125	1	20	
Chromium	ug/L	ND	500	500	533	527	106	105	75-125	1	20	
Copper	ug/L	ND	500	500	536	533	107	107	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	143000	33100	33100	182000	183000	117	119	75-125	0	20	
Molybdenum	ug/L	ND	500	500	539	535	108	107	75-125	1	20	
Nickel	ug/L	0.90J	500	500	513	510	102	102	75-125	1	20	
Selenium	ug/L	ND	500	500	556	552	111	110	75-125	1	20	
Silver	ug/L	ND	250	250	268	265	107	106	75-125	1	20	
Vanadium	ug/L	ND	500	500	529	525	106	105	75-125	1	20	
Zinc	ug/L	ND	500	500	525	522	105	104	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832223
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

METHOD BLANK: 4300574 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.050	02/14/24 20:27	
Iron	ug/L	ND	50.0	20.9	02/14/24 20:27	
Lead	ug/L	ND	1.0	0.077	02/14/24 20:27	
Lithium	ug/L	ND	2.5	0.50	02/14/24 20:27	
Manganese	ug/L	ND	2.0	1.0	02/14/24 20:27	
Thallium	ug/L	ND	0.20	0.050	02/14/24 20:27	
Tin	ug/L	ND	1.0	0.43	02/14/24 20:27	

LABORATORY CONTROL SAMPLE: 4300575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	50.6	101	80-120	
Iron	ug/L	1250	1300	104	80-120	
Lead	ug/L	50	50.1	100	80-120	
Lithium	ug/L	50	51.4	103	80-120	
Manganese	ug/L	50	50.9	102	80-120	
Thallium	ug/L	25	25.0	100	80-120	
Tin	ug/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300576 4300577

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	0.34J	50	50	51.3	51.9	102	103	75-125	1	20	
Iron	ug/L	313	1250	1250	1740	1760	114	115	75-125	1	20	
Lead	ug/L	ND	50	50	51.2	50.7	102	101	75-125	1	20	
Lithium	ug/L	ND	50	50	48.3	49.0	96	97	75-125	2	20	
Manganese	ug/L	3.0	50	50	55.9	55.5	106	105	75-125	1	20	
Thallium	ug/L	ND	25	25	25.6	25.6	102	102	75-125	0	20	
Tin	ug/L	ND	50	50	50.9	50.6	102	101	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832575
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989006, 92712989007

METHOD BLANK: 4302470 Matrix: Water
Associated Lab Samples: 92712989006, 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.050	02/15/24 23:17	
Iron	ug/L	ND	50.0	20.9	02/15/24 23:17	
Lead	ug/L	ND	1.0	0.077	02/15/24 23:17	
Lithium	ug/L	ND	2.5	0.50	02/15/24 23:17	
Manganese	ug/L	ND	2.0	1.0	02/15/24 23:17	
Thallium	ug/L	ND	0.20	0.050	02/15/24 23:17	
Tin	ug/L	ND	1.0	0.43	02/15/24 23:17	

LABORATORY CONTROL SAMPLE: 4302471

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.7	107	80-120	
Iron	ug/L	1250	1340	107	80-120	
Lead	ug/L	50	54.2	108	80-120	
Lithium	ug/L	50	53.7	107	80-120	
Manganese	ug/L	50	52.3	105	80-120	
Thallium	ug/L	25	26.2	105	80-120	
Tin	ug/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302472 4302473

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	1.1	50	50	53.4	55.6	105	109	75-125	4	20	
Iron	ug/L	149	1250	1250	1460	1520	105	110	75-125	4	20	
Lead	ug/L	ND	50	50	53.5	54.9	107	110	75-125	3	20	
Lithium	ug/L	ND	50	50	52.4	53.9	104	107	75-125	3	20	
Manganese	ug/L	37.3	50	50	85.3	88.6	96	103	75-125	4	20	
Thallium	ug/L	ND	25	25	26.0	26.6	104	106	75-125	2	20	
Tin	ug/L	ND	50	50	52.0	54.9	104	109	75-125	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302474 4302475

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	ND	50	50	51.8	51.7	104	103	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302474 4302475

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	ND	1250	1250	1310	1310	104	104	75-125	0	20	
Lead	ug/L	ND	50	50	53.6	53.6	107	107	75-125	0	20	
Lithium	ug/L	7.1	50	50	58.5	58.7	103	103	75-125	0	20	
Manganese	ug/L	4.3	50	50	55.7	55.5	103	102	75-125	0	20	
Thallium	ug/L	ND	25	25	26.2	26.3	105	105	75-125	0	20	
Tin	ug/L	ND	50	50	52.8	52.8	106	105	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 833124
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005, 92712989006

METHOD BLANK: 4305515 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005, 92712989006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	02/17/24 01:16	

LABORATORY CONTROL SAMPLE: 4305516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	230	92	80-120	

SAMPLE DUPLICATE: 4305517

Parameter	Units	92712989006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	46.4	43.6	6	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 833515
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989007

METHOD BLANK: 4306953 Matrix: Water
Associated Lab Samples: 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	02/20/24 15:32	

LABORATORY CONTROL SAMPLE: 4306954

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	246	98	80-120	

SAMPLE DUPLICATE: 4306955

Parameter	Units	92713247001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	254	253	0	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 837078
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005, 92712989006, 92712989007

METHOD BLANK: 4323787 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005, 92712989006, 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	03/06/24 23:35	

LABORATORY CONTROL SAMPLE: 4323788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323789 4323790

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.2	5.2	104	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323791 4323792

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.045J	5	5	5.1	5.1	100	100	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832077
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

METHOD BLANK: 4300169 Matrix: Water
Associated Lab Samples: 92712989001, 92712989002, 92712989003, 92712989004, 92712989005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	02/13/24 21:29	
Fluoride	mg/L	ND	0.10	0.050	02/13/24 21:29	
Nitrate as N	mg/L	ND	0.10	0.060	02/13/24 21:29	
Sulfate	mg/L	ND	1.0	0.50	02/13/24 21:29	

LABORATORY CONTROL SAMPLE: 4300170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.7	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Nitrate as N	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	50	49.2	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300171 4300172

Parameter	Units	92712989001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	50	50	60.6	61.7	101	103	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	4.8	2.0	192	76	90-110	85	10	M1,R1
Nitrate as N	mg/L	0.15	2.5	2.5	2.6	2.7	98	100	90-110	2	10	
Sulfate	mg/L	158	50	50	185	185	54	56	90-110	0	10	M1

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

QC Batch: 832355
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712989006, 92712989007

METHOD BLANK: 4301587 Matrix: Water
Associated Lab Samples: 92712989006, 92712989007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	02/14/24 21:43	
Fluoride	mg/L	ND	0.10	0.050	02/14/24 21:43	
Nitrate as N	mg/L	ND	0.10	0.060	02/14/24 21:43	
Sulfate	mg/L	ND	1.0	0.50	02/14/24 21:43	

LABORATORY CONTROL SAMPLE: 4301588

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.9	98	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Nitrate as N	mg/L	2.5	2.4	94	90-110	
Sulfate	mg/L	50	49.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301589 4301590

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.6	50	50	52.2	53.0	99	101	90-110	2	10	
Fluoride	mg/L	0.070J	2.5	2.5	3.6	3.3	140	129	90-110	8	10	M1
Nitrate as N	mg/L	0.10	2.5	2.5	2.5	2.5	96	97	90-110	2	10	
Sulfate	mg/L	3.1	50	50	58.3	56.6	110	107	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301591 4301592

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.7	50	50	62.0	63.4	99	101	90-110	2	10	
Fluoride	mg/L	0.052J	2.5	2.5	2.9	3.0	113	116	90-110	3	10	M1
Nitrate as N	mg/L	ND	2.5	2.5	2.4	2.4	95	98	90-110	3	10	
Sulfate	mg/L	37.4	50	50	87.6	88.8	100	103	90-110	1	10	

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QUALIFIERS

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92712989001	**021224NMW13**	EPA 7199	831931		
92712989002	**021224NMW31**	EPA 7199	831931		
92712989003	**021224NMW32S**	EPA 7199	831931		
92712989004	**021224NMW32D**	EPA 7199	831931		
92712989005	**021224NWPFDDUPLICATE**	EPA 7199	831931		
92712989006	**021324NMW1**	EPA 7199	832216		
92712989007	**021324NMW12**	EPA 7199	832216		
92712989001	**021224NMW13**	EPA 3010A	832303	EPA 6010D	832444
92712989002	**021224NMW31**	EPA 3010A	832303	EPA 6010D	832444
92712989003	**021224NMW32S**	EPA 3010A	832303	EPA 6010D	832444
92712989004	**021224NMW32D**	EPA 3010A	832303	EPA 6010D	832444
92712989005	**021224NWPFDDUPLICATE**	EPA 3010A	832303	EPA 6010D	832444
92712989006	**021324NMW1**	EPA 3010A	832572	EPA 6010D	832725
92712989007	**021324NMW12**	EPA 3010A	832572	EPA 6010D	832725
92712989001	**021224NMW13**	EPA 3010A	832223	EPA 6020B	832433
92712989002	**021224NMW31**	EPA 3010A	832223	EPA 6020B	832433
92712989003	**021224NMW32S**	EPA 3010A	832223	EPA 6020B	832433
92712989004	**021224NMW32D**	EPA 3010A	832223	EPA 6020B	832433
92712989005	**021224NWPFDDUPLICATE**	EPA 3010A	832223	EPA 6020B	832433
92712989006	**021324NMW1**	EPA 3010A	832575	EPA 6020B	832736
92712989007	**021324NMW12**	EPA 3010A	832575	EPA 6020B	832736
92712989001	**021224NMW13**	EPA 7470A	832173	EPA 7470A	832399
92712989002	**021224NMW31**	EPA 7470A	832173	EPA 7470A	832399
92712989003	**021224NMW32S**	EPA 7470A	832173	EPA 7470A	832399
92712989004	**021224NMW32D**	EPA 7470A	832173	EPA 7470A	832399
92712989005	**021224NWPFDDUPLICATE**	EPA 7470A	832173	EPA 7470A	832399
92712989006	**021324NMW1**	EPA 7470A	832652	EPA 7470A	832682
92712989007	**021324NMW12**	EPA 7470A	832652	EPA 7470A	832682
92712989001	**021224NMW13**	SM 2540C-2015	833124		
92712989002	**021224NMW31**	SM 2540C-2015	833124		
92712989003	**021224NMW32S**	SM 2540C-2015	833124		
92712989004	**021224NMW32D**	SM 2540C-2015	833124		
92712989005	**021224NWPFDDUPLICATE**	SM 2540C-2015	833124		
92712989006	**021324NMW1**	SM 2540C-2015	833124		
92712989007	**021324NMW12**	SM 2540C-2015	833515		
92712989001	**021224NMW13**	EPA 350.1 Rev 2.0 1993	837078		
92712989002	**021224NMW31**	EPA 350.1 Rev 2.0 1993	837078		
92712989003	**021224NMW32S**	EPA 350.1 Rev 2.0 1993	837078		
92712989004	**021224NMW32D**	EPA 350.1 Rev 2.0 1993	837078		
92712989005	**021224NWPFDDUPLICATE**	EPA 350.1 Rev 2.0 1993	837078		
92712989006	**021324NMW1**	EPA 350.1 Rev 2.0 1993	837078		
92712989007	**021324NMW12**	EPA 350.1 Rev 2.0 1993	837078		
92712989001	**021224NMW13**	EPA 9056A	832077		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92712989002	**021224NMW31**	EPA 9056A	832077		
92712989003	**021224NMW32S**	EPA 9056A	832077		
92712989004	**021224NMW32D**	EPA 9056A	832077		
92712989005	**021224NWPFDDUPLICATE**	EPA 9056A	832077		
92712989006	**021324NMW1**	EPA 9056A	832355		
92712989007	**021324NMW12**	EPA 9056A	832355		

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Pace	DC#_Title: ENV-FRM-HUN1-0084 v02_Tech Spec Sample Condition Upon Receipt Effective Date:

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO#: 92712989

92712989

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☑ Client

Carrier Tracking Number: NA

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** GKG 2/13/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 012010 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.9 **Correction Factor: Add / Subtract (°C)** -0.1

Corrected Cooler Temp (°C): 1.7

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project # **WO#: 92712989**

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	B?IN	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1	1															1				2				
2		1	1		1	1															1				2				
3		1	1		1	1															1				2				
4		1	1		1	1															1				2				
5		1	1		1	1															1				2				
6																													
7																													
8																													
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11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E Mail:	kelly.a.hicks@dominionenergy com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_F	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET		County / State origin of sample(s):	Virginia
Data Deliverables: [ ] Level II [ ] Level III [X] Level IV [ ] EQUIS [ ] Other		Regulatory Program (DW, RCRA, etc.) as applicable:	Reportable [ ] Yes [ ] No
		Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other	DW PWSID # or WW Permit # as applicable:
		Date Results Requested:	Field Filtered (if applicable): [ ] Yes [ ] No
			Analysis:

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Specify Container Size **	Identify Container Preservative Type***	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/F/SO4/NO3	Radium 226	Radium 228 & Total Radium	Lab Use Only	Preservation non-conformance identified for sample.
~~02__24NMW1~~ MK	WT											X	X	X	X	X	X	X		
~~02__24NMW12~~ MK	WT											X	X	X	X	X	X	X		
02 12 24NMW13	WT	G			2/12/24	1640	7					X	X	X	X	X	X	X		
02 12 24NMW31	WT	G			2/12/24	1520	7					X	X	X	X	X	X	X		
02 12 24NMW32S	WT	G			2/12/24	1600	7					X	X	X	X	X	X	X		
02 12 24NMW32D	WT	G			2/12/24	1440	7					X	X	X	X	X	X	X		
02 12 24NWPFDDUPLICATE	WT	G			2/12/24	1520	7					X	X	X	X	X	X	X		
~~02__24__MS~~ MK	WT											X	X	X	X	X	X	X		
~~02__24__MSD~~ MK	WT											X	X	X	X	X	X	X		

Sample Comment:
-All samples preserved on ice
-Level IV data package

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3059968

Additional Instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

Collected By: (Printed Name) M. Krez, Z. Mondshine
Signature: M. Krez, ZM

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp (°C)	Corrected Temp (°C)	On Ice:

Relinquished by/Company: (Signature) M. Krez / WSP	Date/Time 2/12/24 @ 1900	Received by/Company: (Signature) GLG Pace HVL	Date/Time: 2/13/24 1035	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
021224MMW32D	GCG	9.64	9.46	2/13/24 1124	11 Drops Acid	224909
021224MMW32S	GCG	9.70	9.45	2/13/24 1134	12 Drops Acid	224909

Pace	DC#_Title: ENV-FRM-HUN1-0084 v02_Tech Spec Sample Condition Upon Receipt Effective Date:

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO# : 92712989

92712989

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☑ Client

Carrier Tracking Number: NA

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** GCG 2/14/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 421090 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.3 **Correction Factor: Add / Subtract (°C)** -0.1

Corrected Cooler Temp (°C): 1.2

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: CWT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

Qualtrax Document ID: 70677

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project # **WO#: 92712989**

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		3	3		3	3														3				6				
2		1	1		1	1														1				2				
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pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_F	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET

County / State origin of sample(s): Virginia

Data Deliverables: [ ] Level II [ ] Level III [✓] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/FI/SO4/NO3	Radium 226	Radium 228 & Total Radium	Sample Comment
02[13]24NMW1	WT	G			2/13/23	1310	21			X	X	X	X	X	X	X	-MS/MSD taken at MW-2
02[13]24NMW12	WT	G			2/13/23	1200	7			X	X	X	X	X	X	X	-All samples preserved on ice
~~02__24NMW15~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NMW31~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NMW32S~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NMW32D~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NWPPDDUPLICATE~~ MK	WT									X	X	X	X	X	X	X	
~~02__24____MS~~ MK	WT									X	X	X	X	X	X	X	
~~02__24____MSD~~ MK	WT									X	X	X	X	X	X	X	

Lab Use Only:
Proj. Mgr: Angela Baioni
AcctNum / Client ID:
Table #:
Profile / Template: 13861
Prelog / Bottle Ord. ID: EZ 3059968

Preservation non-conformance identified for sample.

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Additional Instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

Collected By: (Printed Name) Michael Knez, Z. Mordshire

Signature: M. Knez, Z. Mordshire

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
M. Knez / WSP	2/13/24 @ 1900	Pace HR	2/14/24 1018

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORQ-0019_v02_110123 ©

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
021324WMW12	GCG	9.62	9.46	2/14/24 1051	6 Drops Acid	224809

ANALYTICAL REPORT

April 25, 2024

Revised Report

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1706901
Samples Received:	02/17/2024
Project Number:	92712989
Description:	Bremo_1SA2024_CCR&VSWMR_P_F
Site:	001
Report To:	Angela Baioni
	9800 Kincey Avenue, Suite 100
	Huntersville, NC 28078

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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021224NMW13 L1706901-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 16:40	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 21:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 21:43	SNR	Mt. Juliet, TN

021224NMW31 L1706901-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 15:20	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021224NMW32S L1706901-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 16:00	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021224NMW32D L1706901-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 14:40	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021224NWPFDDUPLICATE L1706901-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 15:20	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021324NMW1 L1706901-06 Non-Potable Water

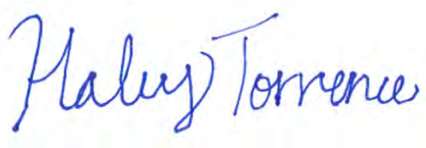
Collected by	Collected date/time	Received date/time
	02/13/24 13:10	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2240337	1	03/06/24 18:38	03/15/24 23:27	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/15/24 23:27	SNR	Mt. Juliet, TN

	Collected by	Collected date/time	Received date/time
021324NMW12 L1706901-07 Non-Potable Water		02/13/24 12:00	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:43	SNR	Mt. Juliet, TN

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: 03/22/24 14:58
Level IV Report - Version 2: 03/22/24 15:06

Project Narrative

T20240411.0241

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.240	J	0.249	0.175	0.379	0.0868	03/14/2024 21:43	WG2236782
(T) Barium	*101*					*30.0-143*	*03/14/2024 21:43*	WG2236782

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	0.250	J	0.272	1.81	0.490	0.255	03/13/2024 17:03	WG2238285
(T) Barium	*113*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*106*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.490	J	0.369	0.619	03/14/2024 21:43	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.283		0.234	0.184	0.274	0.0494	03/14/2024 22:13	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.000	U	0.263		0.480	0.251	03/13/2024 17:03	WG2238285
(T) Barium	*125*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*102*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.283	J	0.352	0.553	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.111	U	0.238	0.116	0.459	0.111	03/14/2024 22:13	WG2236782
(T) Barium	*104*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.121	U	0.257	2.55	0.466	0.244	03/13/2024 17:03	WG2238285
(T) Barium	*121*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*116*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.232	U	0.350	0.654	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.586		0.346	0.323	0.378	0.0849	03/14/2024 22:13	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.246	1.53	0.441	0.231	03/13/2024 17:03	WG2238285
(T) Barium	*133*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*102*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.904		0.425	0.581	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.370	J	0.289	0.234	0.379	0.0850	03/14/2024 22:13	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.392		0.200	1.24	0.356	0.188	03/13/2024 17:03	WG2238285
(T) Barium	*132*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*111*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.762		0.351	0.520	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.152	J	0.181	0.119	0.274	0.0490	03/14/2024 22:43	WG2236782
(T) Barium	*104*					*30.0-143*	*03/14/2024 22:43*	WG2236782

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	-0.136	U	0.249	2.78	0.484	0.257	03/15/2024 23:27	WG2240337
(T) Barium	*131*					*30.0-143*	*03/15/2024 23:27*	WG2240337
(T) Yttrium	*106*					*30.0-136*	*03/15/2024 23:27*	WG2240337

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.152	U	0.308	0.556	03/15/2024 23:27	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.730		0.402	0.389	0.458	0.113	03/14/2024 22:43	WG2236782
(T) Barium	*102*					*30.0-143*	*03/14/2024 22:43*	WG2236782

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	0.492	J	0.285	1.31	0.507	0.264	03/13/2024 17:03	WG2238285
(T) Barium	*129*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*115*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.22		0.493	0.683	03/14/2024 22:43	WG2236782

Method Blank (MB)

(MB) R4048467-1 03/14/24 20:12

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.142		0.117	0.137	0.0248
(T) Barium	*103*		*103*		

Laboratory Control Sample (LCS)

(LCS) R4048467-2 03/14/24 20:12

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.54	111	80.0-120	
(T) Barium			*102*		

L1706883-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706883-04 03/14/24 21:13 • (MS) R4048467-3 03/14/24 20:12 • (MSD) R4048467-5 03/14/24 20:42

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	0.630	23.2	20.5	113	99.2	1	75.0-125			12.5		20
(T) Barium		*104*			*102*	*103*							

L1706901-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706901-06 03/14/24 22:43 • (MS) R4048467-4 03/14/24 20:12 • (MSD) R4048467-6 03/14/24 20:42

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	0.152	21.5	22.1	107	110	1	75.0-125			2.89		20
(T) Barium		*104*			*103*	*104*							

Method Blank (MB)

(MB) R4047078-1 03/13/24 17:03

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.497		0.145	0.251	0.132
(T) Barium	*124*		*124*		
(T) Yttrium	*111*		*111*		

L1707769-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1707769-02 03/13/24 17:03 • (DUP) R4047078-5 03/13/24 17:03

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.92	0.374	0.625	0.328	1.34	0.390	0.676	0.352	35.9	1.08		20	3
(T) Barium	*134*				*109*	*109*							
(T) Yttrium	*100*				*106*	*106*							

Laboratory Control Sample (LCS)

(LCS) R4047078-2 03/13/24 17:03

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.67	113	80.0-120	
(T) Barium			*130*		
(T) Yttrium			*110*		

L1710452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1710452-01 03/13/24 17:03 • (MS) R4047078-3 03/13/24 17:03 • (MSD) R4047078-4 03/13/24 17:03

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	-0.188	17.5	18.3	104	110	1	70.0-130			4.97		20
(T) Barium		*126*			*124*	*116*							
(T) Yttrium		*99.2*			*119*	*108*							

Method Blank (MB)

(MB) R4047930-1 03/15/24 23:27

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.0701	U	0.165	0.310	0.163
(T) Barium	*104*		*104*		
(T) Yttrium	*104*		*104*		

L1708671-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1708671-01 03/15/24 23:27 • (DUP) R4047930-5 03/15/24 23:27

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	1.78	0.314	0.534	0.282	2.55	0.298	0.466	0.248	35.8	1.79		20	3
(T) Barium	*117*				*117*	*117*							
(T) Yttrium	*103*				*97.1*	*97.1*							

Laboratory Control Sample (LCS)

(LCS) R4047930-2 03/15/24 23:27

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.83	96.6	80.0-120	
(T) Barium			*137*		
(T) Yttrium			*109*		

L1706901-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706901-06 03/15/24 23:27 • (MS) R4047930-3 03/15/24 23:27 • (MSD) R4047930-4 03/15/24 23:27

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	-0.136	16.2	16.6	96.9	99.5	1	70.0-130			2.62		20
(T) Barium		*131*			*113*	*125*							
(T) Yttrium		*106*			*116*	*100*							

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.

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.

Internal Transfer Chain of Custody

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: ☒ Yes ☐ No

Workorder: 92712989 Workorder Name: Bremo_1SA2024_CCR&VSWMR_P_F Owner Received Date: 2/13/2024 Results Requested By: 2/27/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Ra 226 903.0	Ra228 904.0/Combined Ra											LAB USE ONLY
1	021224NMW13	PS	2/12/2024 16:40	92712989001	Water	2						X	X											-01
2	021224NMW31	PS	2/12/2024 15:20	92712989002	Water	2						X	X											-02
3	021224NMW32S	PS	2/12/2024 16:00	92712989003	Water	2						X	X											-03
4	021224NMW32D	PS	2/12/2024 14:40	92712989004	Water	2						X	X											-04
5	021224NWPFDDUPLICATE	PS	2/12/2024 15:20	92712989005	Water	2						X	X											-05
6	021324NMW1	RQS	2/13/2024 13:10	92712989006	Water	6						X	X											-06
7	021324NMW12	PS	2/13/2024 12:00	92712989007	Water	2						X	X											-07

L770901
A242

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	2/13/24 1800	[illegible]	2/13/24 0900
2				
3				

Comments: *Level IV Data Package Required*

Cooler Temperature on Receipt _____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

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		

1.5+0=1.5 TUH

L704901

INTER_LABORATORY WORK ORDER # 92712989

(To be completed by sending lab)

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Sending Project No:	92712989
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	02/16/24
REQUESTED COMPLETION DATE:	**2/27/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	PACKAGELV4

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra 226 903.0	BP1N		HNO3	7	SI-38RAD	SUB PASI RAD
Ra228 904.0/Combined Ra	BP1N		HNO3	7	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 20, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory between February 13, 2024 and February 14, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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(704)875-9092

CERTIFICATIONS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92712990001	**021224NMW37**	Water	02/12/24 16:40	02/13/24 10:35
92712990002	**021324NMW39S**	Water	02/13/24 13:25	02/14/24 10:18
92712990003	**021324NMW39D**	Water	02/13/24 12:05	02/14/24 10:18

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92712990001	**021224NMW37**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW, KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712990002	**021324NMW39S**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	JAY	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A
92712990003	**021324NMW39D**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	JAY	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712990001	**021224NMW37**					
EPA 6010D	Barium	75.1	ug/L	5.0	02/20/24 15:39	
EPA 6010D	Boron	142	ug/L	50.0	02/20/24 15:39	
EPA 6010D	Calcium	35400	ug/L	100	02/20/24 15:39	
EPA 6010D	Copper	1.0J	ug/L	5.0	02/20/24 15:39	
EPA 6010D	Nickel	2.4J	ug/L	5.0	02/20/24 15:39	
EPA 6010D	Hardness, Total(SM 2340B)	118000	ug/L	662	02/20/24 15:39	
EPA 6010D	Zinc	4.3J	ug/L	10.0	02/20/24 15:39	
EPA 6020B	Cobalt	2.5	ug/L	1.0	02/14/24 22:10	
EPA 6020B	Iron	31.8J	ug/L	50.0	02/14/24 22:10	
EPA 6020B	Lithium	1.2J	ug/L	2.5	02/14/24 22:10	
EPA 6020B	Manganese	603	ug/L	10.0	02/15/24 17:58	
SM 2540C-2015	Total Dissolved Solids	192	mg/L	10.0	02/17/24 01:27	
EPA 9056A	Chloride	8.7	mg/L	1.0	02/14/24 01:48	
EPA 9056A	Fluoride	0.076J	mg/L	0.10	02/14/24 01:48	
EPA 9056A	Nitrate as N	0.79	mg/L	0.10	02/14/24 01:48	
92712990002	**021324NMW39S**					
EPA 7199	Chromium, Hexavalent	0.29	ug/L	0.050	02/14/24 13:00	
EPA 6010D	Barium	42.7	ug/L	5.0	02/22/24 13:39	
EPA 6010D	Boron	614	ug/L	50.0	02/22/24 13:39	
EPA 6010D	Calcium	33500	ug/L	100	02/22/24 13:39	
EPA 6010D	Chromium	0.78J	ug/L	5.0	02/22/24 13:39	
EPA 6010D	Copper	1.2J	ug/L	5.0	02/22/24 13:39	
EPA 6010D	Nickel	1.4J	ug/L	5.0	02/22/24 13:39	
EPA 6010D	Hardness, Total(SM 2340B)	107000	ug/L	662	02/22/24 13:39	
EPA 6010D	Zinc	3.2J	ug/L	10.0	02/22/24 13:39	
EPA 6020B	Cobalt	0.10J	ug/L	1.0	02/16/24 00:22	
EPA 6020B	Iron	318	ug/L	50.0	02/16/24 00:22	
EPA 6020B	Lead	0.17J	ug/L	1.0	02/16/24 00:22	
EPA 6020B	Lithium	1.1J	ug/L	2.5	02/16/24 00:22	
EPA 6020B	Manganese	12.0	ug/L	2.0	02/16/24 00:22	
SM 2540C-2015	Total Dissolved Solids	171	mg/L	10.0	02/20/24 15:34	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.33	mg/L	0.10	03/07/24 00:57	
EPA 9056A	Chloride	0.87J	mg/L	1.0	02/15/24 02:05	
EPA 9056A	Fluoride	0.050J	mg/L	0.10	02/15/24 02:05	
EPA 9056A	Nitrate as N	1.3	mg/L	0.10	02/15/24 02:05	
EPA 9056A	Sulfate	51.9	mg/L	1.0	02/15/24 02:05	
92712990003	**021324NMW39D**					
EPA 6010D	Barium	23.4	ug/L	5.0	02/22/24 13:42	
EPA 6010D	Boron	39.5J	ug/L	50.0	02/22/24 13:42	
EPA 6010D	Calcium	32200	ug/L	100	02/22/24 13:42	
EPA 6010D	Copper	0.77J	ug/L	5.0	02/22/24 13:42	
EPA 6010D	Nickel	1.8J	ug/L	5.0	02/22/24 13:42	
EPA 6010D	Silver	1.4J	ug/L	5.0	02/22/24 13:42	
EPA 6010D	Hardness, Total(SM 2340B)	117000	ug/L	662	02/22/24 13:42	
EPA 6010D	Zinc	4.6J	ug/L	10.0	02/22/24 13:42	
EPA 6020B	Cobalt	0.064J	ug/L	1.0	02/16/24 00:27	

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(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712990003	**021324NMW39D**					
EPA 6020B	Iron	11700	ug/L	150	02/16/24 20:21	
EPA 6020B	Lithium	2.6	ug/L	2.5	02/16/24 00:27	
EPA 6020B	Manganese	309	ug/L	6.0	02/16/24 20:21	
SM 2540C-2015	Total Dissolved Solids	209	mg/L	10.0	02/20/24 15:34	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.14	mg/L	0.10	03/07/24 01:01	
EPA 9056A	Chloride	25.9	mg/L	1.0	02/14/24 23:41	
EPA 9056A	Fluoride	0.12	mg/L	0.10	02/14/24 23:41	
EPA 9056A	Sulfate	47.5	mg/L	1.0	02/14/24 23:41	

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
3 samples were analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 832077

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92712989001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4300171)
  - Fluoride
  - Sulfate
- MSD (Lab ID: 4300172)
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 4300172)
  - Fluoride

QC Batch: 832355

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92712989006,92713247001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4301589)
  - Fluoride
- MS (Lab ID: 4301591)
  - Fluoride
- MSD (Lab ID: 4301590)
  - Fluoride
- MSD (Lab ID: 4301592)
  - Fluoride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Sample: 021224NMW37 **Lab ID: 92712990001** Collected: 02/12/24 16:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/13/24 15:47	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:39	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:39	7440-38-2	
Barium	**75.1**	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:39	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:39	7440-41-7	
Boron	**142**	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:39	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:39	7440-43-9	
Calcium	**35400**	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:39	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:39	7440-47-3	
Copper	**1.0J**	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:39	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:39	7439-98-7	
Nickel	**2.4J**	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:39	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:39	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:39	7440-22-4	
Hardness, Total(SM 2340B)	**118000**	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:39		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:39	7440-62-2	
Zinc	**4.3J**	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:39	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**2.5**	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 22:10	7440-48-4	
Iron	**31.8J**	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 22:10	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 22:10	7439-92-1	
Lithium	**1.2J**	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 22:10	7439-93-2	
Manganese	**603**	ug/L	10.0	5.1	5	02/14/24 13:35	02/15/24 17:58	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 22:10	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 22:10	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/15/24 14:27	02/17/24 11:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**192**	mg/L	10.0	10.0	1		02/17/24 01:27		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		03/07/24 00:55	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Sample: 021224NMW37 **Lab ID: 92712990001** Collected: 02/12/24 16:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**8.7**	mg/L	1.0	0.60	1		02/14/24 01:48	16887-00-6	
Fluoride	**0.076J**	mg/L	0.10	0.050	1		02/14/24 01:48	16984-48-8	
Nitrate as N	**0.79**	mg/L	0.10	0.060	1		02/14/24 01:48	14797-55-8	
Sulfate	ND	mg/L	1.0	0.50	1		02/14/24 01:48	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Sample: 021324NMW39S **Lab ID: 92712990002** Collected: 02/13/24 13:25 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.29**	ug/L	0.050	0.050	2		02/14/24 13:00	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/15/24 13:40	02/22/24 13:39	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/15/24 13:40	02/22/24 13:39	7440-38-2	
Barium	**42.7**	ug/L	5.0	0.79	1	02/15/24 13:40	02/22/24 13:39	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/15/24 13:40	02/22/24 13:39	7440-41-7	
Boron	**614**	ug/L	50.0	4.0	1	02/15/24 13:40	02/22/24 13:39	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/15/24 13:40	02/22/24 13:39	7440-43-9	
Calcium	**33500**	ug/L	100	14.7	1	02/15/24 13:40	02/22/24 13:39	7440-70-2	
Chromium	**0.78J**	ug/L	5.0	0.63	1	02/15/24 13:40	02/22/24 13:39	7440-47-3	
Copper	**1.2J**	ug/L	5.0	0.62	1	02/15/24 13:40	02/22/24 13:39	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/15/24 13:40	02/22/24 13:39	7439-98-7	
Nickel	**1.4J**	ug/L	5.0	0.88	1	02/15/24 13:40	02/22/24 13:39	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/15/24 13:40	02/22/24 13:39	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/15/24 13:40	02/22/24 13:39	7440-22-4	
Hardness, Total(SM 2340B)	**107000**	ug/L	662	36.8	1	02/15/24 13:40	02/22/24 13:39		
Vanadium	ND	ug/L	5.0	1.6	1	02/15/24 13:40	02/22/24 13:39	7440-62-2	
Zinc	**3.2J**	ug/L	10.0	3.0	1	02/15/24 13:40	02/22/24 13:39	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.10J**	ug/L	1.0	0.050	1	02/15/24 13:55	02/16/24 00:22	7440-48-4	
Iron	**318**	ug/L	50.0	20.9	1	02/15/24 13:55	02/16/24 00:22	7439-89-6	
Lead	**0.17J**	ug/L	1.0	0.077	1	02/15/24 13:55	02/16/24 00:22	7439-92-1	
Lithium	**1.1J**	ug/L	2.5	0.50	1	02/15/24 13:55	02/16/24 00:22	7439-93-2	
Manganese	**12.0**	ug/L	2.0	1.0	1	02/15/24 13:55	02/16/24 00:22	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/15/24 13:55	02/16/24 00:22	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/15/24 13:55	02/16/24 00:22	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/15/24 14:27	02/17/24 11:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**171**	mg/L	10.0	10.0	1		02/20/24 15:34		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.33**	mg/L	0.10	0.031	1		03/07/24 00:57	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Sample: 021324NMW39S **Lab ID: 92712990002** Collected: 02/13/24 13:25 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**0.87J**	mg/L	1.0	0.60	1		02/15/24 02:05	16887-00-6	
Fluoride	**0.050J**	mg/L	0.10	0.050	1		02/15/24 02:05	16984-48-8	
Nitrate as N	**1.3**	mg/L	0.10	0.060	1		02/15/24 02:05	14797-55-8	
Sulfate	**51.9**	mg/L	1.0	0.50	1		02/15/24 02:05	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Sample: 021324NMW39D **Lab ID: 92712990003** Collected: 02/13/24 12:05 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/14/24 11:31	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/15/24 13:40	02/22/24 13:42	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/15/24 13:40	02/22/24 13:42	7440-38-2	
Barium	**23.4**	ug/L	5.0	0.79	1	02/15/24 13:40	02/22/24 13:42	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/15/24 13:40	02/22/24 13:42	7440-41-7	
Boron	**39.5J**	ug/L	50.0	4.0	1	02/15/24 13:40	02/22/24 13:42	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/15/24 13:40	02/22/24 13:42	7440-43-9	
Calcium	**32200**	ug/L	100	14.7	1	02/15/24 13:40	02/22/24 13:42	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/15/24 13:40	02/22/24 13:42	7440-47-3	
Copper	**0.77J**	ug/L	5.0	0.62	1	02/15/24 13:40	02/22/24 13:42	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/15/24 13:40	02/22/24 13:42	7439-98-7	
Nickel	**1.8J**	ug/L	5.0	0.88	1	02/15/24 13:40	02/22/24 13:42	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/15/24 13:40	02/22/24 13:42	7782-49-2	
Silver	**1.4J**	ug/L	5.0	0.49	1	02/15/24 13:40	02/22/24 13:42	7440-22-4	
Hardness, Total(SM 2340B)	**117000**	ug/L	662	36.8	1	02/15/24 13:40	02/22/24 13:42		
Vanadium	ND	ug/L	5.0	1.6	1	02/15/24 13:40	02/22/24 13:42	7440-62-2	
Zinc	**4.6J**	ug/L	10.0	3.0	1	02/15/24 13:40	02/22/24 13:42	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.064J**	ug/L	1.0	0.050	1	02/15/24 13:55	02/16/24 00:27	7440-48-4	
Iron	**11700**	ug/L	150	62.8	3	02/15/24 13:55	02/16/24 20:21	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/15/24 13:55	02/16/24 00:27	7439-92-1	
Lithium	**2.6**	ug/L	2.5	0.50	1	02/15/24 13:55	02/16/24 00:27	7439-93-2	
Manganese	**309**	ug/L	6.0	3.1	3	02/15/24 13:55	02/16/24 20:21	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/15/24 13:55	02/16/24 00:27	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/15/24 13:55	02/16/24 00:27	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/15/24 14:27	02/17/24 11:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**209**	mg/L	10.0	10.0	1		02/20/24 15:34		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.14**	mg/L	0.10	0.031	1		03/07/24 01:01	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Sample: 021324NMW39D **Lab ID: 92712990003** Collected: 02/13/24 12:05 Received: 02/14/24 10:18 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**25.9**	mg/L	1.0	0.60	1		02/14/24 23:41	16887-00-6	
Fluoride	**0.12**	mg/L	0.10	0.050	1		02/14/24 23:41	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		02/14/24 23:41	14797-55-8	
Sulfate	**47.5**	mg/L	1.0	0.50	1		02/14/24 23:41	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 831931
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92712990001

METHOD BLANK: 4299279 Matrix: Water
Associated Lab Samples: 92712990001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.025	02/13/24 16:40	

LABORATORY CONTROL SAMPLE: 4299280

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.11	109	85-115	

MATRIX SPIKE SAMPLE: 4299873

Parameter	Units	92712989003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.089	0.1	0.19	98	90-110	H1

SAMPLE DUPLICATE: 4299872

Parameter	Units	92712987001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.085	0.083	2	20	H1

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832216
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92712990002, 92712990003

METHOD BLANK: 4300564 Matrix: Water
Associated Lab Samples: 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.025	02/14/24 21:21	

LABORATORY CONTROL SAMPLE: 4300565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.094	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300566 4300567

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.025	0.1	0.1	0.12	0.12	90	91	90-110	1	20	H1

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832652
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990001, 92712990002, 92712990003

METHOD BLANK: 4302881 Matrix: Water
Associated Lab Samples: 92712990001, 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	02/17/24 11:09	

LABORATORY CONTROL SAMPLE: 4302882

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302883 4302884

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.4	2.5	96	97	75-125	1	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832303
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990001

METHOD BLANK: 4301221 Matrix: Water
Associated Lab Samples: 92712990001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	02/20/24 14:54	
Arsenic	ug/L	ND	10.0	2.5	02/20/24 14:54	
Barium	ug/L	ND	5.0	0.79	02/20/24 14:54	
Beryllium	ug/L	ND	1.0	0.16	02/20/24 14:54	
Boron	ug/L	ND	50.0	4.0	02/20/24 14:54	
Cadmium	ug/L	ND	1.0	0.29	02/20/24 14:54	
Calcium	ug/L	ND	100	14.7	02/20/24 14:54	
Chromium	ug/L	ND	5.0	0.63	02/20/24 14:54	
Copper	ug/L	ND	5.0	0.62	02/20/24 14:54	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	02/20/24 14:54	
Molybdenum	ug/L	ND	5.0	2.6	02/20/24 14:54	
Nickel	ug/L	ND	5.0	0.88	02/20/24 14:54	
Selenium	ug/L	ND	10.0	4.1	02/20/24 14:54	
Silver	ug/L	ND	5.0	0.49	02/20/24 14:54	
Vanadium	ug/L	ND	5.0	1.6	02/20/24 14:54	
Zinc	ug/L	ND	10.0	3.0	02/20/24 14:54	

LABORATORY CONTROL SAMPLE: 4301222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	474	95	80-120	
Arsenic	ug/L	500	482	96	80-120	
Barium	ug/L	500	472	94	80-120	
Beryllium	ug/L	500	479	96	80-120	
Boron	ug/L	500	482	96	80-120	
Cadmium	ug/L	500	466	93	80-120	
Calcium	ug/L	5000	4520	90	80-120	
Chromium	ug/L	500	468	94	80-120	
Copper	ug/L	500	471	94	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	30000	91	80-120	
Molybdenum	ug/L	500	478	96	80-120	
Nickel	ug/L	500	473	95	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	232	93	80-120	
Vanadium	ug/L	500	467	93	80-120	
Zinc	ug/L	500	478	96	80-120	

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(704)875-9092

QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301223 4301224

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	501	505	100	101	75-125	1	20	
Arsenic	ug/L	ND	500	500	509	512	102	102	75-125	1	20	
Barium	ug/L	3.3J	500	500	495	510	98	101	75-125	3	20	
Beryllium	ug/L	ND	500	500	506	509	101	102	75-125	1	20	
Boron	ug/L	ND	500	500	509	513	102	103	75-125	1	20	
Cadmium	ug/L	ND	500	500	482	484	96	97	75-125	0	20	
Calcium	ug/L	19900	5000	5000	24800	25200	97	105	75-125	2	20	
Chromium	ug/L	ND	500	500	486	489	97	98	75-125	1	20	
Copper	ug/L	2.5J	500	500	493	495	98	99	75-125	0	20	
Hardness, Total(SM 2340B)	ug/L	103000	33100	33100	138000	139000	106	109	75-125	1	20	
Molybdenum	ug/L	ND	500	500	491	494	98	99	75-125	1	20	
Nickel	ug/L	ND	500	500	484	486	97	97	75-125	0	20	
Selenium	ug/L	ND	500	500	519	525	104	105	75-125	1	20	
Silver	ug/L	ND	250	250	244	245	98	98	75-125	1	20	
Vanadium	ug/L	15.9	500	500	506	506	98	98	75-125	0	20	
Zinc	ug/L	ND	500	500	491	493	98	98	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832572
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990002, 92712990003

METHOD BLANK: 4302448 Matrix: Water
Associated Lab Samples: 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	02/22/24 13:16	
Arsenic	ug/L	ND	10.0	2.5	02/22/24 13:16	
Barium	ug/L	ND	5.0	0.79	02/22/24 13:16	
Beryllium	ug/L	ND	1.0	0.16	02/22/24 13:16	
Boron	ug/L	ND	50.0	4.0	02/22/24 13:16	
Cadmium	ug/L	ND	1.0	0.29	02/22/24 13:16	
Calcium	ug/L	ND	100	14.7	02/22/24 13:16	
Chromium	ug/L	ND	5.0	0.63	02/22/24 13:16	
Copper	ug/L	ND	5.0	0.62	02/22/24 13:16	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	02/22/24 13:16	
Molybdenum	ug/L	ND	5.0	2.6	02/22/24 13:16	
Nickel	ug/L	ND	5.0	0.88	02/22/24 13:16	
Selenium	ug/L	ND	10.0	4.1	02/22/24 13:16	
Silver	ug/L	ND	5.0	0.49	02/22/24 13:16	
Vanadium	ug/L	ND	5.0	1.6	02/22/24 13:16	
Zinc	ug/L	ND	10.0	3.0	02/22/24 13:16	

LABORATORY CONTROL SAMPLE: 4302449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	524	105	80-120	
Arsenic	ug/L	500	518	104	80-120	
Barium	ug/L	500	537	107	80-120	
Beryllium	ug/L	500	516	103	80-120	
Boron	ug/L	500	515	103	80-120	
Cadmium	ug/L	500	508	102	80-120	
Calcium	ug/L	5000	5180	104	80-120	
Chromium	ug/L	500	510	102	80-120	
Copper	ug/L	500	517	103	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	33300	101	80-120	
Molybdenum	ug/L	500	522	104	80-120	
Nickel	ug/L	500	509	102	80-120	
Selenium	ug/L	500	509	102	80-120	
Silver	ug/L	250	252	101	80-120	
Vanadium	ug/L	500	510	102	80-120	
Zinc	ug/L	500	515	103	80-120	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302450 4302451

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	541	547	108	109	75-125	1	20	
Arsenic	ug/L	ND	500	500	534	538	107	108	75-125	1	20	
Barium	ug/L	13.0	500	500	557	552	109	108	75-125	1	20	
Beryllium	ug/L	ND	500	500	538	542	108	108	75-125	1	20	
Boron	ug/L	ND	500	500	537	540	107	108	75-125	1	20	
Cadmium	ug/L	ND	500	500	520	524	104	105	75-125	1	20	
Calcium	ug/L	2970	5000	5000	8470	8150	110	104	75-125	4	20	
Chromium	ug/L	ND	500	500	525	529	105	106	75-125	1	20	
Copper	ug/L	0.97J	500	500	519	524	104	105	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	15200	33100	33100	50400	49900	107	105	75-125	1	20	
Molybdenum	ug/L	ND	500	500	527	532	105	106	75-125	1	20	
Nickel	ug/L	ND	500	500	518	523	104	104	75-125	1	20	
Selenium	ug/L	ND	500	500	546	551	109	110	75-125	1	20	
Silver	ug/L	ND	250	250	259	261	103	104	75-125	1	20	
Vanadium	ug/L	ND	500	500	521	525	104	105	75-125	1	20	
Zinc	ug/L	4.0J	500	500	531	535	105	106	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302452 4302453

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	559	554	112	111	75-125	1	20	
Arsenic	ug/L	ND	500	500	547	544	109	109	75-125	1	20	
Barium	ug/L	40.8	500	500	572	576	106	107	75-125	1	20	
Beryllium	ug/L	ND	500	500	549	543	110	109	75-125	1	20	
Boron	ug/L	1400	500	500	2000	1990	121	118	75-125	1	20	
Cadmium	ug/L	ND	500	500	520	516	104	103	75-125	1	20	
Calcium	ug/L	35300	5000	5000	40900	41300	112	119	75-125	1	20	
Chromium	ug/L	ND	500	500	533	527	106	105	75-125	1	20	
Copper	ug/L	ND	500	500	536	533	107	107	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	143000	33100	33100	182000	183000	117	119	75-125	0	20	
Molybdenum	ug/L	ND	500	500	539	535	108	107	75-125	1	20	
Nickel	ug/L	0.90J	500	500	513	510	102	102	75-125	1	20	
Selenium	ug/L	ND	500	500	556	552	111	110	75-125	1	20	
Silver	ug/L	ND	250	250	268	265	107	106	75-125	1	20	
Vanadium	ug/L	ND	500	500	529	525	106	105	75-125	1	20	
Zinc	ug/L	ND	500	500	525	522	105	104	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832223
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990001

METHOD BLANK: 4300574 Matrix: Water
Associated Lab Samples: 92712990001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.050	02/14/24 20:27	
Iron	ug/L	ND	50.0	20.9	02/14/24 20:27	
Lead	ug/L	ND	1.0	0.077	02/14/24 20:27	
Lithium	ug/L	ND	2.5	0.50	02/14/24 20:27	
Manganese	ug/L	ND	2.0	1.0	02/14/24 20:27	
Thallium	ug/L	ND	0.20	0.050	02/14/24 20:27	
Tin	ug/L	ND	1.0	0.43	02/14/24 20:27	

LABORATORY CONTROL SAMPLE: 4300575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	50.6	101	80-120	
Iron	ug/L	1250	1300	104	80-120	
Lead	ug/L	50	50.1	100	80-120	
Lithium	ug/L	50	51.4	103	80-120	
Manganese	ug/L	50	50.9	102	80-120	
Thallium	ug/L	25	25.0	100	80-120	
Tin	ug/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300576 4300577

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	0.34J	50	50	51.3	51.9	102	103	75-125	1	20	
Iron	ug/L	313	1250	1250	1740	1760	114	115	75-125	1	20	
Lead	ug/L	ND	50	50	51.2	50.7	102	101	75-125	1	20	
Lithium	ug/L	ND	50	50	48.3	49.0	96	97	75-125	2	20	
Manganese	ug/L	3.0	50	50	55.9	55.5	106	105	75-125	1	20	
Thallium	ug/L	ND	25	25	25.6	25.6	102	102	75-125	0	20	
Tin	ug/L	ND	50	50	50.9	50.6	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832575
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990002, 92712990003

METHOD BLANK: 4302470 Matrix: Water
Associated Lab Samples: 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.050	02/15/24 23:17	
Iron	ug/L	ND	50.0	20.9	02/15/24 23:17	
Lead	ug/L	ND	1.0	0.077	02/15/24 23:17	
Lithium	ug/L	ND	2.5	0.50	02/15/24 23:17	
Manganese	ug/L	ND	2.0	1.0	02/15/24 23:17	
Thallium	ug/L	ND	0.20	0.050	02/15/24 23:17	
Tin	ug/L	ND	1.0	0.43	02/15/24 23:17	

LABORATORY CONTROL SAMPLE: 4302471

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.7	107	80-120	
Iron	ug/L	1250	1340	107	80-120	
Lead	ug/L	50	54.2	108	80-120	
Lithium	ug/L	50	53.7	107	80-120	
Manganese	ug/L	50	52.3	105	80-120	
Thallium	ug/L	25	26.2	105	80-120	
Tin	ug/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302472 4302473

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	1.1	50	50	53.4	55.6	105	109	75-125	4	20	
Iron	ug/L	149	1250	1250	1460	1520	105	110	75-125	4	20	
Lead	ug/L	ND	50	50	53.5	54.9	107	110	75-125	3	20	
Lithium	ug/L	ND	50	50	52.4	53.9	104	107	75-125	3	20	
Manganese	ug/L	37.3	50	50	85.3	88.6	96	103	75-125	4	20	
Thallium	ug/L	ND	25	25	26.0	26.6	104	106	75-125	2	20	
Tin	ug/L	ND	50	50	52.0	54.9	104	109	75-125	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302474 4302475

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	ND	50	50	51.8	51.7	104	103	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302474 4302475

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	ND	1250	1250	1310	1310	104	104	75-125	0	20	
Lead	ug/L	ND	50	50	53.6	53.6	107	107	75-125	0	20	
Lithium	ug/L	7.1	50	50	58.5	58.7	103	103	75-125	0	20	
Manganese	ug/L	4.3	50	50	55.7	55.5	103	102	75-125	0	20	
Thallium	ug/L	ND	25	25	26.2	26.3	105	105	75-125	0	20	
Tin	ug/L	ND	50	50	52.8	52.8	106	105	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 833124
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990001

METHOD BLANK: 4305515 Matrix: Water
Associated Lab Samples: 92712990001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	02/17/24 01:16	

LABORATORY CONTROL SAMPLE: 4305516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	230	92	80-120	

SAMPLE DUPLICATE: 4305517

Parameter	Units	92712989006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	46.4	43.6	6	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 833515
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990002, 92712990003

METHOD BLANK: 4306953 Matrix: Water
Associated Lab Samples: 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	02/20/24 15:32	

LABORATORY CONTROL SAMPLE: 4306954

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	246	98	80-120	

SAMPLE DUPLICATE: 4306955

Parameter	Units	92713247001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	254	253	0	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 837085
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990001, 92712990002, 92712990003

METHOD BLANK: 4323807 Matrix: Water
Associated Lab Samples: 92712990001, 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	03/07/24 00:18	

LABORATORY CONTROL SAMPLE: 4323808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323809 4323810

Parameter	Units	92715121002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.1	5.1	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4323811 4323812

Parameter	Units	92713535004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.21	5	5	5.2	5.2	99	100	90-110	1	10	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832077
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990001

METHOD BLANK: 4300169 Matrix: Water
Associated Lab Samples: 92712990001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	02/13/24 21:29	
Fluoride	mg/L	ND	0.10	0.050	02/13/24 21:29	
Nitrate as N	mg/L	ND	0.10	0.060	02/13/24 21:29	
Sulfate	mg/L	ND	1.0	0.50	02/13/24 21:29	

LABORATORY CONTROL SAMPLE: 4300170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.7	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Nitrate as N	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	50	49.2	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300171 4300172

Parameter	Units	92712989001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	50	50	60.6	61.7	101	103	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	4.8	2.0	192	76	90-110	85	10	M1,R1
Nitrate as N	mg/L	0.15	2.5	2.5	2.6	2.7	98	100	90-110	2	10	
Sulfate	mg/L	158	50	50	185	185	54	56	90-110	0	10	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

QC Batch: 832355
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712990002, 92712990003

METHOD BLANK: 4301587 Matrix: Water
Associated Lab Samples: 92712990002, 92712990003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	02/14/24 21:43	
Fluoride	mg/L	ND	0.10	0.050	02/14/24 21:43	
Nitrate as N	mg/L	ND	0.10	0.060	02/14/24 21:43	
Sulfate	mg/L	ND	1.0	0.50	02/14/24 21:43	

LABORATORY CONTROL SAMPLE: 4301588

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.9	98	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Nitrate as N	mg/L	2.5	2.4	94	90-110	
Sulfate	mg/L	50	49.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301589 4301590

Parameter	Units	92712989006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.6	50	50	52.2	53.0	99	101	90-110	2	10	
Fluoride	mg/L	0.070J	2.5	2.5	3.6	3.3	140	129	90-110	8	10	M1
Nitrate as N	mg/L	0.10	2.5	2.5	2.5	2.5	96	97	90-110	2	10	
Sulfate	mg/L	3.1	50	50	58.3	56.6	110	107	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301591 4301592

Parameter	Units	92713247001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.7	50	50	62.0	63.4	99	101	90-110	2	10	
Fluoride	mg/L	0.052J	2.5	2.5	2.9	3.0	113	116	90-110	3	10	M1
Nitrate as N	mg/L	ND	2.5	2.5	2.4	2.4	95	98	90-110	3	10	
Sulfate	mg/L	37.4	50	50	87.6	88.8	100	103	90-110	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_1SA2024_CCR&VSWMR_P_G
Pace Project No.: 92712990

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92712990001	**021224NMW37**	EPA 7199	831931		
92712990002	**021324NMW39S**	EPA 7199	832216		
92712990003	**021324NMW39D**	EPA 7199	832216		
92712990001	**021224NMW37**	EPA 3010A	832303	EPA 6010D	832444
92712990002	**021324NMW39S**	EPA 3010A	832572	EPA 6010D	832725
92712990003	**021324NMW39D**	EPA 3010A	832572	EPA 6010D	832725
92712990001	**021224NMW37**	EPA 3010A	832223	EPA 6020B	832433
92712990002	**021324NMW39S**	EPA 3010A	832575	EPA 6020B	832736
92712990003	**021324NMW39D**	EPA 3010A	832575	EPA 6020B	832736
92712990001	**021224NMW37**	EPA 7470A	832652	EPA 7470A	832682
92712990002	**021324NMW39S**	EPA 7470A	832652	EPA 7470A	832682
92712990003	**021324NMW39D**	EPA 7470A	832652	EPA 7470A	832682
92712990001	**021224NMW37**	SM 2540C-2015	833124		
92712990002	**021324NMW39S**	SM 2540C-2015	833515		
92712990003	**021324NMW39D**	SM 2540C-2015	833515		
92712990001	**021224NMW37**	EPA 350.1 Rev 2.0 1993	837085		
92712990002	**021324NMW39S**	EPA 350.1 Rev 2.0 1993	837085		
92712990003	**021324NMW39D**	EPA 350.1 Rev 2.0 1993	837085		
92712990001	**021224NMW37**	EPA 9056A	832077		
92712990002	**021324NMW39S**	EPA 9056A	832355		
92712990003	**021324NMW39D**	EPA 9056A	832355		

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Pace	DC#_Title: ENV-FRM-HUN1-0084 v02_Tech Spec Sample Condition Upon Receipt Effective Date:

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: **WO# : 92712990**

92712990

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other:____

Carrier Tracking Number: NA

Custody Seal Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No Date/Initials Person Examining Contents: GCG 2/13/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92 to 96 Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.6 Correction Factor: Add / Subtract (°C) -0.1

Corrected Cooler Temp (°C): 1.7

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

Qualtrax Document ID: 70677

Page 1 of 2

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO#: 92712990

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1	1															1				2				
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pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.sheidle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_G	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET

County / State origin of sample(s): Virginia

Data Deliverables: [✓] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/Fl/SO4/NO3	Radium 226	Radium 228 & Total Radium			Sample Comment	Preservation non-conformance identified for sample.
02Q 24NMW37	WT	G			2/12/24	1640	7			X	X	X	X	X	X	X			-All samples preserved on ice	
~~02 24NMW39S~~ MK	WT									X	X	X	X	X	X	X				
~~02 24NMW39D~~ MK	WT									X	X	X	X	X	X	X				

Identify Container Preservative Type***

Specify Container Size **

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Angela Baioni

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3059969

Additional Instructions from Pace®:

Collected By: (Printed Name) J. DAVIS

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time	Tracking Number:
W. Kuy / WSP	2/12/24 @ 1900	GCG Pace HRL	2/13/24 1035	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORQ-0019_v02_110123

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
02224NMW37	GCG	9.69	9.47	2/13/24 1142	10 Drops Acid	224909

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO#: 92712990

92712990

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other:____

Carrier Tracking Number: VA

Custody Seal Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No Date/Initials Person Examining Contents: GCG 2/14/27

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T070 Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.3 Correction Factor: Add / Subtract (°C) -0.1

Corrected Cooler Temp (°C): 1.2

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at ≤6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

***Check all unpreserved Nitrates for chlorine

Project # **WO#: 92712990**

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1	1															1				2				
2		1	1		1	1															1				2				
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pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for Instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_G	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET

County / State origin of sample(s): Virginia

Data Deliverables: [✓] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/Fl/SO4/NO3	Radium 226	Radium 228 & Total Radium	Sample Comment
~~02_24NMW37~~ MW	WT									X	X	X	X	X	X	X	-All samples
02_24NMW39S	WT	G			2/13/24	1205	7			X	X	X	X	X	X	X	preserved on ice
02_24NMW39D	WT	G			2/13/24	1325	7			X	X	X	X	X	X	X	

Proj. Mgr: Angela Baioni
AcctNum / Client ID:
Table #:
Profile / Template: 13861
Prelog / Bottle Ord. ID: EZ 3059969

Lab Use Only

Preservation non-conformance identified for sample:

Additional Instructions from Pace®:

Collected By: (Printed Name) Michael Knez, J. DAVIS

Signature: M. Knez, J. Davis

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
M. Knez / WSP	2/13/24 @ 1900	GMN Pace Htn	2/14/24 1018

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

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Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Pace® Location Requested (City/State): Pace Analytical Charlotte, 9800 Kincey Ave. Suite 100, Huntersville, NC 28078

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA
Street Address:	120 Tredegar Street, Richmond, VA 23219
Customer Project #:	
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_G
Site Collection Info/Facility ID (as applicable):	
Time Zone Collected:	[ ] AK [ ] PT [ ] MT [ ] CT [✓] ET
Data Deliverables:	[✓] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other
Regulatory Program (DW, RCRA, etc.) as applicable:	Reportable [ ] Yes [ ] No
Rush (Pre-approval required):	[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other
Date Results Requested:	
Contact/Report To:	Kelly Hicks
Phone #:	(804)273-4903
E-Mail:	kelly.a.hicks@dominionenergy.com
Cc E-Mail:	crystal.shadle@wsp.com
Invoice To:	Kelly Hicks
Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Purchase Order # (if applicable):	50156400
Quote #:	
County / State origin of sample(s):	Virginia
DW PWSID # or WW Permit # as applicable:	
Field Filtered (if applicable):	[ ] Yes [ ] No
Analysis:	

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/F/SO4/NO3	Radium 226	Radium 228 & Total Radium
~~02 24NMW37~~ NA	WT															
02 15 24NMW39S	WT	G			2/13/24	1325	7			X	X	X	X	X	X	X
02 15 24NMW39D	WT	G			2/13/24	1205	7			X	X	X	X	X	X	X

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Angela Baioni

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3059969

Preservation non-conformance identified for sample

Sample Comment

-All samples preserved on ice

Additional Instructions from Pace®:

CKS 2/14/2024

Collected By: (Printed Name) Michael Knez, J. DAVIS

Signature: M. Knez, J. Davis

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature) M. Knez / WSP	Date/Time: 2/13/24 @ 1900	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

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ENV-FRM-CORQ-0019_v02_110123 ©

2SA23 NP Sentinel 1154

MICROPURGE SAMPLING LOG Date 09/11/2023 Weather Sunny 80's

MICROPURGE SAMPLING LOG Date 08/15/2023

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
02/324NMW39D	GCG	9.64	9.46	2/14/24 1056	11 Drops Acid	224809
02/324NMW395	GCG	9.60	9.44	2/14/24 1108	8 Drops Acid	224809

ANALYTICAL REPORT

March 19, 2024

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1706893
Samples Received:	02/17/2024
Project Number:	92712990
Description:	Bremo_1SA2024_CCR&VSWMR_P_G
Site:	001
Report To:	Angela Baioni
	9800 Kincey Avenue, Suite 100
	Huntersville, NC 28078

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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021224NMW37 L1706893-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 16:40	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2232398	1	02/23/24 16:36	03/01/24 15:17	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238282	1	03/04/24 22:49	03/14/24 21:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2232398	1	02/23/24 16:36	03/14/24 21:03	DDD	Mt. Juliet, TN

021324NMW39S L1706893-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 13:25	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2232398	1	02/23/24 16:36	03/01/24 15:17	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238282	1	03/04/24 22:49	03/14/24 21:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2232398	1	02/23/24 16:36	03/14/24 21:03	DDD	Mt. Juliet, TN

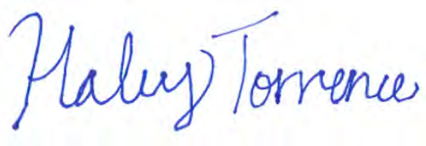
021324NMW39D L1706893-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 12:05	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2232398	1	02/23/24 16:36	03/01/24 16:17	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238282	1	03/04/24 22:49	03/14/24 21:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2232398	1	02/23/24 16:36	03/14/24 21:03	DDD	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

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.235	J	0.199		0.237		03/01/2024 15:17	WG2232398
(T) Barium	*103*					*30.0-143*	*03/01/2024 15:17*	WG2232398

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	-0.0908	U	0.194	2.61	0.358	0.189	03/14/2024 21:03	WG2238282
(T) Barium	*138*					*30.0-143*	*03/14/2024 21:03*	WG2238282
(T) Yttrium	*118*					*30.0-136*	*03/14/2024 21:03*	WG2238282

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.235	J	0.278	0.429	03/14/2024 21:03	WG2232398

Radiochemistry by Method 903.0/9315

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
Radium-226	0.267		0.193		0.188		03/01/2024 15:17	WG2232398
(T) Barium	*99.2*					*30.0-143*	*03/01/2024 15:17*	WG2232398

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	0.481		0.194	1.13	0.335	0.178	03/14/2024 21:03	WG2238282
(T) Barium	*133*					*30.0-143*	*03/14/2024 21:03*	WG2238282
(T) Yttrium	*115*					*30.0-136*	*03/14/2024 21:03*	WG2238282

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.748		0.274	0.384	03/14/2024 21:03	WG2232398

Radiochemistry by Method 903.0/9315

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
Radium-226	1.32		0.415		0.291		03/01/2024 16:17	WG2232398
(T) Barium	*98.0*					*30.0-143*	*03/01/2024 16:17*	WG2232398

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	0.931		0.230	0.879	0.385	0.203	03/14/2024 21:03	WG2238282
(T) Barium	*131*					*30.0-143*	*03/14/2024 21:03*	WG2238282
(T) Yttrium	*114*					*30.0-136*	*03/14/2024 21:03*	WG2238282

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.25		0.474	0.483	03/14/2024 21:03	WG2232398

Method Blank (MB)

(MB) R4039992-1 02/29/24 11:47

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.102	J	0.115	0.184	
(T) Barium	*102*		*102*		

L1708078-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1708078-04 02/29/24 13:47 • (DUP) R4039992-5 02/29/24 12:47

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-226	0.869	0.354	0.212		0.877	0.576	0.580		0.894	0.0115		20	3
(T) Barium	*98.0*				*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R4039992-2 02/29/24 11:47

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.48	89.7	80.0-120	
(T) Barium			*101*		

L1706881-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706881-01 02/29/24 12:47 • (MS) R4039992-3 02/29/24 11:47 • (MSD) R4039992-4 02/29/24 11:47

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-226	20.0	0.171	17.9	20.6	88.7	102	1	75.0-125			13.7		20
(T) Barium		*102*			*102*	*103*							

Method Blank (MB)

(MB) R4047052-1 03/14/24 21:03

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.807		0.248	0.205	
(T) Barium	*122*		*122*		
(T) Yttrium	*109*		*109*		

L1707772-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1707772-01 03/14/24 21:03 • (DUP) R4047052-5 03/14/24 21:03

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	0.816	0.277	0.474	0.252	0.0313	0.364	0.655		185	1.71	U	20	3
(T) Barium	*133*				*138*	*138*							
(T) Yttrium	*115*				*106*	*106*							

Laboratory Control Sample (LCS)

(LCS) R4047052-2 03/14/24 21:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.69	93.8	80.0-120	
(T) Barium			*137*		
(T) Yttrium			*103*		

L1705781-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1705781-01 03/14/24 21:03 • (MS) R4047052-3 03/14/24 21:03 • (MSD) R4047052-4 03/14/24 21:03

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	1.26	16.8	20.1	92.8	113	1	70.0-130			18.2		20
(T) Barium		*141*			*137*	*133*							
(T) Yttrium		*109*			*103*	*101*							

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.

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.

Internal Transfer Chain of Custody

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: ☒ Yes ☐ No

Workorder: 92712990 **Workorder Name:** Bremo_1SA2024_CCR&VSWMR_P_G **Owner Received Date:** 2/13/2024 **Results Requested By:** 2/27/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Ra226 903.0	Ra228 904.0/Combined Ra										LAB USE ONLY
1	021224NMW37	PS	2/12/2024 16:40	92712990001	Water	2						X	X										-01
2	021324NMW39S	PS	2/13/2024 13:25	92712990002	Water	2						X	X										-02
3	021324NMW39D	PS	2/13/2024 12:05	92712990003	Water	2						X	X										-03
4																							
5																							

A239

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	2/13/24 1800	[illegible]	2/17/24 0900
2				
3				

Comments

Cooler Temperature on Receipt _____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

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		

2-STO=2.5 TUAB

L701893

INTER_LABORATORY WORK ORDER # 92712990

(To be completed by sending lab)

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Sending Project No:	92712990
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	02/16/24
REQUESTED COMPLETION DATE:	**2/27/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra226 903.0	BP1N		HNO3	3	SI-38RAD	SUB PASI RAD
Ra228 904.0/Combined Ra	BP1N		HNO3	3	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 20, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on February 13, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

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CERTIFICATIONS

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92712991001	**021224NFBBLANK**	Water	02/12/24 12:40	02/13/24 10:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92712991001	**021224NFBBLANK**	EPA 7199	IRC	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	BM	1	PASI-A
		SM 2540C-2015	RVS	1	PASI-A
		EPA 350.1 Rev 2.0 1993	AWL	1	PASI-A
		EPA 9056A	CDC	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

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SUMMARY OF DETECTION

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92712991001	**021224NFBBLANK**					
EPA 6010D	Boron	24.0J	ug/L	50.0	02/20/24 15:42	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: March 20, 2024

General Information:
1 sample was analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 832077

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92712989001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4300171)
  - Fluoride
  - Sulfate
- MSD (Lab ID: 4300172)
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 4300172)
  - Fluoride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Sample: 021224NFBBLANK **Lab ID: 92712991001** Collected: 02/12/24 12:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.025	1		02/13/24 10:56	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	02/14/24 16:02	02/20/24 15:42	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/14/24 16:02	02/20/24 15:42	7440-38-2	
Barium	ND	ug/L	5.0	0.79	1	02/14/24 16:02	02/20/24 15:42	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	02/14/24 16:02	02/20/24 15:42	7440-41-7	
Boron	**24.0J**	ug/L	50.0	4.0	1	02/14/24 16:02	02/20/24 15:42	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	02/14/24 16:02	02/20/24 15:42	7440-43-9	
Calcium	ND	ug/L	100	14.7	1	02/14/24 16:02	02/20/24 15:42	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	02/14/24 16:02	02/20/24 15:42	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	02/14/24 16:02	02/20/24 15:42	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	02/14/24 16:02	02/20/24 15:42	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	02/14/24 16:02	02/20/24 15:42	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	02/14/24 16:02	02/20/24 15:42	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	02/14/24 16:02	02/20/24 15:42	7440-22-4	
Hardness, Total(SM 2340B)	ND	ug/L	662	36.8	1	02/14/24 16:02	02/20/24 15:42		
Vanadium	ND	ug/L	5.0	1.6	1	02/14/24 16:02	02/20/24 15:42	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	02/14/24 16:02	02/20/24 15:42	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.050	1	02/14/24 13:35	02/14/24 22:15	7440-48-4	
Iron	ND	ug/L	50.0	20.9	1	02/14/24 13:35	02/14/24 22:15	7439-89-6	
Lead	ND	ug/L	1.0	0.077	1	02/14/24 13:35	02/14/24 22:15	7439-92-1	
Lithium	ND	ug/L	2.5	0.50	1	02/14/24 13:35	02/14/24 22:15	7439-93-2	
Manganese	ND	ug/L	2.0	1.0	1	02/14/24 13:35	02/14/24 22:15	7439-96-5	
Thallium	ND	ug/L	0.20	0.050	1	02/14/24 13:35	02/14/24 22:15	7440-28-0	
Tin	ND	ug/L	1.0	0.43	1	02/14/24 13:35	02/14/24 22:15	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	02/15/24 14:27	02/17/24 09:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		02/17/24 01:28		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		02/23/24 16:20	7664-41-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Sample: 021224NFBBLANK **Lab ID: 92712991001** Collected: 02/12/24 12:40 Received: 02/13/24 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		02/13/24 22:26	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		02/13/24 22:26	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		02/13/24 22:26	14797-55-8	
Sulfate	ND	mg/L	1.0	0.50	1		02/13/24 22:26	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 831931
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92712991001

METHOD BLANK: 4299279 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.025	02/13/24 16:40	

LABORATORY CONTROL SAMPLE: 4299280

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.11	109	85-115	

MATRIX SPIKE SAMPLE: 4299873

Parameter	Units	92712989003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.089	0.1	0.19	98	90-110	H1

SAMPLE DUPLICATE: 4299872

Parameter	Units	92712987001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.085	0.083	2	20	H1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 832624
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712991001

METHOD BLANK: 4302733 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	02/17/24 09:28	

LABORATORY CONTROL SAMPLE: 4302734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.6	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4302735 4302736

Parameter	Units	92712842001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.6	2.6	102	103	75-125	1	25	

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 832303
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712991001

METHOD BLANK: 4301221 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	02/20/24 14:54	
Arsenic	ug/L	ND	10.0	2.5	02/20/24 14:54	
Barium	ug/L	ND	5.0	0.79	02/20/24 14:54	
Beryllium	ug/L	ND	1.0	0.16	02/20/24 14:54	
Boron	ug/L	ND	50.0	4.0	02/20/24 14:54	
Cadmium	ug/L	ND	1.0	0.29	02/20/24 14:54	
Calcium	ug/L	ND	100	14.7	02/20/24 14:54	
Chromium	ug/L	ND	5.0	0.63	02/20/24 14:54	
Copper	ug/L	ND	5.0	0.62	02/20/24 14:54	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	02/20/24 14:54	
Molybdenum	ug/L	ND	5.0	2.6	02/20/24 14:54	
Nickel	ug/L	ND	5.0	0.88	02/20/24 14:54	
Selenium	ug/L	ND	10.0	4.1	02/20/24 14:54	
Silver	ug/L	ND	5.0	0.49	02/20/24 14:54	
Vanadium	ug/L	ND	5.0	1.6	02/20/24 14:54	
Zinc	ug/L	ND	10.0	3.0	02/20/24 14:54	

LABORATORY CONTROL SAMPLE: 4301222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	474	95	80-120	
Arsenic	ug/L	500	482	96	80-120	
Barium	ug/L	500	472	94	80-120	
Beryllium	ug/L	500	479	96	80-120	
Boron	ug/L	500	482	96	80-120	
Cadmium	ug/L	500	466	93	80-120	
Calcium	ug/L	5000	4520	90	80-120	
Chromium	ug/L	500	468	94	80-120	
Copper	ug/L	500	471	94	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	30000	91	80-120	
Molybdenum	ug/L	500	478	96	80-120	
Nickel	ug/L	500	473	95	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	232	93	80-120	
Vanadium	ug/L	500	467	93	80-120	
Zinc	ug/L	500	478	96	80-120	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4301223 4301224

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	501	505	100	101	75-125	1	20	
Arsenic	ug/L	ND	500	500	509	512	102	102	75-125	1	20	
Barium	ug/L	3.3J	500	500	495	510	98	101	75-125	3	20	
Beryllium	ug/L	ND	500	500	506	509	101	102	75-125	1	20	
Boron	ug/L	ND	500	500	509	513	102	103	75-125	1	20	
Cadmium	ug/L	ND	500	500	482	484	96	97	75-125	0	20	
Calcium	ug/L	19900	5000	5000	24800	25200	97	105	75-125	2	20	
Chromium	ug/L	ND	500	500	486	489	97	98	75-125	1	20	
Copper	ug/L	2.5J	500	500	493	495	98	99	75-125	0	20	
Hardness, Total(SM 2340B)	ug/L	103000	33100	33100	138000	139000	106	109	75-125	1	20	
Molybdenum	ug/L	ND	500	500	491	494	98	99	75-125	1	20	
Nickel	ug/L	ND	500	500	484	486	97	97	75-125	0	20	
Selenium	ug/L	ND	500	500	519	525	104	105	75-125	1	20	
Silver	ug/L	ND	250	250	244	245	98	98	75-125	1	20	
Vanadium	ug/L	15.9	500	500	506	506	98	98	75-125	0	20	
Zinc	ug/L	ND	500	500	491	493	98	98	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 832223
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712991001

METHOD BLANK: 4300574 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.050	02/14/24 20:27	
Iron	ug/L	ND	50.0	20.9	02/14/24 20:27	
Lead	ug/L	ND	1.0	0.077	02/14/24 20:27	
Lithium	ug/L	ND	2.5	0.50	02/14/24 20:27	
Manganese	ug/L	ND	2.0	1.0	02/14/24 20:27	
Thallium	ug/L	ND	0.20	0.050	02/14/24 20:27	
Tin	ug/L	ND	1.0	0.43	02/14/24 20:27	

LABORATORY CONTROL SAMPLE: 4300575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	50.6	101	80-120	
Iron	ug/L	1250	1300	104	80-120	
Lead	ug/L	50	50.1	100	80-120	
Lithium	ug/L	50	51.4	103	80-120	
Manganese	ug/L	50	50.9	102	80-120	
Thallium	ug/L	25	25.0	100	80-120	
Tin	ug/L	50	49.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300576 4300577

Parameter	Units	92712987001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	0.34J	50	50	51.3	51.9	102	103	75-125	1	20	
Iron	ug/L	313	1250	1250	1740	1760	114	115	75-125	1	20	
Lead	ug/L	ND	50	50	51.2	50.7	102	101	75-125	1	20	
Lithium	ug/L	ND	50	50	48.3	49.0	96	97	75-125	2	20	
Manganese	ug/L	3.0	50	50	55.9	55.5	106	105	75-125	1	20	
Thallium	ug/L	ND	25	25	25.6	25.6	102	102	75-125	0	20	
Tin	ug/L	ND	50	50	50.9	50.6	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 833124
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712991001

METHOD BLANK: 4305515 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	02/17/24 01:16	

LABORATORY CONTROL SAMPLE: 4305516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	230	92	80-120	

SAMPLE DUPLICATE: 4305517

Parameter	Units	92712989006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	46.4	43.6	6	25	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 834442
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712991001

METHOD BLANK: 4311440 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	02/23/24 16:03	

LABORATORY CONTROL SAMPLE: 4311441

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4311442 4311443

Parameter	Units	92714695001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	1.2	10	10	11.0	11.0	98	98	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4311444 4311445

Parameter	Units	92714695002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.48	10	10	10.6	10.6	101	101	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

QC Batch: 832077
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92712991001

METHOD BLANK: 4300169 Matrix: Water
Associated Lab Samples: 92712991001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	02/13/24 21:29	
Fluoride	mg/L	ND	0.10	0.050	02/13/24 21:29	
Nitrate as N	mg/L	ND	0.10	0.060	02/13/24 21:29	
Sulfate	mg/L	ND	1.0	0.50	02/13/24 21:29	

LABORATORY CONTROL SAMPLE: 4300170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.7	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Nitrate as N	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	50	49.2	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4300171 4300172

Parameter	Units	92712989001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	50	50	60.6	61.7	101	103	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	4.8	2.0	192	76	90-110	85	10	M1,R1
Nitrate as N	mg/L	0.15	2.5	2.5	2.6	2.7	98	100	90-110	2	10	
Sulfate	mg/L	158	50	50	185	185	54	56	90-110	0	10	M1

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QUALIFIERS

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_1SA2024_CCR&VSWMR_P_H
Pace Project No.: 92712991

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92712991001	**021224NFBBLANK**	EPA 7199	831931		
92712991001	**021224NFBBLANK**	EPA 3010A	832303	EPA 6010D	832444
92712991001	**021224NFBBLANK**	EPA 3010A	832223	EPA 6020B	832433
92712991001	**021224NFBBLANK**	EPA 7470A	832624	EPA 7470A	832681
92712991001	**021224NFBBLANK**	SM 2540C-2015	833124		
92712991001	**021224NFBBLANK**	EPA 350.1 Rev 2.0 1993	834442		
92712991001	**021224NFBBLANK**	EPA 9056A	832077		

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Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: **WO# : 92712991**

92712991

Courier: ☐ Commercial ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Pace ☐ Other:____

Carrier Tracking Number: VA

Custody Seal Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No Date/Initials Person Examining Contents: GLG 2/B

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☐ IR Gun ID: 92T010 Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.8 Correction Factor: Add / Subtract (°C) -0.1

Corrected Cooler Temp (°C): 1.7

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

Qualtrax Document ID: 70677

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project # **WO#: 92712991**

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1	1															1				B				
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
240224VFBBLANK	GMG	9.73	9.44	2/13/24 1056	4 DROPS ACID	224809

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_H	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET

County / State origin of sample(s): Virginia

Data Deliverables: [✓] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/F/SO4/NO3	Radium 226	Radium 228 & Total Radium	Sample Comment
02[illegible]24NFBBLANK	WT	G			02/11/24	1210	7			X	X	X	X	X	X	X	-All samples preserved on ice -Level II data package requested
					02/12/24												

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 10[illegible] vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Angela Baioni

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3059971

Preservation non-conformance identified for sample:

Additional Instructions from Pace®:

Collected By: (Printed Name) Michael Knez

Signature: M. Knez

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature) M. Knez / WSP	Date/Time: 2/12/24 @ 1400	Received by/Company: (Signature) GCG PACE AVL	Date/Time: 2/13/24 1035	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ANALYTICAL REPORT

March 19, 2024

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1706897
Samples Received:	02/17/2024
Project Number:	92712991
Description:	Bremo_1SA2024_CCR&VSWMR_P_H
Site:	001
Report To:	Angela Baioni
	9800 Kincey Avenue, Suite 100
	Huntersville, NC 28078

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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021224NFBBLANK L1706897-01 5

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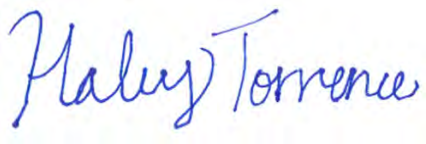
	Collected by	Collected date/time	Received date/time
021224NFBBLANK L1706897-01 Non-Potable Water		02/12/24 12:40	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2232398	1	02/23/24 16:36	03/01/24 16:17	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2232398	1	02/23/24 16:36	03/13/24 17:03	DDD	Mt. Juliet, TN

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

Radiochemistry by Method 903.0/9315

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	0.165		0.186		03/01/2024 16:17	WG2232398
(T) Barium	*102*					*30.0-143*	*03/01/2024 16:17*	WG2232398

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	0.662		0.262	1.08	0.461	0.240	03/13/2024 17:03	WG2238285
(T) Barium	*124*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*103*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.841		0.310	0.497	03/13/2024 17:03	WG2232398

Method Blank (MB)

(MB) R4039992-1 02/29/24 11:47

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.102	J	0.115	0.184	
(T) Barium	*102*		*102*		

L1708078-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1708078-04 02/29/24 13:47 • (DUP) R4039992-5 02/29/24 12:47

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-226	0.869	0.354	0.212		0.877	0.576	0.580		0.894	0.0115		20	3
(T) Barium	*98.0*				*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R4039992-2 02/29/24 11:47

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.48	89.7	80.0-120	
(T) Barium			*101*		

L1706881-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706881-01 02/29/24 12:47 • (MS) R4039992-3 02/29/24 11:47 • (MSD) R4039992-4 02/29/24 11:47

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-226	20.0	0.171	17.9	20.6	88.7	102	1	75.0-125			13.7		20
(T) Barium		*102*			*102*	*103*							

Method Blank (MB)

(MB) R4047078-1 03/13/24 17:03

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.497		0.145	0.251	0.132
(T) Barium	*124*		*124*		
(T) Yttrium	*111*		*111*		

L1707769-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1707769-02 03/13/24 17:03 • (DUP) R4047078-5 03/13/24 17:03

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.92	0.374	0.625	0.328	1.34	0.390	0.676	0.352	35.9	1.08		20	3
(T) Barium	*134*				*109*	*109*							
(T) Yttrium	*100*				*106*	*106*							

Laboratory Control Sample (LCS)

(LCS) R4047078-2 03/13/24 17:03

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.67	113	80.0-120	
(T) Barium			*130*		
(T) Yttrium			*110*		

L1710452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1710452-01 03/13/24 17:03 • (MS) R4047078-3 03/13/24 17:03 • (MSD) R4047078-4 03/13/24 17:03

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	-0.188	17.5	18.3	104	110	1	70.0-130			4.97		20
(T) Barium		*126*			*124*	*116*							
(T) Yttrium		*99.2*			*119*	*108*							

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.

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.

Internal Transfer Chain of Custody

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: ☒ Yes ☐ No

Workorder: 92712991 **Workorder Name:** Bremo_1SA2024_CCR&VSWMR_P_H **Owner Received Date:** 2/13/2024 **Results Requested By:** 2/27/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

L1706897
A240

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis Ra226 903.0	Ra228 904.0/Combined Ra											LAB USE ONLY
1	021224NFBBLANK	PS	2/12/2024 12:40	92712991001	Water	2						X	X											-01
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	2/16/24 1800	[illegible]	2/17/24 0900
2				
3				

Comments

Cooler Temperature on Receipt _____ °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

2.5+0=2.5 TLA

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		

L1706897

INTER_LABORATORY WORK ORDER # 92712991

(To be completed by sending lab)

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Sending Project No:	92712991
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	02/16/24
REQUESTED COMPLETION DATE:	**2/27/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra226 903.0	BP1N		HNO3	1	SI-38RAD	SUB PASI RAD
Ra228 904.0/Combined Ra	BP1N		HNO3	1	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

APPENDIX E.2
LABORATORY ANALYTICAL RESULTS
SECOND SEMI-ANNUAL GROUNDWATER MONITORING EVENT
(AUGUST 2024)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

October 13, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on August 27, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92749752001	**082624NMW11**	Water	08/26/24 12:05	08/27/24 10:10

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92749752001	**082624NMW11**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	CMW1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	EGC	1	PASI-A
		EPA 9056A	CDC	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92749752001	**082624NMW11**					
EPA 7199	Chromium, Hexavalent	1.1	ug/L	0.50	08/27/24 19:10	H1
EPA 6010D	Barium	3.0J	ug/L	5.0	09/04/24 23:42	
EPA 6010D	Calcium	20300	ug/L	100	09/04/24 23:42	
EPA 6010D	Copper	0.76J	ug/L	5.0	09/04/24 23:42	
EPA 6010D	Hardness, Total(SM 2340B)	103000	ug/L	662	09/04/24 23:42	
EPA 6010D	Vanadium	11.2	ug/L	5.0	09/04/24 23:42	
EPA 6020B	Cobalt	0.39J	ug/L	1.0	09/04/24 02:21	
EPA 6020B	Iron	393	ug/L	20.0	09/04/24 02:21	
EPA 6020B	Lithium	0.44J	ug/L	2.5	09/04/24 02:21	
EPA 6020B	Manganese	3.7	ug/L	2.0	09/04/24 02:21	
SM 2540C-2015	Total Dissolved Solids	152	mg/L	25.0	08/30/24 15:22	
EPA 9056A	Chloride	11.2	mg/L	1.0	08/29/24 02:31	
EPA 9056A	Sulfate	5.0	mg/L	1.0	08/29/24 02:31	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- 082624NMW11 (Lab ID: 92749752001)

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 878479

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749754004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4524622)
  - Chromium, Hexavalent
- MSD (Lab ID: 4524675)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879094

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749361003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4527744)
  - Calcium

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879095

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749361003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4527747)
  - Manganese
- MSD (Lab ID: 4527748)
  - Manganese

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 880526

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750377007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4534644)
  - Mercury
- MSD (Lab ID: 4534645)
  - Mercury

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 880438

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92748945002,92748945003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4534313)
  - Nitrogen, Ammonia
- MS (Lab ID: 4534315)
  - Nitrogen, Ammonia
- MSD (Lab ID: 4534314)
  - Nitrogen, Ammonia
- MSD (Lab ID: 4534316)
  - Nitrogen, Ammonia

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- 082624NMW11 (Lab ID: 92749752001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 878974

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749754004,92750091004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4527136)
  - Nitrate as N
- MS (Lab ID: 4527567)
  - Sulfate
- MSD (Lab ID: 4527137)
  - Nitrate as N
- MSD (Lab ID: 4527568)
  - Sulfate

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Sample: 082624NMW11 **Lab ID: 92749752001** Collected: 08/26/24 12:05 Received: 08/27/24 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**1.1**	ug/L	0.50	0.086	20		08/27/24 19:10	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	08/29/24 11:40	09/04/24 23:42	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	08/29/24 11:40	09/04/24 23:42	7440-38-2	
Barium	**3.0J**	ug/L	5.0	0.79	1	08/29/24 11:40	09/04/24 23:42	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	08/29/24 11:40	09/04/24 23:42	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	08/29/24 11:40	09/04/24 23:42	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	08/29/24 11:40	09/04/24 23:42	7440-43-9	
Calcium	**20300**	ug/L	100	14.7	1	08/29/24 11:40	09/04/24 23:42	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	08/29/24 11:40	09/04/24 23:42	7440-47-3	
Copper	**0.76J**	ug/L	5.0	0.62	1	08/29/24 11:40	09/04/24 23:42	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	08/29/24 11:40	09/04/24 23:42	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	08/29/24 11:40	09/04/24 23:42	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	08/29/24 11:40	09/04/24 23:42	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	08/29/24 11:40	09/04/24 23:42	7440-22-4	
Hardness, Total(SM 2340B)	**103000**	ug/L	662	36.8	1	08/29/24 11:40	09/04/24 23:42		
Vanadium	**11.2**	ug/L	5.0	1.6	1	08/29/24 11:40	09/04/24 23:42	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	08/29/24 11:40	09/04/24 23:42	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.39J**	ug/L	1.0	0.14	1	08/29/24 12:00	09/04/24 02:21	7440-48-4	
Iron	**393**	ug/L	20.0	3.0	1	08/29/24 12:00	09/04/24 02:21	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	08/29/24 12:00	09/04/24 02:21	7439-92-1	
Lithium	**0.44J**	ug/L	2.5	0.33	1	08/29/24 12:00	09/04/24 02:21	7439-93-2	
Manganese	**3.7**	ug/L	2.0	0.24	1	08/29/24 12:00	09/04/24 02:21	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	08/29/24 12:00	09/04/24 02:21	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	08/29/24 12:00	09/04/24 02:21	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/05/24 19:56	09/12/24 09:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**152**	mg/L	25.0	25.0	1		08/30/24 15:22		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/05/24 13:59	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Sample: 082624NMW11 **Lab ID: 92749752001** Collected: 08/26/24 12:05 Received: 08/27/24 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**11.2**	mg/L	1.0	0.60	1		08/29/24 02:31	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/24 02:31	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		08/29/24 02:31	14797-55-8	H1
Sulfate	**5.0**	mg/L	1.0	0.50	1		08/29/24 02:31	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 878479
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92749752001

METHOD BLANK: 4524620 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	08/27/24 10:16	

LABORATORY CONTROL SAMPLE: 4524621

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.097	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4524622 4524675

Parameter	Units	92749754004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.25	0.1	0.1	1.1	1.1	870	840	90-110	3	20	H1,M1

SAMPLE DUPLICATE: 4524623

Parameter	Units	92749754001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.0080J	0.012J		20	H1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 880526
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749752001

METHOD BLANK: 4534642 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	09/12/24 09:34	

LABORATORY CONTROL SAMPLE: 4534643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534644 4534645

Parameter	Units	92750377007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	1.8	1.8	70	70	75-125	0	25	M1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 879094
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92749752001

METHOD BLANK: 4527741 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	09/04/24 23:08	
Arsenic	ug/L	ND	10.0	2.5	09/04/24 23:08	
Barium	ug/L	ND	5.0	0.79	09/04/24 23:08	
Beryllium	ug/L	ND	1.0	0.16	09/04/24 23:08	
Boron	ug/L	ND	50.0	4.0	09/04/24 23:08	
Cadmium	ug/L	ND	1.0	0.29	09/04/24 23:08	
Calcium	ug/L	15.2J	100	14.7	09/04/24 23:08	
Chromium	ug/L	ND	5.0	0.63	09/04/24 23:08	
Copper	ug/L	ND	5.0	0.62	09/04/24 23:08	
Hardness, Total(SM 2340B)	ug/L	61.4J	662	36.8	09/04/24 23:08	
Molybdenum	ug/L	ND	5.0	2.6	09/04/24 23:08	
Nickel	ug/L	ND	5.0	0.88	09/04/24 23:08	
Selenium	ug/L	ND	10.0	4.1	09/04/24 23:08	
Silver	ug/L	ND	5.0	0.49	09/04/24 23:08	
Vanadium	ug/L	ND	5.0	1.6	09/04/24 23:08	
Zinc	ug/L	ND	10.0	3.0	09/04/24 23:08	

LABORATORY CONTROL SAMPLE: 4527742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	446	89	80-120	
Arsenic	ug/L	500	447	89	80-120	
Barium	ug/L	500	450	90	80-120	
Beryllium	ug/L	500	435	87	80-120	
Boron	ug/L	500	460	92	80-120	
Cadmium	ug/L	500	457	91	80-120	
Calcium	ug/L	5000	4490	90	80-120	
Chromium	ug/L	500	436	87	80-120	
Copper	ug/L	500	443	89	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	28600	86	80-120	
Molybdenum	ug/L	500	447	89	80-120	
Nickel	ug/L	500	440	88	80-120	
Selenium	ug/L	500	448	90	80-120	
Silver	ug/L	250	238	95	80-120	
Vanadium	ug/L	500	441	88	80-120	
Zinc	ug/L	500	451	90	80-120	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527743 4527744

Parameter	Units	92749361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	511	474	102	95	75-125	8	20	
Arsenic	ug/L	ND	500	500	502	471	100	94	75-125	6	20	
Barium	ug/L	105	500	500	608	553	101	90	75-125	10	20	
Beryllium	ug/L	0.40J	500	500	497	459	99	92	75-125	8	20	
Boron	ug/L	94.0	500	500	610	575	103	96	75-125	6	20	
Cadmium	ug/L	ND	500	500	492	461	98	92	75-125	7	20	
Calcium	ug/L	14400	5000	5000	19900	18000	110	72	75-125	10	20	M1
Chromium	ug/L	0.67J	500	500	491	451	98	90	75-125	9	20	
Copper	ug/L	ND	500	500	503	463	100	92	75-125	8	20	
Hardness, Total(SM 2340B)	ug/L	71100	33100	33100	107000	97600	109	80	75-125	9	20	
Molybdenum	ug/L	ND	500	500	497	462	99	92	75-125	7	20	
Nickel	ug/L	14.0	500	500	503	464	98	90	75-125	8	20	
Selenium	ug/L	ND	500	500	513	486	103	97	75-125	6	20	
Silver	ug/L	ND	250	250	255	245	102	98	75-125	4	20	
Vanadium	ug/L	ND	500	500	497	460	99	92	75-125	8	20	
Zinc	ug/L	25.5	500	500	520	482	99	91	75-125	8	20	

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REPORT OF LABORATORY ANALYSIS

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 879095
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749752001

METHOD BLANK: 4527745 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.14	09/04/24 01:36	
Iron	ug/L	4.8J	20.0	3.0	09/04/24 01:36	
Lead	ug/L	ND	1.0	0.18	09/04/24 01:36	
Lithium	ug/L	ND	2.5	0.33	09/04/24 01:36	
Manganese	ug/L	ND	2.0	0.24	09/04/24 01:36	
Thallium	ug/L	ND	0.20	0.028	09/04/24 01:36	
Tin	ug/L	ND	1.0	0.14	09/04/24 01:36	

LABORATORY CONTROL SAMPLE: 4527746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.0	106	80-120	
Iron	ug/L	1250	1350	108	80-120	
Lead	ug/L	50	50.5	101	80-120	
Lithium	ug/L	50	52.6	105	80-120	
Manganese	ug/L	50	52.6	105	80-120	
Thallium	ug/L	25	25.8	103	80-120	
Tin	ug/L	50	51.2	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527747 4527748

Parameter	Units	92749361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	21.7	50	50	73.7	74.3	104	105	75-125	1	20	
Iron	ug/L	8650	1250	1250	9910	9810	101	93	75-125	1	20	
Lead	ug/L	ND	50	50	51.1	51.6	102	103	75-125	1	20	
Lithium	ug/L	28.6	50	50	79.1	79.7	101	102	75-125	1	20	
Manganese	ug/L	754	50	50	843	779	177	51	75-125	8	20	M1
Thallium	ug/L	ND	25	25	25.9	26.3	103	105	75-125	2	20	
Tin	ug/L	ND	50	50	51.5	47.7	103	95	75-125	8	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 879383
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749752001

METHOD BLANK: 4529543 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	08/30/24 15:22	

LABORATORY CONTROL SAMPLE: 4529544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	234	93	80-120	

SAMPLE DUPLICATE: 4529545

Parameter	Units	92749752001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	152	157	3	25	

SAMPLE DUPLICATE: 4529546

Parameter	Units	92750043002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	694	679	2	25	

SAMPLE DUPLICATE: 4530479

Parameter	Units	92750043003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	332	1	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 880438
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749752001

METHOD BLANK: 4534311 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	09/05/24 13:34	

LABORATORY CONTROL SAMPLE: 4534312

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534313 4534314

Parameter	Units	92748945002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	441	5	5	448	455	123	267	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534315 4534316

Parameter	Units	92748945003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	472	5	5	447	428	-489	-870	90-110	4	10	M1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

QC Batch: 878974
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749752001

METHOD BLANK: 4527134 Matrix: Water
Associated Lab Samples: 92749752001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/28/24 18:30	
Fluoride	mg/L	ND	0.10	0.050	08/28/24 18:30	
Nitrate as N	mg/L	ND	0.10	0.060	08/28/24 18:30	
Sulfate	mg/L	ND	1.0	0.50	08/28/24 18:30	

LABORATORY CONTROL SAMPLE: 4527135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.4	105	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Nitrate as N	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	50	53.3	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527136 4527137

Parameter	Units	92750091004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	50.9	52.5	100	103	90-110	3	10	
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	97	100	90-110	2	10	
Nitrate as N	mg/L	3.5	2.5	2.5	4.9	4.7	56	51	90-110	3	10	M1
Sulfate	mg/L	18.1	50	50	69.1	70.7	102	105	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527567 4527568

Parameter	Units	92749754004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	9.6	50	50	59.6	60.7	100	102	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	95	97	90-110	2	10	
Nitrate as N	mg/L	0.26	2.5	2.5	2.7	2.8	98	100	90-110	2	10	H1
Sulfate	mg/L	93.6	50	50	138	138	88	88	90-110	0	10	M1

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_2SA2024_CCR&VSWMR_A
Pace Project No.: 92749752

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92749752001	**082624NMW11**	EPA 7199	878479		
92749752001	**082624NMW11**	EPA 3010A	879094	EPA 6010D	879275
92749752001	**082624NMW11**	EPA 3010A	879095	EPA 6020B	879262
92749752001	**082624NMW11**	EPA 7470A	880526	EPA 7470A	880793
92749752001	**082624NMW11**	SM 2540C-2015	879383		
92749752001	**082624NMW11**	EPA 350.1 Rev 2.0 1993	880438		
92749752001	**082624NMW11**	EPA 9056A	878974		

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Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO#: 92749752

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☐ No ☑ N/A

Date/Initials Person Examining Contents: CSH 8/27/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92707b

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp: 1.1 Correction Factor: Add/Subtract (°C) 0

Cooler Temp Corrected (°C): 1.1

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg
**Bottom half of box is to list number of bottles
***Check all unpreserved Nitrates for chlorine

Project # WO#:92749752

PM: AMB Due Date: 09/11/24

CLIENT: 92-DomEnergy

Laboratory Receiving Location: Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Client_____ Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP1N	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG9A-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
CC																														
1		1	1		2	1	1																				1			
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Hexavalent Chromium pH Adjustment

Project #

WO#: 92749752

PM: AMB Due Date: 09/11/24
CLIENT: 92-DomEnergy

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
11	bmh	6.8	9.5	8/27/24 10:39	10 base	

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_2SA2024_CCR&VSWMR_A	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 2 4 3 10 3 1

Identify Container Preservative Type***: 1 3 2 5 1 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/Fl/SO4/NO3	RADS 226/228	Sample Comment
08[2]24NMW11	WT	G			08/26/24	1205	7			X	X	X	X	X	X	* ALL SAMPLES PRESERVED ON ICE *
																Tracking #'s: 8184 0816 3134 8184 0816 3070 8184 0816 3069

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3146511

Preservation non-conformance identified for sample:

Additional Instructions from Pace®:

COCID: Bremo_2SA2024_CCR&VSWMR_A_1_1

Collected By: (Printed Name) Zoey Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/26/24 1755	GMH Pace	8/27/24 1010	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

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ANALYTICAL REPORT

October 04, 2024

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1773939
Samples Received:	09/04/2024
Project Number:	92749752
Description:	Bremo_2SA2024_CCR&CCR&VSWMR_A
Site:	001
Report To:	Angela Baioni 9800 Kincey Avenue, Suite 100 Huntersville, NC 28078

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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082624NMW11 L1773939-01 5

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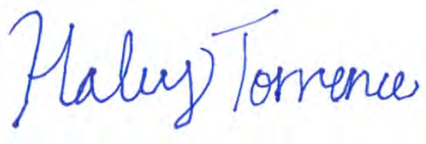
	Collected by	Collected date/time	Received date/time
082624NMW11 L1773939-01 Non-Potable Water		08/26/24 12:05	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2357325	1	09/06/24 09:35	09/16/24 23:24	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 21:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2357325	1	09/06/24 09:35	09/18/24 21:00	ASN	Mt. Juliet, TN

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

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.201	J	0.180	0.323	0.275	0.104	09/16/2024 23:24	WG2357325
(T) Barium	*111*					*30.0-143*	*09/16/2024 23:24*	WG2357325

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	0.389	J	0.227	0.425	0.426	0.223	09/18/2024 21:00	WG2356242
(T) Barium	*130*					*30.0-143*	*09/18/2024 21:00*	WG2356242
(T) Yttrium	*109*					*30.0-136*	*09/18/2024 21:00*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.590		0.290	0.507	09/18/2024 21:00	WG2357325

Method Blank (MB)

(MB) R4128124-1 09/16/24 20:23

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.000	U	0.0621	0.138	0.0523
(T) Barium	*109*		*109*		

L1773945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773945-01 10/03/24 13:40 • (DUP) R4128124-7 10/03/24 13:40

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	0.285	0.242	0.341	0.118	0.281	0.477	0.864	0.328	1.45	0.00767	U	20	3
(T) Barium	*96.6*				*97.6*	*97.6*							

Laboratory Control Sample (LCS)

(LCS) R4128124-2 09/16/24 20:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.39	108	75.0-125	
(T) Barium			*108*		

L1773936-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773936-06 09/16/24 22:24 • (MS) R4128124-3 09/16/24 20:23 • (MSD) R4128124-4 09/16/24 20:23

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	0.202	21.4	19.3	106	95.6	1	75.0-125			10.3		20
(T) Barium		*102*			*109*	*111*							

Method Blank (MB)

(MB) R4125044-1 09/18/24 17:12

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.290		0.139	0.253	0.133
(T) Barium	*129*		*129*		
(T) Yttrium	*101*		*101*		

L1773940-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1773940-02 09/18/24 21:00 • (DUP) R4125044-5 09/18/24 17:12

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	1.38	0.394	0.719	0.375	1.27	0.337	0.594	0.311	8.17	0.208		20	3
(T) Barium	*127*				*125*	*125*							
(T) Yttrium	*95.7*				*107*	*107*							

Laboratory Control Sample (LCS)

(LCS) R4125044-2 09/18/24 17:12

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.04	80.7	80.0-120	
(T) Barium			*127*		
(T) Yttrium			*118*		

L1773902-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773902-06 09/18/24 17:12 • (MS) R4125044-3 09/18/24 17:12 • (MSD) R4125044-4 09/18/24 17:12

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	-0.444	15.8	13.5	94.4	80.5	1	70.0-130			15.8		20
(T) Barium		*122*			*125*	*129*							
(T) Yttrium		*109*			*115*	*107*							

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.

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.

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 8/27/2024 Results Requested By: 9/11/2024

Workorder: 92749752 Workorder Name: Bremo_2SA2024_CCR&VSWMR_A

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Ra 226/903.0	Ra 228/904.0 + Combined Ra	LAB USE ONLY
1	082624NMW11	PS	8/26/2024 12:05	92749752001	Water	2	X	X	01
2									
3									
4									
5									

L1773939

Transfers	Released By	Date/Time	Received By	Date/Time
1	HHA/PDA HUL	9/3/24 1800		
2				
3			Christopher R. Sullivan	9/4/24 0900

Comments

Cooler Temperature on Receipt _____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

2.9+.3=3.2

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	2 TOTAL	
Sufficient volume sent:	Y__N		
RA Screen <0.5 mR/hr:	Y__N		

L1729239

Pace

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 92749752
(To be completed by sending lab)

Sending Project No:	92749752
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	09/01/24
REQUESTED COMPLETION DATE:	**9/11/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra 226/903.0	BP1N		HNO3	1	SI-38RAD	SUB PASI RAD
Ra 228/904.0 + Combined Ra	BP1N		HNO3	1	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

October 25, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory between August 29, 2024 and August 30, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92750325001	**082824NMW1**	Water	08/28/24 15:05	08/29/24 08:00
92750325002	**082824NMW12**	Water	08/28/24 15:35	08/29/24 08:00
92750325003	**082824NMW31**	Water	08/28/24 15:55	08/29/24 08:00
92750325004	**082924NMW13**	Water	08/29/24 12:15	08/30/24 08:00
92750325005	**082924NMW32S**	Water	08/29/24 15:25	08/30/24 08:00
92750325006	**082924NMW32D**	Water	08/29/24 14:25	08/30/24 08:00

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SAMPLE ANALYTE COUNT

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92750325001	**082824NMW1**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750325002	**082824NMW12**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750325003	**082824NMW31**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750325004	**082924NMW13**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750325005	**082924NMW32S**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	CRW	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750325006	**082924NMW32D**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A

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(704)875-9092

SAMPLE ANALYTE COUNT

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92750325001	**082824NMW1**					
EPA 7199	Chromium, Hexavalent	0.23	ug/L	0.025	08/29/24 16:40	H1
EPA 6010D	Barium	12.9	ug/L	5.0	09/09/24 14:54	
EPA 6010D	Calcium	3370	ug/L	100	09/09/24 14:54	
EPA 6010D	Hardness, Total(SM 2340B)	17100	ug/L	662	09/09/24 14:54	
EPA 6010D	Zinc	3.7J	ug/L	10.0	09/09/24 14:54	
EPA 6020B	Cobalt	4.0	ug/L	1.0	09/04/24 04:43	
EPA 6020B	Iron	51.9	ug/L	20.0	09/04/24 04:43	
EPA 6020B	Manganese	84.3	ug/L	2.0	09/04/24 04:43	
SM 2540C-2015	Total Dissolved Solids	63.0	mg/L	25.0	09/03/24 15:30	
EPA 9056A	Chloride	2.1	mg/L	1.0	08/31/24 14:21	
EPA 9056A	Fluoride	0.26	mg/L	0.10	08/31/24 14:21	
EPA 9056A	Nitrate as N	0.27	mg/L	0.10	08/31/24 14:21	H1
EPA 9056A	Sulfate	2.9	mg/L	1.0	08/31/24 14:21	
92750325002	**082824NMW12**					
EPA 7199	Chromium, Hexavalent	0.0050J	ug/L	0.025	08/29/24 16:58	H1
EPA 6010D	Barium	66.9	ug/L	5.0	09/05/24 03:55	
EPA 6010D	Boron	986	ug/L	50.0	09/05/24 03:55	
EPA 6010D	Calcium	36500	ug/L	100	09/05/24 03:55	
EPA 6010D	Nickel	0.91J	ug/L	5.0	09/05/24 03:55	
EPA 6010D	Hardness, Total(SM 2340B)	123000	ug/L	662	09/05/24 03:55	
EPA 6020B	Iron	5480	ug/L	20.0	09/04/24 04:47	
EPA 6020B	Lithium	0.53J	ug/L	2.5	09/04/24 04:47	
EPA 6020B	Manganese	446	ug/L	6.0	09/04/24 17:59	
SM 2540C-2015	Total Dissolved Solids	209	mg/L	25.0	09/03/24 15:30	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.048J	mg/L	0.10	09/10/24 19:18	
EPA 9056A	Chloride	5.0	mg/L	1.0	08/31/24 14:36	
EPA 9056A	Fluoride	0.13	mg/L	0.10	08/31/24 14:36	
EPA 9056A	Sulfate	85.3	mg/L	1.0	08/31/24 14:36	
92750325003	**082824NMW31**					
EPA 7199	Chromium, Hexavalent	1.6	ug/L	0.25	08/29/24 23:46	H1
EPA 6010D	Barium	56.2	ug/L	5.0	09/05/24 03:57	
EPA 6010D	Boron	9.2J	ug/L	50.0	09/05/24 03:57	
EPA 6010D	Calcium	11700	ug/L	100	09/05/24 03:57	
EPA 6010D	Copper	5.8	ug/L	5.0	09/05/24 03:57	
EPA 6010D	Nickel	7.2	ug/L	5.0	09/05/24 03:57	
EPA 6010D	Hardness, Total(SM 2340B)	45900	ug/L	662	09/05/24 03:57	
EPA 6010D	Zinc	8.3J	ug/L	10.0	09/05/24 03:57	
EPA 6020B	Cobalt	4.8	ug/L	1.0	09/04/24 04:51	
EPA 6020B	Iron	178	ug/L	20.0	09/04/24 04:51	
EPA 6020B	Lithium	1.7J	ug/L	2.5	09/04/24 04:51	
EPA 6020B	Manganese	407	ug/L	6.0	09/04/24 18:02	
SM 2540C-2015	Total Dissolved Solids	124	mg/L	25.0	09/03/24 15:33	
EPA 9056A	Chloride	2.4	mg/L	1.0	08/31/24 14:51	
EPA 9056A	Fluoride	0.079J	mg/L	0.10	08/31/24 14:51	
EPA 9056A	Sulfate	43.9	mg/L	1.0	08/31/24 14:51	

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(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92750325004	**082924NMW13**					
EPA 7199	Chromium, Hexavalent	0.098	ug/L	0.025	08/31/24 15:04	H1
EPA 6010D	Barium	131	ug/L	5.0	09/05/24 04:06	
EPA 6010D	Boron	7.4J	ug/L	50.0	09/05/24 04:06	
EPA 6010D	Calcium	45100	ug/L	100	09/05/24 04:06	
EPA 6010D	Nickel	1.3J	ug/L	5.0	09/05/24 04:06	
EPA 6010D	Hardness, Total(SM 2340B)	165000	ug/L	662	09/05/24 04:06	
EPA 6010D	Zinc	5.3J	ug/L	10.0	09/05/24 04:06	
EPA 6020B	Cobalt	0.78J	ug/L	1.0	09/03/24 16:31	
EPA 6020B	Iron	32500	ug/L	100	09/03/24 17:47	
EPA 6020B	Lithium	1.6J	ug/L	2.5	09/03/24 16:31	
EPA 6020B	Manganese	830	ug/L	10.0	09/03/24 17:47	
SM 2540C-2015	Total Dissolved Solids	366	mg/L	10.0	09/05/24 12:12	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.50	mg/L	0.10	09/20/24 17:59	
EPA 9056A	Chloride	70.2	mg/L	1.0	08/31/24 10:43	
EPA 9056A	Fluoride	0.050J	mg/L	0.10	08/31/24 10:43	
EPA 9056A	Nitrate as N	0.13	mg/L	0.10	08/31/24 10:43	
EPA 9056A	Sulfate	58.4	mg/L	1.0	08/31/24 10:43	
92750325005	**082924NMW32S**					
EPA 7199	Chromium, Hexavalent	0.11	ug/L	0.025	08/31/24 15:57	H1
EPA 6010D	Barium	11.5	ug/L	5.0	09/05/24 04:09	
EPA 6010D	Calcium	4620	ug/L	100	09/05/24 04:09	
EPA 6010D	Chromium	0.64J	ug/L	5.0	09/05/24 04:09	
EPA 6010D	Hardness, Total(SM 2340B)	22900	ug/L	662	09/05/24 04:09	
EPA 6020B	Iron	210	ug/L	20.0	09/03/24 16:35	
EPA 6020B	Lithium	0.46J	ug/L	2.5	09/03/24 16:35	
EPA 6020B	Manganese	2.7	ug/L	2.0	09/03/24 16:35	
SM 2540C-2015	Total Dissolved Solids	58.0	mg/L	25.0	09/03/24 15:33	
EPA 9056A	Chloride	3.6	mg/L	1.0	08/31/24 11:01	
EPA 9056A	Fluoride	0.12	mg/L	0.10	08/31/24 11:01	M1, R1
EPA 9056A	Nitrate as N	0.93	mg/L	0.10	08/31/24 11:01	
EPA 9056A	Sulfate	2.6	mg/L	1.0	08/31/24 11:01	M1, R1
92750325006	**082924NMW32D**					
EPA 6010D	Barium	5.8	ug/L	5.0	09/05/24 04:12	
EPA 6010D	Calcium	26200	ug/L	100	09/05/24 04:12	
EPA 6010D	Hardness, Total(SM 2340B)	82800	ug/L	662	09/05/24 04:12	
EPA 6020B	Iron	194	ug/L	20.0	09/04/24 04:55	
EPA 6020B	Lithium	2.2J	ug/L	2.5	09/04/24 04:55	
EPA 6020B	Manganese	34.8	ug/L	2.0	09/04/24 04:55	
SM 2540C-2015	Total Dissolved Solids	135	mg/L	25.0	09/03/24 15:33	
EPA 9056A	Chloride	2.9	mg/L	1.0	08/31/24 11:38	
EPA 9056A	Fluoride	0.13	mg/L	0.10	08/31/24 11:38	
EPA 9056A	Nitrate as N	0.20	mg/L	0.10	08/31/24 11:38	
EPA 9056A	Sulfate	8.1	mg/L	1.0	08/31/24 11:38	

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- 082824NMW1 (Lab ID: 92750325001)
- 082824NMW12 (Lab ID: 92750325002)
- 082824NMW31 (Lab ID: 92750325003)
- 082924NMW13 (Lab ID: 92750325004)
- 082924NMW32S (Lab ID: 92750325005)

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879155

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750045006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4527879)
  - Chromium, Hexavalent

QC Batch: 879449

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750325006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4529744)
  - Chromium, Hexavalent
- MSD (Lab ID: 4529745)

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: October 25, 2024

QC Batch: 879449

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750325006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 881333

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750045006,92750276002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4538745)
  - Nitrogen, Ammonia

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: October 25, 2024

General Information:
6 samples were analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- 082824NMW1 (Lab ID: 92750325001)
- 082824NMW12 (Lab ID: 92750325002)
- 082824NMW31 (Lab ID: 92750325003)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879691

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750325006,92750325007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MSD (Lab ID: 4531038)
  - Sulfate

R1: RPD value was outside control limits.
- MSD (Lab ID: 4531038)
  - Sulfate

QC Batch: 879692

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750045006,92750325005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4531043)
  - Fluoride
- MS (Lab ID: 4531045)
  - Fluoride
- MSD (Lab ID: 4531044)
  - Fluoride
- MSD (Lab ID: 4531046)
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.
- MSD (Lab ID: 4531046)

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: October 25, 2024

QC Batch: 879692

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750045006,92750325005

R1: RPD value was outside control limits.

- Fluoride
- Sulfate

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082824NMW1 **Lab ID: 92750325001** Collected: 08/28/24 15:05 Received: 08/29/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.23**	ug/L	0.025	0.0043	1		08/29/24 16:40	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/05/24 11:50	09/09/24 14:54	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/05/24 11:50	09/09/24 14:54	7440-38-2	
Barium	**12.9**	ug/L	5.0	0.79	1	09/05/24 11:50	09/09/24 14:54	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/05/24 11:50	09/09/24 14:54	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	09/05/24 11:50	09/09/24 14:54	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/05/24 11:50	09/09/24 14:54	7440-43-9	
Calcium	**3370**	ug/L	100	14.7	1	09/05/24 11:50	09/09/24 14:54	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/05/24 11:50	09/09/24 14:54	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	09/05/24 11:50	09/09/24 14:54	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/05/24 11:50	09/09/24 14:54	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	09/05/24 11:50	09/09/24 14:54	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/05/24 11:50	09/09/24 14:54	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/05/24 11:50	09/09/24 14:54	7440-22-4	
Hardness, Total(SM 2340B)	**17100**	ug/L	662	36.8	1	09/05/24 11:50	09/09/24 14:54		
Vanadium	ND	ug/L	5.0	1.6	1	09/05/24 11:50	09/09/24 14:54	7440-62-2	
Zinc	**3.7J**	ug/L	10.0	3.0	1	09/05/24 11:50	09/09/24 14:54	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**4.0**	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:43	7440-48-4	
Iron	**51.9**	ug/L	20.0	3.0	1	09/03/24 13:00	09/04/24 04:43	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 04:43	7439-92-1	
Lithium	ND	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 04:43	7439-93-2	
Manganese	**84.3**	ug/L	2.0	0.24	1	09/03/24 13:00	09/04/24 04:43	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 04:43	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:43	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 11:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**63.0**	mg/L	25.0	25.0	1		09/03/24 15:30		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/10/24 19:17	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082824NMW1 **Lab ID: 92750325001** Collected: 08/28/24 15:05 Received: 08/29/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**2.1**	mg/L	1.0	0.60	1		08/31/24 14:21	16887-00-6	
Fluoride	**0.26**	mg/L	0.10	0.050	1		08/31/24 14:21	16984-48-8	
Nitrate as N	**0.27**	mg/L	0.10	0.060	1		08/31/24 14:21	14797-55-8	H1
Sulfate	**2.9**	mg/L	1.0	0.50	1		08/31/24 14:21	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082824NMW12 **Lab ID: 92750325002** Collected: 08/28/24 15:35 Received: 08/29/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.0050J**	ug/L	0.025	0.0043	1		08/29/24 16:58	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 03:55	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 03:55	7440-38-2	
Barium	**66.9**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 03:55	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 03:55	7440-41-7	
Boron	**986**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 03:55	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 03:55	7440-43-9	
Calcium	**36500**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 03:55	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 03:55	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 03:55	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 03:55	7439-98-7	
Nickel	**0.91J**	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 03:55	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 03:55	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 03:55	7440-22-4	
Hardness, Total(SM 2340B)	**123000**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 03:55		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 03:55	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 03:55	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:47	7440-48-4	
Iron	**5480**	ug/L	20.0	3.0	1	09/03/24 13:00	09/04/24 04:47	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 04:47	7439-92-1	
Lithium	**0.53J**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 04:47	7439-93-2	
Manganese	**446**	ug/L	6.0	0.71	3	09/03/24 13:00	09/04/24 17:59	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 04:47	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:47	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 11:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**209**	mg/L	25.0	25.0	1		09/03/24 15:30		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.048J**	mg/L	0.10	0.031	1		09/10/24 19:18	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082824NMW12 **Lab ID: 92750325002** Collected: 08/28/24 15:35 Received: 08/29/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**5.0**	mg/L	1.0	0.60	1		08/31/24 14:36	16887-00-6	
Fluoride	**0.13**	mg/L	0.10	0.050	1		08/31/24 14:36	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		08/31/24 14:36	14797-55-8	H1
Sulfate	**85.3**	mg/L	1.0	0.50	1		08/31/24 14:36	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082824NMW31 **Lab ID: 92750325003** Collected: 08/28/24 15:55 Received: 08/29/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**1.6**	ug/L	0.25	0.043	10		08/29/24 23:46	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 03:57	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 03:57	7440-38-2	
Barium	**56.2**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 03:57	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 03:57	7440-41-7	
Boron	**9.2J**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 03:57	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 03:57	7440-43-9	
Calcium	**11700**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 03:57	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 03:57	7440-47-3	
Copper	**5.8**	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 03:57	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 03:57	7439-98-7	
Nickel	**7.2**	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 03:57	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 03:57	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 03:57	7440-22-4	
Hardness, Total(SM 2340B)	**45900**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 03:57		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 03:57	7440-62-2	
Zinc	**8.3J**	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 03:57	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**4.8**	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:51	7440-48-4	
Iron	**178**	ug/L	20.0	3.0	1	09/03/24 13:00	09/04/24 04:51	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 04:51	7439-92-1	
Lithium	**1.7J**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 04:51	7439-93-2	
Manganese	**407**	ug/L	6.0	0.71	3	09/03/24 13:00	09/04/24 18:02	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 04:51	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:51	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 11:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**124**	mg/L	25.0	25.0	1		09/03/24 15:33		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/10/24 19:20	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082824NMW31 **Lab ID: 92750325003** Collected: 08/28/24 15:55 Received: 08/29/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**2.4**	mg/L	1.0	0.60	1		08/31/24 14:51	16887-00-6	
Fluoride	**0.079J**	mg/L	0.10	0.050	1		08/31/24 14:51	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		08/31/24 14:51	14797-55-8	H1
Sulfate	**43.9**	mg/L	1.0	0.50	1		08/31/24 14:51	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082924NMW13 **Lab ID: 92750325004** Collected: 08/29/24 12:15 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.098**	ug/L	0.025	0.0043	1		08/31/24 15:04	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:06	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:06	7440-38-2	
Barium	**131**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:06	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:06	7440-41-7	
Boron	**7.4J**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:06	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:06	7440-43-9	
Calcium	**45100**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:06	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:06	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:06	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:06	7439-98-7	
Nickel	**1.3J**	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:06	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:06	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:06	7440-22-4	
Hardness, Total(SM 2340B)	**165000**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:06		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:06	7440-62-2	
Zinc	**5.3J**	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:06	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.78J**	ug/L	1.0	0.14	1	09/01/24 12:35	09/03/24 16:31	7440-48-4	
Iron	**32500**	ug/L	100	14.9	5	09/01/24 12:35	09/03/24 17:47	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/01/24 12:35	09/03/24 16:31	7439-92-1	
Lithium	**1.6J**	ug/L	2.5	0.33	1	09/01/24 12:35	09/03/24 16:31	7439-93-2	
Manganese	**830**	ug/L	10.0	1.2	5	09/01/24 12:35	09/03/24 17:47	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/01/24 12:35	09/03/24 16:31	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/01/24 12:35	09/03/24 16:31	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**366**	mg/L	10.0	10.0	1		09/05/24 12:12		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.50**	mg/L	0.10	0.031	1		09/20/24 17:59	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082924NMW13 **Lab ID: 92750325004** Collected: 08/29/24 12:15 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**70.2**	mg/L	1.0	0.60	1		08/31/24 10:43	16887-00-6	
Fluoride	**0.050J**	mg/L	0.10	0.050	1		08/31/24 10:43	16984-48-8	
Nitrate as N	**0.13**	mg/L	0.10	0.060	1		08/31/24 10:43	14797-55-8	
Sulfate	**58.4**	mg/L	1.0	0.50	1		08/31/24 10:43	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082924NMW32S **Lab ID: 92750325005** Collected: 08/29/24 15:25 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.11**	ug/L	0.025	0.0043	1		08/31/24 15:57	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:09	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:09	7440-38-2	
Barium	**11.5**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:09	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:09	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:09	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:09	7440-43-9	
Calcium	**4620**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:09	7440-70-2	
Chromium	**0.64J**	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:09	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:09	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:09	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:09	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:09	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:09	7440-22-4	
Hardness, Total(SM 2340B)	**22900**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:09		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:09	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:09	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.14	1	09/01/24 12:35	09/03/24 16:35	7440-48-4	
Iron	**210**	ug/L	20.0	3.0	1	09/01/24 12:35	09/03/24 16:35	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/01/24 12:35	09/03/24 16:35	7439-92-1	
Lithium	**0.46J**	ug/L	2.5	0.33	1	09/01/24 12:35	09/03/24 16:35	7439-93-2	
Manganese	**2.7**	ug/L	2.0	0.24	1	09/01/24 12:35	09/03/24 16:35	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/01/24 12:35	09/03/24 16:35	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/01/24 12:35	09/03/24 16:35	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**58.0**	mg/L	25.0	25.0	1		09/03/24 15:33		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/20/24 18:00	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082924NMW32S **Lab ID: 92750325005** Collected: 08/29/24 15:25 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**3.6**	mg/L	1.0	0.60	1		08/31/24 11:01	16887-00-6	
Fluoride	**0.12**	mg/L	0.10	0.050	1		08/31/24 11:01	16984-48-8	M1,R1
Nitrate as N	**0.93**	mg/L	0.10	0.060	1		08/31/24 11:01	14797-55-8	
Sulfate	**2.6**	mg/L	1.0	0.50	1		08/31/24 11:01	14808-79-8	M1,R1

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082924NMW32D **Lab ID: 92750325006** Collected: 08/29/24 14:25 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.0043	1		08/30/24 13:15	18540-29-9	M1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:12	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:12	7440-38-2	
Barium	**5.8**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:12	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:12	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:12	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:12	7440-43-9	
Calcium	**26200**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:12	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:12	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:12	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:12	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:12	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:12	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:12	7440-22-4	
Hardness, Total(SM 2340B)	**82800**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:12		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:12	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:12	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:55	7440-48-4	
Iron	**194**	ug/L	20.0	3.0	1	09/03/24 13:00	09/04/24 04:55	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 04:55	7439-92-1	
Lithium	**2.2J**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 04:55	7439-93-2	
Manganese	**34.8**	ug/L	2.0	0.24	1	09/03/24 13:00	09/04/24 04:55	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 04:55	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 04:55	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**135**	mg/L	25.0	25.0	1		09/03/24 15:33		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/20/24 18:01	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Sample: 082924NMW32D **Lab ID: 92750325006** Collected: 08/29/24 14:25 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**2.9**	mg/L	1.0	0.60	1		08/31/24 11:38	16887-00-6	
Fluoride	**0.13**	mg/L	0.10	0.050	1		08/31/24 11:38	16984-48-8	
Nitrate as N	**0.20**	mg/L	0.10	0.060	1		08/31/24 11:38	14797-55-8	
Sulfate	**8.1**	mg/L	1.0	0.50	1		08/31/24 11:38	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879155
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92750325001, 92750325002, 92750325003

METHOD BLANK: 4527877 Matrix: Water
Associated Lab Samples: 92750325001, 92750325002, 92750325003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	08/29/24 21:06	

LABORATORY CONTROL SAMPLE: 4527878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.096	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527879 4527880

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.14	0.1	0.1	0.27	0.25	123	104	90-110	7	20	H1,M1

SAMPLE DUPLICATE: 4527881

Parameter	Units	92750325003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	1.6	1.6	0	20	H1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879449
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92750325004, 92750325005, 92750325006

METHOD BLANK: 4529742 Matrix: Water
Associated Lab Samples: 92750325004, 92750325005, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	08/31/24 14:11	

LABORATORY CONTROL SAMPLE: 4529743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.10	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4529744 4529745

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	ND	0.1	0.1	0.14	0.13	132	124	90-110	6	20	M1

SAMPLE DUPLICATE: 4529746

Parameter	Units	92750325005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.11	0.13	12	20	H1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 880764 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325004, 92750325005, 92750325006

METHOD BLANK: 4536089 Matrix: Water
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325004, 92750325005, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	09/12/24 11:36	

LABORATORY CONTROL SAMPLE: 4536090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4536091 4536092

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.5	99	98	75-125	1	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879818
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325002, 92750325003, 92750325004, 92750325005, 92750325006

METHOD BLANK: 4531336 Matrix: Water
Associated Lab Samples: 92750325002, 92750325003, 92750325004, 92750325005, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	09/05/24 03:29	
Arsenic	ug/L	ND	10.0	2.5	09/05/24 03:29	
Barium	ug/L	ND	5.0	0.79	09/05/24 03:29	
Beryllium	ug/L	ND	1.0	0.16	09/05/24 03:29	
Boron	ug/L	ND	50.0	4.0	09/05/24 03:29	
Cadmium	ug/L	ND	1.0	0.29	09/05/24 03:29	
Calcium	ug/L	ND	100	14.7	09/05/24 03:29	
Chromium	ug/L	ND	5.0	0.63	09/05/24 03:29	
Copper	ug/L	ND	5.0	0.62	09/05/24 03:29	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	09/05/24 03:29	
Molybdenum	ug/L	ND	5.0	2.6	09/05/24 03:29	
Nickel	ug/L	ND	5.0	0.88	09/05/24 03:29	
Selenium	ug/L	ND	10.0	4.1	09/05/24 03:29	
Silver	ug/L	ND	5.0	0.49	09/05/24 03:29	
Vanadium	ug/L	ND	5.0	1.6	09/05/24 03:29	
Zinc	ug/L	ND	10.0	3.0	09/05/24 03:29	

LABORATORY CONTROL SAMPLE: 4531337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	488	98	80-120	
Arsenic	ug/L	500	481	96	80-120	
Barium	ug/L	500	486	97	80-120	
Beryllium	ug/L	500	483	97	80-120	
Boron	ug/L	500	490	98	80-120	
Cadmium	ug/L	500	488	98	80-120	
Calcium	ug/L	5000	4900	98	80-120	
Chromium	ug/L	500	493	99	80-120	
Copper	ug/L	500	490	98	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	31500	95	80-120	
Molybdenum	ug/L	500	491	98	80-120	
Nickel	ug/L	500	487	97	80-120	
Selenium	ug/L	500	474	95	80-120	
Silver	ug/L	250	246	98	80-120	
Vanadium	ug/L	500	489	98	80-120	
Zinc	ug/L	500	488	98	80-120	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531338 4531339

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	513	519	102	104	75-125	1	20	
Arsenic	ug/L	ND	500	500	507	517	101	103	75-125	2	20	
Barium	ug/L	55.8	500	500	579	589	105	107	75-125	2	20	
Beryllium	ug/L	ND	500	500	506	512	101	102	75-125	1	20	
Boron	ug/L	141	500	500	657	662	103	104	75-125	1	20	
Cadmium	ug/L	ND	500	500	498	505	99	101	75-125	2	20	
Calcium	ug/L	33300	5000	5000	38400	39200	101	117	75-125	2	20	
Chromium	ug/L	ND	500	500	507	511	101	102	75-125	1	20	
Copper	ug/L	ND	500	500	508	514	101	103	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	160000	33100	33100	195000	199000	108	118	75-125	2	20	
Molybdenum	ug/L	ND	500	500	506	512	101	102	75-125	1	20	
Nickel	ug/L	2.6J	500	500	493	500	98	99	75-125	1	20	
Selenium	ug/L	ND	500	500	516	520	103	104	75-125	1	20	
Silver	ug/L	ND	250	250	255	257	102	103	75-125	1	20	
Vanadium	ug/L	ND	500	500	507	514	101	103	75-125	1	20	
Zinc	ug/L	ND	500	500	502	510	100	101	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531340 4531341

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	509	506	101	101	75-125	1	20	
Arsenic	ug/L	ND	500	500	501	498	100	100	75-125	1	20	
Barium	ug/L	5.8	500	500	516	520	102	103	75-125	1	20	
Beryllium	ug/L	ND	500	500	501	498	100	100	75-125	1	20	
Boron	ug/L	ND	500	500	509	506	101	101	75-125	1	20	
Cadmium	ug/L	ND	500	500	497	492	99	98	75-125	1	20	
Calcium	ug/L	26200	5000	5000	31100	31500	98	105	75-125	1	20	
Chromium	ug/L	ND	500	500	503	499	100	100	75-125	1	20	
Copper	ug/L	ND	500	500	500	497	100	99	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	82800	33100	33100	116000	116000	100	102	75-125	1	20	
Molybdenum	ug/L	ND	500	500	502	498	100	99	75-125	1	20	
Nickel	ug/L	ND	500	500	492	488	98	98	75-125	1	20	
Selenium	ug/L	ND	500	500	509	506	102	101	75-125	1	20	
Silver	ug/L	ND	250	250	250	249	100	100	75-125	1	20	
Vanadium	ug/L	ND	500	500	503	499	101	100	75-125	1	20	
Zinc	ug/L	ND	500	500	502	498	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 880429
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92750325001

METHOD BLANK: 4534271 Matrix: Water
Associated Lab Samples: 92750325001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	09/09/24 14:09	
Arsenic	ug/L	ND	10.0	2.5	09/09/24 14:09	
Barium	ug/L	ND	5.0	0.79	09/09/24 14:09	
Beryllium	ug/L	ND	1.0	0.16	09/09/24 14:09	
Boron	ug/L	ND	50.0	4.0	09/09/24 14:09	
Cadmium	ug/L	ND	1.0	0.29	09/09/24 14:09	
Calcium	ug/L	ND	100	14.7	09/09/24 14:09	
Chromium	ug/L	ND	5.0	0.63	09/09/24 14:09	
Copper	ug/L	ND	5.0	0.62	09/09/24 14:09	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	09/09/24 14:09	
Molybdenum	ug/L	ND	5.0	2.6	09/09/24 14:09	
Nickel	ug/L	ND	5.0	0.88	09/09/24 14:09	
Selenium	ug/L	ND	10.0	4.1	09/09/24 14:09	
Silver	ug/L	ND	5.0	0.49	09/09/24 14:09	
Vanadium	ug/L	ND	5.0	1.6	09/09/24 14:09	
Zinc	ug/L	ND	10.0	3.0	09/09/24 14:09	

LABORATORY CONTROL SAMPLE: 4534272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	520	104	80-120	
Arsenic	ug/L	500	507	101	80-120	
Barium	ug/L	500	534	107	80-120	
Beryllium	ug/L	500	509	102	80-120	
Boron	ug/L	500	513	103	80-120	
Cadmium	ug/L	500	506	101	80-120	
Calcium	ug/L	5000	5210	104	80-120	
Chromium	ug/L	500	509	102	80-120	
Copper	ug/L	500	510	102	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	33300	101	80-120	
Molybdenum	ug/L	500	515	103	80-120	
Nickel	ug/L	500	509	102	80-120	
Selenium	ug/L	500	503	101	80-120	
Silver	ug/L	250	252	101	80-120	
Vanadium	ug/L	500	509	102	80-120	
Zinc	ug/L	500	508	102	80-120	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534273 4534274

Parameter	Units	92750043002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	565	556	113	111	75-125	1	20	
Arsenic	ug/L	ND	500	500	546	540	109	108	75-125	1	20	
Barium	ug/L	18.1	500	500	553	553	107	107	75-125	0	20	
Beryllium	ug/L	ND	500	500	549	542	110	108	75-125	1	20	
Boron	ug/L	1350	500	500	1940	1910	119	113	75-125	2	20	
Cadmium	ug/L	ND	500	500	517	510	103	102	75-125	1	20	
Calcium	ug/L	65000	5000	5000	70600	70400	112	109	75-125	0	20	
Chromium	ug/L	ND	500	500	531	524	106	105	75-125	1	20	
Copper	ug/L	ND	500	500	570	564	114	113	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	286000	33100	33100	327000	325000	125	118	75-125	1	20	
Molybdenum	ug/L	ND	500	500	549	543	109	108	75-125	1	20	
Nickel	ug/L	1.7J	500	500	529	521	105	104	75-125	1	20	
Selenium	ug/L	ND	500	500	563	557	113	111	75-125	1	20	
Silver	ug/L	0.74J	250	250	279	276	111	110	75-125	1	20	
Vanadium	ug/L	ND	500	500	540	533	108	107	75-125	1	20	
Zinc	ug/L	5.2J	500	500	526	519	104	103	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879740
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325004, 92750325005

METHOD BLANK: 4531177 Matrix: Water
Associated Lab Samples: 92750325004, 92750325005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.14	09/03/24 15:31	
Iron	ug/L	ND	20.0	3.0	09/03/24 15:31	
Lead	ug/L	ND	1.0	0.18	09/03/24 15:31	
Lithium	ug/L	ND	2.5	0.33	09/03/24 15:31	
Manganese	ug/L	ND	2.0	0.24	09/03/24 15:31	
Thallium	ug/L	ND	0.20	0.028	09/03/24 15:31	
Tin	ug/L	ND	1.0	0.14	09/03/24 15:31	

LABORATORY CONTROL SAMPLE: 4531178

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.0	106	80-120	
Iron	ug/L	1250	1340	107	80-120	
Lead	ug/L	50	51.2	102	80-120	
Lithium	ug/L	50	53.0	106	80-120	
Manganese	ug/L	50	53.1	106	80-120	
Thallium	ug/L	25	26.5	106	80-120	
Tin	ug/L	50	52.8	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531179 4531180

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	2.1	50	50	54.9	54.4	105	105	75-125	1	20	
Iron	ug/L	342	1250	1250	1710	1700	109	108	75-125	1	20	
Lead	ug/L	ND	50	50	51.6	50.8	103	102	75-125	2	20	
Lithium	ug/L	1.2J	50	50	51.5	51.2	101	100	75-125	1	20	
Manganese	ug/L	578	50	50	626	626	96	95	75-125	0	20	
Thallium	ug/L	ND	25	25	26.7	26.3	107	105	75-125	2	20	
Tin	ug/L	ND	50	50	53.2	52.8	106	106	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879810
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325006

METHOD BLANK: 4531323 Matrix: Water
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.14	09/04/24 04:32	
Iron	ug/L	7.0J	20.0	3.0	09/04/24 04:32	
Lead	ug/L	ND	1.0	0.18	09/04/24 04:32	
Lithium	ug/L	ND	2.5	0.33	09/04/24 04:32	
Manganese	ug/L	0.33J	2.0	0.24	09/04/24 04:32	
Thallium	ug/L	ND	0.20	0.028	09/04/24 04:32	
Tin	ug/L	ND	1.0	0.14	09/04/24 04:32	

LABORATORY CONTROL SAMPLE: 4531324

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.6	107	80-120	
Iron	ug/L	1250	1340	107	80-120	
Lead	ug/L	50	50.9	102	80-120	
Lithium	ug/L	50	53.0	106	80-120	
Manganese	ug/L	50	53.8	108	80-120	
Thallium	ug/L	25	26.3	105	80-120	
Tin	ug/L	50	52.3	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531330 4531331

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	ND	50	50	54.3	53.9	109	108	75-125	1	20	
Iron	ug/L	194	1250	1250	1570	1580	110	111	75-125	1	20	
Lead	ug/L	ND	50	50	52.5	52.1	105	104	75-125	1	20	
Lithium	ug/L	2.2J	50	50	54.7	55.1	105	106	75-125	1	20	
Manganese	ug/L	34.8	50	50	89.3	89.0	109	108	75-125	0	20	
Thallium	ug/L	ND	25	25	27.2	26.9	109	108	75-125	1	20	
Tin	ug/L	ND	50	50	52.8	52.8	106	106	75-125	0	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879809 | Analysis Method: SM 2540C-2015
QC Batch Method: SM 2540C-2015 | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325005, 92750325006

METHOD BLANK: 4531319 Matrix: Water
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325005, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	09/03/24 15:27	

LABORATORY CONTROL SAMPLE: 4531320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	251	266	106	80-120	

SAMPLE DUPLICATE: 4531321

Parameter	Units	92750045002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	374	362	3	25	

SAMPLE DUPLICATE: 4531322

Parameter	Units	92750325006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	145	7	25	

SAMPLE DUPLICATE: 4532060

Parameter	Units	92750045006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	217	212	2	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 880362
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325004

METHOD BLANK: 4534107 Matrix: Water
Associated Lab Samples: 92750325004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/05/24 12:12	

LABORATORY CONTROL SAMPLE: 4534108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	232	93	80-120	

SAMPLE DUPLICATE: 4534109

Parameter	Units	92750325004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	366	342	7	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 881333
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325001, 92750325002, 92750325003

METHOD BLANK: 4538742 Matrix: Water
Associated Lab Samples: 92750325001, 92750325002, 92750325003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	09/10/24 18:52	

LABORATORY CONTROL SAMPLE: 4538743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4538744 4538745

Parameter	Units	92750276002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	30.0	5	5	34.5	34.0	90	80	90-110	1	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4538746 4538747

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.1	5.0	101	101	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 884219
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325004, 92750325005, 92750325006

METHOD BLANK: 4553291 Matrix: Water
Associated Lab Samples: 92750325004, 92750325005, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	09/20/24 17:44	

LABORATORY CONTROL SAMPLE: 4553292

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4553293 4553294

Parameter	Units	92753913001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	100	100	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4553295 4553296

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	99	99	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879691
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325004, 92750325006

METHOD BLANK: 4531035 Matrix: Water
Associated Lab Samples: 92750325004, 92750325006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/31/24 13:28	
Fluoride	mg/L	ND	0.10	0.050	08/31/24 13:28	
Nitrate as N	mg/L	ND	0.10	0.060	08/31/24 13:28	
Sulfate	mg/L	ND	1.0	0.50	08/31/24 13:28	

LABORATORY CONTROL SAMPLE: 4531036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.2	104	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Nitrate as N	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	50	53.2	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531037 4531038

Parameter	Units	92750325007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	27.8	50	50	77.2	78.2	99	101	90-110	1	10	
Fluoride	mg/L	0.11	2.5	2.5	2.6	2.7	101	102	90-110	1	10	
Nitrate as N	mg/L	ND	2.5	2.5	2.4	2.4	96	97	90-110	1	10	
Sulfate	mg/L	47.9	50	50	99.7	84.1	104	72	90-110	17	10	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531039 4531040

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.9	50	50	53.8	54.5	102	103	90-110	1	10	
Fluoride	mg/L	0.13	2.5	2.5	2.7	2.7	102	103	90-110	1	10	
Nitrate as N	mg/L	0.20	2.5	2.5	2.7	2.7	100	101	90-110	1	10	
Sulfate	mg/L	8.1	50	50	59.7	60.5	103	105	90-110	1	10	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

QC Batch: 879692
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325005

METHOD BLANK: 4531041 Matrix: Water
Associated Lab Samples: 92750325001, 92750325002, 92750325003, 92750325005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/31/24 11:47	
Fluoride	mg/L	ND	0.10	0.050	08/31/24 11:47	
Nitrate as N	mg/L	ND	0.10	0.060	08/31/24 11:47	
Sulfate	mg/L	ND	1.0	0.50	08/31/24 11:47	

LABORATORY CONTROL SAMPLE: 4531042

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Nitrate as N	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	51.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531043 4531044

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	15.9	50	50	66.5	68.8	101	106	90-110	3	10	
Fluoride	mg/L	0.14	2.5	2.5	3.0	3.1	112	118	90-110	5	10	M1
Nitrate as N	mg/L	ND	2.5	2.5	2.6	2.7	100	105	90-110	4	10	H1
Sulfate	mg/L	16.3	50	50	67.2	69.5	102	106	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531045 4531046

Parameter	Units	92750325005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.6	50	50	53.8	54.7	100	102	90-110	2	10	
Fluoride	mg/L	0.12	2.5	2.5	2.9	3.5	112	134	90-110	18	10	M1,R1
Nitrate as N	mg/L	0.93	2.5	2.5	3.6	3.6	105	107	90-110	1	10	
Sulfate	mg/L	2.6	50	50	53.0	77.9	101	151	90-110	38	10	M1,R1

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QUALIFIERS

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92750325001	**082824NMW1**	EPA 7199	879155		
92750325002	**082824NMW12**	EPA 7199	879155		
92750325003	**082824NMW31**	EPA 7199	879155		
92750325004	**082924NMW13**	EPA 7199	879449		
92750325005	**082924NMW32S**	EPA 7199	879449		
92750325006	**082924NMW32D**	EPA 7199	879449		
92750325001	**082824NMW1**	EPA 3010A	880429	EPA 6010D	880630
92750325002	**082824NMW12**	EPA 3010A	879818	EPA 6010D	879963
92750325003	**082824NMW31**	EPA 3010A	879818	EPA 6010D	879963
92750325004	**082924NMW13**	EPA 3010A	879818	EPA 6010D	879963
92750325005	**082924NMW32S**	EPA 3010A	879818	EPA 6010D	879963
92750325006	**082924NMW32D**	EPA 3010A	879818	EPA 6010D	879963
92750325001	**082824NMW1**	EPA 3010A	879810	EPA 6020B	879962
92750325002	**082824NMW12**	EPA 3010A	879810	EPA 6020B	879962
92750325003	**082824NMW31**	EPA 3010A	879810	EPA 6020B	879962
92750325004	**082924NMW13**	EPA 3010A	879740	EPA 6020B	879757
92750325005	**082924NMW32S**	EPA 3010A	879740	EPA 6020B	879757
92750325006	**082924NMW32D**	EPA 3010A	879810	EPA 6020B	879962
92750325001	**082824NMW1**	EPA 7470A	880764	EPA 7470A	880917
92750325002	**082824NMW12**	EPA 7470A	880764	EPA 7470A	880917
92750325003	**082824NMW31**	EPA 7470A	880764	EPA 7470A	880917
92750325004	**082924NMW13**	EPA 7470A	880764	EPA 7470A	880917
92750325005	**082924NMW32S**	EPA 7470A	880764	EPA 7470A	880917
92750325006	**082924NMW32D**	EPA 7470A	880764	EPA 7470A	880917
92750325001	**082824NMW1**	SM 2540C-2015	879809		
92750325002	**082824NMW12**	SM 2540C-2015	879809		
92750325003	**082824NMW31**	SM 2540C-2015	879809		
92750325004	**082924NMW13**	SM 2540C-2015	880362		
92750325005	**082924NMW32S**	SM 2540C-2015	879809		
92750325006	**082924NMW32D**	SM 2540C-2015	879809		
92750325001	**082824NMW1**	EPA 350.1 Rev 2.0 1993	881333		
92750325002	**082824NMW12**	EPA 350.1 Rev 2.0 1993	881333		
92750325003	**082824NMW31**	EPA 350.1 Rev 2.0 1993	881333		
92750325004	**082924NMW13**	EPA 350.1 Rev 2.0 1993	884219		
92750325005	**082924NMW32S**	EPA 350.1 Rev 2.0 1993	884219		
92750325006	**082924NMW32D**	EPA 350.1 Rev 2.0 1993	884219		
92750325001	**082824NMW1**	EPA 9056A	879692		
92750325002	**082824NMW12**	EPA 9056A	879692		
92750325003	**082824NMW31**	EPA 9056A	879692		
92750325004	**082924NMW13**	EPA 9056A	879691		
92750325005	**082924NMW32S**	EPA 9056A	879692		

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_2SA2024_CCR&VSWMR_F
Pace Project No.: 92750325

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92750325006	**082924NMW32D**	EPA 9056A	879691		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace	DC#_Title: ENV-FRM-HUN1-0083 v05_Sample Condition Upon Receipt
	Effective Date: 05/24/2024

Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO# : 92750325

92750325

Courier: ☐ Commercial ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Other:

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No ☑ N/A

Date/Initials Person Examining Contents: HHN 9/20/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☐ IR Gun ID: 92107616

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp: 3.1, 3.2, 4.1, 2.0 **Correction Factor: Add/Subtract (°C)** 0

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.1, 3.2, 4.1, 2.0

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	10.
Trip Blank Present?	☐ Yes	☑ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☑ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: **Date:**

Project Manager SRF Review: **Date:**

Pace	DC#_Title: ENV-FRM-HUN1-0083 v05_Sample Condition Upon Receipt
	Effective Date: 05/24/2024

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg
**Bottom half of box is to list number of bottles
***Check all unpreserved Nitrates for chlorine

Project # **WO# : 92750325**

PM: AMB Due Date: 09/13/24

CLIENT: 92-DomEnergy

Laboratory Receiving Location: Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Client Dominion Energy Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4N-125 mL Plastic HNO3 (pH < 2)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG9H-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VGBU-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK-(3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AGDU-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DGBU-40 mL Amber Unpreserved vials (N/A)
CC																														
1		1	1		2	1 ✓	1 ✓																				1 ✓			
2		1	1		2	1 ✓	1 ✓																				1 ✓			
3		1	1		2	1 ✓	1 ✓																				1 ✓			
4																														
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7																														
8																														
9																														
10																														
11																														
12																														

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_2SA2024_CCR&VSWMR_F	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 2 4 3 10 3 1

Identify Container Preservative Type***: 1 3 2 1 1 2

Analysis Requested: 2540C Total Dissolved Solids; 350.1 Ammonia; 6010/6020/7470 Metals + Hardness; 7199 Chromium, Hexavalent; 9056 IC - Cl/F/SO4/NO3; RADS 226/228

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3146516

Preservation non-conformance identified for sample.

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Sample Comment
0823 24NMW1	WT	G			08/28/24	1505	7			* ALL SAMPLES
0823 24NMW12	WT	G			08/28/24	1535	7			PRESERVED
0823 24NMW13	WT	G			08/28/24	1555	7			ON ICE *
~~08 24NMW31~~	WT									
~~08 24NMW32S~~	WT									Fedex Tracking
~~08 24NMW32D~~	WT									8184 0816 3091
~~08 24NWPEDDUPLICATE~~	WT									8184 0816 3080
~~08 24 MS~~	WT									8184 0816 2956
~~08 24 MSD~~	WT									

Additional instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

COC ED: Bremo_2SA2024_CCR:VSWMR_F_3_1

Collected By:
(Printed Name) J.DAVIS / Z. Mondshine
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
	92107e	0	3.1 1.3 2.4 2.0		

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/29/24 1805	HHNPOLE HVL	8/29/24 1005	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[X] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
Customer Project #:		Cc E-Mail:	crystal.shadle@wsp.com
Project Name:	Bremo_2SA2024_CCR&VSWMR_F	Invoice To:	Kelly Hicks
Site Collection Info/Facility ID (as applicable):		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 2 4 3 10 3 1

Identify Container Preservative Type***: 1 3 2 1 1 2

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/Fl/SO4/NO3	RADS 226/228	Sample Comment
08[28]24NMW1	WT	G			08/28/24	1505	7			X	X	X	X	X	X	* ALL SAMPLES
08[28]24NMW12	WT	G			08/28/24	1535	7			X	X	X	X	X	X	PRESERVED
082824NMW31	WT	G			08/28/24	1555	7			X	X	X	X	X	X	ON ICE *
~~08__24NMW31~~	~~WT~~									X	X	X	X	X	X 3D	
~~08__24NMW32S~~	~~WT~~									X	X	X	X	X	X 3D	Fedex Tracking
~~08__24NMW32D~~	~~WT~~									X	X	X	X	X	X 3D	8184 0816 3091
~~08__24NWPEDDUPLICATE~~	~~WT~~									X	X	X	X	X	X 3D	8184 0816 3080
~~08__24__MS~~	~~WT~~									X	X	X	X	X	X 3D	8184 0816 2956
~~08__24__MSD~~	~~WT~~									X	X	X	X	X	X 3D	

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3146516

Preservation non-conformance identified for sample.

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Additional Instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

CKS 8/29/2024

COC ED: Bremo_2SA2024_CCR/VSWMR_F_3_1

Collected By: (Printed Name) J.DAVIS / Z. Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/29/24 1805			
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace

Receipt

Effective Date: 5/24/2024

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☑ **Raleigh** ☐ **Mechanicsville** ☐ **Atlanta** ☐ **Kernersville** ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project **WO# : 92750325**

92750325

Courier: ☐ Commercial ☑ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☐ Client

Carrier Tracking Number: _____

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** APL 9-30-24

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T076 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.1, 2.9, 1.4 **Correction Factor:** Add / Subtract (°C) 0.0

Corrected Cooler Temp (°C): 1.1, 2.9, 1.4

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling proce has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened: 1000	Temp: 12.1.1
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

Qualtrax Document ID: 70677

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☐ **Raleigh** ☐ **Mechanicsville** ☐ **Atlanta** ☐ **Kernersville** ☐

Client_____ Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG9A-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
CC																													
1		1	1		1	1																			2	1			
2		1	1		1	1																			2	1			
3		3	3		3	3																			6	3			
4		1	1		1	1																			2	1			
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_2SA2024_CCR&VSWMR_F	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 2 4 3 10 3 1

Identify Container Preservative Type***: 1 3 2 1 1 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/Fl/SO4/NO3	RADS 226/228				Sample Comment
~~08__24NMW1~~	~~WT~~									X	X	X	X	X	X	JD			* ALL SAMPLES
~~08__24NMW12~~	~~WT~~									X	X	X	X	X	X	JD			PRESERVED
08 27 24NMW13	WT	G			08/29/24	1215	7			X	X	X	X	X	X				ON ICE *
~~08__24NMW31~~	~~WT~~									X	X	X	X	X	X	JD			
08 27 24NMW32S	WT	G			08/29/24	1525	7			X	X	X	X	X	X				field duplicate
08 25 24NMW32D	WT	G			08/29/24	1425	21			X	X	X	X	X	X				taken at MW-39D
08 27 24NWPFDDUPLICATE	WT	G			08/29/24	1315	7			X	X	X	X	X	X				
~~08__24__MS~~	~~WT~~									X	X	X	X	X	X	JD			MS/MSD taken
~~08__24__MSD~~	~~WT~~									X	X	X	X	X	X	JD			at MW-32D

Lab Use Only
Proj. Mgr: Angela Baioni
AcctNum / Client ID:
Table #:
Profile / Template: 13861
Prelog / Bottle Ord. ID: EZ 3146516

Preservation non-conformance identified for sample

Additional Instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

COC ID: Bremo_2SA2024_CCR+VSWMR_F_4_2

Collected By:
(Printed Name) J. DAVIS / Z. Mondshine
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/29/24 1810	APHPacetM	8-30-24 1000	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

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Scan QR Code for instructions

Company Name:	Dominion Energy_VA
Street Address:	120 Tredegar Street, Richmond, VA 23219
Customer Project #:	
Project Name:	Bremo_2SA2024_CCR&VSWMR_F
Site Collection Info/Facility ID (as applicable):	
Contact/Report To:	Kelly Hicks
Phone #:	(804)273-4903
E-Mail:	kelly.a.hicks@dominionenergy.com
Cc E-Mail:	crystal.shadle cwsp.com
Invoice To:	Kelly Hicks
Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Purchase Order # (if applicable):	50149081
Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

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DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

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Identify Container Preservative Type***: 1 3 2 1 1 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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Analysis Requested

Lab Use Only

Proj. Mgr: Angela Baioni

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3146516

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/F/SO4/NO3	RADS 226/228		Sample Comment	Preservation non-conformance identified for sample
~~08___24NMW1~~	~~WT~~									X	X	X	X	X	X	JD	* ALL SAMPLES	
~~08___24NMW12~~	~~WT~~									X	X	X	X	X	X	JD	PRESERVED	
08 29 24NMW13	WT	G			08/29/24	1215	7			X	X	X	X	X	X		ON ICE *	
~~08___24NMW21~~	~~WT~~									X	X	X	X	X	X	JD		
08 29 24NMW32S	WT	G			08/29/24	1525	7			X	X	X	X	X	X		~~field duplicate~~	
08 29 24NMW32D	WT	G			08/29/24	1425	21			X	X	X	X	X	X		~~taken at MW-39D~~	
08 29 24NWPFDDUPLICATE	WT	G			08/29/24	1315	7			X	X	X	X	X	X			
~~08___24_____MS~~	~~WT~~									X	X	X	X	X	X	JD	MS/MSD taken	
~~08___24_____MSD~~	~~WT~~									X	X	X	X	X	X	JD	at MW-32D	

Additional Instructions from Pace®: LEVEL IV DATA PACKAGE REQUIRED

CKS 9/3/2024

COC ID: Bremo_2SA2024_CCR&VSWMR_F_4_2

Collected By: (Printed Name) J. DAVIS / Z. Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time: 08/29/24 1810	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

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Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
13	GMH	8.6	9.1	11:40	2	
325		9.2				
32D		9.2				
32 Mg		9.2				
32 MSD		9.1				
Dup		9.1				

ANALYTICAL REPORT

October 24, 2024

Revised Report

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1773902
Samples Received:	09/04/2024
Project Number:	92750325
Description:	Bremo_2SA2024_CCR&CCR&VSWMR_F
Site:	001
Report To:	Angela Baioni
	9800 Kincey Avenue, Suite 100
	Huntersville, NC 28078

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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082924NMW13 L1773902-04 8

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082824NMW1 L1773902-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/28/24 15:05	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 14:36	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	DDD	Mt. Juliet, TN

082824NMW12 L1773902-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/28/24 15:35	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 14:36	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	DDD	Mt. Juliet, TN

082824NMW31 L1773902-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/28/24 15:55	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 14:36	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	DDD	Mt. Juliet, TN

082924NMW13 L1773902-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 12:15	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 14:36	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	DDD	Mt. Juliet, TN

0829244NMW32S L1773902-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 15:25	09/04/24 09:00

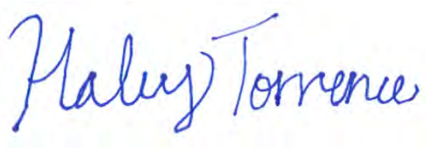
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 15:37	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	DDD	Mt. Juliet, TN

082924NMW32D L1773902-06 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 14:25	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 15:37	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	DDD	Mt. Juliet, TN

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: 09/30/24 14:03

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.262		0.181	0.323	0.228	0.0785	09/14/2024 14:36	WG2356501
(T) Barium	*103*					*30.0-143*	*09/14/2024 14:36*	WG2356501

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	0.403	J	0.271	0.469	0.494	0.258	09/18/2024 17:12	WG2356242
(T) Barium	*117*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*108*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.664		0.326	0.544	09/18/2024 17:12	WG2356501

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.717		0.273	0.416	0.229	0.0788	09/14/2024 14:36	WG2356501
(T) Barium	*99.9*					*30.0-143*	*09/14/2024 14:36*	WG2356501

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	-0.160	U	0.262	0.463	0.494	0.258	09/18/2024 17:12	WG2356242
(T) Barium	*122*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*96.7*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.717		0.378	0.544	09/18/2024 17:12	WG2356501

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.119	J	0.124	0.266	0.183	0.0557	09/14/2024 14:36	WG2356501
(T) Barium	*104*					*30.0-143*	*09/14/2024 14:36*	WG2356501

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	0.0213	U	0.245	0.448	0.459	0.240	09/18/2024 17:12	WG2356242
(T) Barium	*122*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*95.7*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.141	U	0.275	0.494	09/18/2024 17:12	WG2356501

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.0714	U	0.155	0.297	0.293	0.111	09/14/2024 14:36	WG2356501
(T) Barium	*106*					*30.0-143*	*09/14/2024 14:36*	WG2356501

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	0.248	J	0.224	0.422	0.413	0.216	09/18/2024 17:12	WG2356242
(T) Barium	*127*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*112*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.319	J	0.272	0.506	09/18/2024 17:12	WG2356501

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.143	J	0.147	0.289	0.228	0.0784	09/14/2024 15:37	WG2356501
(T) Barium	*109*					*30.0-143*	*09/14/2024 15:37*	WG2356501

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	0.171	J	0.185	0.383	0.344	0.182	09/18/2024 17:12	WG2356242
(T) Barium	*122*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*103*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.314	J	0.236	0.413	09/18/2024 17:12	WG2356501

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.691		0.268	0.411	0.228	0.0786	09/14/2024 15:37	WG2356501
(T) Barium	*104*					*30.0-143*	*09/14/2024 15:37*	WG2356501

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	-0.444	U	0.603	1.07	1.14	0.592	09/18/2024 17:12	WG2356242
(T) Barium	*122*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*109*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.691	J	0.660	1.16	09/18/2024 17:12	WG2356501

Method Blank (MB)

(MB) R4120404-1 09/14/24 11:35

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.108	J	0.0847	0.115	0.0396
(T) Barium	*104*		*104*		

L1773902-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773902-01 09/14/24 14:36 • (DUP) R4120404-5 09/14/24 12:36

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	0.262	0.181	0.228	0.0785	0.239	0.282	0.459	0.158	8.86	0.0663	J	20	3
(T) Barium	*103*				*105*	*105*							

Laboratory Control Sample (LCS)

(LCS) R4120404-2 09/14/24 11:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.15	103	75.0-125	
(T) Barium			*98.6*		

L1773902-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773902-06 09/14/24 15:37 • (MS) R4120404-3 09/14/24 11:35 • (MSD) R4120404-4 09/14/24 12:36

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	0.691	21.1	20.4	102	98.4	1	75.0-125			3.23		20
(T) Barium		*104*			*102*	*104*							

Method Blank (MB)

(MB) R4125044-1 09/18/24 17:12

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.290		0.139	0.253	0.133
(T) Barium	*129*		*129*		
(T) Yttrium	*101*		*101*		

L1773940-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1773940-02 09/18/24 21:00 • (DUP) R4125044-5 09/18/24 17:12

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	1.38	0.394	0.719	0.375	1.27	0.337	0.594	0.311	8.17	0.208		20	3
(T) Barium	*127*				*125*	*125*							
(T) Yttrium	*95.7*				*107*	*107*							

Laboratory Control Sample (LCS)

(LCS) R4125044-2 09/18/24 17:12

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.04	80.7	80.0-120	
(T) Barium			*127*		
(T) Yttrium			*118*		

L1773902-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773902-06 09/18/24 17:12 • (MS) R4125044-3 09/18/24 17:12 • (MSD) R4125044-4 09/18/24 17:12

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	-0.444	15.8	13.5	94.4	80.5	1	70.0-130			15.8		20
(T) Barium		*122*			*125*	*129*							
(T) Yttrium		*109*			*115*	*107*							

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.

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.

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: ☒ Yes ☐ No

Workorder: 92750325 Workorder Name: Bremo_2SA2024_CCR&VSWMR_F Owner Received Date: 8/29/2024 Results Requested By: 9/13/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis: Ra 226/903.0	Ra 228/904.0 + Combined Ra											LAB USE ONLY
1	082824NMW1	PS	8/28/2024 15:05	92750325001	Water	2						X	X											01
2	082824NMW12	PS	8/28/2024 15:35	92750325002	Water	2						X	X											02
3	082824NMW31	PS	8/28/2024 15:55	92750325003	Water	2						X	X											03
4	082924NMW13	PS	8/29/2024 12:15	92750325004	Water	2						X	X											04
5	082924NMW32S	PS	8/29/2024 15:25	92750325005	Water	2						X	X											05
6	082924NMW32D	RQS	8/29/2024 14:25	92750325006	Water	6						X	X											06
7	082924NWPFDDUPLICATE	PS	8/29/2024 13:15	92750325007	Water	2						X	X											07

L1773402

Transfers	Released By	Date/Time	Received By	Date/Time
1	HHM/pace HHL	9/3/24 1800		
2				
3			Christopher B Collins	9/4/24 0900

Comments: *MS/MSD required on sample 92750325-006*

Cooler Temperature on Receipt _____°C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

3.2+.3=3.5

Sample Receipt Checklist

COC Seal Present/Intact:	X Y N	If Applicable	
COC Signed Accurate:	X Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	X Y N	Pres. Correct/Check:	Y N
Correct bottles used:	X Y N	18 To 4C	
Sufficient volume sent:	X Y N		
RA Screen <0.5 mR/hr:	X Y N		

92750325

Pace

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 92750325
(To be completed by sending lab)

Sending Project No:	92750325
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	09/01/24
REQUESTED COMPLETION DATE:	**9/13/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra 226/903.0	BP1N		HNO3	7	SI-38RAD	SUB PASI RAD
Ra 228/904.0 + Combined Ra	BP1N		HNO3	7	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 08, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on August 30, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92750652001	**082924NMW37**	Water	08/29/24 14:10	08/30/24 10:00
92750652002	**082924NMW39S**	Water	08/29/24 12:05	08/30/24 10:00
92750652003	**082924NMW39D**	Water	08/29/24 13:05	08/30/24 10:00
92750325007	**082924NWPFDDUPLICATE**	Water	08/29/24 13:15	08/30/24 08:00

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SAMPLE ANALYTE COUNT

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92750652001	**082924NMW37**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750652002	**082924NMW39S**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750652003	**082924NMW39D**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A
92750325007	**082924NWPFDDUPLICATE**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	AA	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	JCM	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92750652001	**082924NMW37**					
EPA 7199	Chromium, Hexavalent	0.20	ug/L	0.025	08/30/24 12:57	
EPA 6010D	Barium	76.9	ug/L	5.0	09/05/24 04:40	
EPA 6010D	Boron	93.0	ug/L	50.0	09/05/24 04:40	
EPA 6010D	Calcium	40000	ug/L	100	09/05/24 04:40	
EPA 6010D	Copper	0.85J	ug/L	5.0	09/05/24 04:40	
EPA 6010D	Molybdenum	2.8J	ug/L	5.0	09/05/24 04:40	
EPA 6010D	Nickel	2.8J	ug/L	5.0	09/05/24 04:40	
EPA 6010D	Hardness, Total(SM 2340B)	130000	ug/L	662	09/05/24 04:40	
EPA 6010D	Zinc	3.8J	ug/L	10.0	09/05/24 04:40	
EPA 6020B	Cobalt	3.2	ug/L	1.0	09/04/24 05:25	
EPA 6020B	Iron	41.9	ug/L	20.0	09/04/24 05:25	
EPA 6020B	Lithium	1.3J	ug/L	2.5	09/04/24 05:25	
EPA 6020B	Manganese	762	ug/L	10.0	09/04/24 18:10	
SM 2540C-2015	Total Dissolved Solids	197	mg/L	25.0	09/03/24 15:33	
EPA 9056A	Chloride	12.1	mg/L	1.0	08/31/24 10:47	
EPA 9056A	Fluoride	0.11	mg/L	0.10	08/31/24 10:47	
EPA 9056A	Nitrate as N	0.17	mg/L	0.10	08/31/24 10:47	
EPA 9056A	Sulfate	53.1	mg/L	1.0	08/31/24 10:47	
92750652002	**082924NMW39S**					
EPA 7199	Chromium, Hexavalent	0.038	ug/L	0.025	08/31/24 14:46	H1
EPA 6010D	Barium	45.3	ug/L	5.0	09/05/24 04:43	
EPA 6010D	Boron	776	ug/L	50.0	09/05/24 04:43	
EPA 6010D	Calcium	36700	ug/L	100	09/05/24 04:43	
EPA 6010D	Chromium	0.76J	ug/L	5.0	09/05/24 04:43	
EPA 6010D	Copper	1.3J	ug/L	5.0	09/05/24 04:43	
EPA 6010D	Nickel	3.0J	ug/L	5.0	09/05/24 04:43	
EPA 6010D	Silver	0.94J	ug/L	5.0	09/05/24 04:43	
EPA 6010D	Hardness, Total(SM 2340B)	116000	ug/L	662	09/05/24 04:43	
EPA 6010D	Zinc	3.1J	ug/L	10.0	09/05/24 04:43	
EPA 6020B	Cobalt	0.34J	ug/L	1.0	09/04/24 05:29	
EPA 6020B	Iron	222	ug/L	20.0	09/04/24 05:29	
EPA 6020B	Lithium	1.1J	ug/L	2.5	09/04/24 05:29	
EPA 6020B	Manganese	73.9	ug/L	2.0	09/04/24 05:29	
SM 2540C-2015	Total Dissolved Solids	184	mg/L	25.0	09/03/24 15:35	
EPA 9056A	Chloride	1.9	mg/L	1.0	08/31/24 10:17	
EPA 9056A	Fluoride	0.090J	mg/L	0.10	08/31/24 10:17	
EPA 9056A	Nitrate as N	0.39	mg/L	0.10	08/31/24 10:17	
EPA 9056A	Sulfate	69.4	mg/L	1.0	08/31/24 10:17	
92750652003	**082924NMW39D**					
EPA 6010D	Barium	19.1	ug/L	5.0	09/05/24 04:46	
EPA 6010D	Boron	32.7J	ug/L	50.0	09/05/24 04:46	
EPA 6010D	Calcium	34400	ug/L	100	09/05/24 04:46	
EPA 6010D	Hardness, Total(SM 2340B)	120000	ug/L	662	09/05/24 04:46	
EPA 6020B	Iron	12700	ug/L	60.0	09/04/24 18:14	
EPA 6020B	Lithium	2.4J	ug/L	2.5	09/04/24 05:32	
EPA 6020B	Manganese	369	ug/L	6.0	09/04/24 18:14	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

SUMMARY OF DETECTION

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92750652003	**082924NMW39D**					
SM 2540C-2015	Total Dissolved Solids	242	mg/L	25.0	09/03/24 15:35	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.11	mg/L	0.10	09/20/24 18:13	
EPA 9056A	Chloride	27.1	mg/L	1.0	08/31/24 10:32	
EPA 9056A	Fluoride	0.20	mg/L	0.10	08/31/24 10:32	
EPA 9056A	Sulfate	48.5	mg/L	1.0	08/31/24 10:32	
92750325007	**082924NWPFDDUPLICATE**					
EPA 6010D	Barium	20.5	ug/L	5.0	09/05/24 04:37	
EPA 6010D	Boron	33.1J	ug/L	50.0	09/05/24 04:37	
EPA 6010D	Calcium	36600	ug/L	100	09/05/24 04:37	
EPA 6010D	Copper	0.64J	ug/L	5.0	09/05/24 04:37	
EPA 6010D	Hardness, Total(SM 2340B)	127000	ug/L	662	09/05/24 04:37	
EPA 6020B	Iron	11000	ug/L	60.0	09/04/24 18:06	
EPA 6020B	Lithium	2.5	ug/L	2.5	09/04/24 05:21	
EPA 6020B	Manganese	318	ug/L	6.0	09/04/24 18:06	
SM 2540C-2015	Total Dissolved Solids	238	mg/L	25.0	09/03/24 15:33	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.099J	mg/L	0.10	09/20/24 18:06	
EPA 9056A	Chloride	27.8	mg/L	1.0	08/31/24 10:56	
EPA 9056A	Fluoride	0.11	mg/L	0.10	08/31/24 10:56	
EPA 9056A	Sulfate	47.9	mg/L	1.0	08/31/24 10:56	M1, R1

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- 082924NMW39D (Lab ID: 92750652003)
- 082924NMW39S (Lab ID: 92750652002)
- 082924NWPFDDUPLICATE (Lab ID: 92750325007)

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879449

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750325006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4529744)
  - Chromium, Hexavalent
- MSD (Lab ID: 4529745)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: November 08, 2024

General Information:
4 samples were analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879691

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750325006,92750325007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4531038)
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 4531038)
  - Sulfate

QC Batch: 879692

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750045006,92750325005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4531043)
  - Fluoride
- MS (Lab ID: 4531045)
  - Fluoride
- MSD (Lab ID: 4531044)
  - Fluoride
- MSD (Lab ID: 4531046)
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 4531046)
  - Fluoride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: November 08, 2024

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NMW37 **Lab ID: 92750652001** Collected: 08/29/24 14:10 Received: 08/30/24 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.20**	ug/L	0.025	0.0043	1		08/30/24 12:57	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:40	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:40	7440-38-2	
Barium	**76.9**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:40	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:40	7440-41-7	
Boron	**93.0**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:40	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:40	7440-43-9	
Calcium	**40000**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:40	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:40	7440-47-3	
Copper	**0.85J**	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:40	7440-50-8	
Molybdenum	**2.8J**	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:40	7439-98-7	
Nickel	**2.8J**	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:40	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:40	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:40	7440-22-4	
Hardness, Total(SM 2340B)	**130000**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:40		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:40	7440-62-2	
Zinc	**3.8J**	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:40	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**3.2**	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:25	7440-48-4	
Iron	**41.9**	ug/L	20.0	3.0	1	09/03/24 13:00	09/04/24 05:25	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 05:25	7439-92-1	
Lithium	**1.3J**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 05:25	7439-93-2	
Manganese	**762**	ug/L	10.0	1.2	5	09/03/24 13:00	09/04/24 18:10	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 05:25	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:25	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**197**	mg/L	25.0	25.0	1		09/03/24 15:33		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/20/24 18:10	7664-41-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NMW37 **Lab ID: 92750652001** Collected: 08/29/24 14:10 Received: 08/30/24 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**12.1**	mg/L	1.0	0.60	1		08/31/24 10:47	16887-00-6	
Fluoride	**0.11**	mg/L	0.10	0.050	1		08/31/24 10:47	16984-48-8	
Nitrate as N	**0.17**	mg/L	0.10	0.060	1		08/31/24 10:47	14797-55-8	
Sulfate	**53.1**	mg/L	1.0	0.50	1		08/31/24 10:47	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NMW39S **Lab ID: 92750652002** Collected: 08/29/24 12:05 Received: 08/30/24 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.038**	ug/L	0.025	0.0043	1		08/31/24 14:46	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:43	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:43	7440-38-2	
Barium	**45.3**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:43	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:43	7440-41-7	
Boron	**776**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:43	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:43	7440-43-9	
Calcium	**36700**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:43	7440-70-2	
Chromium	**0.76J**	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:43	7440-47-3	
Copper	**1.3J**	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:43	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:43	7439-98-7	
Nickel	**3.0J**	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:43	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:43	7782-49-2	
Silver	**0.94J**	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:43	7440-22-4	
Hardness, Total(SM 2340B)	**116000**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:43		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:43	7440-62-2	
Zinc	**3.1J**	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:43	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	**0.34J**	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:29	7440-48-4	
Iron	**222**	ug/L	20.0	3.0	1	09/03/24 13:00	09/04/24 05:29	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 05:29	7439-92-1	
Lithium	**1.1J**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 05:29	7439-93-2	
Manganese	**73.9**	ug/L	2.0	0.24	1	09/03/24 13:00	09/04/24 05:29	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 05:29	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:29	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**184**	mg/L	25.0	25.0	1		09/03/24 15:35		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/20/24 18:11	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NMW39S **Lab ID: 92750652002** Collected: 08/29/24 12:05 Received: 08/30/24 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**1.9**	mg/L	1.0	0.60	1		08/31/24 10:17	16887-00-6	
Fluoride	**0.090J**	mg/L	0.10	0.050	1		08/31/24 10:17	16984-48-8	
Nitrate as N	**0.39**	mg/L	0.10	0.060	1		08/31/24 10:17	14797-55-8	
Sulfate	**69.4**	mg/L	1.0	0.50	1		08/31/24 10:17	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NMW39D **Lab ID: 92750652003** Collected: 08/29/24 13:05 Received: 08/30/24 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.0043	1		08/31/24 15:22	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:46	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:46	7440-38-2	
Barium	**19.1**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:46	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:46	7440-41-7	
Boron	**32.7J**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:46	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:46	7440-43-9	
Calcium	**34400**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:46	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:46	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:46	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:46	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:46	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:46	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:46	7440-22-4	
Hardness, Total(SM 2340B)	**120000**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:46		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:46	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:46	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:32	7440-48-4	
Iron	**12700**	ug/L	60.0	9.0	3	09/03/24 13:00	09/04/24 18:14	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 05:32	7439-92-1	
Lithium	**2.4J**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 05:32	7439-93-2	
Manganese	**369**	ug/L	6.0	0.71	3	09/03/24 13:00	09/04/24 18:14	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 05:32	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:32	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**242**	mg/L	25.0	25.0	1		09/03/24 15:35		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.11**	mg/L	0.10	0.031	1		09/20/24 18:13	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NMW39D **Lab ID: 92750652003** Collected: 08/29/24 13:05 Received: 08/30/24 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**27.1**	mg/L	1.0	0.60	1		08/31/24 10:32	16887-00-6	
Fluoride	**0.20**	mg/L	0.10	0.050	1		08/31/24 10:32	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		08/31/24 10:32	14797-55-8	
Sulfate	**48.5**	mg/L	1.0	0.50	1		08/31/24 10:32	14808-79-8	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NWPFDDUPLICATE **Lab ID: 92750325007** Collected: 08/29/24 13:15 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	ND	ug/L	0.025	0.0043	1		08/31/24 15:40	18540-29-9	H1
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	09/03/24 12:25	09/05/24 04:37	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	09/03/24 12:25	09/05/24 04:37	7440-38-2	
Barium	**20.5**	ug/L	5.0	0.79	1	09/03/24 12:25	09/05/24 04:37	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	09/03/24 12:25	09/05/24 04:37	7440-41-7	
Boron	**33.1J**	ug/L	50.0	4.0	1	09/03/24 12:25	09/05/24 04:37	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	09/03/24 12:25	09/05/24 04:37	7440-43-9	
Calcium	**36600**	ug/L	100	14.7	1	09/03/24 12:25	09/05/24 04:37	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	09/03/24 12:25	09/05/24 04:37	7440-47-3	
Copper	**0.64J**	ug/L	5.0	0.62	1	09/03/24 12:25	09/05/24 04:37	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	09/03/24 12:25	09/05/24 04:37	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	09/03/24 12:25	09/05/24 04:37	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	09/03/24 12:25	09/05/24 04:37	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	09/03/24 12:25	09/05/24 04:37	7440-22-4	
Hardness, Total(SM 2340B)	**127000**	ug/L	662	36.8	1	09/03/24 12:25	09/05/24 04:37		
Vanadium	ND	ug/L	5.0	1.6	1	09/03/24 12:25	09/05/24 04:37	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	09/03/24 12:25	09/05/24 04:37	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:21	7440-48-4	
Iron	**11000**	ug/L	60.0	9.0	3	09/03/24 13:00	09/04/24 18:06	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	09/03/24 13:00	09/04/24 05:21	7439-92-1	
Lithium	**2.5**	ug/L	2.5	0.33	1	09/03/24 13:00	09/04/24 05:21	7439-93-2	
Manganese	**318**	ug/L	6.0	0.71	3	09/03/24 13:00	09/04/24 18:06	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	09/03/24 13:00	09/04/24 05:21	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	09/03/24 13:00	09/04/24 05:21	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/06/24 14:00	09/12/24 12:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	**238**	mg/L	25.0	25.0	1		09/03/24 15:33		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	**0.099J**	mg/L	0.10	0.031	1		09/20/24 18:06	7664-41-7	

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Sample: 082924NWPFDDUPLICATE **Lab ID: 92750325007** Collected: 08/29/24 13:15 Received: 08/30/24 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	**27.8**	mg/L	1.0	0.60	1		08/31/24 10:56	16887-00-6	
Fluoride	**0.11**	mg/L	0.10	0.050	1		08/31/24 10:56	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		08/31/24 10:56	14797-55-8	
Sulfate	**47.9**	mg/L	1.0	0.50	1		08/31/24 10:56	14808-79-8	M1,R1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 879449
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

METHOD BLANK: 4529742 Matrix: Water
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	08/31/24 14:11	

LABORATORY CONTROL SAMPLE: 4529743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.10	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4529744 4529745

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	ND	0.1	0.1	0.14	0.13	132	124	90-110	6	20	M1

SAMPLE DUPLICATE: 4529746

Parameter	Units	92750325005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.11	0.13	12	20	H1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 880764
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

METHOD BLANK: 4536089 Matrix: Water
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	09/12/24 11:36	

LABORATORY CONTROL SAMPLE: 4536090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4536091 4536092

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.5	99	98	75-125	1	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 879818
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

METHOD BLANK: 4531336 Matrix: Water
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	09/05/24 03:29	
Arsenic	ug/L	ND	10.0	2.5	09/05/24 03:29	
Barium	ug/L	ND	5.0	0.79	09/05/24 03:29	
Beryllium	ug/L	ND	1.0	0.16	09/05/24 03:29	
Boron	ug/L	ND	50.0	4.0	09/05/24 03:29	
Cadmium	ug/L	ND	1.0	0.29	09/05/24 03:29	
Calcium	ug/L	ND	100	14.7	09/05/24 03:29	
Chromium	ug/L	ND	5.0	0.63	09/05/24 03:29	
Copper	ug/L	ND	5.0	0.62	09/05/24 03:29	
Hardness, Total(SM 2340B)	ug/L	ND	662	36.8	09/05/24 03:29	
Molybdenum	ug/L	ND	5.0	2.6	09/05/24 03:29	
Nickel	ug/L	ND	5.0	0.88	09/05/24 03:29	
Selenium	ug/L	ND	10.0	4.1	09/05/24 03:29	
Silver	ug/L	ND	5.0	0.49	09/05/24 03:29	
Vanadium	ug/L	ND	5.0	1.6	09/05/24 03:29	
Zinc	ug/L	ND	10.0	3.0	09/05/24 03:29	

LABORATORY CONTROL SAMPLE: 4531337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	488	98	80-120	
Arsenic	ug/L	500	481	96	80-120	
Barium	ug/L	500	486	97	80-120	
Beryllium	ug/L	500	483	97	80-120	
Boron	ug/L	500	490	98	80-120	
Cadmium	ug/L	500	488	98	80-120	
Calcium	ug/L	5000	4900	98	80-120	
Chromium	ug/L	500	493	99	80-120	
Copper	ug/L	500	490	98	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	31500	95	80-120	
Molybdenum	ug/L	500	491	98	80-120	
Nickel	ug/L	500	487	97	80-120	
Selenium	ug/L	500	474	95	80-120	
Silver	ug/L	250	246	98	80-120	
Vanadium	ug/L	500	489	98	80-120	
Zinc	ug/L	500	488	98	80-120	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531338 4531339

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	513	519	102	104	75-125	1	20	
Arsenic	ug/L	ND	500	500	507	517	101	103	75-125	2	20	
Barium	ug/L	55.8	500	500	579	589	105	107	75-125	2	20	
Beryllium	ug/L	ND	500	500	506	512	101	102	75-125	1	20	
Boron	ug/L	141	500	500	657	662	103	104	75-125	1	20	
Cadmium	ug/L	ND	500	500	498	505	99	101	75-125	2	20	
Calcium	ug/L	33300	5000	5000	38400	39200	101	117	75-125	2	20	
Chromium	ug/L	ND	500	500	507	511	101	102	75-125	1	20	
Copper	ug/L	ND	500	500	508	514	101	103	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	160000	33100	33100	195000	199000	108	118	75-125	2	20	
Molybdenum	ug/L	ND	500	500	506	512	101	102	75-125	1	20	
Nickel	ug/L	2.6J	500	500	493	500	98	99	75-125	1	20	
Selenium	ug/L	ND	500	500	516	520	103	104	75-125	1	20	
Silver	ug/L	ND	250	250	255	257	102	103	75-125	1	20	
Vanadium	ug/L	ND	500	500	507	514	101	103	75-125	1	20	
Zinc	ug/L	ND	500	500	502	510	100	101	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531340 4531341

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	509	506	101	101	75-125	1	20	
Arsenic	ug/L	ND	500	500	501	498	100	100	75-125	1	20	
Barium	ug/L	5.8	500	500	516	520	102	103	75-125	1	20	
Beryllium	ug/L	ND	500	500	501	498	100	100	75-125	1	20	
Boron	ug/L	ND	500	500	509	506	101	101	75-125	1	20	
Cadmium	ug/L	ND	500	500	497	492	99	98	75-125	1	20	
Calcium	ug/L	26200	5000	5000	31100	31500	98	105	75-125	1	20	
Chromium	ug/L	ND	500	500	503	499	100	100	75-125	1	20	
Copper	ug/L	ND	500	500	500	497	100	99	75-125	1	20	
Hardness, Total(SM 2340B)	ug/L	82800	33100	33100	116000	116000	100	102	75-125	1	20	
Molybdenum	ug/L	ND	500	500	502	498	100	99	75-125	1	20	
Nickel	ug/L	ND	500	500	492	488	98	98	75-125	1	20	
Selenium	ug/L	ND	500	500	509	506	102	101	75-125	1	20	
Silver	ug/L	ND	250	250	250	249	100	100	75-125	1	20	
Vanadium	ug/L	ND	500	500	503	499	101	100	75-125	1	20	
Zinc	ug/L	ND	500	500	502	498	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 879810
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

METHOD BLANK: 4531323 Matrix: Water
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.14	09/04/24 04:32	
Iron	ug/L	7.0J	20.0	3.0	09/04/24 04:32	
Lead	ug/L	ND	1.0	0.18	09/04/24 04:32	
Lithium	ug/L	ND	2.5	0.33	09/04/24 04:32	
Manganese	ug/L	0.33J	2.0	0.24	09/04/24 04:32	
Thallium	ug/L	ND	0.20	0.028	09/04/24 04:32	
Tin	ug/L	ND	1.0	0.14	09/04/24 04:32	

LABORATORY CONTROL SAMPLE: 4531324

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.6	107	80-120	
Iron	ug/L	1250	1340	107	80-120	
Lead	ug/L	50	50.9	102	80-120	
Lithium	ug/L	50	53.0	106	80-120	
Manganese	ug/L	50	53.8	108	80-120	
Thallium	ug/L	25	26.3	105	80-120	
Tin	ug/L	50	52.3	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531330 4531331

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	ND	50	50	54.3	53.9	109	108	75-125	1	20	
Iron	ug/L	194	1250	1250	1570	1580	110	111	75-125	1	20	
Lead	ug/L	ND	50	50	52.5	52.1	105	104	75-125	1	20	
Lithium	ug/L	2.2J	50	50	54.7	55.1	105	106	75-125	1	20	
Manganese	ug/L	34.8	50	50	89.3	89.0	109	108	75-125	0	20	
Thallium	ug/L	ND	25	25	27.2	26.9	109	108	75-125	1	20	
Tin	ug/L	ND	50	50	52.8	52.8	106	106	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 879809 Analysis Method: SM 2540C-2015
QC Batch Method: SM 2540C-2015 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

METHOD BLANK: 4531319 Matrix: Water
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	09/03/24 15:27	

LABORATORY CONTROL SAMPLE: 4531320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	251	266	106	80-120	

SAMPLE DUPLICATE: 4531321

Parameter	Units	92750045002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	374	362	3	25	

SAMPLE DUPLICATE: 4531322

Parameter	Units	92750325006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	145	7	25	

SAMPLE DUPLICATE: 4532060

Parameter	Units	92750045006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	217	212	2	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 884219
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

METHOD BLANK: 4553291 Matrix: Water
Associated Lab Samples: 92750325007, 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	09/20/24 17:44	

LABORATORY CONTROL SAMPLE: 4553292

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4553293 4553294

Parameter	Units	92753913001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	100	100	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4553295 4553296

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	99	99	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 879691
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750325007

METHOD BLANK: 4531035 Matrix: Water
Associated Lab Samples: 92750325007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/31/24 13:28	
Fluoride	mg/L	ND	0.10	0.050	08/31/24 13:28	
Nitrate as N	mg/L	ND	0.10	0.060	08/31/24 13:28	
Sulfate	mg/L	ND	1.0	0.50	08/31/24 13:28	

LABORATORY CONTROL SAMPLE: 4531036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.2	104	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Nitrate as N	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	50	53.2	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531037 4531038

Parameter	Units	92750325007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	27.8	50	50	77.2	78.2	99	101	90-110	1	10	
Fluoride	mg/L	0.11	2.5	2.5	2.6	2.7	101	102	90-110	1	10	
Nitrate as N	mg/L	ND	2.5	2.5	2.4	2.4	96	97	90-110	1	10	
Sulfate	mg/L	47.9	50	50	99.7	84.1	104	72	90-110	17	10	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531039 4531040

Parameter	Units	92750325006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.9	50	50	53.8	54.5	102	103	90-110	1	10	
Fluoride	mg/L	0.13	2.5	2.5	2.7	2.7	102	103	90-110	1	10	
Nitrate as N	mg/L	0.20	2.5	2.5	2.7	2.7	100	101	90-110	1	10	
Sulfate	mg/L	8.1	50	50	59.7	60.5	103	105	90-110	1	10	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

QC Batch: 879692
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92750652001, 92750652002, 92750652003

METHOD BLANK: 4531041 Matrix: Water
Associated Lab Samples: 92750652001, 92750652002, 92750652003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/31/24 11:47	
Fluoride	mg/L	ND	0.10	0.050	08/31/24 11:47	
Nitrate as N	mg/L	ND	0.10	0.060	08/31/24 11:47	
Sulfate	mg/L	ND	1.0	0.50	08/31/24 11:47	

LABORATORY CONTROL SAMPLE: 4531042

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Nitrate as N	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	50	51.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531043 4531044

Parameter	Units	92750045006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	15.9	50	50	66.5	68.8	101	106	90-110	3	10	
Fluoride	mg/L	0.14	2.5	2.5	3.0	3.1	112	118	90-110	5	10	M1
Nitrate as N	mg/L	ND	2.5	2.5	2.6	2.7	100	105	90-110	4	10	H1
Sulfate	mg/L	16.3	50	50	67.2	69.5	102	106	90-110	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4531045 4531046

Parameter	Units	92750325005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.6	50	50	53.8	54.7	100	102	90-110	2	10	
Fluoride	mg/L	0.12	2.5	2.5	2.9	3.5	112	134	90-110	18	10	M1,R1
Nitrate as N	mg/L	0.93	2.5	2.5	3.6	3.6	105	107	90-110	1	10	
Sulfate	mg/L	2.6	50	50	53.0	77.9	101	151	90-110	38	10	M1,R1

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(704)875-9092

QUALIFIERS

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_2SA2024_CCR&VSWMR_G
Pace Project No.: 92750652

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92750325007	**082924NWPFDDUPLICATE**	EPA 7199	879449		
92750652001	**082924NMW37**	EPA 7199	879449		
92750652002	**082924NMW39S**	EPA 7199	879449		
92750652003	**082924NMW39D**	EPA 7199	879449		
92750325007	**082924NWPFDDUPLICATE**	EPA 3010A	879818	EPA 6010D	879963
92750652001	**082924NMW37**	EPA 3010A	879818	EPA 6010D	879963
92750652002	**082924NMW39S**	EPA 3010A	879818	EPA 6010D	879963
92750652003	**082924NMW39D**	EPA 3010A	879818	EPA 6010D	879963
92750325007	**082924NWPFDDUPLICATE**	EPA 3010A	879810	EPA 6020B	879962
92750652001	**082924NMW37**	EPA 3010A	879810	EPA 6020B	879962
92750652002	**082924NMW39S**	EPA 3010A	879810	EPA 6020B	879962
92750652003	**082924NMW39D**	EPA 3010A	879810	EPA 6020B	879962
92750325007	**082924NWPFDDUPLICATE**	EPA 7470A	880764	EPA 7470A	880917
92750652001	**082924NMW37**	EPA 7470A	880764	EPA 7470A	880917
92750652002	**082924NMW39S**	EPA 7470A	880764	EPA 7470A	880917
92750652003	**082924NMW39D**	EPA 7470A	880764	EPA 7470A	880917
92750325007	**082924NWPFDDUPLICATE**	SM 2540C-2015	879809		
92750652001	**082924NMW37**	SM 2540C-2015	879809		
92750652002	**082924NMW39S**	SM 2540C-2015	879809		
92750652003	**082924NMW39D**	SM 2540C-2015	879809		
92750325007	**082924NWPFDDUPLICATE**	EPA 350.1 Rev 2.0 1993	884219		
92750652001	**082924NMW37**	EPA 350.1 Rev 2.0 1993	884219		
92750652002	**082924NMW39S**	EPA 350.1 Rev 2.0 1993	884219		
92750652003	**082924NMW39D**	EPA 350.1 Rev 2.0 1993	884219		
92750325007	**082924NWPFDDUPLICATE**	EPA 9056A	879691		
92750652001	**082924NMW37**	EPA 9056A	879692		
92750652002	**082924NMW39S**	EPA 9056A	879692		
92750652003	**082924NMW39D**	EPA 9056A	879692		

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Pace

Receipt

Effective Date: 5/24/2024

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☑ **Raleigh** ☐ **Mechanicsville** ☐ **Atlanta** ☐ **Kernersville** ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project **WO# : 92750652**

92750652

Courier: ☐ Commercial ☑ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☐ Client

Carrier Tracking Number: _____

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** APL 4-30-24

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T076 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.1, 2.9, 1.4 **Correction Factor:** Add / Subtract (°C) 0.0

Corrected Cooler Temp (°C): 1.1, 2.9, 1.4

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling proce has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☑ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened: 1000	Temp: 1.1, 2.9, 1.4
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO#: 92750652

PM: AMB Due Date: 09/16/24

CLIENT: 92-DomEnergy

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☐ **Raleigh** ☐ **Mechanicsville** ☐ **Atlanta** ☐ **Kernersville** ☐

Client_____ Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
CC																													
1		1	1		1	1																			2	1			
2		1	1		1	1																			2	1			
3		1	1		1	1																			2	1			
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_2SA2024_CCR&VSWMR_G	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 4 2 3 10 3 1

Identify Container Preservative Type***: 1 3 2 1 1 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3146517

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/Fl/SO4/NO3	RADS 226/228	Sample Comment	Preservation non-conformance identified for sample.
0829 24NMW37	WT	G			08/29/24	1410	7			X	X	X	X	X	X	* ALL SAMPLES	
0829 24NMW39S	WT	G			08/29/24	1205	7			X	X	X	X	X	X	PRESERVED	
0829 24NMW39D	WT	G			08/29/24	1305	7			X	X	X	X	X	X	ON ICE *	
																Fedex Tracking	
																8184 0816 3117	
																8184 0816 3106	
																8184 0816 3573	

Additional Instructions from Pace®: COC ID: Bremo_2SA2024_CCR+VSWMR_G_4_1

Collected By: (Printed Name) J. DAVIS / Z. Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C) | Corrected Temp. (°C) | On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/29/24 1816		08-30-24 1000	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA
Street Address:	120 Tredegar Street, Richmond, VA 23219
Customer Project #:	
Project Name:	Bremo_2SA2024_CCR&VSWMR_G
Site Collection Info/Facility ID (as applicable):	
Contact/Report To:	Kelly Hicks
Phone #:	(804)273-4903
E-Mail:	kelly.a.hicks@dominionenergy.com
Cc E-Mail:	crystal.shadle@wsp.com
Invoice To:	Kelly Hicks
Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Purchase Order # (if applicable):	50149081
Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 4 2 3 10 3 1

Identify Container Preservative Type***: 1 3 2 1 1 2

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/Fl/SO4/NO3	RADS 226/228	Sample Comment
08_29_24NMW37	WT	G			08/29/24	1410	7			X	X	X	X	X	X	*ALL SAMPLES
08_29_24NMW39S	WT	G			08/29/24	1205	7			X	X	X	X	X	X	PRESERVED
08_29_24NMW39D	WT	G			08/29/24	1305	7			X	X	X	X	X	X	ON ICE *
082924NWPFDDUPLICATE	WT	G			08/29/2024	1315	7			X	X	X	X	X	X	

Fedex Tracking
8184 0816 3117
8184 0816 3106
8184 0816 3573

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3146517

Preservation non-conformance identified for sample.

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Additional Instructions from Pace®: CKS 9/3/2024

COC ID: Bremo_2SA2024_CCR+VSWMR_G_4_1

Collected By: (Printed Name) J.DAVIS / Z.Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/29/24 1816			
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
37	GMH	9.2				
395		9.2				
39D		9.2				

ANALYTICAL REPORT

November 04, 2024

Revised Report

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1773943
Samples Received:	09/04/2024
Project Number:	92750652
Description:	Bremo_2SA2024_CCR&CCR&VSWMR_G
Site:	001
Report To:	Angela Baioni 9800 Kincey Avenue, Suite 100 Huntersville, NC 28078

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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082924NMW37 L1773943-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 14:10	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2357325	1	09/06/24 09:35	09/16/24 23:24	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 21:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2357325	1	09/06/24 09:35	09/18/24 21:00	ASN	Mt. Juliet, TN

082924NMW39S L1773943-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 12:05	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2357325	1	09/06/24 09:35	09/17/24 00:24	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356942	1	09/11/24 18:43	09/20/24 16:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2357325	1	09/06/24 09:35	09/20/24 16:03	ASN	Mt. Juliet, TN

082924NMW39D L1773943-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 13:05	09/04/24 09:00

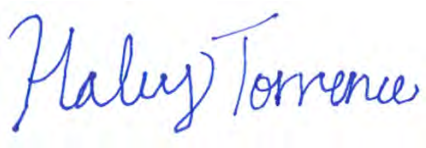
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2357325	1	09/06/24 09:35	09/17/24 00:24	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356942	1	09/11/24 18:43	09/20/24 16:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2357325	1	09/06/24 09:35	09/20/24 16:03	ASN	Mt. Juliet, TN

082924NWPFDDUPLICATE L1773943-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/29/24 13:15	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2356501	1	09/05/24 09:08	09/14/24 15:37	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356242	1	09/05/24 21:00	09/18/24 17:12	ALG	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2356501	1	09/05/24 09:08	09/18/24 17:12	ALG	Mt. Juliet, TN

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: 10/04/24 16:11

Project Narrative

Revision to report 082924NWPFDDUPLICATE.

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.358		0.186	0.328	0.171	0.0521	09/16/2024 23:24	WG2357325
(T) Barium	*100*					*30.0-143*	*09/16/2024 23:24*	WG2357325

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	-0.333	U	0.244	0.442	0.481	0.251	09/18/2024 21:00	WG2356242
(T) Barium	*132*					*30.0-143*	*09/18/2024 21:00*	WG2356242
(T) Yttrium	*111*					*30.0-136*	*09/18/2024 21:00*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.358	J	0.307	0.510	09/18/2024 21:00	WG2357325

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.112	U	0.158	0.300	0.274	0.104	09/17/2024 00:24	WG2357325
(T) Barium	*100*					*30.0-143*	*09/17/2024 00:24*	WG2357325

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	0.0220	U	0.207	0.405	0.384	0.202	09/20/2024 16:03	WG2356942
(T) Barium	*107*					*30.0-143*	*09/20/2024 16:03*	WG2356942
(T) Yttrium	*104*					*30.0-136*	*09/20/2024 16:03*	WG2356942

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.134	U	0.260	0.472	09/20/2024 16:03	WG2357325

Radiochemistry by Method 903.0/9315

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
Radium-226	1.66		0.388	0.530	0.214	0.0739	09/17/2024 00:24	WG2357325
(T) Barium	*100*					*30.0-143*	*09/17/2024 00:24*	WG2357325

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	1.57		0.260	0.458	0.428	0.225	09/20/2024 16:03	WG2356942
(T) Barium	*104*					*30.0-143*	*09/20/2024 16:03*	WG2356942
(T) Yttrium	*117*					*30.0-136*	*09/20/2024 16:03*	WG2356942

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.23		0.467	0.479	09/20/2024 16:03	WG2357325

Radiochemistry by Method 903.0/9315

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
Radium-226	1.10		0.323	0.466	0.182	0.0556	09/14/2024 15:37	WG2356501
(T) Barium	*100*					*30.0-143*	*09/14/2024 15:37*	WG2356501

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	0.851		0.241	0.450	0.425	0.223	09/18/2024 17:12	WG2356242
(T) Barium	*130*					*30.0-143*	*09/18/2024 17:12*	WG2356242
(T) Yttrium	*90.2*					*30.0-136*	*09/18/2024 17:12*	WG2356242

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.95		0.403	0.462	09/18/2024 17:12	WG2356501

Method Blank (MB)

(MB) R4120404-1 09/14/24 11:35

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.108	J	0.0847	0.115	0.0396
(T) Barium	*104*		*104*		

L1773902-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773902-01 09/14/24 14:36 • (DUP) R4120404-5 09/14/24 12:36

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	0.262	0.181	0.228	0.0785	0.239	0.282	0.459	0.158	8.86	0.0663	J	20	3
(T) Barium	*103*				*105*	*105*							

Laboratory Control Sample (LCS)

(LCS) R4120404-2 09/14/24 11:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.15	103	75.0-125	
(T) Barium			*98.6*		

L1773902-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773902-06 09/14/24 15:37 • (MS) R4120404-3 09/14/24 11:35 • (MSD) R4120404-4 09/14/24 12:36

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	0.691	21.1	20.4	102	98.4	1	75.0-125			3.23		20
(T) Barium		*104*			*102*	*104*							

Method Blank (MB)

(MB) R4128124-1 09/16/24 20:23

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.000	U	0.0621	0.138	0.0523
(T) Barium	*109*		*109*		

L1773945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773945-01 10/03/24 13:40 • (DUP) R4128124-7 10/03/24 13:40

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	0.285	0.242	0.341	0.118	0.281	0.477	0.864	0.328	1.45	0.00767	U	20	3
(T) Barium	*96.6*				*97.6*	*97.6*							

Laboratory Control Sample (LCS)

(LCS) R4128124-2 09/16/24 20:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.39	108	75.0-125	
(T) Barium			*108*		

L1773936-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773936-06 09/16/24 22:24 • (MS) R4128124-3 09/16/24 20:23 • (MSD) R4128124-4 09/16/24 20:23

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	0.202	21.4	19.3	106	95.6	1	75.0-125			10.3		20
(T) Barium		*102*			*109*	*111*							

Method Blank (MB)

(MB) R4125044-1 09/18/24 17:12

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.290		0.139	0.253	0.133
(T) Barium	*129*		*129*		
(T) Yttrium	*101*		*101*		

L1773940-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1773940-02 09/18/24 21:00 • (DUP) R4125044-5 09/18/24 17:12

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	1.38	0.394	0.719	0.375	1.27	0.337	0.594	0.311	8.17	0.208		20	3
(T) Barium	*127*				*125*	*125*							
(T) Yttrium	*95.7*				*107*	*107*							

Laboratory Control Sample (LCS)

(LCS) R4125044-2 09/18/24 17:12

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.04	80.7	80.0-120	
(T) Barium			*127*		
(T) Yttrium			*118*		

L1773902-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773902-06 09/18/24 17:12 • (MS) R4125044-3 09/18/24 17:12 • (MSD) R4125044-4 09/18/24 17:12

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	-0.444	15.8	13.5	94.4	80.5	1	70.0-130			15.8		20
(T) Barium		*122*			*125*	*129*							
(T) Yttrium		*109*			*115*	*107*							

Method Blank (MB)

(MB) R4125059-1 09/20/24 16:03

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	-0.430	U	0.181	0.346	0.181
(T) Barium	*122*		*122*		
(T) Yttrium	*93.1*		*93.1*		

L1775404-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1775404-08 09/20/24 16:03 • (DUP) R4125059-5 09/20/24 16:03

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	0.460	0.343	0.615	0.322	0.664	0.291	0.516	0.272	36.4	0.455		20	3
(T) Barium	*122*				*109*	*109*							
(T) Yttrium	*107*				*103*	*103*							

Laboratory Control Sample (LCS)

(LCS) R4125059-2 09/20/24 16:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.18	83.5	80.0-120	
(T) Barium			*123*		
(T) Yttrium			*113*		

L1773936-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773936-06 09/20/24 16:03 • (MS) R4125059-3 09/20/24 16:03 • (MSD) R4125059-4 09/20/24 16:03

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	0.0260	15.1	12.5	90.4	74.8	1	70.0-130			18.9		20
(T) Barium		*124*			*124*	*98.3*							
(T) Yttrium		*114*			*113*	*110*							

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.

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.

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 8/30/2024 Results Requested By: 9/16/2024

Workorder: 92750652 Workorder Name: Bremo_2SA2024_CCR&VSWMR_G

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3	Ra 226/903.0	Ra 228/904.0 + Combined Ra	LAB USE ONLY
1	082924NMW37	PS	8/29/2024 14:10	92750652001	Water	2	X	X	-01
2	082924NMW39S	PS	8/29/2024 12:05	92750652002	Water	2	X	X	-02
3	082924NMW39D	PS	8/29/2024 13:05	92750652003	Water	2	X	X	-03
4									
5									

L1773943

Transfers	Released By	Date/Time	Received By	Date/Time
1	HH/Pace HH	9/3/24 18:2		
2				
3			Christopher L. Gallien	9/4/24 0900

Comments

Cooler Temperature on Receipt _____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

3.2+.3=3.5

Sample Receipt Checklist

COC Seal Present/Intact:	X 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	6 TOTAL	
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N		

Pace

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 92750652
(To be completed by sending lab)

Sending Project No:	92750652
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	09/01/24
REQUESTED COMPLETION DATE:	**9/16/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra 226/903.0	BP1N		HNO3	3	SI-38RAD	SUB PASI RAD
Ra 228/904.0 + Combined Ra	BP1N		HNO3	3	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

F034

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 8/29/2024 Results Requested By: 9/13/2024

Workorder: 92750325 Workorder Name: Bremo_2SA2024_CCR&VSWMR_F

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Ra 226/903.0	Ra 228/904.0 + Combined Ra											LAB USE ONLY
1	082824NMW1	PS	8/28/2024 15:05	92750325001	Water	2						X	X											09
2	082824NMW12	PS	8/28/2024 15:35	92750325002	Water	2						X	X											01
3	082824NMW31	PS	8/28/2024 15:55	92750325003	Water	2						X	X											03
4	082924NMW13	PS	8/29/2024 12:15	92750325004	Water	2						X	X											04
5	082924NMW32S	PS	8/29/2024 15:25	92750325005	Water	2						X	X											05
6	082924NMW32D	RQS	8/29/2024 14:25	92750325006	Water	6						X	X											06
7	082924NWPFDDUPLICATE	PS	8/29/2024 13:15	92750325007	Water	2						X	X											07

L1773943
L1773952 IN 10/23/24

-04

Transfers	Released By	Date/Time	Received By	Date/Time
1	HHW/pace HL	9/3/24		
2				
3			Christopher M Tollison	9/4/24 0900

Comments: *MS/MSD required on sample 92750325-006*

Cooler Temperature on Receipt _____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

3.2+.3=3.5

Sample Receipt Checklist

COC Seal Present/Intact:	X Y N	If Applicable:	
COC Signed Accurate:	X Y N	VOA Zero Headspace:	Y N
Bottles Arrive Intact:	X Y N	Pres. Correct/Check:	2 Y N
Correct Bottles Used:	X Y N	18 TOTAL	
Sufficient Volume Sent:	Y N		
RA Screen <0.5 mR/hr:	X Y N		

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

October 13, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on August 27, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott for
Angela Baioni
angela.baioni@pacelabs.com
612-473-6801
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Laboratory ID: 99030
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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(704)875-9092

SAMPLE SUMMARY

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92749755001	**082624NFBBLANK**	Water	08/26/24 12:30	08/27/24 10:10

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SAMPLE ANALYTE COUNT

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92749755001	**082624NFBBLANK**	EPA 7199	VJM	1	PASI-C
		EPA 6010D	DBB1	16	PASI-A
		EPA 6020B	KRL	7	PASI-A
		EPA 7470A	KML	1	PASI-A
		SM 2540C-2015	CMW1	1	PASI-A
		EPA 350.1 Rev 2.0 1993	NCF	1	PASI-A
		EPA 9056A	CDC	4	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

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SUMMARY OF DETECTION

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92749755001	**082624NFBBLANK**					
EPA 7199	Chromium, Hexavalent	0.025	ug/L	0.025	08/27/24 12:22	

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 878479

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749754004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4524622)
  - Chromium, Hexavalent
- MSD (Lab ID: 4524675)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **EPA 6010D**
Description: 6010 MET ICP
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 6010D by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879094

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749361003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4527744)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **EPA 6020B**
Description: 6020 MET ICPMS
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 6020B by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 879095

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749361003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4527747)
  - Manganese
- MSD (Lab ID: 4527748)
  - Manganese

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 7470A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 880526

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92750377007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 4534644)
  - Mercury
- MSD (Lab ID: 4534645)
  - Mercury

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **SM 2540C-2015**
Description: 2540C Total Dissolved Solids
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for SM 2540C-2015 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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Huntersville, NC 28078
(704)875-9092

PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **EPA 350.1 Rev 2.0 1993**
Description: 350.1 Ammonia
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 350.1 Rev 2.0 1993 by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Method: **EPA 9056A**
Description: 9056 IC Anions 48hr
Client: Dominion Energy_VA
Date: October 13, 2024

General Information:
1 sample was analyzed for EPA 9056A by Pace Analytical Services Asheville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.
- 082624NFBBLANK (Lab ID: 92749755001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 878974

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92749754004,92750091004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 4527136)
  - Nitrate as N
- MS (Lab ID: 4527567)
  - Sulfate
- MSD (Lab ID: 4527137)
  - Nitrate as N
- MSD (Lab ID: 4527568)
  - Sulfate

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Sample: 082624NFBBLANK **Lab ID: 92749755001** Collected: 08/26/24 12:30 Received: 08/27/24 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.025**	ug/L	0.025	0.0043	1		08/27/24 12:22	18540-29-9	
6010 MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	ug/L	5.0	3.6	1	08/29/24 11:40	09/05/24 00:02	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	08/29/24 11:40	09/05/24 00:02	7440-38-2	
Barium	ND	ug/L	5.0	0.79	1	08/29/24 11:40	09/05/24 00:02	7440-39-3	
Beryllium	ND	ug/L	1.0	0.16	1	08/29/24 11:40	09/05/24 00:02	7440-41-7	
Boron	ND	ug/L	50.0	4.0	1	08/29/24 11:40	09/05/24 00:02	7440-42-8	
Cadmium	ND	ug/L	1.0	0.29	1	08/29/24 11:40	09/05/24 00:02	7440-43-9	
Calcium	ND	ug/L	100	14.7	1	08/29/24 11:40	09/05/24 00:02	7440-70-2	
Chromium	ND	ug/L	5.0	0.63	1	08/29/24 11:40	09/05/24 00:02	7440-47-3	
Copper	ND	ug/L	5.0	0.62	1	08/29/24 11:40	09/05/24 00:02	7440-50-8	
Molybdenum	ND	ug/L	5.0	2.6	1	08/29/24 11:40	09/05/24 00:02	7439-98-7	
Nickel	ND	ug/L	5.0	0.88	1	08/29/24 11:40	09/05/24 00:02	7440-02-0	
Selenium	ND	ug/L	10.0	4.1	1	08/29/24 11:40	09/05/24 00:02	7782-49-2	
Silver	ND	ug/L	5.0	0.49	1	08/29/24 11:40	09/05/24 00:02	7440-22-4	
Hardness, Total(SM 2340B)	ND	ug/L	662	36.8	1	08/29/24 11:40	09/05/24 00:02		
Vanadium	ND	ug/L	5.0	1.6	1	08/29/24 11:40	09/05/24 00:02	7440-62-2	
Zinc	ND	ug/L	10.0	3.0	1	08/29/24 11:40	09/05/24 00:02	7440-66-6	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Cobalt	ND	ug/L	1.0	0.14	1	08/29/24 12:00	09/04/24 02:47	7440-48-4	
Iron	ND	ug/L	20.0	3.0	1	08/29/24 12:00	09/04/24 02:47	7439-89-6	
Lead	ND	ug/L	1.0	0.18	1	08/29/24 12:00	09/04/24 02:47	7439-92-1	
Lithium	ND	ug/L	2.5	0.33	1	08/29/24 12:00	09/04/24 02:47	7439-93-2	
Manganese	ND	ug/L	2.0	0.24	1	08/29/24 12:00	09/04/24 02:47	7439-96-5	
Thallium	ND	ug/L	0.20	0.028	1	08/29/24 12:00	09/04/24 02:47	7440-28-0	
Tin	ND	ug/L	1.0	0.14	1	08/29/24 12:00	09/04/24 02:47	7440-31-5	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.20	0.12	1	09/05/24 19:56	09/12/24 10:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C-2015 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		08/30/24 15:22		
350.1 Ammonia	Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville								
Nitrogen, Ammonia	ND	mg/L	0.10	0.031	1		09/05/24 16:10	7664-41-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Sample: 082624NFBBLANK **Lab ID: 92749755001** Collected: 08/26/24 12:30 Received: 08/27/24 10:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions 48hr	Analytical Method: EPA 9056A Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		08/29/24 04:02	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/24 04:02	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.060	1		08/29/24 04:02	14797-55-8	H1
Sulfate	ND	mg/L	1.0	0.50	1		08/29/24 04:02	14808-79-8	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 878479
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92749755001

METHOD BLANK: 4524620 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	08/27/24 10:16	

LABORATORY CONTROL SAMPLE: 4524621

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.097	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4524622 4524675

Parameter	Units	92749754004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.25	0.1	0.1	1.1	1.1	870	840	90-110	3	20	H1,M1

SAMPLE DUPLICATE: 4524623

Parameter	Units	92749754001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.0080J	0.012J		20	H1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 880526
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749755001

METHOD BLANK: 4534642 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.12	09/12/24 09:34	

LABORATORY CONTROL SAMPLE: 4534643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534644 4534645

Parameter	Units	92750377007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	1.8	1.8	70	70	75-125	0	25	M1

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 879094
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749755001

METHOD BLANK: 4527741 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.6	09/04/24 23:08	
Arsenic	ug/L	ND	10.0	2.5	09/04/24 23:08	
Barium	ug/L	ND	5.0	0.79	09/04/24 23:08	
Beryllium	ug/L	ND	1.0	0.16	09/04/24 23:08	
Boron	ug/L	ND	50.0	4.0	09/04/24 23:08	
Cadmium	ug/L	ND	1.0	0.29	09/04/24 23:08	
Calcium	ug/L	15.2J	100	14.7	09/04/24 23:08	
Chromium	ug/L	ND	5.0	0.63	09/04/24 23:08	
Copper	ug/L	ND	5.0	0.62	09/04/24 23:08	
Hardness, Total(SM 2340B)	ug/L	61.4J	662	36.8	09/04/24 23:08	
Molybdenum	ug/L	ND	5.0	2.6	09/04/24 23:08	
Nickel	ug/L	ND	5.0	0.88	09/04/24 23:08	
Selenium	ug/L	ND	10.0	4.1	09/04/24 23:08	
Silver	ug/L	ND	5.0	0.49	09/04/24 23:08	
Vanadium	ug/L	ND	5.0	1.6	09/04/24 23:08	
Zinc	ug/L	ND	10.0	3.0	09/04/24 23:08	

LABORATORY CONTROL SAMPLE: 4527742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	446	89	80-120	
Arsenic	ug/L	500	447	89	80-120	
Barium	ug/L	500	450	90	80-120	
Beryllium	ug/L	500	435	87	80-120	
Boron	ug/L	500	460	92	80-120	
Cadmium	ug/L	500	457	91	80-120	
Calcium	ug/L	5000	4490	90	80-120	
Chromium	ug/L	500	436	87	80-120	
Copper	ug/L	500	443	89	80-120	
Hardness, Total(SM 2340B)	ug/L	33100	28600	86	80-120	
Molybdenum	ug/L	500	447	89	80-120	
Nickel	ug/L	500	440	88	80-120	
Selenium	ug/L	500	448	90	80-120	
Silver	ug/L	250	238	95	80-120	
Vanadium	ug/L	500	441	88	80-120	
Zinc	ug/L	500	451	90	80-120	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527743 4527744

Parameter	Units	92749361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	511	474	102	95	75-125	8	20	
Arsenic	ug/L	ND	500	500	502	471	100	94	75-125	6	20	
Barium	ug/L	105	500	500	608	553	101	90	75-125	10	20	
Beryllium	ug/L	0.40J	500	500	497	459	99	92	75-125	8	20	
Boron	ug/L	94.0	500	500	610	575	103	96	75-125	6	20	
Cadmium	ug/L	ND	500	500	492	461	98	92	75-125	7	20	
Calcium	ug/L	14400	5000	5000	19900	18000	110	72	75-125	10	20	M1
Chromium	ug/L	0.67J	500	500	491	451	98	90	75-125	9	20	
Copper	ug/L	ND	500	500	503	463	100	92	75-125	8	20	
Hardness, Total(SM 2340B)	ug/L	71100	33100	33100	107000	97600	109	80	75-125	9	20	
Molybdenum	ug/L	ND	500	500	497	462	99	92	75-125	7	20	
Nickel	ug/L	14.0	500	500	503	464	98	90	75-125	8	20	
Selenium	ug/L	ND	500	500	513	486	103	97	75-125	6	20	
Silver	ug/L	ND	250	250	255	245	102	98	75-125	4	20	
Vanadium	ug/L	ND	500	500	497	460	99	92	75-125	8	20	
Zinc	ug/L	25.5	500	500	520	482	99	91	75-125	8	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 879095
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749755001

METHOD BLANK: 4527745 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	ug/L	ND	1.0	0.14	09/04/24 01:36	
Iron	ug/L	4.8J	20.0	3.0	09/04/24 01:36	
Lead	ug/L	ND	1.0	0.18	09/04/24 01:36	
Lithium	ug/L	ND	2.5	0.33	09/04/24 01:36	
Manganese	ug/L	ND	2.0	0.24	09/04/24 01:36	
Thallium	ug/L	ND	0.20	0.028	09/04/24 01:36	
Tin	ug/L	ND	1.0	0.14	09/04/24 01:36	

LABORATORY CONTROL SAMPLE: 4527746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	ug/L	50	53.0	106	80-120	
Iron	ug/L	1250	1350	108	80-120	
Lead	ug/L	50	50.5	101	80-120	
Lithium	ug/L	50	52.6	105	80-120	
Manganese	ug/L	50	52.6	105	80-120	
Thallium	ug/L	25	25.8	103	80-120	
Tin	ug/L	50	51.2	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527747 4527748

Parameter	Units	92749361003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	ug/L	21.7	50	50	73.7	74.3	104	105	75-125	1	20	
Iron	ug/L	8650	1250	1250	9910	9810	101	93	75-125	1	20	
Lead	ug/L	ND	50	50	51.1	51.6	102	103	75-125	1	20	
Lithium	ug/L	28.6	50	50	79.1	79.7	101	102	75-125	1	20	
Manganese	ug/L	754	50	50	843	779	177	51	75-125	8	20	M1
Thallium	ug/L	ND	25	25	25.9	26.3	103	105	75-125	2	20	
Tin	ug/L	ND	50	50	51.5	47.7	103	95	75-125	8	20	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 879383
QC Batch Method: SM 2540C-2015
Analysis Method: SM 2540C-2015
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749755001

METHOD BLANK: 4529543 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	08/30/24 15:22	

LABORATORY CONTROL SAMPLE: 4529544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	234	93	80-120	

SAMPLE DUPLICATE: 4529545

Parameter	Units	92749752001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	152	157	3	25	

SAMPLE DUPLICATE: 4529546

Parameter	Units	92750043002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	694	679	2	25	

SAMPLE DUPLICATE: 4530479

Parameter	Units	92750043003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	332	1	25	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 880535
QC Batch Method: EPA 350.1 Rev 2.0 1993
Analysis Method: EPA 350.1 Rev 2.0 1993
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749755001

METHOD BLANK: 4534692 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.031	09/05/24 16:15	

LABORATORY CONTROL SAMPLE: 4534693

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534694 4534695

Parameter	Units	92749653007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	100	100	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4534696 4534697

Parameter	Units	92749754004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	4.8	4.8	97	97	90-110	0	10	

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QUALITY CONTROL DATA

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

QC Batch: 878974
QC Batch Method: EPA 9056A
Analysis Method: EPA 9056A
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92749755001

METHOD BLANK: 4527134 Matrix: Water
Associated Lab Samples: 92749755001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/28/24 18:30	
Fluoride	mg/L	ND	0.10	0.050	08/28/24 18:30	
Nitrate as N	mg/L	ND	0.10	0.060	08/28/24 18:30	
Sulfate	mg/L	ND	1.0	0.50	08/28/24 18:30	

LABORATORY CONTROL SAMPLE: 4527135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.4	105	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Nitrate as N	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	50	53.3	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527136 4527137

Parameter	Units	92750091004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	50.9	52.5	100	103	90-110	3	10	
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	97	100	90-110	2	10	
Nitrate as N	mg/L	3.5	2.5	2.5	4.9	4.7	56	51	90-110	3	10	M1
Sulfate	mg/L	18.1	50	50	69.1	70.7	102	105	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4527567 4527568

Parameter	Units	92749754004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	9.6	50	50	59.6	60.7	100	102	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	95	97	90-110	2	10	
Nitrate as N	mg/L	0.26	2.5	2.5	2.7	2.8	98	100	90-110	2	10	H1
Sulfate	mg/L	93.6	50	50	138	138	88	88	90-110	0	10	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo_2SA2024_CCR&VSWMR_H
Pace Project No.: 92749755

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92749755001	**082624NFBBLANK**	EPA 7199	878479		
92749755001	**082624NFBBLANK**	EPA 3010A	879094	EPA 6010D	879275
92749755001	**082624NFBBLANK**	EPA 3010A	879095	EPA 6020B	879262
92749755001	**082624NFBBLANK**	EPA 7470A	880526	EPA 7470A	880793
92749755001	**082624NFBBLANK**	SM 2540C-2015	879383		
92749755001	**082624NFBBLANK**	EPA 350.1 Rev 2.0 1993	880535		
92749755001	**082624NFBBLANK**	EPA 9056A	878974		

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Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project # WO#: 92749755

92749755

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Custody Seal Present? ☐ Yes ☑ No Seals Intact? ☐ Yes ☐ No ☑ N/A

Date/Initials Person Examining Contents: GMH 8/27/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T076

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp: 1.3 Correction Factor: Add/Subtract (°C) 0

Cooler Temp Corrected (°C): 1.3

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg
**Bottom half of box is to list number of bottles
***Check all unpreserved Nitrates for chlorine

Project #

WO#: 92749755

PM: AMB Due Date: 09/11/24

CLIENT: 92-DomEnergy

Laboratory Receiving Location: Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Client_____ Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP1N	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG9A-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
CC							✓																							
1		1	1		2	1	1																				1	✓		
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Hexavalent Chromium pH Adjustment

Project #

WO#: 92749755
PM: AMB Due Date: 09/11/24
CLIENT: 92-DomEnergy

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
FBBLANK	GMH	9.2				

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shidle@wsp.com
Customer Project #:			
Project Name:	Bremo_2SA2024_CCR&VSWMR_H	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

Specify Container Size **: 2 4 3 7 3 1

Identify Container Preservative Type***: 1 3 2 1 1 2

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: **Angela Baioni**

AcctNum / Client ID:

Table #:

Profile / Template: **13861**

Prelog / Bottle Ord. ID: **EZ 3146518**

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals + Hardness	7199 Chromium, Hexavalent	9056 IC - Cl/Fl/SO4/NO3	RADS 226/228	Sample Comment	Preservation non-conformance identified for sample.
08[X]24NFBBLANK	WT	G			08/24/24	1230	7			X	X	X	X	X	X	*ALL SAMPLES PRESERVED ON ICE *	
																Taken near MW-11 with Lab DI water -Tracking ID #'s 8184 0816 3139 8184 0816 3139	

Additional Instructions from Pace®:

COC ID: Bremo_2SA2024_CCR&VSWMR_H_1_1

Collected By: (Printed Name) Zoey Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C) | Corrected Temp. (°C) | On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	08/24/24 1755		8/27/24 1010	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ANALYTICAL REPORT

October 04, 2024

Pace Analytical - Huntersville, NC

Sample Delivery Group:	L1773945
Samples Received:	09/04/2024
Project Number:	92749755
Description:	Bremo_2SA2024_CCR&CCR&VSWMR_H
Site:	001
Report To:	Angela Baioni 9800 Kincey Avenue, Suite 100 Huntersville, NC 28078

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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082624NFBBLANK L1773945-01 5

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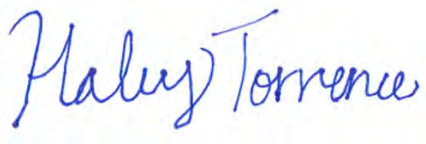
082624NFBBLANK L1773945-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/26/24 12:30	09/04/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2357325	1	09/27/24 09:00	10/03/24 13:40	ASN	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2356942	1	09/11/24 18:43	09/20/24 16:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2357325	1	09/27/24 09:00	10/03/24 13:40	ASN	Mt. Juliet, TN

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

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.285	J	0.242	0.387	0.341	0.118	10/03/2024 13:40	WG2357325
(T) Barium	*96.6*					*30.0-143*	*10/03/2024 13:40*	WG2357325

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	-0.0109	U	0.226	0.425	0.418	0.219	09/20/2024 16:03	WG2356942
(T) Barium	*114*					*30.0-143*	*09/20/2024 16:03*	WG2356942
(T) Yttrium	*101*					*30.0-136*	*09/20/2024 16:03*	WG2356942

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.285	J	0.331	0.539	10/03/2024 13:40	WG2357325

Method Blank (MB)

(MB) R4128124-1 09/16/24 20:23

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.000	U	0.0621	0.138	0.0523
(T) Barium	*109*		*109*		

L1773945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1773945-01 10/03/24 13:40 • (DUP) R4128124-7 10/03/24 13:40

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	0.285	0.242	0.341	0.118	0.281	0.477	0.864	0.328	1.45	0.00767	U	20	3
(T) Barium	*96.6*				*97.6*	*97.6*							

Laboratory Control Sample (LCS)

(LCS) R4128124-2 09/16/24 20:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.39	108	75.0-125	
(T) Barium			*108*		

L1773936-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773936-06 09/16/24 22:24 • (MS) R4128124-3 09/16/24 20:23 • (MSD) R4128124-4 09/16/24 20:23

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	0.202	21.4	19.3	106	95.6	1	75.0-125			10.3		20
(T) Barium		*102*			*109*	*111*							

Method Blank (MB)

(MB) R4125059-1 09/20/24 16:03

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	-0.430	U	0.181	0.346	0.181
(T) Barium	*122*		*122*		
(T) Yttrium	*93.1*		*93.1*		

L1775404-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1775404-08 09/20/24 16:03 • (DUP) R4125059-5 09/20/24 16:03

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.460	0.343	0.615	0.322	0.664	0.291	0.516	0.272	36.4	0.455		20	3
(T) Barium	*122*				*109*	*109*							
(T) Yttrium	*107*				*103*	*103*							

Laboratory Control Sample (LCS)

(LCS) R4125059-2 09/20/24 16:03

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.18	83.5	80.0-120	
(T) Barium			*123*		
(T) Yttrium			*113*		

L1773936-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1773936-06 09/20/24 16:03 • (MS) R4125059-3 09/20/24 16:03 • (MSD) R4125059-4 09/20/24 16:03

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	0.0260	15.1	12.5	90.4	74.8	1	70.0-130			18.9		20
(T) Barium		*124*			*124*	*98.3*							
(T) Yttrium		*114*			*113*	*110*							

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.

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.

F039

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: [X] Yes ☐ No

Workorder: 92749755 Workorder Name: Bremo_2SA2024_CCR&VSWMR_H

Owner Received Date: 8/27/2024 Results Requested By: 9/11/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Ra 226/903.0	Ra 228/904.0 + Combined Ra	LAB USE ONLY
1	082624NFBBLANK	PS	8/26/2024 12:30	92749755001	Water	2	X	X	-01
2									
3									
4									
5									

L1773045

Transfers	Released By	Date/Time	Received By	Date/Time
1	HHB/Pace MCL	9/3/24		
2				
3			Christopher Sellers	9/4/24 0920

Comments

Cooler Temperature on Receipt ____°C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	
Bottles arrive intact:	Y N	Pres. Correct/Check:	Z
Correct bottles used:	Y N		
Sufficient volume sent:	Y N	2 TOTAL	
RA Screen <0.5 mR/hr:	Y N		

Pace

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

INTER_LABORATORY WORK ORDER # 92749755
(To be completed by sending lab)

Sending Project No:	92749755
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	09/01/24
REQUESTED COMPLETION DATE:	**9/11/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra 226/903.0	BP1N		HNO3	1	SI-38RAD	SUB PASI RAD
Ra 228/904.0 + Combined Ra	BP1N		HNO3	1	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

APPENDIX E.3

LABORATORY ANALYTICAL RESULTS

SECOND SEMI-ANNUAL GROUNDWATER RESAMPLE EVENT

(NOVEMBER 2024)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 21, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on November 15, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott

Stephanie Knott
stephanie.knott@pacelabs.com
704-977-0981
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92763893001	**111424NMW39D**	Water	11/14/24 13:30	11/15/24 10:30
92763893002	**1114FBBLANK**	Water	11/14/24 13:45	11/15/24 10:30

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SAMPLE ANALYTE COUNT

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92763893001	**111424NMW39D**	EPA 7199	VJM	1	PASI-C
92763893002	**1114FBBLANK**	EPA 7199	VJM	1	PASI-C

PASI-C = Pace Analytical Services - Charlotte

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SUMMARY OF DETECTION

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92763893001	**111424NMW39D**					
EPA 7199	Chromium, Hexavalent	0.12	ug/L	0.025	11/15/24 12:49	M1
92763893002	**1114FBBLANK**					
EPA 7199	Chromium, Hexavalent	0.031	ug/L	0.025	11/15/24 13:10	

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PROJECT NARRATIVE

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: November 21, 2024

General Information:
2 samples were analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 896257

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92763893001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4613464)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 896257

- 111424NMW39D (Lab ID: 92763893001)
  - Chromium, Hexavalent

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Sample: 111424NMW39D **Lab ID: 92763893001** Collected: 11/14/24 13:30 Received: 11/15/24 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.12**	ug/L	0.025	0.0043	1		11/15/24 12:49	18540-29-9	M1

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ANALYTICAL RESULTS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Sample: 1114FBBLANK **Lab ID: 92763893002** Collected: 11/14/24 13:45 Received: 11/15/24 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.031**	ug/L	0.025	0.0043	1		11/15/24 13:10	18540-29-9	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

QC Batch: 896257
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92763893001, 92763893002

METHOD BLANK: 4613461 Matrix: Water
Associated Lab Samples: 92763893001, 92763893002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	11/15/24 08:38	

LABORATORY CONTROL SAMPLE: 4613462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.096	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4613463 4613464

Parameter	Units	92763893001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.12	0.1	0.1	0.22	0.23	100	112	90-110	5	20	H1,M1

SAMPLE DUPLICATE: 4613512

Parameter	Units	92763893001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.12	0.12	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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(704)875-9092

QUALIFIERS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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Huntersville, NC 28078
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92763893001	**111424NMW39D**	EPA 7199	896257		
92763893002	**1114FBBLANK**	EPA 7199	896257		

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Pace

Receipt

Effective Date: 5/24/2024

Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO# : 92763893

92763893

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:____

Carrier Tracking Number: _____

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** ARL 11-15-24

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92TDB2 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 0.6 **Correction Factor:** Add / Subtract (°C) 0.0

Corrected Cooler Temp (°C): 0.6

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling proce has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: NT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.
Time opened: 1030 Temp: 0.6
Time: put in cooler
Time: Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

Qualtrax Document ID: 70677

Page 1 of 2

Pace

Receipt

Effective Date: 5/24/2024

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO# : 92763893

PM: SK **Due Date: 12/03/24**

CLIENT: 92-DomEnergy

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☐ **Raleigh** ☐ **Mechanicsville** ☐ **Atlanta** ☐ **Kernersville** ☐

Client_____ Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
CC																													
1																										X			
2																										X			
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

COCID. BremoPS-2SA24_HexCrResample_HVL-GrpA-1-1

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	BremoPS_2SA24_CCR&VSWMR_HexCr_GrpA	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	7199 Chromium, Hexavalent	Sample Comment
1114_24NMW39D	WT	G			11/14/24	1330	1			X	all samples preserved on ice
1114FBBLANK	WT	G			11/14/24	1345	1			X	

Specify Container Size **: 10

Identify Container Preservative Type***: 11

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Stephanie Knott

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3171542

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: (Printed Name) Z. Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C) | Corrected Temp. (°C) | On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	11/14/24 1600	ARL Pacefm	11-15-24 1030	779880033313
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
111424 BM W 3IP	APL	9.7	9.1	11-15-24 1030	20 drop 1 drop	224809 / H2SO4 225312 / NaOH
111424 FBBlank	APL	9.9	9.5	1	10drop	224809 / H2SO4

APPENDIX F
HISTORICAL LABORATORY DETECTIONS

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Ammonia													
09/09-13/2019	E350.1	mg/L	--	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	0.46	< 0.070 U	--	--	--	< 0.070 U
03/02-05/2020	E350.1	mg/L	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	--	--	--	< 0.070 U
06/02-05/2020	E350.1	mg/L	--	--	--	--	--	--	--	< 0.070 U	< 0.070 U	0.15	< 0.070 U
08/24-28/2020	E350.1	mg/L	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	0.14	< 0.070 U
12/01-02/2020	E350.2	mg/L	--	--	--	--	--	--	--	< 0.070 U	< 0.070 U	0.17	< 0.070 U
2/23-26/2021	E350.2	mg/L	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U
6/7-10/2021	E350.2	mg/L	--	--	--	--	--	--	--	<0.031 U	<0.031 U	0.17	< 0.070 U
8/30-9/1/2021	E350.2	mg/L	< 0.070 U	< 0.070 U	< 0.070 U	< 0.070 U	0.088 J	0.57	< 0.070 U	< 0.070 U	0.045	0.12	< 0.070 U
11/29/2021	E350.2	mg/L	--	--	--	--	--	--	--	< 0.031 U	< 0.031 U	0.16	< 0.031 U
02/07-09/2022	E350.2	mg/L	0.029 J	< 0.027 U	< 0.027 U	< 0.027 U	0.068 J	0.037 J	< 0.027 U	< 0.027 U	0.040 J	0.13	< 0.027 U
08/29-31/2022	E350.2	mg/L	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	0.49	< 0.027 U	< 0.027 U	< 0.027 U	0.032 J	< 0.027 U
02/13-14/2023	E350.2	mg/L	< 0.031 U	< 0.031 U	< 0.031 U	< 0.031 U	0.038 J	< 0.031 U	< 0.031 U	< 0.031 U	< 0.031 U	0.11	< 0.031 U
8/21-25/2023	E350.2	mg/L	< 0.031 U	< 0.031 U	< 0.031 U	< 0.031 U	0.059 J	0.56	< 0.031 U	< 0.031 U	< 0.031 U	0.13	< 0.031 U
02/12-14/2024	EPA350.1	mg/L	< 0.031 U	< 0.031 U	< 0.031 U	< 0.031 U	0.060 J	0.034 J	< 0.031 U	< 0.031 U	0.33	0.14	< 0.031 U
08/26-29/2024	EPA350.1	mg/L	< 0.031 U	< 0.031 U	< 0.031 U	< 0.031 U	0.048 J	0.50	< 0.031 U	< 0.031 U	< 0.031 U	0.11	< 0.031 U
Arsenic													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.50 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	0.67 J	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	0.67 J	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.14	--	--	--	0.32	0.36	0.3	--	--	--	< 0.05 U
12/05/2017	SW6020	µg/L	< 0.21 U	--	--	--	0.31 J	0.23 J	< 0.21 U	--	--	--	< 0.21 U
01/29-30/2018	SW6020	µg/L	--	< 0.21 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	< 0.21 U	--	--	--	0.26 J	0.40 J	< 0.21 U	--	--	--	< 0.21 U
03/26-28/2018	SW6020A	µg/L	< 0.21 U	--	--	--	0.26 J	0.50 J	< 0.21 U	--	--	--	< 0.21 U
04/30-05/01/2018	SW6010	µg/L	--	< 5.0 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6010	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
06/25-26/2018	SW6010D	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
08/15-16/2018	SW6010D	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
10/15-16/2018	SW6010D	µg/L	< 5.0 U	< 5.0 U	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
03/18-28/2019	SW6010D	µg/L	--	--	< 5.0 U	< 5.0 U	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	--	--	--	< 4.7 U
03/02-05/2020	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	--	--	--	< 4.7 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
08/24-28/2020	SW6010D	µg/L	< 4.7 U	< 4.7 U	8.4 J+	< 4.7 U	< 4.7 U	12.7 J+	< 4.7 U	5.7 J+	< 4.7 U	10.5 J+	4.9 J
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
2/23-26/2021	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
8/30-9/1/2021	SW6010D	µg/L	< 4.7 U	< 11.4 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
02/07-09/2022	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	6.3 J	< 4.7 U	4.8 J	4.8 J	< 4.7 U	< 4.7 U
08/29-31/2022	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
02/13-14/2023	SW6010D	µg/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
8/21-25/2023	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
02/12-14/2024	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
08/26-29/2024	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Barium													
10/27-11/01/2016	SW6020B	µg/L	--	3.6	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	3.6	14.9	5.3	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	3 J	18.4	6.0	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	3.1	13.6	5.2	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	3	13.9	5.0	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	3.2	13.4	5.5	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	2.1 J	10.3	9.0 J+	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	3.1	26.0	5.7	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	13.3	--	--	--	69	277	85.8	--	--	--	< 0.11 U
12/05/2017	SW6020	µg/L	15.5	--	--	--	74.2	255	103	--	--	--	< 0.14 U
01/29-30/2018	SW6010	µg/L	--	3.5 J	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	16.7	--	--	--	70.4	237	88.9	--	--	--	< 0.14 U
03/26-28/2018	SW6020A	µg/L	16.0	--	--	--	68.1	90.5	73.8	--	--	--	0.44
04/30-05/01/2018	SW6010	µg/L	--	3.1 J	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6010	µg/L	15.5	--	--	--	65.0	48.9	68.7	--	--	--	< 2.5 U
06/25-26/2018	SW6010D	µg/L	14.9	--	--	--	66.8	54.9	95.6	--	--	--	< 2.5 U
08/15-16/2018	SW6010D	µg/L	14.1	--	--	--	64.9	119	73.2	--	--	--	< 2.5 U
10/15-16/2018	SW6010D	µg/L	14.9	2.8 J	--	--	67.7	59.8	95.7	--	--	--	< 2.5 U
03/18-28/2019	SW6010D	µg/L	--	--	13.6	21.0	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	2.8 J	12.3	7.6	68.8	168	68.6	--	--	--	< 1.0 U
03/02-05/2020	SW6010D	µg/L	14.0	3.5 J	11.7	7.3	57.9	77.7	63.6	--	--	--	< 1.0 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	76.5	36.6	28.5	< 3.5 U
08/24-28/2020	SW6010D	µg/L	14.4	3.6 J	12.6	7.8	62.4	63.3	67.4	78.1	35.5	24.6	< 3.5 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	82.5	96.6	34.0	< 3.5 U
2/23-26/2021	SW6010D	µg/L	14	< 3.5 U	11.1	6.2	61.7	36.9	66.1	76	34.3	36.3	< 3.5 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	73.8	40.5	26.1	< 3.5 U
8/30-9/1/2021	SW6010D	µg/L	13.8	4.1 J	11.3	5.7	63.3	182	64.2	76.6	41.5	21.9	< 3.5 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	79.4	40.0	20.9	< 3.5 U
02/07-09/2022	SW6010D	µg/L	13.0	< 3.5 U	10.4	5.8	55.1	104	62.2	75.4	35.0	20.7	< 3.5 U
08/29-31/2022	SW6010D	µg/L	12.8	< 3.5 U	11.3	6.0	60.5	142	58.8	79.4	39.9	18.3	< 3.5 U
02/13-14/2023	SW6010D	µg/L	14.4	3.2 J	12.4	6.9 J	63.4	65.8	66.4	68.4	34.7	23.2	< 0.84 U
8/21-25/2023	SW6010D	µg/L	12.7	< 3.5 U	13.2	6.8	66.3	135	61.7	79.2	44.5	19.1	< 3.5 U
02/12-14/2024	SW6010D	µg/L	13.0	3.3 J	11.2	5.3	63.0	57.2	58.1	75.1	42.7	23.4	< 0.79 U
08/26-29/2024	SW6010D	µg/L	12.9	3.0 J	11.5	5.8	66.9	131	56.2	76.9	45.3	19.1	< 0.79 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Beryllium													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.20 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 0.02 U	--	--	--	0.054 J	0.096 J	< 0.02 U	--	--	--	< 0.02 U
12/05/2017	SW6020	µg/L	< 0.064 U	--	--	--	< 0.064 U	< 0.064 U	< 0.064 U	--	--	--	< 0.064 U
01/29-30/2018	SW6010	µg/L	--	< 0.50 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	< 0.064 U	--	--	--	< 0.064 U	< 0.064 U	< 0.064 U	--	--	--	< 0.064 U
03/26-28/2018	SW6020A	µg/L	< 0.064 U	--	--	--	< 0.064 U	0.076 J	< 0.064 U	--	--	--	< 0.064 U
05/14-15/2018	SW6010	µg/L	< 0.50 U	--	--	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	< 0.50 U
06/25-26/2018	SW6010D	µg/L	< 0.50 U	--	--	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	< 0.50 U
08/15-16/2018	SW6010D	µg/L	< 0.50 U	--	--	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	< 0.50 U
10/15-16/2018	SW6010D	µg/L	< 0.50 U	--	--	--	< 0.50 U	< 0.50 U	< 0.50 U	--	--	--	< 0.50 U
03/18-28/2019	SW6010D	µg/L	--	--	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	0.31 J+	< 0.20 U	< 0.20 U	< 0.20 U	0.22 J+	< 0.20 U	< 0.20 U	--	--	--	< 0.20 U
03/02-05/2020	SW6010D	µg/L	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	< 0.20 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
08/24-28/2020	SW6010D	µg/L	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
2/23-26/2021	SW6010D	µg/L	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
8/30-9/1/2021	SW6010D	µg/L	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
02/07-09/2022	SW6010D	µg/L	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
08/29-31/2022	SW6010D	µg/L	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
02/13-14/2023	SW6010D	µg/L	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
8/21-25/2023	SW6010D	µg/L	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U	< 0.70 U
02/12-14/2024	SW6010D	µg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
08/26-29/2024	SW6010D	µg/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Boron													
10/27-11/01/2016	SW6020B	µg/L	--	12.9 J	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	15 B	< 5.7 U	< 5.7 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 5.7 U	< 5.7 U	< 5.7 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	14.4 J	24 J	5.7 J	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 5.7 U	15.5 J+	28.4 J+	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	6 J	29.4 J+	17.5 J+	--	--	--	--	--	--	--
06/19-20/2017	SW6010	µg/L	--	< 25 U	< 25 U	< 25 U	--	--	--	--	--	--	--
07/24-25/2017	SW6010	µg/L	--	< 25 U	< 25 U	< 25 U	--	--	--	--	--	--	--
09/06/2017	SW6010	µg/L	--	< 25 U	--	--	--	--	--	--	--	--	--
10/23/2017	SW6010	µg/L	< 25 U	--	--	--	1320	< 25 U	< 25 U	--	--	--	< 25 U
12/05/2017	SW6010	µg/L	< 25 U	--	--	--	1340	< 25 U	< 25 U	--	--	--	< 25 U
02/14/2018	SW6010	µg/L	< 25 U	--	--	--	1450	< 25 U	< 25 U	--	--	--	< 25 U
03/26-28/2018	SW6010	µg/L	< 25 U	--	--	--	1340	< 25 U	< 25 U	--	--	--	< 25 U
04/30-05/01/2018	SW6010	µg/L	--	< 25 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6010	µg/L	< 25 U	--	--	--	1300	< 25 U	< 25 U	--	--	--	< 25 U
06/25-26/2018	SW6010D	µg/L	< 25 U	--	--	--	1400	29 J	26 J	--	--	--	< 25 U
08/15-16/2018	SW6010D	µg/L	< 25 U	--	--	--	1300	< 25 U	< 25 U	--	--	--	< 25 U
10/15-16/2018	SW6010D	µg/L	< 25 U	< 25 U	--	--	1300	27 J	26 J	--	--	--	< 25 U
03/18-28/2019	SW6010D	µg/L	--	--	< 25 U	< 25 U	--	--	--	--	--	--	< 25 U
3/19-28/2019	SW6010D	µg/L	< 25 U	< 25 U	--	--	1300	< 25 U	< 25 U	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 6.6 U	< 6.6 U	< 6.6 U	1300	12 J	11 J	--	--	--	43 J
03/02-05/2020	SW6010D	µg/L	< 6.6 U	< 6.6 U	< 6.6 U	< 6.6 U	1300	41 J	13 J	--	--	--	< 6.6 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	120	990	66	< 32.4 U
08/24-28/2020	SW6010D	µg/L	< 32.4 U	< 32.4 U	< 32.4 U	< 32.4 U	1230	44 J	< 32.4 U	150	906	61.4	< 32.4 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	203	802	59.9	< 32.4 U
2/23-26/2021	SW6010D	µg/L	< 32.4 U	< 32.4 U	< 32.4 U	< 32.4 U	1250	< 32.4 U	< 32.4 U	177	645	68.7	< 32.4 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	95.7	760	58.4	< 32.4 U
8/30-9/1/2021	SW6010D	µg/L	< 32.4 U	< 32.4 U	< 32.4 U	< 32.4	1160	< 32.4 U	< 32.4 U	78.7	879	52.1	< 32.4 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	74.4	971	44.1	< 32.4 U
02/07-09/2022	SW6010D	µg/L	< 32.4 U	< 32.4 U	< 32.4 U	< 32.4 U	1180	< 32.4 U	< 32.4 U	148	728	42.0 J	< 32.4 U
08/29-31/2022	SW6010D	µg/L	< 32.4 U	< 32.4 U	< 32.4 U	< 32.4 U	1110	< 32.4 U	< 32.4 U	88.8	890	38.4 J	< 32.4 U
02/13-14/2023	SW6010D	µg/L	< 12.4 U	< 12.4 U	< 12.4 U	< 12.4 U	1110	29.1 J	13.2 J	130	467	31.2 J	< 12.4 U
8/21-25/2023	SW6010D	µg/L	< 32.4 U	< 32.4 U	< 32.4 U	< 32.4 U	1200	< 32.4 U	< 32.4 U	101	907	< 32.4 U	< 32.4 U
02/12-14/2024	SW6010D	µg/L	< 4.0 U	< 4.0 U	< 9.0 U	< 4.0 U	1210	< 24.0 U	< 10.2 U	142	614	< 39.5 U	24.0 J
08/26-29/2024	SW6010D	µg/L	< 4.0 U	< 4.0 U	< 4.0 U	< 4.0 U	986	7.4 J	9.2 J	93.0	776	32.7 J	< 4.0 U
Cadmium													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.60 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.60 U	< 0.60 U	< 0.60 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.15	--	--	--	0.062 J	< 0.06 U	< 0.06 U	--	--	--	< 0.06 U
12/05/2017	SW6020	µg/L	0.035 J	--	--	--	< 0.028 U	< 0.028 U	0.038 J	--	--	--	< 0.028 U
01/29-30/2018	SW6010	µg/L	--	< 0.50 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	0.29	--	--	--	< 0.028 U	0.11	0.41	--	--	--	< 0.028 U
03/26-28/2018	SW6020A	µg/L	0.034 J	--	--	--	< 0.028 U	1.6	0.35	--	--	--	< 0.028 U
05/14-15/2018	SW6010	µg/L	< 0.50 U	--	--	--	< 0.50 U	1.3	< 0.50 U	--	--	--	< 0.50 U
06/25-26/2018	SW6010D	µg/L	< 0.50 U	--	--	--	< 0.50 U	1.2	0.56 J	--	--	--	< 0.50 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Cadmium (cont.)													
08/15-16/2018	SW6010D	µg/L	< 0.50 U	--	--	--	< 0.50 U	0.97 J	< 0.50 U	--	--	--	< 0.50 U
10/15-16/2018	SW6010D	µg/L	< 0.50 U	--	--	--	< 0.50 U	0.99 J	< 0.50 U	--	--	--	< 0.50 U
03/18-28/2019	SW6010D	µg/L	--	--	< 0.50 U	< 0.50 U	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	--	--	--	< 0.40 U
03/02-05/2020	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	--	--	--	< 0.40 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
08/24-28/2020	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	0.88 J	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.40 U	0.40 J	< 0.40 U	< 0.40 U
2/23-26/2021	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	0.59 J	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	0.43 J	0.57 J	< 0.40 U	< 0.40 U
8/30-9/1/2021	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	0.44 J	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
02/07-09/2022	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	0.86 J	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
08/29-31/2022	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	0.51 J	< 0.40 U	< 0.40 U	0.41 J	< 0.40 U	< 0.40 U
02/13-14/2023	SW6010D	µg/L	< 0.33 U	< 0.33 U	< 0.33 U	< 0.33 U	< 0.33 U	0.87 J	< 0.33 U	< 0.33 U	< 0.33 U	< 0.33 U	< 0.33 U
8/21-25/2023	SW6010D	µg/L	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
02/12-14/2024	SW6010D	µg/L	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	0.71 J	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
08/26-29/2024	SW6010D	µg/L	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
Calcium													
10/27-11/01/2016	SW6020B	µg/L	--	22800	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	20900	4260	23300	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	23700	5110	33400	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	20700	4700	32500	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	17800	5200	33200	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	19100	5030	35100	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	19400	4320	29800	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	20500	12900	36000	--	--	--	--	--	--	--
09/06/2017	SW6020B	µg/L	--	22600	--	--	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	3030	--	--	--	39900	60400	12300	--	--	--	< 103 U
12/05/2017	SW6020	µg/L	3120	--	--	--	48800	59200	13400	--	--	--	< 11.4 U
02/14/2018	SW6020	µg/L	3100	--	--	--	41600	53600	13200	--	--	--	28.1 J
03/26-28/2018	SW6020A	µg/L	3160	--	--	--	41300	70700	12600	--	--	--	< 11.4 U
04/30-05/01/2018	SW6010	µg/L	--	19600	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6020A	µg/L	3400	--	--	--	40900	67000	14300	--	--	--	< 11 U
06/25-26/2018	SW6010D	µg/L	3200	--	--	--	41100	59000	20400	--	--	--	< 50 U
08/15-16/2018	SW6020A	µg/L	3200	--	--	--	41100	61200	14400	--	--	--	21 J
10/15-16/2018	SW6010D	µg/L	--	19600	--	--	--	--	--	--	--	--	--
10/15-16/2018	SW6020B	µg/L	3100	--	--	--	39100	53300	19900	--	--	--	< 100 U
03/18-28/2019	SW6010D	µg/L	--	--	4900	32900	--	--	--	--	--	--	< 50 U
3/19-28/2019	SW6010D	µg/L	3200	19000	--	--	37200	52400	18100	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	19600	5000	31200	38000	57400	12900	--	--	--	< 24 U
03/02-05/2020	SW6010D	µg/L	3000	19700	5000	29800	34200	69600	13200	--	--	--	< 24 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	36200	37000	35500	< 94.2 U
08/24-28/2020	SW6010D	µg/L	2900	20300	4800	28700	35300	62200	12700	33800	33900	35400	< 94.2 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	38100	40300	40700	< 94.2 U
2/23-26/2021	SW6010D	µg/L	3050	19700	4430	29300	33900	54100	15000	37300	33300	43200	< 94.2 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	36000	35300	39200	< 94.2 U
8/30-9/1/2021	SW6010D	µg/L	2890	19500	4580	28700	33300	49600	11900	37000	34400	33500	< 94.2 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	38700	35700	33000	< 94.2 U
02/07-09/2022	SW6010D	µg/L	3110	20500	4610	30900	34000	63100	13400	38300	34300	33900	< 94.2 U
08/29-31/2022	SW6010D	µg/L	3050	19700	4760	25700	34800	53800	11500	39700	36900	34500	< 94.2 U
02/13-14/2023	SW6010D	µg/L	2990	21200	4560	29800	35000	59200	13100	35200	30200	28900	< 190 U
8/21-25/2023	SW6010D	µg/L	3230	20400	4910	26600	63400	50600	11800	40100	39800	32800	< 94.2 U
02/12-14/2024	SW6010D	µg/L	2970	19900	4390	27300	34500	52000	11700	35400	33500	32200	< 14.7 U
08/26-29/2024	SW6010D	µg/L	3370	20300	4620	26200	36500	45100	11700	40000	36700	34400	< 14.7 U
Chloride													
10/27-11/01/2016	SW9056A	mg/L	--	8.3	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW9056A	mg/L	--	7.3	3.1	2.5	--	--	--	--	--	--	--
01/18-19/2017	SW9056A	mg/L	--	8.5	3.8	3.3	--	--	--	--	--	--	--
02/28-03/02/2017	SW9056A	mg/L	--	8.1	3.7	3.1	--	--	--	--	--	--	--
04/10-12/2017	SW9056A	mg/L	--	8.0	3.6	3.1	--	--	--	--	--	--	--
05/11-12/2017	SW9056A	mg/L	--	8.2	3.5	3.1	--	--	--	--	--	--	--
06/19-20/2017	SW9056A	mg/L	--	8.8	3.7	3.3	--	--	--	--	--	--	--
07/24-25/2017	SW9056A	mg/L	--	8.2	3.2	2.8	--	--	--	--	--	--	--
09/06/2017	E300	mg/L	--	8.5	--	--	--	--	--	--	--	--	--
10/23/2017	SW9056A	mg/L	2.9	--	--	--	18.3	92.3	8.5	--	--	--	< 0.50 U
12/05/2017	SW9056A	mg/L	3.0	--	--	--	17.2	94.9	7.2	--	--	--	< 0.50 U
02/14/2018	SW9056A	mg/L	3.5	--	--	--	15.7	91.7	6.1	--	--	--	< 0.50 U
03/26-28/2018	SW9056A	mg/L	3.2	--	--	--	14.0	17.4	5.3	--	--	--	< 0.50 U
04/30-05/01/2018	E300	mg/L	--	9.4	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW9056A	mg/L	4.0	--	--	--	14.1	13.0	5.1	--	--	--	< 0.50 U
06/25-26/2018	SW9056A	mg/L	4.4	--	--	--	14.0	14.4	4.9	--	--	--	< 0.50 U
08/15-16/2018	SW9056A	mg/L	4.6	--	--	--	14.0	56.6	5.9	--	--	--	< 0.50 U
10/15-16/2018	E300	mg/L	--	10.2	--	--	--	--	--	--	--	--	--
10/15-16/2018	SW9056A	mg/L	4.5	--	--	--	12.6	12.0	4.4	--	--	--	< 0.50 U
03/18-28/2019	E300	mg/L	--	--	3.6	2.9	--	--	--	--	--	--	< 0.60 U
3/19-28/2019	E300	mg/L	3.7	9.4	--	--	9.7	6.8	4.2	--	--	--	--
09/09-13/2019	SW9056A	mg/L	--	8.0	3.7	3.1	9.0	71.2	5.7	--	--	--	< 0.60 U
03/02-05/2020	SW9056A	mg/L	3.0	8.2	3.8	3.0	7.0	12.9	3.6	--	--	--	< 0.60 U
06/02-05/2020	SW9056A	mg/L	--	--	--	--	--	--	--	11.8	4.1	40.1	< 0.60 U
08/24-28/2020	SW9056A	mg/L	2.5	8.8	3.6	2.9	5.9	8.5	4.0	11.5	1.8	35.5	< 0.60 U
12/01-02/2020	SW9056A	mg/L	--	--	--	--	--	--	--	9.1	2.5	45.2	< 0.60 U
2/23-26/2021	SW9056A	mg/L	2.5	9.9	3.4	2.9	5.3	7.6	1.9	8.7	0.84 J	45.2	< 0.60 U
6/7-10/2021	SW9056A	mg/L	--	--	--	--	--	--	--	11.6	2.5	38.5	< 0.60 U
8/30-9/1/2021	SW9056A	mg/L	2.1	7.7	3.0	2.6	4.5	81.7	3.4	11.6	2.4	27.2	< 0.60 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Chloride (cont.)													
11/29/2021	SW9056A	mg/L	--	--	--	--	--	--	--	13.2 J-	1.6 J-	27.6 J-	< 0.60 U
02/07-09/2022	SW9056A	mg/L	2.7	9.0	3.3	2.9	4.1	12.7	2.7	9.1	0.91 J	26.3	< 0.60 U
08/29-31/2022	SW9056A	mg/L	2.3	9.7	3.5	3.1	4.4	84.1	3.0	12.2	1.6	25.1	< 0.60 U
02/13-14/2023	SW9056A	mg/L	2.8	10.5	3.5	3.2	3.9	9.4	2.0	8.8	0.87 J	25.8	< 0.60 U
8/21-25/2023	SW9056A	mg/L	1.9	11.0	3.1	2.8	4.1	72.6	2.5	11.4	1.8	20.1	< 0.60 U
02/12-14/2024	SW9056A	mg/L	2.6	11.4	3.3	3.0	3.6	10.1	2.0	8.7	0.87 J	25.9	< 0.60 U
08/26-29/2024	SW9056A	mg/L	2.1	11.2	3.6	2.9	5.0	70.2	2.4	12.1	1.9	27.1	< 0.60 U
Chromium													
10/27-11/01/2016	SW6020B	µg/L	--	< 1.00 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 1.00 U	< 1.0 U	< 1.0 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 1.00 U	< 1.0 U	< 1.0 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 1.00 U	< 1.0 U	< 1.0 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 1.00 U	< 1.0 U	< 1.0 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 1.00 U	< 1.0 U	< 1.0 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 1.00 U	< 1.0 U	5.2 J+	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	1.2 J+	1.0 J	< 1.0 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.51 J+	--	--	--	0.42 J+	1.5 J+	0.48 J+	--	--	--	0.12 J
12/05/2017	SW6020	µg/L	0.21 J	--	--	--	< 0.13 U	0.17 J	0.16 J	--	--	--	< 0.13 U
01/29-30/2018	SW6010	µg/L	--	< 2.50 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	0.31 J	--	--	--	0.17 J	0.58	0.38 J	--	--	--	< 0.13 U
03/26-28/2018	SW6020A	µg/L	0.24 J	--	--	--	< 0.13 U	< 0.13 U	0.18 J	--	--	--	< 0.13 U
05/14-15/2018	SW6010	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
06/25-26/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
08/15-16/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
10/15-16/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
03/18-28/2019	SW6010D	µg/L	--	--	< 2.5 U	< 2.5 U	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	--	--	--	< 1.0 U
03/02-05/2020	SW6010D	µg/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	--	--	--	< 1.0 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.7 U	< 3.7 U	< 3.7 U	< 1.0 U
08/24-28/2020	SW6010D	µg/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.7 U	7.2	< 3.7 U	< 3.7 U
2/23-26/2021	SW6010D	µg/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
8/30-9/1/2021	SW6010D	µg/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
02/07-09/2022	SW6010D	µg/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
08/29-31/2022	SW6010D	µg/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
02/13-14/2023	SW6010D	µg/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
8/21-25/2023	SW6010D	µg/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
02/12-14/2024	SW6010D	µg/L	< 0.63 U	< 0.63 U	0.64 J	< 0.63 U	< 0.63 U	< 0.63 U	0.70 J	< 0.63 U	0.78 J	< 0.63 U	< 0.63 U
08/26-29/2024	SW6010D	µg/L	< 0.63 U	< 0.63 U	0.64 J	< 0.63 U	< 0.63 U	< 0.63 U	< 0.63 U	< 0.63 U	0.76 J	< 0.63 U	< 0.63 U
Cobalt													
10/27-11/01/2016	SW6020B	µg/L	--	0.89 J	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	2.6	0.99 J	0.16 J	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	1.3	< 0.10 U	< 0.10 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	0.88 J	< 0.10 U	< 0.10 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	0.42 J	< 0.10 U	< 0.10 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	0.66 J	0.11 J	< 0.10 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	0.38 J	< 0.10 U	< 0.10 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	0.22 J	0.29 J	< 0.10 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	1.6 J+	--	--	--	0.17 J+	1.1 J+	0.82 J+	--	--	--	< 0.01 U
12/05/2017	SW6020	µg/L	0.51	--	--	--	< 0.15 U	0.47 J	6.2	--	--	--	< 0.15 U
01/29-30/2018	SW6020	µg/L	--	0.62	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	0.23 J	--	--	--	< 0.15 U	0.55	7.6	--	--	--	< 0.15 U
03/26-28/2018	SW6020A	µg/L	0.29 J	--	--	--	< 0.15 U	5.5	5.4	--	--	--	< 0.15 U
04/30-05/01/2018	SW6010	µg/L	--	< 2.5 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6010	µg/L	< 2.5 U	--	--	--	< 2.5 U	4.3 J	3.3 J	--	--	--	< 2.5 U
06/25-26/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	4.3 J	2.8 J	--	--	--	< 2.5 U
08/15-16/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	3.2 J	3.2 J	--	--	--	< 2.5 U
10/15-16/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	4.1 J	< 2.5 U	--	--	--	< 2.5 U
10/15-16/2018	SW6020A	µg/L	--	0.42 J	--	--	--	--	--	--	--	--	--
03/18-28/2019	SW6020B	µg/L	--	--	0.13	0.93	--	--	--	--	--	--	--
09/09-13/2019	SW6020B	µg/L	--	0.34	0.081 J	0.18	< 0.10	1.8	3.5	--	--	--	< 0.050 U
03/02-05/2020	SW6020B	µg/L	0.33	1.2	0.084 J	0.20	< 0.050	4.3	2.9	--	--	--	< 0.050 U
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	3.2	2.3	0.065 J	< 0.050 U
08/24-28/2020	SW6020B	µg/L	1.5	0.60	0.064 J	0.17	0.074 J	3.3	2.9	3.3	0.53	0.27	< 0.050 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	2.7	3.3	0.11	< 0.050 U
2/23-26/2021	SW6020B	µg/L	0.35 J	0.50 J			0.060 J	5.3	2.8	3.1	0.12 J	0.14J	< 0.050 U
4/16/2021	SW6020B	µg/L	--	--	--	--	--	5.6	--	--	--	--	< 0.050 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	3.0	2.2	<0.090 U	< 0.050 U
8/30-9/1/2021	SW6020B	µg/L	0.66 J	0.39 J	< 0.050 U	< 0.050 U	0.080 J	0.94 J	4.6	3.3	3.4	< 0.050 U	< 0.050 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	3.4	0.63 J	0.15 J	< 0.050 U
02/07-09/2022	SW6020B	µg/L	0.33 J	1.4	< 0.050 U	0.085 J	< 0.050 U	3.7	3.8	3.1	0.074 J	0.11 J	< 0.050 U
08/29-31/2022	SW6020B	µg/L	1.1	0.26 J	< 0.050 U	< 0.050 U	0.051 J	1.3	3.5	2.6	0.15 J	< 0.050 U	< 0.050 U
02/13-14/2023	SW6020B	µg/L	0.59 J	1.1	0.067 J	0.071 J	0.14 J	3.7	3.0	2.5	0.19 J	0.20 J	< 0.050 U
8/21-25/2023	SW6020B	µg/L	1.1	0.24 J	0.064 J	< 0.050 U	< 0.050 U	0.76 J	2.7	2.6	0.099 J	0.29 J	< 0.050 U
02/12-14/2024	SW6020B	µg/L	1.1	0.34 J	< 0.050 U	< 0.050 U	0.053 J	4.6	3.6	2.5	0.10 J	0.064 J	< 0.050 U
08/26-29/2024	SW6020B	µg/L	4.0	0.39 J	< 0.14 U	< 0.14 U	< 0.14 U	0.78 J	4.8	3.2	0.34 J	< 0.14 U	< 0.14 U
Copper													
10/27-11/01/2016	SW6020B	µg/L	--	< 1.2 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	5.5	< 1.2 U	< 1.2 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	2.4 J	< 1.2 U	< 1.2 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	3.2 J	< 1.2 U	< 1.2 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 1.2 U	1.3 J+	< 1.2 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	2.3 J	3.0 J+	3.0 J+	--	--	--	--	--	--	--

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Copper (cont.)													
06/19-20/2017	SW6020B	µg/L	--	< 1.2 U	< 1.2 U	5.7	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 1.2 U	< 1.2 U	< 1.2 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.3 J+	--	--	--	0.78 J+	1.1 J+	0.55 J+	--	--	--	0.61
12/05/2017	SW6020	µg/L	2.6 J+	--	--	--	0.69 J+	0.32 J+	0.31 J+	--	--	--	0.57 J
02/14/2018	SW6020	µg/L	0.62 J+	--	--	--	0.43 J+	0.55 J+	2.2 J+	--	--	--	0.40 J
03/26-28/2018	SW6020A	µg/L	0.59 J+	--	--	--	0.21 J+	0.74 J+	12.2 J+	--	--	--	1.1
05/14-15/2018	SW6020A	µg/L	0.36 J+	--	--	--	0.32 J+	0.69 J+	23.8	--	--	--	1.4
06/25-26/2018	SW6020A	µg/L	0.28 J+	--	--	--	< 0.22 U	3.2 J+	17.0	--	--	--	0.65 J
08/15-16/2018	SW6020A	µg/L	0.57 J+	--	--	--	< 0.22 U	0.60 J+	14.3	--	--	--	0.46 J
10/15-16/2018	SW6020B	µg/L	4.4 J+	--	--	--	0.24 J+	0.42 J+	8.2	--	--	--	0.77
03/18-28/2019	SW6020B	µg/L	--	--	0.54	2.3	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 2.1 U	15.4	< 2.1 U	< 2.1 U	< 2.1 U	11.6	--	--	--	< 2.1 U
03/02-05/2020	SW6010D	µg/L	< 2.1 U	3.5 J	< 2.1 U	5.0	< 2.1 U	< 2.1 U	11.2	--	--	--	< 2.1 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
08/24-28/2020	SW6010D	µg/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	14.1	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.3 U	5.5	< 4.3 U	< 4.3 U
2/23-26/2021	SW6010D	µg/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	5.1	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.3 U	< 4.3 U	< 4.3 UJ	< 4.3 U
8/30-9/1/2021	SW6010D	µg/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	8.0	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
02/07-09/2022	SW6010D	µg/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	12.0	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
08/29-31/2022	SW6010D	µg/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	6.7	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
02/13-14/2023	SW6010D	µg/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 9.9 U	< 2.6 U	< 2.6 U	< 2.6 U	2.8 J
8/21-25/2023	SW6010D	µg/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	7.2	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
02/12-14/2024	SW6010D	µg/L	0.97 J	2.5 J	< 0.62 U	< 0.62 U	< 0.62 U	1.2 J	9.4	1.0 J	1.2 J	0.77 J	< 0.62 U
08/26-29/2024	SW6010D	µg/L	< 0.62 U	0.76 J	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	5.8	0.85 J	1.3 J	< 0.62 U	< 0.62 U
Fluoride													
10/27-11/01/2016	SW9056A	mg/L	--	< 0.020 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW9056A	mg/L	--	< 0.020 U	0.089 J	0.10	--	--	--	--	--	--	--
01/18-19/2017	SW9056A	mg/L	--	< 0.020 U	0.10	0.12	--	--	--	--	--	--	--
02/28-03/02/2017	SW9056A	mg/L	--	< 0.020 U	0.094 J	0.093 J	--	--	--	--	--	--	--
04/10-12/2017	SW9056A	mg/L	--	< 0.020 U	0.12	0.12	--	--	--	--	--	--	--
05/11-12/2017	SW9056A	mg/L	--	< 0.050 U	0.12	0.12	--	--	--	--	--	--	--
06/19-20/2017	SW9056A	mg/L	--	< 0.050 U	0.12	0.10	--	--	--	--	--	--	--
07/24-25/2017	SW9056A	mg/L	--	< 0.050 U	0.056 J	< 0.050	--	--	--	--	--	--	--
09/06/2017	E300	mg/L	--	< 0.050 U	--	--	--	--	--	--	--	--	--
10/23/2017	SW9056A	mg/L	0.065 J	--	--	--	0.070 J	0.066 J	0.052 J	--	--	--	< 0.050 U
12/05/2017	SW9056A	mg/L	0.056 J	--	--	--	0.067 J	0.059 J	< 0.050 U	--	--	--	< 0.050 U
01/29-30/2018	E300	mg/L	--	< 0.050 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW9056A	mg/L	< 0.050 U	--	--	--	0.093 J	0.057 J	< 0.050 U	--	--	--	< 0.050 U
03/26-28/2018	SW9056A	mg/L	< 0.050 U	--	--	--	0.058 J	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
04/30-05/01/2018	E300	mg/L	--	< 0.050 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW9056A	mg/L	< 0.050 U	--	--	--	0.057 J	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
06/25-26/2018	SW9056A	mg/L	< 0.050 U	--	--	--	0.055 J	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
08/15-16/2018	SW9056A	mg/L	0.052 J	--	--	--	0.078 J	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
10/15-16/2018	E300	mg/L	--	< 0.050 U	--	--	--	--	--	--	--	--	--
10/15-16/2018	SW9056A	mg/L	< 0.050 U	--	--	--	0.061 J	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
03/18-28/2019	E300	mg/L	--	--	0.096 J	0.12	--	--	--	--	--	--	< 0.050 U
3/19-28/2019	E300	mg/L	0.073 J	< 0.050 U	--	--	0.072 J	< 0.050 U	< 0.050 U	--	--	--	--
09/09-13/2019	SW9056A	mg/L	--	< 0.050 U	0.10	0.13	0.087 J	0.11	0.16	--	--	--	< 0.050 U
03/02-05/2020	SW9056A	mg/L	< 0.050 U	< 0.050 U	0.087 J	0.13	0.30	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
06/02-05/2020	SW9056A	mg/L	--	--	--	--	--	--	--	0.053 J	< 0.050 U	0.10	< 0.050 U
08/24-28/2020	SW9056A	mg/L	0.093 J	< 0.050 U	0.093 J	0.13	0.062 J	< 0.050 U	< 0.050 U	0.051 J	< 0.050 U	0.13	< 0.050 U
12/01-02/2020	SW9056A	mg/L	--	--	--	--	--	--	--	0.064 J	0.055 J	0.11	< 0.050 U
2/23-26/2021	SW9056A	mg/L	< 0.050 U	< 0.050 U	0.076 J	0.12	0.053 J	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	0.081 J	< 0.050 U
6/7-10/2021	SW9056A	mg/L	--	--	--	--	--	--	--	0.093 J	0.087 J	0.18 J+	< 0.050 U
8/30-9/1/2021	SW9056A	mg/L	< 0.050 U	< 0.050 U	0.061 J	0.11	0.059 J	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	0.091 J	< 0.050 U
11/29/2021	SW9056A	mg/L	--	--	--	--	--	--	--	0.065 J	< 0.050 UJ	0.10 J-	< 0.050 U
02/07-09/2022	SW9056A	mg/L	0.089 J	< 0.050 U	0.081 J	0.13	0.063 J	0.057 J	< 0.050 U	0.054 J	< 0.050 U	0.12	< 0.050 U
08/29-31/2022	SW9056A	mg/L	0.15 J+	0.052 J	0.11	0.15	0.14 J+	0.26 J+	0.11 J+	0.12	0.077 J	0.15	< 0.050 U
02/13-14/2023	SW9056A	mg/L	0.10	< 0.050 U	0.12	0.16	0.092 J	0.059 J	0.067 J	0.088 J	0.079 J	0.15	< 0.050 U
8/21-25/2023	SW9056A	mg/L	0.094 J	< 0.050 U	0.080 J	0.12	0.063 J	0.090 J	< 0.050 U	0.056 J	0.050 J	0.11	< 0.050 U
02/12-14/2024	SW9056A	mg/L	0.070 J	< 0.050 U	0.072 J	0.14 J	0.055 J	< 0.050 UJ	< 0.050 UJ	0.076 J	0.050 J	0.12	< 0.050 U
08/26-29/2024	SW9056A	mg/L	0.26 J+	< 0.050 U	0.12 J+	0.13	0.13 J+	0.050 J	0.11	0.090 J	0.20	0.11	< 0.050 U
Hardness													
09/09-13/2019	SW6010D	µg/L	--	101000	25500	96400	131000	207000	51100	--	--	--	< 131 U
03/02-05/2020	SM2340B	µg/L	16600	104000	25900	93200	119000	231000	51600	--	--	--	< 131 U
06/02-05/2020	SM2340B	µg/L	--	--	--	--	--	--	--	124000	123000	131000	< 131 U
08/24-28/2020	SM2340B	µg/L	15800	106000	25300	90300	122000	204000	50400	117000	112000	129000	< 131 U
12/01-02/2020	SM2340B	µg/L	--	--	--	--	--	--	--	130000	134000	152000	< 131 U
2/23-26/2021	SM2340B	µg/L	16500	10400	23500	92300	119000	181000	58700	128000	109000	162000	< 131 U
6/7-10/2021	SM2340B	µg/L	--	--	--	--	--	--	--	122000	117000	143000	< 131 U
8/30-9/1/2021	SM2340B	µg/L	15700	104000	2400	90400	117000	186000	48800	125000	117000	124000	< 131 U
11/29/2021	SM2340B	µg/L	--	--	--	--	--	--	--	128000	116000	118000	< 131 U
02/07-09/2022	SM2340B	µg/L	16400	107000	23600	96700	117000	208000	51800	128000	110000	121000	154 J
08/29-31/2022	SM2340B	µg/L	16100	104000	24400	81900	119000	194000	46200	131000	119000	120000	< 131 U
02/13-14/2023	SM2340B	µg/L	15600	107000	23000	93400	119000	193000	50600	116000	96000	105000	< 506 U
8/21-25/2023	SM2340B	µg/L	16600	104000	25000	85600	126000	184000	47700	133000	128000	117000	< 131 U
02/12-14/2024	SM2340B	µg/L	15200	103000	22200	85600	119000	171000	46200	118000	107000	117000	< 36.8 U
08/26-29/2024	SM2340B	µg/L	17100	103000	22900	82800	123000	165000	45900	130000	116000	120000	< 36.8 U
Hexavalent Chromium													
09/09-13/2019	SW7196A	µg/L	--	--	< 5 U	< 5 U	< 5 U	6	< 5 U	--	--	--	< 5 U
11/18-20/2019	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	--	--	--	< 5 U
03/02-05/2020	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	--	--	--	< 5 U
06/02-05/2020	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Hexavalent Chromium (cont.)													
08/24-28/2020	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	5	< 5 U
12/01-02/2020	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	10	< 5 U	< 5 U
2/23-26/2021	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
6/7-10/2021	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	7	< 5 U	< 5 U	< 5 U	< 5 UJ	< 5 U
8/30-9/1/2021	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	8 J	< 5 U
11/29/2021	SW7196A	µg/L	--	--	--	--	--	--	--	< 5 U	< 5 U	7	< 5 U
02/07-09/2022	SW7196A	µg/L	< 5 UJ	< 5 U	< 5 UJ	< 5 UJ	< 5 UJ	< 5 UJ	< 5 UJ	< 5 U	< 5 U	< 5 U	< 5 U
08/29-31/2022	SW7196A	µg/L	< 5 U	< 5 U	6	< 5 U	8	19	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
02/13-14/2023	SW7196A	µg/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
8/21-25/2023	SW7196A	µg/L	< 1 U	< 5 U	< 1 U	< 1 U	< 1 U	< 1 UJ	< 1 UJ	< 1 U	< 1 U	< 1 U	< 5 U
02/12-14/2024	SW7199	µg/L	0.025	0.085	0.089	< 0.025 U	< 0.025 U	< 0.025 U	0.030	< 0.025 U	0.29	< 0.025 U	< 0.025 U
08/26-29/2024	SW7199	µg/L	0.023 J	1.1 J	< 0.11 U	< 0.0043 U	< 0.0050 U	< 0.098 U	1.6 J	0.20	< 0.038 U	< 0.12 U	0.025
Iron													
09/09-13/2019	SW6020B	µg/L	--	204	242	1140	4780	30600	46.0 J	--	--	--	< 7.5 U
03/02-05/2020	SW6020B	µg/L	402	1180	233	823	4150	6050	170	--	--	--	< 7.5 U
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	213	585	17000	< 20.9 U
08/24-28/2020	SW6020B	µg/L	350	593	225	556	6870 J	5540	112	71.9	116	17000	< 20.9 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	40.7 J	7240	15400	< 20.9 U
2/23-26/2021	SW6020B	µg/L	246	502	75.9	421	2920	1100	26.7	< 20.9 U	55.2	19700	< 20.9 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	258	567	14400	< 20.9 U
8/30-9/1/2021	SW6020B	µg/L	152	193	< 88.0 U	548	5650	41500	278	< 70.7 U	< 72.8 U	10200	< 20.9 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	164	110 J	11400	< 20.9 U
02/07-09/2022	SW6020B	µg/L	229	1280	122	502	3620	6000	276	22.4 J	52.8	8970	< 20.9 U
08/29-31/2022	SW6020B	µg/L	139	130	105	232	4880	31300	308	86.6	< 20.9 U	8410	< 20.9 U
02/13-14/2023	SW6020B	µg/L	220	1010	197	862	3920	1350	197	51.9	719	12400	< 20.9 U
8/21-25/2023	SW6020B	µg/L	53.1	232	255	533	4750	29700	52.3	48.0 J	< 20.9 U	8630	< 20.9 U
02/12-14/2024	SW6020B	µg/L	149	313	182	227	3430	1180	353	31.8 J	318	11700	< 20.9 U
08/26-29/2024	SW6020B	µg/L	51.9	393	210	194	5480	32500	178	41.9	222	12700	< 3.0 U
Lead													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.80 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 0.08 U	--	--	--	0.16	0.58	< 0.08 U	--	--	--	< 0.08 U
12/05/2017	SW6020	µg/L	0.16	--	--	--	< 0.028 U	0.12	< 0.028 U	--	--	--	< 0.028 U
01/29-30/2018	SW6020	µg/L	--	0.032 J+	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	0.28	--	--	--	0.039 J	0.25	< 0.028 U	--	--	--	< 0.028 U
03/26-28/2018	SW6020A	µg/L	0.26	--	--	--	< 0.028 U	0.12	0.032 J	--	--	--	< 0.028 U
04/30-05/01/2018	SW6010	µg/L	--	< 2.5 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6010	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
06/25-26/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
08/15-16/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
10/15-16/2018	SW6010D	µg/L	< 2.5 U	< 2.5 U	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
03/18-28/2019	SW6010D	µg/L	--	--	< 2.5 U	< 2.5 U	--	--	--	--	--	--	--
09/09-13/2019	SW6020B	µg/L	--	< 0.050 U	0.11	0.12	< 0.10 U	< 0.10 U	< 0.050 U	--	--	--	< 0.050 U
03/02-05/2020	SW6020B	µg/L	0.17	0.050 J	0.10	0.22	< 0.050 U	< 0.050 U	< 0.050 U	--	--	--	< 0.050 U
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	0.081 J	0.14	0.10	< 0.077 U
08/24-28/2020	SW6020B	µg/L	0.12	< 0.077 U	0.093 J	0.096 J	< 0.077 U	0.098 J	< 0.077 U	< 0.077 U	< 0.077 U	0.19	< 0.077 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.077 U	3.3	0.12	< 0.077 U
2/23-26/2021	SW6020B	µg/L	0.14 J	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	0.081 J	< 0.077 U	0.078 J	< 0.077 U
8/30-9/1/2021	SW6020B	µg/L	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	0.084 J	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.077 U	< 0.077 U	0.16 J	< 0.077 U
02/07-09/2022	SW6020B	µg/L	0.14 J	0.13 J	< 0.077 U	< 0.077 U	< 0.077 U	0.14 J	0.14 J	< 0.077 U	0.14 J	0.12 J	< 0.077 U
08/29-31/2022	SW6020B	µg/L	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U
02/13-14/2023	SW6020B	µg/L	<0.13 U	<0.092 U	<0.11 U	<0.15 U	<0.089 U	<0.12 U	< 0.077 U	< 0.077 U	<0.42 U	<0.19 U	1.3
8/21-25/2023	SW6020B	µg/L	< 0.077 U	< 0.077 U	0.098 J	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	0.083 J	< 0.077 U
02/12-14/2024	SW6020B	µg/L	< 0.077 U	< 0.077 U	0.081 J	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.077 U	0.17 J	< 0.077 U	< 0.077 U
08/26-29/2024	SW6020B	µg/L	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U
Lithium													
10/27-11/01/2016	SW6020B	µg/L	--	1 J	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	3.5 B	< 0.70 U	0.78 B	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.7 U	< 0.70 U	1.7 J	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.7 U	< 0.70 U	4.2 J	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.7 U	0.86 J+	2.8 J+	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	3.9 J+	1.2 J+	3.8 J+	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.7 U	< 0.70 U	1.7 J	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	0.79 J	< 0.70 U	1.9 J	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.4 J+	--	--	--	0.54 J+	2.6	5.4	--	--	--	0.078 J
12/05/2017	SW6020	µg/L	0.4 J	--	--	--	0.59	1.8	3.5	--	--	--	< 0.17 U
01/29-30/2018	SW6020	µg/L	--	0.43 J	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	0.42 J	--	--	--	0.53	2.0	6.1	--	--	--	< 0.17 U
03/26-28/2018	SW6020A	µg/L	0.45 J	--	--	--	0.53	2.1	2.6	--	--	--	< 0.17 U
04/30-05/01/2018	SW6020A	µg/L	--	0.48 J	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6020A	µg/L	0.36 J	--	--	--	< 0.83	1.6 J	1.6 J	--	--	--	< 0.17 U
06/25-26/2018	SW6010C	µg/L	4.1 J+	--	--	--	4.8 J+	5.5 J+	6.2 J+	--	--	--	4.2 J+
08/15-16/2018	SW6010C	µg/L	< 4.6 U	--	--	--	< 4.6 U	< 4.6 U	< 4.6 U	--	--	--	< 4.6 U
10/15-16/2018	SW6020B	µg/L	0.35 J	0.43 J	--	--	0.52 J	1.8 J	3.2	--	--	--	< 0.070 U
03/18-28/2019	SW6020B	µg/L	--	--	0.46 J	3.1	--	--	--	--	--	--	--
09/09-13/2019	SW6020B	µg/L	--	< 0.42 U	0.42 J	2.7	< 0.84 U	1.7 J	1.8 J	--	--	--	< 0.42 U
03/02-05/2020	SW6020B	µg/L	< 0.42 U	< 0.42 U	< 0.42 U	3.0	0.51 J	2.2 J	2.0 J	--	--	--	0.57 J+

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Lithium (cont.)													
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	1.3 J	1.3 J	2.8	< 0.39 U
08/24-28/2020	SW6020B	µg/L	< 0.39 U	< 0.39 U	< 0.39 U	2.9	0.53 J	2.0 J	2.1 J	1.0 J	0.98 J	2.6	< 0.39 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	1.2 J	4.6	2.9	< 0.39 U
2/23-26/2021	SW6020B	µg/L	< 0.39 U	< 0.39 U	< 0.39 U	2.7	0.65 J	1.7 J	1.7 J	1.2 J	< 0.39 U	3.1	< 0.39 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	1.2 J	0.98 J	2.6	< 0.39 U
8/30-9/1/2021	SW6020B	µg/L	< 0.39 U	< 0.39 U	< 0.39 U	2.7	0.61 J	1.8 J	1.7 J	1.3 J	1.3 J	2.6	< 0.39 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	1.4 J	1.2 J	2.9	< 0.39 U
02/07-09/2022	SW6020B	µg/L	< 0.50 U	< 0.50 U	< 0.50 U	2.3 J	< 0.50 U	1.6 J	1.8 J	1.2 J	0.89 J	2.1 J	< 0.50 U
08/29-31/2022	SW6020B	µg/L	< 0.50 U	< 0.50 U	< 0.50 U	2.3 J	< 0.50 U	1.7 J	1.7 J	1.1 J	1.0 J	2.2 J	< 0.50 U
02/13-14/2023	SW6020B	µg/L	< 0.50 U	< 0.50 U	< 0.50 U	2.4 J	0.73 J	1.7 J	1.5 J	1.2 J	1.1 J	2.2 J	< 0.50 U
8/21-25/2023	SW6020B	µg/L	< 0.50 U	< 0.50 U	0.54 J	2.4 J	0.61 J	1.8 J	1.9 J	1.3 J	1.1 J	2.5	< 0.50 U
02/12-14/2024	SW6020B	µg/L	< 0.50 U	< 0.50 U	< 0.50 U	2.5	0.62 J	1.9 J	1.9 J	1.2 J	1.1 J	2.6	< 0.50 U
08/26-29/2024	SW6020B	µg/L	< 0.33 U	0.44 J	0.46 J	2.2 J	0.53 J	1.6 J	1.7 J	1.3 J	1.1 J	2.4 J	< 0.33 U
Manganese													
09/09-13/2019	SW6020B	µg/L	--	3.5	17.6	234	396	1510	403	--	--	--	< 0.14 U
03/02-05/2020	SW6020B	µg/L	38.9	12.8	11.3	194	367	1080	292	--	--	--	< 0.14 U
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	564	692	367	< 0.47 U
08/24-28/2020	SW6020B	µg/L	159	6.5	14.4	279	495	1170	348	719	225	420	< 0.47 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	590	472	386	< 0.47 U
2/23-26/2021	SW6020B	µg/L	35.6	6.2	3.4	74.2	472	1090	356	640	91.7	470	< 0.47 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	608	767	379	< 0.47 U
8/30-9/1/2021	SW6020B	µg/L	106	4.5	5.1	57.5	473	1040	423	697	779	292	< 0.47 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	717	384	308	< 0.47 U
02/07-09/2022	SW6020B	µg/L	26.9	13.2	4.0	62.1	338	876	290	585	21.1	194	< 1.0 U
08/29-31/2022	SW6020B	µg/L	99.0	2.3	2.3	36.1	365	927	278	670	131	217	< 1.0 U
02/13-14/2023	SW6020B	µg/L	33.5	11.8	4.9	51.4	340	715	165	600	12.8	332	< 1.0 U
8/21-25/2023	SW6020B	µg/L	75.8	2.2	3.1	41.1	366	802	266	674	48.8	248	< 1.0 U
02/12-14/2024	SW6020B	µg/L	37.3	3.0	2.5	45.4	343	947	301	603	12.0	309	< 1.0 U
08/26-29/2024	SW6020B	µg/L	84.3	3.7	2.7	34.8	446	830	407	762	73.9	369	< 0.24 U
Mercury													
10/27-11/01/2016	SW7470	µg/L	--	< 0.1 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW7470	µg/L	--	< 0.1 U	0.12 J	0.11 J	--	--	--	--	--	--	--
01/18-19/2017	SW7470	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW7470	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
04/10-12/2017	SW7470	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
05/11-12/2017	SW7470	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
06/19-20/2017	SW7470	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
07/24-25/2017	SW7470	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
10/23/2017	SW7470	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
12/05/2017	SW7470	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
01/29-30/2018	SW7470	µg/L	--	< 0.1 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW7470	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
03/26-28/2018	SW7470	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
04/30-05/01/2018	SW7470	µg/L	--	< 0.1 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW7470	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
06/25-26/2018	SW7470A	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
08/15-16/2018	SW7470A	µg/L	< 0.1 U	--	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
10/15-16/2018	SW7470A	µg/L	< 0.1 U	< 0.1 U	--	--	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
03/18-28/2019	SW7470A	µg/L	--	--	< 0.1 U	< 0.1 U	--	--	--	--	--	--	--
09/09-13/2019	SW7470A	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
03/02-05/2020	SW7470A	µg/L	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	--	--	--	< 0.1 U
06/02-05/2020	SW7470A	µg/L	--	--	--	--	--	--	--	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
08/24-28/2020	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
12/01-02/2020	SW7470A	µg/L	--	--	--	--	--	--	--	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
2/23-26/2021	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
6/7-10/2021	SW7470A	µg/L	--	--	--	--	--	--	--	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
8/30-9/1/2021	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
11/29/2021	SW7470A	µg/L	--	--	--	--	--	--	--	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
02/07-09/2022	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
08/29-31/2022	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
02/13-14/2023	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
8/21-25/2023	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
02/12-14/2024	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
08/26-29/2024	SW7470A	µg/L	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
Molybdenum													
10/27-11/01/2016	SW6020B	µg/L	--	< 1.10 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 1.10 U	< 1.10 U	< 1.10 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 1.10 U	--	--	--	0.15 J	< 1.10 U	1.4	--	--	--	< 1.10 U
12/05/2017	SW6020	µg/L	< 0.08 U	--	--	--	0.1 J	< 0.08 U	0.44 J	--	--	--	< 0.08 U
01/29-30/2018	SW6010	µg/L	--	< 2.50 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	< 0.080 U	--	--	--	0.10 J	< 0.080 U	0.26 J	--	--	--	< 0.080 U
03/26-28/2018	SW6020A	µg/L	< 0.080 U	--	--	--	< 0.080 U	< 0.080 U	0.32 J	--	--	--	< 0.080 U
04/30-05/01/2018	SW6010	µg/L	--	< 2.5 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW6010	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
06/25-26/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
08/15-16/2018	SW6010D	µg/L	< 2.5 U	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
10/15-16/2018	SW6010D	µg/L	< 2.5 U	< 2.5 U	--	--	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
03/18-28/2019	SW6010D	µg/L	--	--	< 2.5 U	< 2.5 U	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 0.90 U	< 0.90 U	< 0.90 U	< 0.90 U	< 0.90 U	< 0.90 U	--	--	--	< 0.90 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Molybdenum (cont.)													
03/02-05/2020	SW6010D	µg/L	< 0.90 U	< 0.90 U	< 0.90 U	14.6	< 0.90 U	< 0.90 U	< 0.90 U	--	--	--	< 0.90 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	8.7	4.5 J	< 3.9 U	< 3.9 U
08/24-28/2020	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2/23-26/2021	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
8/30-9/1/2021	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
02/07-09/2022	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
08/29-31/2022	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
02/13-14/2023	SW6010D	µg/L	<1.6 U	<1.6 U	<1.6 U	<1.6 U	<1.6 U	<1.6 U	<1.6 U	2.3 J	<1.6 U	<1.6 U	<1.6 U
8/21-25/2023	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
02/12-14/2024	SW6010D	µg/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
08/26-29/2024	SW6010D	µg/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	2.8 J	< 2.6 U	< 2.6 U	< 2.6 U
Nickel													
10/27-11/01/2016	SW6020B	µg/L	--	< 4.50 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 4.50	< 4.5 U	< 4.5 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 4.50 U	< 4.5 U	< 4.5 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 4.50 U	< 4.5 U	< 4.5 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 4.50 U	< 4.5 U	< 4.5 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 4.50 U	< 4.5 U	< 4.5 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 4.50 U	< 4.5 U	9.3	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 4.50 U	< 4.5 U	< 4.5 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.78	--	--	--	1.3	1.4	2.1	--	--	--	< 0.45 U
12/05/2017	SW6020	µg/L	0.67	--	--	--	0.92	0.29	6.5	--	--	--	0.13 J
02/14/2018	SW6020	µg/L	0.76	--	--	--	1.2	0.86	8.1 J+	--	--	--	2.8
03/26-28/2018	SW6020A	µg/L	0.74	--	--	--	0.90	9.5	8.3	--	--	--	< 0.12 U
05/14-15/2018	SW6020A	µg/L	0.82	--	--	--	0.82	9.5	7.8	--	--	--	< 0.12 U
06/25-26/2018	SW6020A	µg/L	0.67	--	--	--	0.87	8.3	9.6	--	--	--	0.15 J
08/15-16/2018	SW6020A	µg/L	0.68	--	--	--	0.91	5.8	8.4	--	--	--	< 0.11 U
10/15-16/2018	SW6020B	µg/L	0.60	--	--	--	0.78	7.3	9.6	--	--	--	< 0.45 U
03/18-28/2019	SW6020B	µg/L	--	--	0.51	3.3	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 0.90 U	< 0.90 U	< 0.90 U	1.1 J	3.1 J	8.0	--	--	--	< 0.90 U
03/02-05/2020	SW6010D	µg/L	< 0.90 U	< 0.90 U	< 0.90 U	< 0.90 U	< 0.90 U	8.5	6.5	--	--	--	< 0.90 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.5 U	7.7	< 3.5 U	< 3.5 U
08/24-28/2020	SW6010D	µg/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	8.8	7.3	< 3.5 U	8.3	< 3.5 U	< 3.5 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.5 U	9.4	< 3.5 U	< 3.5 U
2/23-26/2021	SW6010D	µg/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	8.5	8.0	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.5 U	5.1	< 3.5 UJ	< 3.5 U
8/30-9/1/2021	SW6010D	µg/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	7.4	< 3.5 U	6.5	< 3.5 U	< 3.5 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.5 U	4.4 J	< 3.5 U	< 3.5 U
02/07-09/2022	SW6010D	µg/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	9.8	7.0	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
04/12/2022	SW6010D	µg/L	--	--	--	--	--	8.7	--	--	--	--	< 3.5 U
08/29-31/2022	SW6010D	µg/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	6.8	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
02/13-14/2023	SW6010D	µg/L	<1.0	1.7 J	<1.0	<1.0	1.1 J	9.2	6.7	2.0 J	1.0 J	<1.0	<1.0
8/21-25/2023	SW6010D	µg/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U	6.8	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
02/12-14/2024	SW6010D	µg/L	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	1.3 J	9.0	6.5	2.4 J	1.4 J	1.8 J	< 0.88 U
08/26-29/2024	SW6010D	µg/L	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	0.91 J	1.3 J	7.2	2.8 J	3.0 J	< 0.88 U	< 0.88 U
Nitrate													
09/09-13/2019	SW9056A	mg/L	--	0.14	0.93	< 0.060 U	< 0.060 U	< 0.060 U	2.0 J	--	--	--	< 0.060 U
03/02-05/2020	SW9056A	mg/L	< 0.060	< 0.060 U	0.85	< 0.060 U	< 0.060 U	< 0.060 U	0.66 J	--	--	--	< 0.060 U
06/02-05/2020	SW9056A	mg/L	--	--	--	--	--	--	--	0.12	0.28	< 0.060 U	< 0.060 U
08/24-28/2020	SW9056A	mg/L	0.079 J	< 0.060 U	0.84	< 0.060 U	< 0.060 U	< 0.060 U	0.81	0.16	0.97	< 0.060 U	< 0.060 U
12/01-02/2020	SW9056A	mg/L	--	--	--	--	--	--	--	0.25	0.43	< 0.060 U	< 0.060 U
2/23-26/2021	SW9056A	mg/L	< 0.060	< 0.060 U	0.95	< 0.060 U	< 0.060 U	< 0.060 U	0.089 J	0.17	0.78	< 0.060 U	< 0.060 U
6/7-10/2021	SW9056A	mg/L	--	--	--	--	--	--	--	0.066 J	< 0.060 U	< 0.060 U	< 0.060 U
8/30-9/1/2021	SW9056A	mg/L	0.082 J	< 0.060 U	0.82	< 0.060 U	< 0.060 U	< 0.060 U	0.20	< 0.060 U	< 0.060 U	< 0.060 U	< 0.060 U
11/29/2021	SW9056A	mg/L	--	--	--	--	--	--	--	< 0.060 UJ	< 0.060 UJ	< 0.060 UJ	< 0.060 U
02/07-09/2022	SW9056A	mg/L	0.062 J	< 0.060 U	0.92	< 0.060 U	< 0.060 U	< 0.060 U	0.14	0.25	0.84	< 0.060 U	< 0.060 U
08/29-31/2022	SW9056A	mg/L	0.13	< 0.060 U	0.90	< 0.060 U	< 0.060 U	0.068 J	< 0.060	0.094 J	0.25	< 0.060 U	< 0.060 U
02/13-14/2023	SW9056A	mg/L	0.10	0.060 J	0.98	< 0.060 U	< 0.060 U	0.090 J	0.60	0.92	1.5	< 0.060 U	< 0.060 U
8/21-25/2023	SW9056A	mg/L	0.14	0.061 J	0.82	0.076 J	< 0.060 U	< 0.060 U	< 0.060 U	0.12	0.48	< 0.060 U	< 0.060 U
02/12-14/2024	SW9056A	mg/L	0.10	0.061 J	0.91	0.087 J	< 0.060 U	0.15	0.23	0.79	1.3	< 0.060 U	< 0.060 U
08/26-29/2024	SW9056A	mg/L	0.27 J	< 0.060 UJ	0.93	0.20	< 0.060 UJ	0.13	< 0.060 UJ	0.17	0.39	< 0.060 U	< 0.060 UJ
pH													
10/27-11/01/2016	FIELD	SU	--	5.13	--	--	--	--	--	--	--	--	--
12/06-07/2016	FIELD	SU	--	5.12	6.16	7.70	--	--	--	--	--	--	--
01/18-19/2017	FIELD	SU	--	5.21	5.26	7.31	--	--	--	--	--	--	--
02/28-03/02/2017	FIELD	SU	--	4.93	5.61	7.33	--	--	--	--	--	--	--
04/10-12/2017	FIELD	SU	--	4.49	5.66	7.42	--	--	--	--	--	--	--
05/11-12/2017	FIELD	SU	--	5.03	5.67	7.17	--	--	--	--	--	--	--
06/19-20/2017	FIELD	SU	--	5.36	6.02	7.32	--	--	--	--	--	--	--
07/24-25/2017	FIELD	SU	--	5.64	6.80	7.68	--	--	--	--	--	--	--
09/06/2017	FIELD	SU	--	5.29	--	--	--	--	--	--	--	--	--
10/23/2017	FIELD	SU	4.76	--	--	--	5.62	5.85	6.20	--	--	--	--
12/05/2017	FIELD	SU	4.80	--	--	--	5.76	5.87	5.71	--	--	--	--
01/29-30/2018	FIELD	SU	--	5.33	--	--	--	--	--	--	--	--	--
02/14/2018	FIELD	SU	4.71	--	--	--	5.89	5.98	5.43	--	--	--	--
03/26-28/2018	FIELD	SU	4.73	5.36	--	--	5.74	5.39	5.32	--	--	--	--
04/30-05/01/2018	FIELD	SU	--	4.94	--	--	--	--	--	--	--	--	--
05/14-15/2018	FIELD	SU	4.80	5.50	--	--	5.83	5.48	5.28	--	--	--	--
06/25-26/2018	FIELD	SU	4.89	5.08	--	--	5.70	5.40	5.36	--	--	--	--
08/15-16/2018	FIELD	SU	4.76	5.33	--	--	5.90	5.80	5.27	--	--	--	--
10/15-16/2018	FIELD	SU	4.83	5.32	--	--	5.80	5.47	5.40	--	--	--	--
11/28-29/2018	FIELD	SU	4.92	5.20	--	--	5.70	5.48	5.16	--	--	--	--

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
pH (cont.)													
01/07-18/2019	FIELD	SU	4.67	4.97	--	--	5.68	5.44	5.34	--	--	--	--
3/19-28/2019	FIELD	SU	4.60	5.04	5.94	6.92	5.85	5.70	5.30	--	--	--	--
04/01/2019	FIELD	SU	--	--	5.55	7.02	--	--	--	--	--	--	--
09/09-13/2019	FIELD	SU	4.54	5.20	5.53	6.90	5.66	5.66	5.19	--	--	--	--
11/18-20/2019	FIELD	SU	4.46	5.63	5.93	5.76	5.79	5.72	5.26	--	--	--	--
03/02-05/2020	FIELD	SU	4.88	5.18	6.15	6.92	5.94	5.59	5.52	--	--	--	--
06/02-05/2020	FIELD	SU	5.23	5.16	6.05	6.66	5.83	5.55	5.31	5.91	5.66	6.24	--
08/24-28/2020	FIELD	SU	4.20	8.07	6.09	7.12	5.79	5.49	5.19	6.00	5.64	6.28	--
12/01-03/2020	FIELD	SU	4.98	5.31	6.05	7.37	5.89	5.60	5.53	6.05	5.93	6.24	--
2/23-26/2021	FIELD	SU	4.92	5.01	5.70	7.00	5.57	5.50	5.70	6.50	5.63	6.01	--
6/7-10/2021	FIELD	SU	4.77	5.01	5.88	7.08	5.65	5.68	5.32	6.01	5.72	6.29	--
8/30-9/1/2021	FIELD	SU	4.88	5.27	6.01	6.86	5.81	5.62	5.39	5.94	5.68	6.06	--
11/29/2021	FIELD	SU	--	--	--	--	--	--	--	6.07	5.75	6.21	--
02/07-09/2022	FIELD	SU	4.93	5.41	5.55	6.67	5.71	4.70	5.38	5.91	5.51	5.77	--
08/29-31/2022	FIELD	SU	4.80	4.94	5.84	6.90	5.85	5.62	5.17	5.60	5.49	6.17	--
02/13-14/2023	FIELD	SU	4.87	5.03	5.18	6.57	5.54	5.02	5.45	5.60	5.82	6.20	--
8/21-25/2023	FIELD	SU	4.91	5.22	5.88	6.60	5.72	5.65	5.26	5.80	5.42	6.00	--
02/12-14/2024	FIELD	SU	4.61	5.02	5.49	6.79	5.70	5.05	5.33	5.94	5.81	5.89	--
08/26-29/2024	FIELD	SU	4.85	5.14	5.68	6.57	5.76	5.42	5.27	5.85	5.63	6.16	--
Radium 226 and 228 combined													
10/27-11/01/2016	CALC	pCi/L	--	0.858 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	CALC	pCi/L	--	0.0837 U	0.332 U	0.862 U	--	--	--	--	--	--	--
01/18-19/2017	CALC	pCi/L	--	0.526 U	0 U	0.514 U	--	--	--	--	--	--	--
02/28-03/02/2017	CALC	pCi/L	--	0.00490 U	0.315 U	0.228 U	--	--	--	--	--	--	--
04/10-12/2017	CALC	pCi/L	--	0.367 U	0.332 U	0.902 U	--	--	--	--	--	--	--
05/11-12/2017	CALC	pCi/L	--	0.205 U	0.520 U	0.829 U	--	--	--	--	--	--	--
06/19-20/2017	CALC	pCi/L	--	0.796 U	0.463 U	1.30	--	--	--	--	--	--	--
07/24-25/2017	CALC	pCi/L	--	0.233 U	0.558 U	0.437 U	--	--	--	--	--	--	--
10/23/2017	CALC	pCi/L	0.479 U	--	--	--	1.02 U	0.898 U	0.478 U	--	--	--	0.885
12/05/2017	CALC	pCi/L	0.609 U	--	--	--	1.18 U	0.917 U	0.688 U	--	--	--	0.646
01/29-30/2018	CALC	pCi/L	--	0.477 U	--	--	--	--	--	--	--	--	--
02/14/2018	CALC	pCi/L	1.42	--	--	--	2.12	0.760 U	0.734 U	--	--	--	0.219 U
03/26-28/2018	CALC	pCi/L	0.0918 U	--	--	--	0.671 U	0.530 U	0.262 U	--	--	--	0.857 U
04/30-05/01/2018	CALC	pCi/L	--	0.287 U	--	--	--	--	--	--	--	--	--
05/14-15/2018	CALC	pCi/L	0.293 U	--	--	--	1.52 U	0.452 U	0.490 U	--	--	--	0.131 U
06/25-26/2018	CALC	pCi/L	0.757 U	--	--	--	1.40 U	0.231 U	0.888 U	--	--	--	0.370 U
08/15-16/2018	RA226RA228	pCi/L	2.26	--	--	--	1.42 U	1.35 U	0.387 U	--	--	--	1.15 U
10/15-16/2018	RA226RA228	pCi/L	0.392 U	1.37	--	--	1.27 U	1.36 U	0.305 U	--	--	--	0.519 U
04/01/2019	RA226RA228	pCi/L	--	--	0.974 U	1.32 U	--	--	--	--	--	--	--
09/09-13/2019	RA226RA228	pCi/L	--	0.883 U	1.20 U	6.04	1.10 U	0.884 U	1.03 U	--	--	--	0.504 U
10/10/2019	RA226RA228	pCi/L	--	--	--	2.07	--	--	--	--	--	--	--
03/02-05/2020	RA226RA228	pCi/L	0.316 U	0.374 U	1.04 U	1.88	1.28 U	1.60	0.997 U	--	--	--	0.672 U
06/02-05/2020	RA226RA228	pCi/L	--	--	--	--	--	--	--	0.138 U	0.212 U	2.71	0.679 U
08/24-28/2020	RA226RA228	pCi/L	0.224 U	0.371 U	0.0401 U	2.36	0.977 U	0.0869 U	1.14 U	1.17 U	0.369 U	2.64 J	0.449 U
12/01-02/2020	RA226RA229	pCi/L	--	--	--	--	--	--	--	0.400	0.717	3.45	0.204
2/23-26/2021	RA226RA229	pCi/L	0.665 U	0.235 U	0.494 U	2.04 J	2.66 J	1.07 U	0.446U	0.194 U	0.278 U	4.13	0.574 U
6/7-10/2021	RA226RA229	pCi/L	--	--	--	--	--	--	--	0.874 U	0.618 U	3.48 J	0.00 U
8/30-9/1/2021	RA226RA229	pCi/L	0.384 U	1.03	1.09	1.83	1.04	1.02	0.00 U	0.552 U	0.138 U	1.79 J+	0.00 U
11/29/2021	RA226RA229	pCi/L	--	--	--	--	--	--	--	0.000 U	0.274 UJ	2.52 J	0.00 U
02/07-09/2022	RA226RA229	pCi/L	2.39	0.0765 U	0.455 U	1.73 J	2.01 J	1.73 J	0.226 UJ	0.608 U	0.533 U	2.24 J	0.696 J
08/29-31/2022	RA226RA229	pCi/L	0.594 J	0.404 U	0.609 J	0.880	0.546 U	1.07 J	0.243 U	0.761 J	0.600 J	2.26	0.160 U
02/13-14/2023	RA226RA229	pCi/L	0.695 U	0.662 U	0.000 UJ	2.51 J	1.31 J	0.102 UJ	0.154 UJ	0.594 U	0.000 U	2.96 J	0.978 J
8/21-25/2023	RA226RA230	pCi/L	1.03 U	1.09 U	0.284 U	1.49 J	1.10 U	0.509 U	0.292 U	0.191 U	0.286 U	3.36	1.33 J+
02/12-14/2024	CALC	pCi/L	0.152 U	0.717 U	0.232 U	0.904 U	1.22 J	0.490 U	0.283 U	0.235 U	0.748 J	2.25 J	0.841 J
08/26-29/2024	CALC	pCi/L	0.664 J	0.590 U	0.314 U	0.691 J	0.717 J	0.319 U	0.141 U	0.358 J	0.134 U	3.23 J	0.285 U
Selenium													
10/27-11/01/2016	SW6020B	µg/L	--	< 3.20 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 3.20 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 3.20 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 3.20 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 3.20 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 3.20 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.32 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 3.20 U	< 3.20 U	< 3.20 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 0.32 U	--	--	--	< 0.32 U	< 0.32 U	< 0.32 U	--	--	--	< 0.32 U
12/05/2017	SW6020	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	< 0.17 U	--	--	--	< 0.17 U
01/29-30/2018	SW6010	µg/L	--	< 5 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	1.0	--	--	--	< 0.17 U
03/26-28/2018	SW6020A	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	1.3	--	--	--	< 0.17 U
05/14-15/2018	SW6010	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
06/25-26/2018	SW6010D	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
08/15-16/2018	SW6010D	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
10/15-16/2018	SW6010D	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
03/18-28/2019	SW6010D	µg/L	--	--	< 5.0 U	< 5.0 U	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	--	--	--	< 4.7 U
03/02-05/2020	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	--	--	--	< 4.7 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
08/24-28/2020	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	4.9 J	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
2/23-26/2021	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
8/30-9/1/2021	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
02/07-09/2022	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
08/29-31/2022	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7	< 4.7 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Selenium (cont.)													
02/13-14/2023	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
8/21-25/2023	SW6010D	µg/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
02/12-14/2024	SW6010D	µg/L	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U
08/26-29/2024	SW6010D	µg/L	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U	< 4.1 U
Silver													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.80 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.80 U	< 0.80 U	< 0.80 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 0.08 U	--	--	--	0.13 J	0.15 J	< 0.08 U	--	--	--	< 0.08 U
12/05/2017	SW6020	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	< 0.17 U	--	--	--	< 0.17 U
02/14/2018	SW6020	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	< 0.17 U	--	--	--	< 0.17 U
03/26-28/2018	SW6020A	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	< 0.17 U	--	--	--	< 0.17 U
05/14-15/2018	SW6020A	µg/L	< 0.17 U	--	--	--	< 0.17 U	< 0.17 U	< 0.17 U	--	--	--	< 0.17 U
06/25-26/2018	SW6020A	µg/L	< 0.15 U	--	--	--	< 0.15 U	< 0.15 U	< 0.15 U	--	--	--	< 0.15 U
08/15-16/2018	SW6020A	µg/L	< 0.15 U	--	--	--	< 0.15 U	< 0.15 U	< 0.15 U	--	--	--	< 0.15 U
10/15-16/2018	SW6020B	µg/L	< 0.080 U	--	--	--	< 0.080 U	< 0.080 U	< 0.080 U	--	--	--	< 0.080 U
03/18-28/2019	SW6020B	µg/L	--	--	0.083 J	2.6	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
03/02-05/2020	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	--	--	--	< 2.5 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
08/24-28/2020	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2/23-26/2021	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
8/30-9/1/2021	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
02/07-09/2022	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
08/29-31/2022	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
02/13-14/2023	SW6010D	µg/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
8/21-25/2023	SW6010D	µg/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
02/12-14/2024	SW6010D	µg/L	< 0.49 U	< 0.49 U	1.7 J	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	1.4 J	< 0.49 U
08/26-29/2024	SW6010D	µg/L	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	< 0.49 U	0.94 J	< 0.49 U	< 0.49 U
Sulfate													
10/27-11/01/2016	SW9056A	mg/L	--	6.5	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW9056A	mg/L	--	7.0	2.3 B	8.0	--	--	--	--	--	--	--
01/18-19/2017	SW9056A	mg/L	--	7.1	2.8	11.2	--	--	--	--	--	--	--
02/28-03/02/2017	SW9056A	mg/L	--	7.1	2.9	10.9	--	--	--	--	--	--	--
04/10-12/2017	SW9056A	mg/L	--	6.1	3.2	11.7	--	--	--	--	--	--	--
05/11-12/2017	SW9056A	mg/L	--	7.4	3.3	11.8	--	--	--	--	--	--	--
06/19-20/2017	SW9056A	mg/L	--	8.2	3.4	13.3	--	--	--	--	--	--	--
07/24-25/2017	SW9056A	mg/L	--	6.6	2.7	11.5	--	--	--	--	--	--	--
09/06/2017	E300	mg/L	--	6.7	--	--	--	--	--	--	--	--	--
10/23/2017	SW9056A	mg/L	2.4	--	--	--	111	114	32.2	--	--	--	< 0.50 U
12/05/2017	SW9056A	mg/L	2.3	--	--	--	97.7	98.3	38.3	--	--	--	< 0.50 U
02/14/2018	SW9056A	mg/L	1.8	--	--	--	106	70.4	34.5	--	--	--	< 0.50 U
03/26-28/2018	SW9056A	mg/L	1.8	--	--	--	93.1	193	41.3	--	--	--	< 0.50 U
04/30-05/01/2018	E300	mg/L	--	6.2	--	--	--	--	--	--	--	--	--
05/14-15/2018	SW9056A	mg/L	2.4	--	--	--	102	183	40.7	--	--	--	< 0.50 U
06/25-26/2018	SW9056A	mg/L	2.3	--	--	--	109	153	39.2	--	--	--	< 0.50 U
08/15-16/2018	SW9056A	mg/L	2.6	--	--	--	106	142	38.2	--	--	--	< 0.50 U
10/15-16/2018	E300	mg/L	--	6.5	--	--	--	--	--	--	--	--	--
10/15-16/2018	SW9056A	mg/L	2.6	--	--	--	105	142	39.2	--	--	--	< 0.50 U
03/18-28/2019	E300	mg/L	--	--	3.1	15.7	--	--	--	--	--	--	< 0.50 U
3/19-28/2019	E300	mg/L	3.0	6.6	--	--	98.2	131	42.0	--	--	--	--
09/09-13/2019	SW9056A	mg/L	--	7.3	3.3	11.0	98.5	120	42.1	--	--	--	< 0.50 U
03/02-05/2020	SW9056A	mg/L	3.5	7.3	3.2	10.2	96.6	206	44.8	--	--	--	< 0.50 U
06/02-05/2020	SW9056A	mg/L	--	--	--	--	--	--	--	66.5	96.6	64.3	< 0.50 U
08/24-28/2020	SW9056A	mg/L	3.0	6.8	3.0	10.6	91.9	174	45.5	64.5	72.5	54.8	< 0.50 U
12/01-02/2020	SW9056A	mg/L	--	--	--	--	--	--	--	59.7	73.4	69.1	< 0.50 U
2/23-26/2021	SW9056A	mg/L	2.7	7.4	2.4	10.2	93.7	140	42.4	58.9	56.1	82.8	< 0.50 U
6/7-10/2021	SW9056A	mg/L	--	--	--	--	--	--	--	66.1 J-	90.4 J-	82.0 J-	< 0.50 U
8/30-9/1/2021	SW9056A	mg/L	2.1	5.2	2.1	9.3	84.6	65.7	37.5	51.9	78.5	50.4	< 0.50 U
11/29/2021	SW9056A	mg/L	--	--	--	--	--	--	--	54.3 J-	76.9 J-	47.2 J-	< 0.50 U
02/07-09/2022	SW9056A	mg/L	5.7	6.5	2.4	10.3	81.4	160	45.2	54.0	63.2	43.3	< 0.50 U
08/29-31/2022	SW9056A	mg/L	3.3	5.2	2.6	8.7	86.2	92.6	44.6	54.9	71.4	44.3	< 0.50 U
02/13-14/2023	SW9056A	mg/L	3.0	5.0	2.5	10.1	82.8	165	43.3	53.2	50.7	40.6	< 0.50 U
8/21-25/2023	SW9056A	mg/L	2.1	5.3	2.3	7.9	77.1	67.3	38.9	49.3	68.5	34.6	< 0.50 U
02/12-14/2024	SW9056A	mg/L	3.1	6.3	2.4 J-	11.0 J-	86.7	158 J-	46.1 J-	< 0.50 U	51.9	47.5	< 0.50 U
08/26-29/2024	SW9056A	mg/L	2.9 J	5.0	2.6 J	8.1	85.3 J	58.4	43.9 J	53.1	69.4	48.5	< 0.50 U
Thallium													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.20 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.20 U	< 0.20 U	< 0.20 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 0.20 U	--	--	--	< 0.20 U	0.026 J	< 0.20 U	--	--	--	< 0.20 U
12/05/2017	SW6020	µg/L	< 0.028 U	--	--	--	< 0.028 U	< 0.028 U	0.032 J	--	--	--	< 0.028 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Thallium (cont.)													
01/29-30/2018	SW6020	µg/L	--	< 0.028 U	--	--	--	--	--	--	--	--	--
02/14/2018	SW6020	µg/L	< 0.028 U	--	--	--	< 0.028 U	< 0.028 U	0.20	--	--	--	< 0.028 U
03/26-28/2018	SW6020A	µg/L	< 0.028 U	--	--	--	< 0.028 U	< 0.028 U	0.072 J	--	--	--	< 0.028 U
05/14-15/2018	SW6010	µg/L	< 5.0 U	--	--	--	< 5.0 U	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U
06/25-26/2018	SW6020A	µg/L	< 0.026 U	--	--	--	< 0.026 U	0.039 J	0.040 J	--	--	--	< 0.026 U
08/15-16/2018	SW6020A	µg/L	< 0.026 U	--	--	--	< 0.026 U	< 0.026 U	0.030 J	--	--	--	< 0.026 U
10/15-16/2018	SW6020B	µg/L	< 0.020 U	--	--	--	< 0.020 U	< 0.020 U	< 0.020 U	--	--	--	< 0.020 U
03/18-28/2019	SW6020B	µg/L	--	--	< 0.060 U	< 0.060 U	--	--	--	--	--	--	--
09/09-13/2019	SW6020B	µg/L	--	< 0.060 U	< 0.060 U	< 0.060 U	< 0.12 U	< 0.12 U	< 0.060 U	--	--	--	< 0.060 U
03/02-05/2020	SW6020B	µg/L	< 0.060 U	< 0.060 U	< 0.060 U	< 0.060 U	< 0.060 U	< 0.060 U	< 0.060 U	--	--	--	< 0.060 U
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
08/24-28/2020	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.050 U	0.077 J	< 0.050 U	< 0.050 U
2/23-26/2021	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
8/30-9/1/2021	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
02/07-09/2022	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
08/29-31/2022	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
02/13-14/2023	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
8/21-25/2023	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
02/12-14/2024	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
08/26-29/2024	SW6020B	µg/L	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U	< 0.050 U
Tin													
10/27-11/01/2016	SW6020B	µg/L	--	< 0.70 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	0.8 J	1.1 J	1.3 J	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	3.2 B	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 0.70 U	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 0.70 U	< 0.70 U	0.85 J+	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	1 J+	< 0.70 U	0.73 J+	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 0.70 U	< 0.70 U	2.1 J+	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 0.70 U	0.76 J	< 0.70 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.14 J	--	--	--	0.077 J	0.087 J	< 0.07 U	--	--	--	< 0.07 U
12/05/2017	SW6020	µg/L	< 0.11 U	--	--	--	< 0.11 U	< 0.11 U	< 0.11 U	--	--	--	< 0.11 U
02/14/2018	SW6020	µg/L	< 0.11 U	--	--	--	< 0.11 U	< 0.11 U	< 0.11 U	--	--	--	< 0.11 U
03/26-28/2018	SW6020A	µg/L	< 0.11 U	--	--	--	< 0.11 U	< 0.11 U	< 0.11 U	--	--	--	< 0.11 U
05/14-15/2018	SW6020A	µg/L	< 0.11 U	--	--	--	< 0.11 U	< 0.11 U	< 0.11 U	--	--	--	< 0.11 U
06/25-26/2018	SW6020A	µg/L	< 0.16 U	--	--	--	< 0.16 U	< 0.16 U	< 0.16 U	--	--	--	0.18 J
08/15-16/2018	SW6020A	µg/L	< 0.16 U	--	--	--	< 0.16 U	< 0.16 U	< 0.16 U	--	--	--	< 0.16 U
10/15-16/2018	SW6020B	µg/L	< 0.070 U	--	--	--	< 0.070 U	< 0.070 U	< 0.070 U	--	--	--	< 0.070 U
03/18-28/2019	SW6020B	µg/L	--	--	0.13 J	3.1	--	--	--	--	--	--	--
09/09-13/2019	SW6020B	µg/L	--	< 0.090 U	< 0.090 U	0.64	1.2	< 0.18 U	< 0.090 U	--	--	--	< 0.090 U
03/02-05/2020	SW6020B	µg/L	0.11 J	< 0.090 U	< 0.090 U	0.58	< 0.090 U	< 0.090 U	< 0.090 U	--	--	--	< 0.090 U
06/02-05/2020	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.24 U	0.31 J	1.8	< 0.24 U
08/24-28/2020	SW6020B	µg/L	0.25 J	< 0.24 U	0.38 J	0.53	< 0.24 U	< 0.24 U	< 0.24 U	0.42 J	0.42 J	1.1	< 0.24 U
12/01-02/2020	SW6020B	µg/L	--	--	--	--	--	--	--	0.29 J	< 0.24 U	< 0.24 U	0.26 J
2/23-26/2021	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
6/7-10/2021	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
8/30-9/1/2021	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
11/29/2021	SW6020B	µg/L	--	--	--	--	--	--	--	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
02/07-09/2022	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
08/29-31/2022	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
02/13-14/2023	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
8/21-25/2023	SW6020B	µg/L	1.2	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
02/12-14/2024	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
08/26-29/2024	SW6020B	µg/L	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U	< 0.43 U
Total Dissolved Solids													
10/27-11/01/2016	SM2540C	mg/L	--	148	--	--	--	--	--	--	--	--	--
12/06-07/2016	SM2540C	mg/L	--	360	49.0	128	--	--	--	--	--	--	--
01/18-19/2017	SM2540C	mg/L	--	127	50.0	141	--	--	--	--	--	--	--
02/28-03/02/2017	SM2540C	mg/L	--	134	70.0	152	--	--	--	--	--	--	--
04/10-12/2017	SM2540C	mg/L	--	150	46.0	155	--	--	--	--	--	--	--
05/11-12/2017	SM2540C	mg/L	--	132	53.0	136	--	--	--	--	--	--	--
06/19-20/2017	SM2540C	mg/L	--	148	44.0	127	--	--	--	--	--	--	--
07/24-25/2017	SM2540C	mg/L	--	129	42.0	136	--	--	--	--	--	--	--
09/06/2017	SM2540C	mg/L	--	136	--	--	--	--	--	--	--	--	--
10/23/2017	SM2540C	mg/L	46.0	--	--	--	261	430	157	--	--	--	< 25.0 U
12/05/2017	SM2540C	mg/L	53.0	--	--	--	256	386	139	--	--	--	< 25.0 U
02/14/2018	SM2540C	mg/L	54.0	--	--	--	256	371	< 25.0 U	--	--	--	121
03/26-28/2018	SM2540C	mg/L	45.0	--	--	--	257	402	119	--	--	--	< 25.0 U
04/30-05/01/2018	SM2540C	mg/L	--	141	--	--	--	--	--	--	--	--	--
05/14-15/2018	SM2540C	mg/L	47.0	--	--	--	263	389	128	--	--	--	< 25.0 U
06/25-26/2018	SM2540C	mg/L	42.0	--	--	--	257	313	161	--	--	--	< 25.0 U
08/15-16/2018	SM2540C	mg/L	61.0	--	--	--	275	400	174	--	--	--	< 25.0 U
10/15-16/2018	SM2540C	mg/L	54.0	145	--	--	257	311	169	--	--	--	< 25.0 U
03/18-28/2019	SM2540C	mg/L	--	--	46.0	174	--	--	--	--	--	--	< 25.0 U
3/19-28/2019	SM2540C	mg/L	40.0	1160	--	--	237	281	137	--	--	--	--
09/09-13/2019	SM2540C	mg/L	--	41.0	57.0	137	< 33.3 U	1540	119	--	--	--	< 25.0 U
03/02-05/2020	SM2540C	mg/L	43.0	131	56.0	145	244	407	121	--	--	--	< 25.0 U
06/02-05/2020	SM2540C	mg/L	--	--	--	--	--	--	--	210	226	296	< 25.0 U
08/24-28/2020	SM2540C	mg/L	56.0	144	74.0	156	211	361	136	215 J+	192	243	27.0
12/01-02/2020	SM2540C	mg/L	--	--	--	--	--	--	--	204	259	285	< 25.0 U
2/23-26/2021	SM2540C	mg/L	69	153	78	140	245	327	152	212	174	324	< 25.0 U
6/7-10/2021	SM2540C	mg/L	--	--	--	--	--	--	--	198	197	262	< 25.0 U
8/30-9/1/2021	SM2540C	mg/L	45	137	< 25.0 U	129	225	348	121	195	192	229	< 25.0 U

Appendix F
Historic Laboratory Detections
Bremo Power Station, West Pond
Permit No. 618

		Location	MW-1	MW-11	MW-32S	MW-32D	MW-12	MW-13	MW-31	MW-37	MW-39S	MW-39D	Field Blank
Sample Date	**Method**	**Unit**											
Total Dissolved Solids (cont.)													
11/29/2021	SM2540C	mg/L	--	--	--	--	--	--	--	206	195	227	< 25.0 U
02/07-09/2022	SM2540C	mg/L	50.0	133	50.0	136	210	330	124	188	177	214	< 25.0 U
08/29-31/2022	SM2540C	mg/L	47.0	138	48.0	126	214	394	121	205	181	200	< 25.0 U
02/13-14/2023	SM2540C	mg/L	50.0	145	54.0	135	213	300	112	196	166	204	< 25.0 U
8/21-25/2023	SM2540C	mg/L	46.0	153	56.0	138	212	419	125	195	193	210	< 25.0 U
02/12-14/2024	SM2540C	mg/L	46.4	149	54.0	128	214	299	120	192	171	209	< 10.0 U
08/26-29/2024	SM2540C	mg/L	63.0	152	58.0	135	209	366	124	197	184	242	< 25.0 U
Vanadium													
10/27-11/01/2016	SW6020B	µg/L	--	12.1	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	22.5	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	15	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	12.8	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	10.7	1.2 J+	0.73 J+	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	11.7	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	10.4	< 0.70 U	< 0.70 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	9.1	1.8 J	< 0.70 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	0.43 J+	--	--	--	0.41 J+	2.1 J+	0.3 J+	--	--	--	0.2 J
12/05/2017	SW6020	µg/L	0.44 J	--	--	--	< 0.27 U	0.36 J	< 0.27	--	--	--	< 0.27 U
02/14/2018	SW6020	µg/L	0.60 J	--	--	--	< 0.27 U	0.78 J	< 0.27	--	--	--	< 0.27 U
03/26-28/2018	SW6020A	µg/L	0.57 J	--	--	--	< 0.27 U	0.34 J	< 0.27	--	--	--	< 0.27 U
05/14-15/2018	SW6020A	µg/L	0.57 J	--	--	--	< 0.27 U	0.60 J	< 0.27	--	--	--	< 0.27 U
06/25-26/2018	SW6020A	µg/L	0.44 J	--	--	--	< 0.27 U	< 0.27	< 0.27	--	--	--	< 0.27 U
08/15-16/2018	SW6020A	µg/L	< 0.27 U	--	--	--	< 0.27 U	0.60 J	< 0.27	--	--	--	< 0.27 U
10/15-16/2018	SW6020A	µg/L	< 0.27 U	--	--	--	< 0.27 U	0.35 J	< 0.27	--	--	--	< 0.27 U
03/18-28/2019	SW6020B	µg/L	--	--	0.83	0.83	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	10.6	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	--	--	--	< 1.3 U
03/02-05/2020	SW6010D	µg/L	< 1.3 U	16.2	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	--	--	--	< 1.3 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
08/24-28/2020	SW6010D	µg/L	< 3.9 U	11.3	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2/23-26/2021	SW6010D	µg/L	< 3.9 U	13	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
8/30-9/1/2021	SW6010D	µg/L	< 3.9 U	12.5	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
02/07-09/2022	SW6010D	µg/L	< 3.9 U	19.1	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
08/29-31/2022	SW6010D	µg/L	< 3.9 U	11.8	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
02/13-14/2023	SW6010D	µg/L	< 1.0 U	9.9 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.1 J	< 1.0 U	1.2 J	< 1.0 U
8/21-25/2023	SW6010D	µg/L	< 3.9 U	10.6	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
02/12-14/2024	SW6010D	µg/L	< 1.6 U	15.9	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
08/26-29/2024	SW6010D	µg/L	< 1.6 U	11.2	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Zinc													
10/27-11/01/2016	SW6020B	µg/L	--	< 24 U	--	--	--	--	--	--	--	--	--
12/06-07/2016	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
01/18-19/2017	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
02/28-03/02/2017	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
04/10-12/2017	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
05/11-12/2017	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
06/19-20/2017	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
07/24-25/2017	SW6020B	µg/L	--	< 24 U	< 24 U	< 24 U	--	--	--	--	--	--	--
10/23/2017	SW6020B	µg/L	< 2.4 U	--	--	--	9.9 J+	8.3 J+	3.3 J+	--	--	--	< 2.4 U
12/05/2017	SW6020	µg/L	1.9 J	--	--	--	4.3 J	3 J	7.6	--	--	--	< 0.82 U
02/14/2018	SW6020	µg/L	3.3 J+	--	--	--	7.7 J+	5.4 J+	13.7 J+	--	--	--	1.1 J
03/26-28/2018	SW6020A	µg/L	2.6 J+	--	--	--	2.0 J	12.8 J+	13.5 J+	--	--	--	1.1 J
05/14-15/2018	SW6020A	µg/L	2.5 J+	--	--	--	3.8 J	15.6	12.1	--	--	--	1.8 J
06/25-26/2018	SW6020A	µg/L	4.4 J+	--	--	--	2.7 J	13.9	12.7 J+	--	--	--	3.3 J
08/15-16/2018	SW6020A	µg/L	3.3 J+	--	--	--	3.2 J	10.2	20.0	--	--	--	1.9 J
10/15-16/2018	SW6020B	µg/L	3.1 J	--	--	--	2.9 J	9.4	10.7	--	--	--	< 2.4 U
03/18-28/2019	SW6020B	µg/L	--	--	1.5 J	19.6	--	--	--	--	--	--	--
09/09-13/2019	SW6010D	µg/L	--	< 3.9 U	9.1 J	3.9 J	< 3.9 U	5.4 J	9.6 J	--	--	--	< 3.9 U
03/02-05/2020	SW6010D	µg/L	< 3.9 U	< 3.9 U	< 3.9 U	8.8 J	< 3.9 U	7.8 J	7.7 J	--	--	--	< 3.9 U
06/02-05/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U
08/24-28/2020	SW6010D	µg/L	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	10.4	9.9 J	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U
12/01-02/2020	SW6010D	µg/L	--	--	--	--	--	--	--	< 9.5 U	21.7	< 9.5 U	< 9.5 U
2/23-26/2021	SW6010D	µg/L	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5	< 9.5	< 9.5 U	< 9.5 U
6/7-10/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 9.5	< 9.5	< 9.5 U	< 9.5 U
8/30-9/1/2021	SW6010D	µg/L	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	10	< 9.5	< 9.5	< 9.5 U	< 9.5 U
11/29/2021	SW6010D	µg/L	--	--	--	--	--	--	--	< 9.5	< 9.5	< 9.5 U	< 9.5 U
02/07-09/2022	SW6010D	µg/L	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	12.3	< 9.5 U	< 9.5	< 9.5	11.6	< 9.5 U
04/13/2022	SW6010D	µg/L	--	--	--	--	--	10 J	--	--	--	< 9.5 U	< 9.5 U
08/29-31/2022	SW6010D	µg/L	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U
02/13-14/2023	SW6010D	µg/L	< 11.0 U	< 11.0 U	< 11.0 U	< 11.0 U	< 11.0 U	12.0 J	12.3 J	< 11.0 U	< 11.0 U	< 11.0 U	< 11.0 U
8/21-25/2023	SW6010D	µg/L	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	12.3	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U	< 9.5 U
02/12-14/2024	SW6010D	µg/L	4.0 J	< 3.0 U	< 3.0 U	< 3.0 U	< 3.0 U	10.9	8.9 J	4.3 J	3.2 J	4.6 J	< 3.0 U
08/26-29/2024	SW6010D	µg/L	3.7 J	< 3.0 U	< 3.0 U	< 3.0 U	< 3.0 U	5.3 J	8.3 J	3.8 J	3.1 J	< 3.0 U	< 3.0 U

Notes: µg/L = Micrograms per liter
mg/L = Milligrams per liter
pCi/L = picoCuries per liter
-- = Not Sampled

J = Estimated concentration
J+ = Potential bias high
J- = Potential bias low
U = Not detected above the level of the reported sample quantitation limit
UJ = Not detected, reporting limit may or may not be higher due to a bias indentified during data validation

APPENDIX G
DATA VALIDATION FORMS

APPENDIX G.1
DATA VALIDATION FORMS
FIRST SEMI-ANNUAL GROUNDWATER MONITORING EVENT
(FEBRUARY 2024)

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 2/12/2024 and 2/14/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92712987

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
021224NMW11	MW-11	N	SW-846 6010D	Barium	T	3.3	J	RL	0.79	5.0		ug/L
021224NMW11	MW-11	N	SW-846 6010D	Copper	T	2.5	J	RL	0.62	5.0		ug/L
021224NMW11	MW-11	N	SW-846 6020B	Cobalt	T	0.34	J	RL	0.050	1.0		ug/L
021224NMW11	MW-11	N	SW-846 9056A	Nitrate as N	N	0.061	J	RL	0.060	0.10		mg/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.

RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92712987

Lab Sample ID	92712987001
Sys Sample Code	021224NMW11
Sample Name	021224NMW11
Sample Date	2/12/2024 1:20:00 PM
Location	BPS-BKGD-MW-11 / MW-11
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	103000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	149				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	3.3	J	RL		0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	19900				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	2.5	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L	15.9				1.6	1.6	5.0	Y	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.34	J	RL		0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	313				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			0.50	0.50	2.5	N	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	3.0				1.0	1.0	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.085				0.025	0.025	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	11.4				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.050	0.050	0.10	N	Yes	1	NA

Lab Sample ID	92712987001
Sys Sample Code	021224NMW11
Sample Name	021224NMW11
Sample Date	2/12/2024 1:20:00 PM
Location	BPS-BKGD-MW-11 / MW-11
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.061	J	RL		0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	6.3				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92712987

Lab Sample ID	L1706899-01
Sys Sample Code	021224NMW11
Sample Name	021224NMW11
Sample Date	2/12/2024 1:20:00 PM
Location	BPS-BKGD-MW-11 / MW-11
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.717	U		0.385				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.239	U		0.248	0.339	0.339	0.339	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.478	U		0.294	0.523	0.523	0.523	N	Y	1	NA

QUALITY ASSURANCE REPORT

FOR THE BREMO POWER STATION SAMPLING REVIEW

AQUEOUS SAMPLES COLLECTED ON

FEBRUARY 12 AND 13, 2024

November 26, 2024

Prepared for:

DOMINION ENERGY SERVICES, INC.
120 Tredegar Street
Richmond, VA 23219

Prepared by:

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Section 5 Project Correspondence

INTRODUCTION

This QA review is based upon an examination of the data generated from the analyses of the seven aqueous samples and associated QC samples collected on February 12 and 13, 2024, at the Bremo Power Station facility in Bremo Bluff, Virgina. These samples were collectively analyzed by Pace Analytical Services (Pace) of Asheville, North Carolina, and of Huntersville, North Carolina, for total metals (specifically, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, copper, molybdenum, nickel, selenium, silver, vanadium, and zinc) by SW-846 Method 6010D; for total metals (specifically, cobalt, iron, lead, lithium, manganese, thallium, and tin) by SW-846 Method 6020B; for total mercury by SW-846 Method 7470A; for anions (specifically, chloride, fluoride, nitrate, and sulfate) by SW-846 Method 9056A; for total dissolved solids by Standard Method (SM) 2540C; for ammonia by US EPA Method 350.1; for total hardness by SM 2340B; for hexavalent chromium by SW-846 Method 7199; for radium-226 by SW-846 Method 9315; for radium-228 by SW-846 Method 9320; and for combined radium-226+228 by calculation.

This review was performed in accordance with the Quality Assurance Program Plan for Environmental Analyses for Dominion Energy (QAPP; Revision 0, March 2020). This review was performed with guidance from the National Functional Guidelines for Inorganic Superfund Methods Data Review (2017, US EPA). This validation guidance document specifically addresses analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SM, SW-846, and US EPA methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SM, SW-846, and US EPA methods utilized by the laboratory.

Data were examined to determine the usability of the analytical results relative to the acceptance criteria in the QAPP and compliance relative to the requirements specified in the analytical methods. In addition, the deliverables were evaluated for completeness and accuracy. Details of this QA review are presented in Section 1 of this report. The reported analytical results are presented in Section 3; any required data validation qualifications are presented on the qualified data tables in Section 3. Reason codes have been placed next to results to enable the data user to quickly assess the qualitative and/or quantitative reliability of any result based on the criteria evaluated. The data qualifications allow the data end-user to best understand the usability of any result. Data not qualified in this report should be considered valid based on the QC criteria that have been reviewed. The data reviewer has included copies of validation forms, QC summary forms, COC Record, laboratory Case Narrative, and other documentation needed to support the findings in this QA review in the Data Support Documentation sections (Section 4). The cover sheet for these sections is a checklist of the QA procedures required by the protocol and examined in this data review. The Project Correspondence is in Section 5.

The analytical results and associated laboratory QC samples were reviewed to determine the integrity of the reported analytical results and to ensure that the data met the established DQOs. This QA review includes all samples in Pace Report Number 92712989.

TABLE 1

SAMPLES THAT HAVE UNDERGONE QUALITY ASSURANCE REVIEW

Sample Identification	Laboratory Sample Identifications	Laboratory Report Number	Matrix	Date Sample Collected	Parameter Examined
021224NMW13	92712989001 L1706901-01	92712989	Aq	2/12/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228
021224NMW31	92712989002 L1706901-02	92712989	Aq	2/12/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228
021224NMW32S	92712989003 L1706901-03	92712989	Aq	2/12/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228
021224NMW32D	92712989004 L1706901-04	92712989	Aq	2/12/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228
021224NWPFDDUPLICATE (Field Duplicate of 021224NMW31)	92712989005 L1706901-05	92712989	Aq	2/12/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228
021324NMW1	92712989006 L1706901-06	92712989	Aq	2/13/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228
021324NMW12	92712989007 L1706901-07	92712989	Aq	2/13/24	M, M^1, H, Hg, Cr^{+6}, An, NH, TDS, Ra-226, Ra-228, Ra-226+228

Parameters Examined:

M - Total Metals (specifically, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, copper, molybdenum, nickel, selenium, silver, vanadium, and zinc) by SW-846 Method 6010D.

M^1 - Total Metals (specifically, cobalt, iron, lead, lithium, manganese, thallium, and tin) by SW-846 Method 6020B.

H - Total Hardness by SM 2340B.

Hg - Total Mercury by SW-846 Method 7470A.

TABLE 1 (Cont.)

Parameters (Con't):

Cr^{+6}	-	Hexavalent Chromium by SW-846 Method 7199A.
An	-	Anions (specifically, chloride, fluoride, nitrate and sulfate) by SW-846 Method 9056A.
NH	-	Ammonia by US EPA Method 350.1
TDS	-	Total Dissolved Solids by SM 2540C.
Ra-226	-	Total Radium-226 by SW-846 Method 9315.
Ra-228	-	Total Radium-228 by SW-846 Method 9320.
Ra-226+228	-	Combined Radium-226+228 by calculation.
Aq	-	Aqueous.

SECTION 1 QUALITY ASSURANCE REVIEW

ITEMS REVIEWED

COC Record and Case Narrative	Sample Login
Holding Times	Sample Preservation
Sample Preparation	Blank Results
LCS/LCSD Recovery and Precision	MS/MSD Recovery and Precision
Field Duplicate Precision	Laboratory Replicate Evaluation
Surrogate Recovery	Instrument Performance Checks
Instrument Calibration Results	ICV and CCV Results
Efficiency Checks	Background Checks
Chemical Yield	Internal Standard Area Count/Recovery
PDS Results	Serial Dilution Results
ICS Results	RL Standard
Sample Quantitation	Percent Solids
Replicate Analysis Evaluation	Analytical Sequence
Results Reported Between the MDL and RL	Qualitative Evaluation
Data Package Completeness	

Based upon review of the data package provided, the following issues and data qualifiers are offered. Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following issues should not be construed as an indication of laboratory performance.

COMMENTS

1. All analyses performed for the sampling event were in compliance with the requirements set forth in the QAPP.

2. One field duplicate pair, sample 021224NMW31 and its field duplicate, sample 021224NWPFDDUPLICATE, were collected and analyzed with this data set. Acceptable precision and sample representativeness were observed between the field duplicate pair, with the exceptions noted in the table below.

3. Radium-226+228 was reported as the summation of the calculated activities for radium-226 and radium-228. The reported results for radium-226+228 for the samples

included in this report may have been adjusted and/or qualified in accordance with the Dominion Energy reporting protocols and assigned an “S” reason code.

QUALIFICATION

Based on the items included in this QA review, the following qualifiers are offered.

Analyte(s)	Sample(s)	Validation Qualifier(s)	Reason(s) for Qualification
boron	021224NMW13, 021224NMW31, 021224NMW32S, and 021224NWPFDDUPLICATE	U	BF
radium-226 and combined radium	021224NMW31 and 021224NMW32D	U	BL
radium-228 and combined radium	021224NWPFDDUPLICATE	U	BF, BL,
radium-228 and combined radium	021224NWPFDDUPLICATE	J+ (unless previously flagged “U”)	Y
radium-228 and combined radium	021224NMW31 and 021224NWPFDDUPLICATE	J/UJ (unless previously flagged U)	FD
fluoride	all samples	J-/UJ	R
fluoride	021224NMW32S, 021224NMW32D, 021324NMW1, and 021324NMW12	J+	M
fluoride	021224NMW32S and 021224NMW32D	J	MP
sulfate	021224NMW13, 021224NMW31, 021224NMW32S, 021224NMW32D, and 021224NWPFDDUPLICATE	J-	M

- In accordance with reporting conventions, all positive non-radiological results reported between the MDL and RL should be considered estimated and have been flagged “J” (unless previously flagged “U”) on the data tables. (Reason Code: RL)

- Any radium-226+228 result reported from the summation of one isotope activity less than the MDA (negative or non-negative value) and one isotope activity greater than the MDA should be considered estimated and have been flagged “J” on the data tables. (Reason Code S)

- For results qualified due to blank contamination, the values in the result field of the data tables should be considered the revised MDLs and RLs (if the reported results exceeded the RL).

- When sample results were qualified both as estimated with a direction of bias ("J+" or "J-") and as estimated with unknown bias ("J") or the opposite bias, only the unknown bias qualifier has been included in the EDD and on the data tables.

SIGNATURES

Validation performed by: Wendy Zhou 11/26/24

Wendy Zhou, Date
Quality Assurance Chemist

Validation reviewed by: Amanda J Cover 11/26/24

Amanda J. Cover, Date
Associate Chemist

Report approved by: Alyssa M. Reed 11/26/24

Alyssa M. Reed, Date
Senior Quality Assurance Chemist/
Project Manager

Report approved by: Jennifer Gable 11/26/24

Jennifer N. Gable, Date
Principal Chemist

SECTION 2

DATA QUALIFIERS, REASON CODES, AND ACRONYMS

DATA QUALIFIERS

U	The analyte was analyzed was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity with indeterminate bias. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

REASON CODES AND EXPLANATIONS

Reason Code	Description
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
C	Initial and/or continuing calibration issue.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance.
Q	Chemical preservation issue.
R	RL standards outside of acceptance limits.
RL	Positive result reported between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results.
SD	Serial dilution imprecision.
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits.
Z	Instrumental or chromatographic interference.
ZZ	Other.

ACROMYNS AND ABBREVIATIONS

Acronym/ Abbreviation	Description
Aq	Aqueous
ASTM	American Society for Testing and Materials
BFB	Bromofluorobenzene
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
°C	Celsius (degree)
CAS #	Chemical Abstract Service Number(s)
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCC	Calibration Check Compound
CCV	Continuing Calibration Verification
CEAC	Certified Environmental Analytical Chemist
CF	Calibration Factor
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
COA	Certificate of Analysis
COC	Chain-of-Custody
CoD	Coefficient of Determination
CRDL	Contract-Required Detection Limit
CRQL	Contract-Required Quantitation Limit
CVAA	Cold Vapor Atomic Absorption
%D	Percent Difference
DAI	Direct Aqueous Injection
DCS	Detectability Check Sample
DF	Dilution Factor
DFTPP	Decafluorotriphenylphosphine
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DQO	Data Quality Objective

Acronym/ Abbreviation	Description
DRO	Diesel Range Organic
DUP	Sample Duplicate
DVM	Data Verification Module
EDB	Ethylene Dibromide
EDD	Electronic Data Deliverable
EMPC	Estimated Maximum Possible Concentration
°F	Fahrenheit (degree)
FID	Flame Ionization Detector
FWHM	Full Width Half Maximum
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
GW	Groundwater
HASL	Health and Safety Laboratory
HCl	Hydrochloric Acid
HDPE	High Density Polyethylene
HEM	Hexane Extractable Material
HPLC	High Performance Liquid Chromatography
HRGC/HRMS	High Resolution Gas Chromatography/High Resolution Mass Spectrometry
IC	Ion Chromatography
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ICS	Interference Check Sample
ICSA	Interference Check Sample [A]
ICSAB	Interference Check Sample [A & B]
ICV	Initial Calibration Verification
ID	Identification

Acronym/ Abbreviation	Description
IDL	Instrument Detection Limit
LC	Liquid Chromatography
LC/MS	Liquid Chromatography/Mass Spectrometry
LC/MS/MS	Liquid Chromatography/Tandem Mass Spectrometry
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LIMS	Laboratory Information Management System
LLE	Liquid-Liquid Extraction
LOD	Limit of Detection
LOQ	Limit of Quantitation
M.S.	Master of Science
MB	Method Blank
MBAS	Methylene Blue Active Substances
MDA	Minimum Detectable Activity
MDC	Minimum Detectable Concentration
MDL	Method Detection Limit
mg/L	Milligrams per Liter
MRL	Method Reporting Limit
MS	Mass Spectrometry/Matrix Spike
MS/MS	Tandem Mass Spectrometry
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standards Addition
MSI	Matrix Spike Insoluble
MTBE	Methyl *Tertiary* Butyl Ether
N	Nitrogen
ND	Not Detected (at or above the detection limit) or “Not-Detected”
NIS	Injection Internal Standard
ORP	Oxidation Reduction Potential
P.G.	Professional Geologist/Geoscientist

Acronym/ Abbreviation	Description
PAH	Polycyclic/Polynuclear Aromatic Hydrocarbon (or Polyaromatic)
PCB	Polychlorinated Biphenyl
PDS	Post-digestion Spike
Ph.D.	Doctor or holds a Doctorate Degree
PM	Project Manager
PMP	Project Management Professional
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
PQL	Practical Quantitation Limit
PRDL	Project-Required Detection Limit
PRQL	Project-Required Quantitation Limit
PRRL	Project-Required Reporting Limit
PVC	Polyvinyl Chloride
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RER	Replicate Error Ratio
RF	Response Factor
RL	Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSD	Relative Standard Deviation
RT	Retention Time
S/N	Signal-to-Noise
SAP	Sampling and Analysis Plan
SCUR	Sample Conditions Upon Receipt
SDG	Sample Delivery Group
Sed	Sediment

Acronym/ Abbreviation	Description
SGC	Silica Gel Cleanup
SGT	Silica Gel Treatment
SICP	Selected Ion Current Profile
SIM	Selective Ion Monitoring
SM	Standard Methods for the Analysis of Water and Wastewater
SOP	Standard Operating Procedure
SOW	Statement of Work
SPCC	System Performance Check Compound
SU	Standard Units
SVOC	Semivolatile Organic Compound
SW	Surface Water
SW-846	Test Methods for Evaluating Solid Waste Physical/Chemical Method
TBA	*Tert*-butyl Acetate
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TCP	Trichloropropane
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TOD	Total Oxygen Demand
TOX	Total Organic Halogen/Total Organic Halides
TPH	Total Petroleum Hydrocarbon
TSM	Technical Specifications Manual
TSS	Total Suspended Solids
µg/L	Micrograms per Liter
UCL	Upper Control Limit
US	United States
US EPA	United States Environmental Protection Agency
VA DEQ	Virginia Department of Environmental Quality
VOC	Volatile Organic Compound

Acronym/ Abbreviation	Description
VPH	Volatile Petroleum Hydrocarbon
VTSR	Validated Time of Sample Receipt
WET	Whole Effluent Toxicity
WO	Work Order(s)
WP	Work Plan
ZHE	Zero Headspace Extraction/Extractor

SECTION 3

ANALYTICAL RESULTS

Facility: Bremo Power Station
SDG: 92712989

Lab Sample ID	92712989001
Sys Sample Code	021224NMW13
Sample Name	021224NMW13
Sample Date	2/12/2024 4:40:00 PM
Location	BPS-WAP-MW-13 / MW-13
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.034	J	RL		0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	171000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	299				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	57.2				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U	BF		24.0	24.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L	0.71	J	RL		0.29	0.29	1.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	52000				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	1.2	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	9.0				0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	10.9				3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	4.6				0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	1180				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.9	J	RL		0.50	0.50	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	947				10.2	10.2	20.0	Y	Yes	10	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Sulfate	14808-79-8	N	mg/L	158	J-	M		1.5	1.5	3.0	Y	Yes	3	NA

Lab Sample ID	92712989001
Sys Sample Code	021224NMW13
Sample Name	021224NMW13
Sample Date	2/12/2024 4:40:00 PM
Location	BPS-WAP-MW-13 / MW-13
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Chloride	16887-00-6	N	mg/L	10.1				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		UJ	R		0.050	0.050	0.10	N	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L	0.15				0.060	0.060	0.10	Y	Yes	1	NA

Lab Sample ID	92712989002
Sys Sample Code	021224NMW31
Sample Name	021224NMW31
Sample Date	2/12/2024 3:20:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	46200				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	120				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	58.1				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U	BF		10.2	10.2	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	11700				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L	0.70	J	RL		0.63	0.63	5.0	Y	Yes	1	NA
	Copper	7440-50-8	T	ug/L	9.4				0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	6.5				0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	8.9	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	3.6				0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	353				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.9	J	RL		0.50	0.50	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	301				3.1	3.1	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.030				0.025	0.025	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	2.0				0.60	0.60	1.0	Y	Yes	1	NA

Lab Sample ID	92712989002
Sys Sample Code	021224NMW31
Sample Name	021224NMW31
Sample Date	2/12/2024 3:20:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Fluoride	16984-48-8	N	mg/L		UJ	R		0.050	0.050	0.10	N	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L	0.23				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	46.1	J-	M		0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92712989003
Sys Sample Code	021224NMW32S
Sample Name	021224NMW32S
Sample Date	2/12/2024 4:00:00 PM
Location	BPS-WAP-MW-32S / MW-32S
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	22200				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	54.0				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	11.2				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U	BF		9.0	9.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	4390				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L	0.64	J	RL		0.63	0.63	5.0	Y	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L	1.7	J	RL		0.49	0.49	5.0	Y	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.050	0.050	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L	182				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L	0.081	J	RL		0.077	0.077	1.0	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			0.50	0.50	2.5	N	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	2.5				1.0	1.0	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.089				0.025	0.025	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	3.3				0.60	0.60	1.0	Y	Yes	1	NA

Lab Sample ID	92712989003
Sys Sample Code	021224NMW32S
Sample Name	021224NMW32S
Sample Date	2/12/2024 4:00:00 PM
Location	BPS-WAP-MW-32S / MW-32S
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Fluoride	16984-48-8	N	mg/L	0.072	J	M,MP,R,RL		0.050	0.050	0.10	Y	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L	0.91				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	2.4	J-	M		0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92712989004
Sys Sample Code	021224NMW32D
Sample Name	021224NMW32D
Sample Date	2/12/2024 2:40:00 PM
Location	BPS-WAP-MW-32D / MW-32D
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	85600				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	128				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	5.3				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	27300				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.050	0.050	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L	227				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.5				0.50	0.50	2.5	Y	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	45.4				1.0	1.0	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	3.0				0.60	0.60	1.0	Y	Yes	1	NA

Lab Sample ID	92712989004
Sys Sample Code	021224NMW32D
Sample Name	021224NMW32D
Sample Date	2/12/2024 2:40:00 PM
Location	BPS-WAP-MW-32D / MW-32D
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Fluoride	16984-48-8	N	mg/L	0.14	J	M,MP,R		0.050	0.050	0.10	Y	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L	0.087	J	RL		0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	11.0	J-	M		0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92712989005
Sys Sample Code	021224NWPFDDUPLICATE
Sample Name	021224NWPFDDUPLICATE
Sample Date	2/12/2024 3:20:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	FD
Matrix	GW
Parent Sample	021224NMW31
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	44700				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	122				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	56.0				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U	BF		9.8	9.8	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	11300				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L	0.76	J	RL		0.63	0.63	5.0	Y	Yes	1	NA
	Copper	7440-50-8	T	ug/L	9.3				0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	6.1				0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	9.2	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	3.6				0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	336				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.9	J	RL		0.50	0.50	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	288				3.1	3.1	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	2.0				0.60	0.60	1.0	Y	Yes	1	NA

Lab Sample ID	92712989005
Sys Sample Code	021224NWPFDDUPLICATE
Sample Name	021224NWPFDDUPLICATE
Sample Date	2/12/2024 3:20:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	FD
Matrix	GW
Parent Sample	021224NMW31
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Fluoride	16984-48-8	N	mg/L		UJ	R		0.050	0.050	0.10	N	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L	0.16				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	45.9	J-	M		0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92712989006
Sys Sample Code	021324NMW1
Sample Name	021324NMW1
Sample Date	2/13/2024 1:10:00 PM
Location	BPS-WAP-MW-01 / MW-1
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	15200				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	46.4				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	13.0				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2970				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	0.97	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	4.0	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	1.1				0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	149				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			0.50	0.50	2.5	N	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	37.3				1.0	1.0	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.025				0.025	0.025	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	2.6				0.60	0.60	1.0	Y	Yes	1	NA

Lab Sample ID	92712989006
Sys Sample Code	021324NMW1
Sample Name	021324NMW1
Sample Date	2/13/2024 1:10:00 PM
Location	BPS-WAP-MW-01 / MW-1
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Fluoride	16984-48-8	N	mg/L	0.070	J	M,R,RL		0.050	0.050	0.10	Y	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L	0.10				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	3.1				0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92712989007
Sys Sample Code	021324NMW12
Sample Name	021324NMW12
Sample Date	2/13/2024 12:00:00 PM
Location	BPS-WAP-MW-12 / MW-12
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.060	J	RL		0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	119000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	214				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	63.0				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	1210				4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	34500				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	1.3	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.053	J	RL		0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	3430				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	0.62	J	RL		0.50	0.50	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	343				3.1	3.1	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	3.6				0.60	0.60	1.0	Y	Yes	1	NA

Lab Sample ID	92712989007
Sys Sample Code	021324NMW12
Sample Name	021324NMW12
Sample Date	2/13/2024 12:00:00 PM
Location	BPS-WAP-MW-12 / MW-12
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Fluoride	16984-48-8	N	mg/L	0.055	J	M,R,RL		0.050	0.050	0.10	Y	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L		U			0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	86.7				0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	L1706901-01
Sys Sample Code	021224NMW13
Sample Name	021224NMW13
Sample Date	2/12/2024 4:40:00 PM
Location	BPS-WAP-MW-13 / MW-13
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.490	U		0.369				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.240	U		0.249	0.379	0.379	0.379	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.250	U		0.272	0.490	0.490	0.490	N	Y	1	NA

Lab Sample ID	L1706901-02
Sys Sample Code	021224NMW31
Sample Name	021224NMW31
Sample Date	2/12/2024 3:20:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.283	U	BL,FD,S	0.352				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.283	U	BL	0.234	0.283	0.283	0.283	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.000	UJ	FD	0.263	0.480	0.480	0.480	N	Y	1	NA

Lab Sample ID	L1706901-03
Sys Sample Code	021224NMW32S
Sample Name	021224NMW32S
Sample Date	2/12/2024 4:00:00 PM
Location	BPS-WAP-MW-32S / MW-32S
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.232	U		0.350				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.111	U		0.238	0.459	0.459	0.459	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.121	U		0.257	0.466	0.466	0.466	N	Y	1	NA

Lab Sample ID	L1706901-04
Sys Sample Code	021224NMW32D
Sample Name	021224NMW32D
Sample Date	2/12/2024 2:40:00 PM
Location	BPS-WAP-MW-32D / MW-32D
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.904	U	BL,S	0.425				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.586	U	BL	0.346	0.586	0.586	0.586	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.318	U		0.246	0.441	0.441	0.441	N	Y	1	NA

Lab Sample ID	L1706901-05
Sys Sample Code	021224NWPFDDUPLICATE
Sample Name	021224NWPFDDUPLICATE
Sample Date	2/12/2024 3:20:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	FD
Matrix	GW
Parent Sample	021224NMW31
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.762	U	BF,BL,Y,FD,S	0.351				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.370	U		0.289	0.379	0.379	0.379	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.392	U	BF,BL,Y,FD	0.200	0.392	0.392	0.392	N	Y	1	NA

Lab Sample ID	L1706901-06
Sys Sample Code	021324NMW1
Sample Name	021324NMW1
Sample Date	2/13/2024 1:10:00 PM
Location	BPS-WAP-MW-01 / MW-1
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.152	U	S	0.308				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.152	U		0.181	0.274	0.274	0.274	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	-0.136	U		0.249	0.484	0.484	0.484	N	Y	1	NA

Lab Sample ID	L1706901-07
Sys Sample Code	021324NMW12
Sample Name	021324NMW12
Sample Date	2/13/2024 12:00:00 PM
Location	BPS-WAP-MW-12 / MW-12
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	1.22	J	S	0.493				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.730			0.402	0.458	0.458	0.458	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.492	U		0.285	0.507	0.507	0.507	N	Y	1	NA

SECTION 4

SUPPORT DOCUMENTATION

INORGANIC ANALYSIS SUPPORT DOCUMENTATION

Client Name:	Dominion Energy	EnvStd Project Manager:	Alyssa Reed
Site/Project Name:	Bremo Power Station/2024 GW QA and DM	Reviewed by:	Wendy Zhou
Job Number/Task/Subtask:	2024 GW QA and DM - Bremo West Pond > Professional Services > Level 4 Data Validation	Approved by:	AJC
Laboratory/Location:	Pace Asheville and Charlotte/NC	Completion Date:	11/2024
SDG:	92712989	Validation Level:	4
Sample Collection Dates:	2/12 and 2/13/2024		

The following table indicates criteria that were examined, the identified problems, and support documentation attachments.

	Criteria Examined in Detail **Note:** All items examined have been included in the Support Document unless otherwise noted.							**Problems Identified**						
	Check (√) if Yes or Footnote Letter for Comments Below													
Parameter/ Method	Metals - 6010D	Metals – 6020B	Mercury – 7470A	Anions – 9056A	Ammonia – 350.1	TDS – 2540C	Hexachrome	Metals - 6010D	Metals – 6020B	Mercury – 7470A	Anions – 9056A	Ammonia – 350.1	TDS – 2540C	Hexachrome
Condition upon Receipt	√	√	√	√	√	√	√							
Sample Preservation	√	√	√	√	√	√	√							
Holding Times	√	√	√	√	√	√	√							
Blank Analysis Results	√	√	√	√	√	√	√	√						
Laboratory Control Sample	√	√	√	√	√	√	√							
Matrix Spike (Pre-Digestion Spike)	√	√	√	√	√		√				√			
Laboratory Duplicate						√								
Field Duplicate	√	√	√	√	√	√	√							
Total *vs.* Dissolved Results Comparison														
Sample Preparation	√	√	√	√	√	√	√							
Mass Tuning		√												
Initial Calibrations	√	√	√	√	√		√							
Continuing Calibrations	√	√	√	√	√		√							
Detection Limit/Reporting Limit Standards	√	√	√	√							√			
Negative Bias	√	√	√											
Interference Checks	√	√												
Post-Digestion Spike	√	√												
Serial Dilution	√	√												
Analytical Sequence	√	√	√	√	√	√	√							
Linear Range Analysis														
Interelement Correction Factors														
Detection Limit/Sensitivity	√	√	√	√	√	√	√							
Dilutions		√		√										
Internal Standard Performance	√	√												
Quantitation of Results	√	√	√	√	√	√	√							
Multiple Exposures %RSD	√	√	√											
Percent Solids														
Deliverable was Complete	√	√	√	√	√	√	√							
Others:														

Comments: Quantitation of Results and Multiple Exposures are not included in the Support Documentation unless a problem was identified.

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

BLANK ANALYSIS RESULTS

Fraction[1]	Matrix[2]	Blank Type[3]	Blank Sample Number	Contaminant	Concentration	Units[4]	Qualification limit (5×)	Qualification limit (10×)
M	Aq	FB	021224NFBBLANK	boron	24	µg/L	120	240
			[92712991001]					

1 - M = Metal; G = General Chemistry; V = Volatile; S = Semivolatile; P = Pesticide/PCB; O = Other:
2 - Aq = Aqueous; S = Solid
3 - MB = Method Blank; TB = Trip Blank; EB = Equipment Blank; FB = Field Blank;
IB = Instrument Blank; CCB = Continuing Calibration Blank; ICB = Initial Calibration Blank
4 - µg/L, mg/L, µg/kg, mg/kg

Notes:
Samples 1-3, 5 "U" ; Reason Code BF

ENVIRONMENTAL STANDARDS, INC.
EVALUATION OF DUPLICATE RESULTS

Effective Date: 6/13/2017
Revision: 1

Matrix: (●) Aqueous ( ) Non-aq.
Reporting Level: (●) MDL ( ) QL
Units: µg/L

PRECISION OBJECTIVES:
If Both Results ≥ 5 × Their QL, RPD ≤: 20
If Either Result < 5 × Its QL, Dif. ≤: 1 **× Highest QL**

Sample ID:	021224NMW31				**Duplicate Sample ID:**	021224NWPFDDUPLICATE					
Analyte	**Sample Concentration**	**Qual**	**QL**	**MDL**	**Duplicate Concentration**	**Qual**	**QL**	**MDL**	**Difference**	**RPD**	**Flag**
Nitrogen, Ammonia	0.031	U	0.1	0.031	0.031	U	0.1	0.031	NA	NA	
Hardness, Total(SM 2340B)	46200		662	36.8	44700		662	36.8	NA	3%	
Total Dissolved Solids	120		10	10	122		10	10	NA	2%	
Antimony	3.6	U	5	3.6	3.6	U	5	3.6	NA	NA	
Arsenic	2.5	U	10	2.5	2.5	U	10	2.5	NA	NA	
Barium	58.1		5	0.79	56		5	0.79	NA	4%	
Beryllium	0.16	U	1	0.16	0.16	U	1	0.16	NA	NA	
Boron	10.2	U	50	10.2	9.8	U	50	9.8	NA	NA	
Cadmium	0.29	U	1	0.29	0.29	U	1	0.29	NA	NA	
Calcium	11700		100	14.7	11300		100	14.7	NA	3%	
Chromium	0.7	J	5	0.63	0.76	J	5	0.63	NA	NA	
Copper	9.4		5	0.62	9.3		5	0.62	0.1	NA	
Molybdenum	2.6	U	5	2.6	2.6	U	5	2.6	NA	NA	
Nickel	6.5		5	0.88	6.1		5	0.88	0.4	NA	
Selenium	4.1	U	10	4.1	4.1	U	10	4.1	NA	NA	
Silver	0.49	U	5	0.49	0.49	U	5	0.49	NA	NA	
Vanadium	1.6	U	5	1.6	1.6	U	5	1.6	NA	NA	
Zinc	8.9	J	10	3	9.2	J	10	3	NA	NA	
Cobalt	3.6		1	0.05	3.6		1	0.05	0	NA	
Iron	353		50	20.9	336		50	20.9	NA	5%	
Lead	0.077	U	1	0.077	0.077	U	1	0.077	NA	NA	
Lithium	1.9	J	2.5	0.5	1.9	J	2.5	0.5	NA	NA	
Manganese	301		6	3.1	288		6	3.1	NA	4%	
Thallium	0.05	U	0.2	0.05	0.05	U	0.2	0.05	NA	NA	
Tin	0.43	U	1	0.43	0.43	U	1	0.43	NA	NA	
Chromium, Hexavalent	0.03		0.025	0.025	0.025	U	0.025	0.025	0.005	NA	
Mercury	0.12	U	0.2	0.12	0.12	U	0.2	0.12	NA	NA	
Chloride	2		1	0.6	2		1	0.6	0	NA	
Fluoride	0.05	U	0.1	0.05	0.05	U	0.1	0.05	NA	NA	
Nitrate as N	0.23		0.1	0.06	0.16		0.1	0.06	0.07	NA	
Sulfate	46.1		1	0.5	45.9		1	0.5	NA	0%	

NOTES:

Qual: Qualifier(s) based on evaluation(s) other than Total/ vs. Dissolved comparison, if applicable (J, U, U* or B)
RPD: Relative Percent Difference
QL: Quantitation Limit
MDL: Method Detection Limit
RL: Reporting Limit. RL = QL for QL reporting and MDL for MDL reporting
J: The analyte concentration should be considered estimated
U: The analyte was not detected in the sample at or above the RL indicated. The RL will be used for comparison purposes.
UJ: The analyte was not detected in the sample at or above the Reporting Limit Indicated. The RL is approximate.
R: The analyte was analyzed for and detected, but sample results are unreliable. The presence or absence of the analyte cannot be verified.
UR: The analyte was analyzed for and not detected, but the determination that the analyte was not present in the sample is unreliable. The presence or absence of the analyte cannot be verified.
U* The result was blank qualified. The RL will be used for comparison purposes.
NA: The MDL (for QL reporting), RPD or Difference is not applicable

Comments:

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Bremo_1SA2024_CCR&VSWMR_P_F
Pace Project No.: 92712989

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92712989001	**021224NMW13**	Water	02/12/24 16:40	02/13/24 10:35
92712989002	**021224NMW31**	Water	02/12/24 15:20	02/13/24 10:35
92712989003	**021224NMW32S**	Water	02/12/24 16:00	02/13/24 10:35
92712989004	**021224NMW32D**	Water	02/12/24 14:40	02/13/24 10:35
92712989005	**021224NWPFDDUPLICATE**	Water	02/12/24 15:20	02/13/24 10:35
92712989006	**021324NMW1**	Water	02/13/24 13:10	02/14/24 10:18
92712989007	**021324NMW12**	Water	02/13/24 12:00	02/14/24 10:18

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace	DC#_Title: ENV-FRM-HUN1-0084 v02_Tech Spec Sample Condition Upon Receipt Effective Date:

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO#: 92712989

92712989

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☑ Client

Carrier Tracking Number: NA

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** GKG 2/13/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 012T010 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.9 **Correction Factor: Add / Subtract (°C)** -0.1

Corrected Cooler Temp (°C): 1.7 ✔

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO#: 92712989

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	B?|N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1	1		1	1															1				2				
2		1	1		1	1															1				2				
3		1	1		1	1															1				2				
4		1	1		1	1															1				2				
5		1	1		1	1															1				2				
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E Mail:	kelly.a.hicks@dominionenergy com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_F	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET		County / State origin of sample(s):	Virginia

Data Deliverables: [ ] Level II [ ] Level III [✓] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/F/SO4/NO3	Radium 226	Radium 228 & Total Radium	Sample Comment
~~02__24NMW1 MK~~	WT									X	X	X	X	X	X	X	-All samples
~~02__24NMW12 MK~~	WT									X	X	X	X	X	X	X	preserved on ice
02 12 24NMW13	WT	G			2/12/24	1640	7			X	X	X	X	X	X	X	
02 12 24NMW31	WT	G			2/12/24	1520	7			X	X	X	X	X	X	X	-Level IV
02 12 24NMW32S	WT	G			2/12/24	1600	7			X	X	X	X	X	X	X	data package
02 12 24NMW32D	WT	G			2/12/24	1440	7			X	X	X	X	X	X	X	
02 12 24NWPFDDUPLICATE	WT	G			2/12/24	1520	7			X	X	X	X	X	X	X	
~~02__24__MS MK~~ ✓	WT									X	X	X	X	X	X	X	
~~02__24__MSD MK~~	WT									X	X	X	X	X	X	X	

Lab Use Only: Proj. Mgr: Angela Baioni; AcctNum / Client ID:; Table #:; Profile / Template: 13861; Prelog / Bottle Ord. ID: EZ 3059968

Preservation non-conformance identified for sample:

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Additional Instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

Collected By: (Printed Name) M. Krez, Z. Mondshine

Signature: M. Krez, ZM

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp (°C)	Corrected Temp (°C)	On Ice:

	Date/Time		Date/Time		
Relinquished by/Company: (Signature) M. Krez / WSP	2/12/24 @ 1900	Received by/Company: (Signature) GLG Pace HVL	2/13/24 1035	Tracking Number:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: ✓	Delivered by: [ ] In Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other	
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time		
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Page: 1 of 1	

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORQ-0019_v02_110123 ©

5 10 2006

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5 ✔
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
021224MMW32D	GCG	9.64	9.46	2/13/24 1124	11 Drops Acid	224909
021224MMW32S	GCG	9.70	9.45	2/13/24 1134	12 Drops Acid	224909
			✔			

Pace	DC#_Title: ENV-FRM-HUN1-0084 v02_Tech Spec Sample Condition Upon Receipt
	Effective Date:

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO# : 92712989

92712989

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☑ Client

Carrier Tracking Number: NA

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** GCG 2/14/24

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 421090 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 1.3 **Correction Factor: Add / Subtract (°C)** -0.1

Corrected Cooler Temp (°C): 1.2 ✔

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: CWT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.	
Time opened:	Temp:
Time:	put in cooler
Time:	Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

Qualtrax Document ID: 70677

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project # **WO#: 92712989**

PM: AMB Due Date: 02/27/24

CLIENT: 92-DomEnergy

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP1N	BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		3	3		3	3															3				6				
2		1	1		1	1															1				2				
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street, Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	Bremo_1SA2024_CCR&VSWMR_NEWPonds_F	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50156400
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [✓] ET

County / State origin of sample(s): Virginia

Data Deliverables: [ ] Level II [ ] Level III [✓] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	2540C Total Dissolved Solids	350.1 Ammonia	6010/6020/7470 Metals	7199 Chromium, Hexavalent	9056 - Cl/FI/SO4/NO3	Radium 226	Radium 228 & Total Radium	Sample Comment
02_13_24NMW1	WT	G			2/13/23	1310	21			X	X	X	X	X	X	X	-MS/MSD taken at MW-2 -All samples preserved on ice
02_13_24NMW12	WT	G			2/13/23	1200	7			X	X	X	X	X	X	X	
~~02__24NMW13~~ MK ✓	WT				✓	✓				X	X	X	X	X	X	X	
~~02__24NMW31~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NMW32S~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NMW32D~~ MK	WT									X	X	X	X	X	X	X	
~~02__24NWPPDDUPLICATE~~ MK	WT									X	X	X	X	X	X	X	
~~02__24_____MS~~ MK	WT									X	X	X	X	X	X	X	
~~02__24_____MSD~~ MK	WT									X	X	X	X	X	X	X	

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) ~~125mL~~, (5) ~~100mL~~, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Angela Baioni

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3059968

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
LEVEL IV DATA PACKAGE REQUIRED

Collected By: (Printed Name) Michael Knez, Z. Mordshire

Signature: M. Knez, Z. Mordshire

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
M. Knez / WSP	2/13/24 @ 1900	Pace HH	2/14/24 1018
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: ✓
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 1 of 1

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ENV-FRM-CORQ-0019_v02_110123 ©

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5 ✔
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
021324WMW12	GCG	9.62	9.46	2/14/24 1051	6 Drops Acid	224809
			✔			

SAMPLE NO.

021224NMW13

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/20/2024 15:25
7440-38-2	Arsenic	ND	U	ug/L	1	02/20/2024 15:25
7440-39-3	Barium	57.2		ug/L	1	02/20/2024 15:25
7440-41-7	Beryllium	ND	U	ug/L	1	02/20/2024 15:25
7440-42-8	Boron	24.0	J	ug/L	1	02/20/2024 15:25
7440-43-9	Cadmium	0.71	J	ug/L	1	02/20/2024 15:25
7440-70-2	Calcium	52000		ug/L	1	02/20/2024 15:25
7440-47-3	Chromium	ND	U	ug/L	1	02/20/2024 15:25
7440-50-8	Copper	1.2	J	ug/L	1	02/20/2024 15:25
	Hardness, Total(SM 2340B)	171000		ug/L	1	02/20/2024 15:25
7439-98-7	Molybdenum	ND	U	ug/L	1	02/20/2024 15:25
7440-02-0	Nickel	9.0		ug/L	1	02/20/2024 15:25
7782-49-2	Selenium	ND	U	ug/L	1	02/20/2024 15:25
7440-22-4	Silver	ND	U	ug/L	1	02/20/2024 15:25
7440-62-2	Vanadium	ND	U	ug/L	1	02/20/2024 15:25
7440-66-6	Zinc	10.9		ug/L	1	02/20/2024 15:25

SAMPLE NO.

021224NMW31

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/20/2024 15:28
7440-38-2	Arsenic	ND	U	ug/L	1	02/20/2024 15:28
7440-39-3	Barium	58.1		ug/L	1	02/20/2024 15:28
7440-41-7	Beryllium	ND	U	ug/L	1	02/20/2024 15:28
7440-42-8	Boron	10.2	J	ug/L	1	02/20/2024 15:28
7440-43-9	Cadmium	ND	U	ug/L	1	02/20/2024 15:28
7440-70-2	Calcium	11700		ug/L	1	02/20/2024 15:28
7440-47-3	Chromium	0.70	J	ug/L	1	02/20/2024 15:28
7440-50-8	Copper	9.4		ug/L	1	02/20/2024 15:28
	Hardness, Total(SM 2340B)	46200		ug/L	1	02/20/2024 15:28
7439-98-7	Molybdenum	ND	U	ug/L	1	02/20/2024 15:28
7440-02-0	Nickel	6.5		ug/L	1	02/20/2024 15:28
7782-49-2	Selenium	ND	U	ug/L	1	02/20/2024 15:28
7440-22-4	Silver	ND	U	ug/L	1	02/20/2024 15:28
7440-62-2	Vanadium	ND	U	ug/L	1	02/20/2024 15:28
7440-66-6	Zinc	8.9	J	ug/L	1	02/20/2024 15:28

SAMPLE NO.

021224NMW32S

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/20/2024 15:31
7440-38-2	Arsenic	ND	U	ug/L	1	02/20/2024 15:31
7440-39-3	Barium	11.2		ug/L	1	02/20/2024 15:31
7440-41-7	Beryllium	ND	U	ug/L	1	02/20/2024 15:31
7440-42-8	Boron	9.0	J	ug/L	1	02/20/2024 15:31
7440-43-9	Cadmium	ND	U	ug/L	1	02/20/2024 15:31
7440-70-2	Calcium	4390		ug/L	1	02/20/2024 15:31
7440-47-3	Chromium	0.64	J	ug/L	1	02/20/2024 15:31
7440-50-8	Copper	ND	U	ug/L	1	02/20/2024 15:31
	Hardness, Total(SM 2340B)	22200		ug/L	1	02/20/2024 15:31
7439-98-7	Molybdenum	ND	U	ug/L	1	02/20/2024 15:31
7440-02-0	Nickel	ND	U	ug/L	1	02/20/2024 15:31
7782-49-2	Selenium	ND	U	ug/L	1	02/20/2024 15:31
7440-22-4	Silver	1.7	J	ug/L	1	02/20/2024 15:31
7440-62-2	Vanadium	ND	U	ug/L	1	02/20/2024 15:31
7440-66-6	Zinc	ND	U	ug/L	1	02/20/2024 15:31

SAMPLE NO.

021224NMW32D

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/20/2024 15:34
7440-38-2	Arsenic	ND	U	ug/L	1	02/20/2024 15:34
7440-39-3	Barium	5.3		ug/L	1	02/20/2024 15:34
7440-41-7	Beryllium	ND	U	ug/L	1	02/20/2024 15:34
7440-42-8	Boron	ND	U	ug/L	1	02/20/2024 15:34
7440-43-9	Cadmium	ND	U	ug/L	1	02/20/2024 15:34
7440-70-2	Calcium	27300		ug/L	1	02/20/2024 15:34
7440-47-3	Chromium	ND	U	ug/L	1	02/20/2024 15:34
7440-50-8	Copper	ND	U	ug/L	1	02/20/2024 15:34
	Hardness, Total(SM 2340B)	85600		ug/L	1	02/20/2024 15:34
7439-98-7	Molybdenum	ND	U	ug/L	1	02/20/2024 15:34
7440-02-0	Nickel	ND	U	ug/L	1	02/20/2024 15:34
7782-49-2	Selenium	ND	U	ug/L	1	02/20/2024 15:34
7440-22-4	Silver	ND	U	ug/L	1	02/20/2024 15:34
7440-62-2	Vanadium	ND	U	ug/L	1	02/20/2024 15:34
7440-66-6	Zinc	ND	U	ug/L	1	02/20/2024 15:34

SAMPLE NO.

021224NWPFDDUPLICATE

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/20/2024 15:37
7440-38-2	Arsenic	ND	U	ug/L	1	02/20/2024 15:37
7440-39-3	Barium	56.0		ug/L	1	02/20/2024 15:37
7440-41-7	Beryllium	ND	U	ug/L	1	02/20/2024 15:37
7440-42-8	Boron	9.8	J	ug/L	1	02/20/2024 15:37
7440-43-9	Cadmium	ND	U	ug/L	1	02/20/2024 15:37
7440-70-2	Calcium	11300		ug/L	1	02/20/2024 15:37
7440-47-3	Chromium	0.76	J	ug/L	1	02/20/2024 15:37
7440-50-8	Copper	9.3		ug/L	1	02/20/2024 15:37
	Hardness, Total(SM 2340B)	44700		ug/L	1	02/20/2024 15:37
7439-98-7	Molybdenum	ND	U	ug/L	1	02/20/2024 15:37
7440-02-0	Nickel	6.1		ug/L	1	02/20/2024 15:37
7782-49-2	Selenium	ND	U	ug/L	1	02/20/2024 15:37
7440-22-4	Silver	ND	U	ug/L	1	02/20/2024 15:37
7440-62-2	Vanadium	ND	U	ug/L	1	02/20/2024 15:37
7440-66-6	Zinc	9.2	J	ug/L	1	02/20/2024 15:37

SAMPLE NO.

021324NMW1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/22/2024 13:22
7440-38-2	Arsenic	ND	U	ug/L	1	02/22/2024 13:22
7440-39-3	Barium	13.0		ug/L	1	02/22/2024 13:22
7440-41-7	Beryllium	ND	U	ug/L	1	02/22/2024 13:22
7440-42-8	Boron	ND	U	ug/L	1	02/22/2024 13:22
7440-43-9	Cadmium	ND	U	ug/L	1	02/22/2024 13:22
7440-70-2	Calcium	2970		ug/L	1	02/22/2024 13:22
7440-47-3	Chromium	ND	U	ug/L	1	02/22/2024 13:22
7440-50-8	Copper	0.97	J	ug/L	1	02/22/2024 13:22
	Hardness, Total(SM 2340B)	15200		ug/L	1	02/22/2024 13:22
7439-98-7	Molybdenum	ND	U	ug/L	1	02/22/2024 13:22
7440-02-0	Nickel	ND	U	ug/L	1	02/22/2024 13:22
7782-49-2	Selenium	ND	U	ug/L	1	02/22/2024 13:22
7440-22-4	Silver	ND	U	ug/L	1	02/22/2024 13:22
7440-62-2	Vanadium	ND	U	ug/L	1	02/22/2024 13:22
7440-66-6	Zinc	4.0	J	ug/L	1	02/22/2024 13:22

SAMPLE NO.

021324NMW12

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-36-0	Antimony	ND	U	ug/L	1	02/22/2024 13:36
7440-38-2	Arsenic	ND	U	ug/L	1	02/22/2024 13:36
7440-39-3	Barium	63.0		ug/L	1	02/22/2024 13:36
7440-41-7	Beryllium	ND	U	ug/L	1	02/22/2024 13:36
7440-42-8	Boron	1210		ug/L	1	02/22/2024 13:36
7440-43-9	Cadmium	ND	U	ug/L	1	02/22/2024 13:36
7440-70-2	Calcium	34500		ug/L	1	02/22/2024 13:36
7440-47-3	Chromium	ND	U	ug/L	1	02/22/2024 13:36
7440-50-8	Copper	ND	U	ug/L	1	02/22/2024 13:36
	Hardness, Total(SM 2340B)	119000		ug/L	1	02/22/2024 13:36
7439-98-7	Molybdenum	ND	U	ug/L	1	02/22/2024 13:36
7440-02-0	Nickel	1.3	J	ug/L	1	02/22/2024 13:36
7782-49-2	Selenium	ND	U	ug/L	1	02/22/2024 13:36
7440-22-4	Silver	ND	U	ug/L	1	02/22/2024 13:36
7440-62-2	Vanadium	ND	U	ug/L	1	02/22/2024 13:36
7440-66-6	Zinc	ND	U	ug/L	1	02/22/2024 13:36

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 259776

Continuing Calibration Verification Source: 260996

Concentration Units: ug/L Instrument ID: 93ICP6

	Initial Calibration Verification				Continuing Calibration Verification						
	02/20/2024 10:17				02/20/2024 10:53			02/20/2024 14:37			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Antimony	500	503	100.6	90-110	500	490	98.0	500	485	97.0	90-110
Arsenic	500	501	100.2	90-110	500	495	99.1	500	496	99.2	90-110
Barium	500	515	103.1	90-110	500	521	104.2	500	495	98.9	90-110
Beryllium	500	503	100.5	90-110	500	492	98.5	500	491	98.3	90-110
Boron	500	516	103.1	90-110	500	491	98.2	500	493	98.6	90-110
Cadmium	500	501	100.2	90-110	500	488	97.6	500	477	95.4	90-110
Calcium	5000	5150	103.1	90-110	5000	5210	104.1	5000	4790	95.9	90-110
Chromium	500	498	99.6	90-110	500	483	96.5	500	476	95.1	90-110
Copper	500	492	98.3	90-110	500	475	95.1	500	469	93.9	90-110
Magnesium	5000	4890	97.8	90-110	5000	4800	96.0	5000	4690	93.7	90-110
Molybdenum	500	492	98.5	90-110	500	490	98.0	500	486	97.1	90-110
Nickel	500	505	101.0	90-110	500	492	98.4	500	484	96.7	90-110
Selenium	500	513	102.6	90-110	500	496	99.1	500	497	99.4	90-110
Silver				90-110	250	240	95.8	250	236	94.5	90-110
Vanadium	500	496	99.2	90-110	500	486	97.2	500	475	95.0	90-110
Zinc	500	508	101.7	90-110	500	494	98.9	500	486	97.1	90-110

will replace when revision comes in.

not bracketing samples

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260996

Concentration Units: ug/L Instrument ID: 93ICP6

	Continuing Calibration Verification									
	02/20/2024 15:17			02/20/2024 15:45			02/20/2024 18:29			Control Limit
Analyte	True	Found	%R	True	Found	%R	True	Found	%R	
Antimony	500	482	96.5	500	478	95.6	500	473	94.6	90-110
Arsenic	500	491	98.3	500	485	97.1	500	480	96.1	90-110
Barium	500	486	97.3	500	477	95.3	500	492	98.3	90-110
Beryllium	500	488	97.6	500	484	96.7	500	478	95.7	90-110
Boron	500	490	98.0	500	486	97.3	500	479	95.9	90-110
Cadmium	500	473	94.7	500	468	93.5	500	464	92.9	90-110
Calcium	5000	4700	94.0	5000	4590	91.7	5000	4750	95.0	90-110
Chromium	500	473	94.6	500	469	93.7	500	462	92.3	90-110
Copper	500	466	93.2	500	462	92.3	500	456	91.2	90-110
Magnesium	5000	4650	92.9	5000	4600	92.0	5000	4540	90.8	90-110
Molybdenum	500	481	96.3	500	477	95.5	500	470	94.0	90-110
Nickel	500	479	95.9	500	475	95.0	500	470	94.0	90-110
Selenium	500	496	99.3	500	490	98.1	500	482	96.4	90-110
Silver	250	235	94.0	250	233	93.4	250	229	91.6	90-110
Vanadium	500	472	94.4	500	466	93.2	500	463	92.5	90-110
Zinc	500	482	96.3	500	476	95.2	500	472	94.4	90-110

not bracketing samples

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 259776

Continuing Calibration Verification Source: 260996

Concentration Units: ug/L Instrument ID: 93ICP6

	Initial Calibration Verification				Continuing Calibration Verification						
	02/22/2024 11:04				02/22/2024 11:46			02/22/2024 12:54			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Antimony	500	514	102.8	90-110	500	537	107.3	500	524	104.8	90-110
Arsenic	500	501	100.2	90-110	500	524	104.8	500	515	102.9	90-110
Barium	500	496	99.2	90-110	500	538	107.6	500	501	100.3	90-110
Beryllium	500	503	100.7	90-110	500	525	105.1	500	517	103.5	90-110
Boron	500	516	103.3	90-110	500	523	104.5	500	517	103.3	90-110
Cadmium	500	502	100.5	90-110	500	519	103.7	500	507	101.4	90-110
Calcium	5000	4970	99.4	90-110	5000	5330	106.6	5000	4940	98.9	90-110
Chromium	500	503	100.5	90-110	500	519	103.8	500	512	102.5	90-110
Copper	500	495	98.9	90-110	500	509	101.7	500	497	99.4	90-110
Magnesium	5000	4870	97.3	90-110	5000	5080	101.7	5000	4950	98.9	90-110
Molybdenum	500	494	98.8	90-110	500	525	104.9	500	517	103.4	90-110
Nickel	500	500	100.1	90-110	500	518	103.5	500	505	101.0	90-110
Selenium	500	506	101.3	90-110	500	523	104.6	500	515	103.1	90-110
Silver				90-110	250	257	102.6	250	253	101.1	90-110
Vanadium	500	496	99.1	90-110	500	516	103.3	500	504	100.7	90-110
Zinc	500	506	101.2	90-110	500	522	104.5	500	512	102.4	90-110

will replace when revision comes in.

not bracketing samples

See next page for revision

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 259776

Continuing Calibration Verification Source: 260996

Concentration Units: ug/L Instrument ID: 93ICP6

	Initial Calibration Verification				Continuing Calibration Verification						
	02/22/2024 11:04				02/22/2024 11:46			02/22/2024 12:54			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Antimony	500	514	102.8	90-110	500	537	107.3	500	524	104.8	90-110
Arsenic	500	501	100.2	90-110	500	524	104.8	500	515	102.9	90-110
Barium	500	496	99.2	90-110	500	538	107.6	500	501	100.3	90-110
Beryllium	500	503	100.7	90-110	500	525	105.1	500	517	103.5	90-110
Boron	500	516	103.3	90-110	500	523	104.5	500	517	103.3	90-110
Cadmium	500	502	100.5	90-110	500	519	103.7	500	507	101.4	90-110
Calcium	5000	4970	99.4	90-110	5000	5330	106.6	5000	4940	98.9	90-110
Chromium	500	503	100.5	90-110	500	519	103.8	500	512	102.5	90-110
Copper	500	495	98.9	90-110	500	509	101.7	500	497	99.4	90-110
Magnesium	5000	4870	97.3	90-110	5000	5080	101.7	5000	4950	98.9	90-110
Molybdenum	500	494	98.8	90-110	500	525	104.9	500	517	103.4	90-110
Nickel	500	500	100.1	90-110	500	518	103.5	500	505	101.0	90-110
Selenium	500	506	101.3	90-110	500	523	104.6	500	515	103.1	90-110
Silver	250	258	103.2	90-110	250	257	102.6	250	253	101.1	90-110
Vanadium	500	496	99.1	90-110	500	516	103.3	500	504	100.7	90-110
Zinc	500	506	101.2	90-110	500	522	104.5	500	512	102.4	90-110

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260996

Concentration Units: ug/L Instrument ID: 93ICP6

	Continuing Calibration Verification						
	02/22/2024 13:44			02/22/2024 14:18			Control Limit
Analyte	True	Found	%R	True	Found	%R	
Antimony	500	539	107.9	500	537	107.5	90-110
Arsenic	500	528	105.6	500	528	105.5	90-110
Barium	500	511	102.3	500	519	103.8	90-110
Beryllium	500	531	106.2	500	528	105.6	90-110
Boron	500	532	106.3	500	529	105.8	90-110
Cadmium	500	516	103.1	500	512	102.5	90-110
Calcium	5000	4960	99.2	5000	4970	99.5	90-110
Chromium	500	523	104.5	500	519	103.8	90-110
Copper	500	509	101.7	500	506	101.2	90-110
Magnesium	5000	5050	101.0	5000	5030	100.6	90-110
Molybdenum	500	530	106.0	500	528	105.7	90-110
Nickel	500	515	102.9	500	511	102.3	90-110
Selenium	500	530	106.1	500	532	106.3	90-110
Silver	250	259	103.5	250	258	103.1	90-110
Vanadium	500	514	102.8	500	511	102.2	90-110
Zinc	500	521	104.3	500	519	103.7	90-110

not bracketing samples.

FORM II INORGANIC-1
CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 261524 Analysis Date/Time: 02/20/2024 10:30

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Antimony	5.0	5.8	115.2	50-150
Arsenic	10.0	8.8	87.7	50-150
Barium	5.0	5.4	108.6	50-150
Beryllium	1.0	0.90	90.0	50-150
Boron	50	48.6	97.2	50-150
Cadmium	1.0	0.93	93.0	50-150
Calcium	100	101	101.5	50-150
Chromium	5.0	4.8	96.4	50-150
Copper	5.0	4.7	94.4	50-150
Magnesium	100	94.6	94.6	50-150
Molybdenum	5.0	4.4	87.4	50-150
Nickel	5.0	4.9	97.8	50-150
Selenium	10.0	10.2	101.6	50-150
Silver	5.0	4.6	92.6	50-150
Vanadium	5.0	4.7	94.6	50-150
Zinc	10.0	9.9	99.1	50-150

70-130%

Closing CRDL not analyzed, not method requirement but it's a procedural issue, no qualifications.

FORM II INORGANIC-1
CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 261524 Analysis Date/Time: 02/22/2024 11:23

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Antimony	5.0	4.4	88.8	50-150
Arsenic	10.0	11.6	115.6	50-150
Barium	5.0	5.9	117.4	50-150
Beryllium	1.0	1.0	103.0	50-150
Boron	50	52.1	104.2	50-150
Cadmium	1.0	0.99	99.0	50-150
Calcium	100	98.3	98.3	50-150
Chromium	5.0	5.1	102.0	50-150
Copper	5.0	5.2	103.4	50-150
Magnesium	100	101	101.0	50-150
Molybdenum	5.0	4.7	93.2	50-150
Nickel	5.0	5.6	111.6	50-150
Selenium	10.0	9.5	94.9	50-150
Silver	5.0	5.3	106.2	50-150
Vanadium	5.0	5.1	101.2	50-150
Zinc	10.0	10.7	107.0	50-150

70-130%

Closing CRDL not analyzed, not method requirement but it's a procedural issue, no qualifications.

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93ICP6

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	02/20/2024 10:20	C	02/20/2024 10:56	C	02/20/2024 14:40	C	02/20/2024 15:20	C	4301221	C
Antimony	2.5	U	3.6	U	3.6	U	3.6	U	ND	U
Arsenic	5.0	U	5.0	U	5.0	U	5.0	U	ND	U
Barium	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Beryllium	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Boron	25.0	U	25.0	U	25.0	U	25.0	U	ND	U
Cadmium	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Calcium	50.0	U	50.0	U	50.0	U	50.0	U	ND	U
Chromium	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Copper	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Hardness, Total(SM 2340B)									ND	U
Magnesium NT, analyzed	50.0	U	50.0	U	50.0	U	50.0	U		
Molybdenum for Hardness	2.5	U	2.6	U	2.6	U	2.6	U	ND	U
Nickel	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	ND	U
Silver	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Vanadium	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	ND	U

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 93ICP6

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)					
		C	02/20/2024 15:48 ✔	C	02/20/2024 18:32	C		C
Antimony			3.6	U	3.6	U		
Arsenic			5.0	U	5.0	U		
Barium			2.5	U	2.5	U		
Beryllium			0.50	U	0.50	U		
Boron			25.0	U	25.0	U		
Cadmium			0.50	U	0.50	U		
Calcium			50.0	U	50.0	U		
Chromium			2.5	U	2.5	U		
Copper			2.5	U	2.5	U		
Hardness, Total(SM 2340B)								
Magnesium			50.0	U	50.0	U		
Molybdenum			2.6	U	2.6	U		
Nickel			2.5	U	2.5	U		
Selenium			5.0	U	5.0	U		
Silver			2.5	U	2.5	U		
Vanadium			2.5	U	2.5	U		
Zinc			5.0	U	5.0	U		

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93ICP6

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	02/22/2024 11:07 ✔	C	02/22/2024 11:49	C	02/22/2024 12:57 ✔	C	02/22/2024 13:47 ✔	C	4302448 ✔	C
Antimony	2.5	U	3.6	U	3.6	U	3.6	U	ND	U
Arsenic	5.0	U	5.0	U	5.0	U	5.0	U	ND	U
Barium	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Beryllium	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Boron	25.0	U	25.0	U	25.0	U	25.0	U	ND	U
Cadmium	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Calcium	50.0	U	50.0	U	50.0	U	50.0	U	ND	U
Chromium	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Copper	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Hardness, Total(SM 2340B)									ND	U
Magnesium NT	50.0	U	50.0	U	50.0	U	50.0	U		
Molybdenum	2.5	U	2.6	U	2.6	U	2.6	U	ND	U
Nickel	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	ND	U
Silver	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Vanadium	2.5	U	2.5	U	2.5	U	2.5	U	ND	U
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	ND	U

✔

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 93ICP6

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)					
		C	02/22/2024 14:21	C		C		C
Antimony			3.6	U				
Arsenic			5.0	U				
Barium			2.5	U				
Beryllium			0.50	U				
Boron			25.0	U				
Cadmium			0.50	U				
Calcium			50.0	U				
Chromium			2.5	U				
Copper			2.5	U				
Hardness, Total(SM 2340B)								
Magnesium			50.0	U				
Molybdenum			2.6	U				
Nickel			2.5	U				
Selenium			5.0	U				
Silver			2.5	U				
Vanadium			2.5	U				
Zinc			5.0	U				

FORM IV INORGANIC-1
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/20/2024 10:33 ✔

ICS Source: 260706,256862,261529 Solution AB Run Date: 02/20/2024 10:36

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%P ✔	Limits
Aluminum	100000	105000	104099.09	104.1	109104.05	103.9	80-120
Antimony		500	0.74		511.01	102.2	80-120
Arsenic		500	-0.84		512.04	102.4	80-120
Barium		500	0.5		505.19	101	80-120
Beryllium		500	-0.07		506.41	101.3	80-120
Boron		500	-1.2		511.9	102.4	80-120
Cadmium		500	0.01		488.08	97.6	80-120
Calcium	100000	105000	100258.81	100.3	103591.95	98.7	80-120
Chromium		500	0.33		495.46	99.1	80-120
Copper		500	0.52		532.82	106.6	80-120
Iron	100000	105000	98677.15	98.7	101684.01	96.8	80-120
Magnesium	100000	105000	105122.5	105.1	111625.21	106.3	80-120
Molybdenum		500	-0.13		500.81	100.2	80-120
Nickel		500	0.59		490.6	98.1	80-120
Selenium		500	0.87		508.06	101.6	80-120
Silver		250	-0.17		260.65	104.3	80-120
Vanadium		500	-1.48		503.87	100.8	80-120
Zinc		500	4.7 >MDL(3.0)		493.4	98.7	80-120

Interferents concentrations in all samples<90% of ICSA. ✔

FORM IV INORGANIC-2
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/20/2024 14:43

ICS Source: 256862,260706,261529 Solution AB Run Date: 02/20/2024 14:45

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	100000	105000	100507.02	100.5	106112.19	101.1	80-120
Antimony		500	1.75		502.68	100.5	80-120
Arsenic		500	-1.65		506.84	101.4	80-120
Barium		500	0.45		496.1	99.2	80-120
Beryllium		500	-0.09		499.88	100	80-120
Boron		500	-1.47		507.2	101.4	80-120
Cadmium		500	-0.07		471.32	94.3	80-120
Calcium	100000	105000	90013.33	90	98443.81	93.8	80-120
Chromium		500	0.28		480.23	96	80-120
Copper		500	0.63		519.93	104	80-120
Iron	100000	105000	90175.22	90.2	100774.8	96	80-120
Magnesium	100000	105000	100678.82	100.7	107510.65	102.4	80-120
Molybdenum		500	0.18		491.61	98.3	80-120
Nickel		500	0.32		476.19	95.2	80-120
Selenium		500	0.9		503.29	100.7	80-120
Silver		250	-0.23		253.31	101.3	80-120
Vanadium		500	-0.18		486.07	97.2	80-120
Zinc		500	4.72		479.13	95.8	80-120

Interferents concentrations in all samples<90% of ICSA.

FORM IV INORGANIC-3
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/20/2024 15:51

ICS Source: 256862,260706,259777 Solution AB Run Date: 02/20/2024 15:54

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	100000	105000	99605.38	99.6	105044.3	100	80-120
Antimony		500	2.37		494.08	98.8	80-120
Arsenic		500	-1.65		498.99	99.8	80-120
Barium		500	0.44		484.19	96.8	80-120
Beryllium		500	-0.09		492.3	98.5	80-120
Boron		500	-1.87		499.42	99.9	80-120
Cadmium		500	-0.13		463.8	92.8	80-120
Calcium	100000	105000	91836.59	91.8	96295.47	91.7	80-120
Chromium		500	0.33		473.67	94.7	80-120
Copper		500	0.83		511.44	102.3	80-120
Iron	100000	105000	93165.67	93.2	97164.29	92.5	80-120
Magnesium	100000	105000	99452.3	99.5	106006.64	101	80-120
Molybdenum		500	0.02		483.12	96.6	80-120
Nickel		500	0.51		468.68	93.7	80-120
Selenium		500	0.69		495.6	99.1	80-120
Silver		250	-0.32		249.69	99.9	80-120
Vanadium		500	-0.72		479.23	95.8	80-120
Zinc		500	4.6		470.64	94.1	80-120

Interferents concentrations in all samples<90% of ICSA.

FORM IV INORGANIC-4
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/20/2024 18:35 ✔

ICS Source: 260706,256862,259777 Solution AB Run Date: 02/20/2024 18:38

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	100000	105000	97735.67	97.7	103097.66	98.2	80-120
Antimony		500	1.06		483.68	96.7	80-120
Arsenic		500	-0.71		486.26	97.3	80-120
Barium		500	0.44		467.18	93.4	80-120
Beryllium		500	-0.08		483.59	96.7	80-120
Boron		500	-1.67		491.75	98.4	80-120
Cadmium		500	0.04		456.39	91.3	80-120
Calcium	100000	105000	87283.12	87.3	92822.31	88.4	80-120
Chromium		500	0.23		464.05	92.8	80-120
Copper		500	0.58		502.62	100.5	80-120
Iron	100000	105000	88259.56	88.3	94521.81	90	80-120
Magnesium	100000	105000	97367.2	97.4	103796.22	98.9	80-120
Molybdenum		500	-0.06		475.15	95	80-120
Nickel		500	0.38		460.44	92.1	80-120
Selenium		500	-0.33		484.45	96.9	80-120
Silver		250	-0.29	✔	245.13	98.1	80-120
Vanadium		500	-1.18		469.58	93.9	80-120
Zinc		500	4.41		463.63	92.7	80-120

not bracketing samples ✔

FORM IV INORGANIC-5
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/20/2024 21:36

ICS Source: 260706,256862,259777 Solution AB Run Date: 02/20/2024 21:39

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	100000	105000	90769.03	90.8	96043.53	91.5	80-120
Antimony		500	0.24		450.34	90.1	80-120
Arsenic		500	-1.32		453.91	90.8	80-120
Barium		500	0.42		438.27	87.7	80-120
Beryllium		500	-0.08		448.22	89.6	80-120
Boron		500	-1.88		455.49	91.1	80-120
Cadmium		500	-0.13		429.95	86	80-120
Calcium	100000	105000	85549.52	85.5	90531.64	86.2	80-120
Chromium		500	0.29		437.63	87.5	80-120
Copper		500	0.63		475.91	95.2	80-120
Iron	100000	105000	86503.2	86.5	90618.55	86.3	80-120
Magnesium	100000	105000	92426.5	92.4	98271.13	93.6	80-120
Molybdenum		500	0.03		445.34	89.1	80-120
Nickel		500	0.25		434.68	86.9	80-120
Selenium		500	0.13		448.08	89.6	80-120
Silver		250	-0.31		231.98	92.8	80-120
Vanadium		500	-1.7		444.76	89	80-120
Zinc		500	4.26		436.3	87.3	80-120

not bracketing samples

FORM IV INORGANIC-1
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/22/2024 11:26

ICS Source: 260706,256862,261881 Solution AB Run Date: 02/22/2024 11:29

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	100000	105000	107802.44	107.8	114000.11	108.6	80-120
Antimony		500	1.98		542.1	108.4	80-120
Arsenic		500	-0.04		531.96	106.4	80-120
Barium		500	0.55		528.48	105.7	80-120
Beryllium		500	-0.02		528.57	105.7	80-120
Boron		500	-1.51		533.02	106.6	80-120
Cadmium		500	-0.16		509.54	101.9	80-120
Calcium	100000	105000	105056.78	105.1	108466.52	103.3	80-120
Chromium		500	0.12		522.09	104.4	80-120
Copper		500	0.79		556.86	111.4	80-120
Iron	100000	105000	106105.95	106.1	108911.18	103.7	80-120
Magnesium	100000	105000	108261.32	108.3	115474.88	110	80-120
Molybdenum		500	-0.1		523.62	104.7	80-120
Nickel		500	0.87		504.05	100.8	80-120
Selenium		500	-2.08		520.49	104.1	80-120
Silver		250	-0.16		274.28	109.7	80-120
Vanadium		500	-1.64		525.49	105.1	80-120
Zinc		500	4.88		511.53	102.3	80-120

Interferents concentrations in all samples<90% of ICSA.

FORM IV INORGANIC-2
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Solution A Run Date: 02/22/2024 14:24

ICS Source: 256862,260706,261881 Solution AB Run Date: 02/22/2024 14:27

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	100000	105000	108880.89	108.9	116519.08	111	80-120
Antimony		500	0.83		557.71	111.5	80-120
Arsenic		500	-0.48		544.1	108.8	80-120
Barium		500	0.6		524.6	104.9	80-120
Beryllium		500	0		544.26	108.9	80-120
Boron		500	-2.43		550.64	110.1	80-120
Cadmium		500	-0.14		514.13	102.8	80-120
Calcium	100000	105000	96582.47	96.6	103550.34	98.6	80-120
Chromium		500	0.29		530.43	106.1	80-120
Copper		500	0.69		564.95	113	80-120
Iron	100000	105000	99914.35	99.9	105511.01	100.5	80-120
Magnesium	100000	105000	107870.83	107.9	116350.24	110.8	80-120
Molybdenum		500	-0.29		542.87	108.6	80-120
Nickel		500	0.84		509.11	101.8	80-120
Selenium		500	-0.61		547.14	109.4	80-120
Silver		250	0.09		280.04	112	80-120
Vanadium		500	-2.35		530.95	106.2	80-120
Zinc		500	4.86		519.27	103.9	80-120

Interferents concentrations in all samples<90% of ICSA.

SAMPLE NO.

4301223MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92712987001

not from this SDG

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	75-125	501	ND	500	100
Arsenic	ug/L	75-125	509	ND	500	102
Barium	ug/L	75-125	495	3.3J	500	98
Beryllium	ug/L	75-125	506	ND	500	101
Boron	ug/L	75-125	509	ND	500	102
Cadmium	ug/L	75-125	482	ND	500	96
Calcium	ug/L	75-125	24800	19900	5000	97
Chromium	ug/L	75-125	486	ND	500	97
Copper	ug/L	75-125	493	2.5J	500	98
Molybdenum	ug/L	75-125	491	ND	500	98
Nickel	ug/L	75-125	484	ND	500	97
Selenium	ug/L	75-125	519	ND	500	104
Silver	ug/L	75-125	244	ND	250	98
Hardness, Total(SM 2340B)	ug/L	75-125	138000	103000	33100	106
Vanadium	ug/L	75-125	506	15.9	500	98
Zinc	ug/L	75-125	491	ND	500	98

SAMPLE NO.

4301224MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92712987001

Percent Moisture: not from this SDG

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	75-125	505	ND	500	101
Arsenic	ug/L	75-125	512	ND	500	102
Barium	ug/L	75-125	510	3.3J	500	101
Beryllium	ug/L	75-125	509	ND	500	102
Boron	ug/L	75-125	513	ND	500	103
Cadmium	ug/L	75-125	484	ND	500	97
Calcium	ug/L	75-125	25200	19900	5000	105
Chromium	ug/L	75-125	489	ND	500	98
Copper	ug/L	75-125	495	2.5J	500	99
Molybdenum	ug/L	75-125	494	ND	500	99
Nickel	ug/L	75-125	486	ND	500	97
Selenium	ug/L	75-125	525	ND	500	105
Silver	ug/L	75-125	245	ND	250	98
Hardness, Total(SM 2340B)	ug/L	75-125	139000	103000	33100	109
Vanadium	ug/L	75-125	506	15.9	500	98
Zinc	ug/L	75-125	493	ND	500	98

SAMPLE NO.

4302450MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	75-125	541	ND	500	108
Arsenic	ug/L	75-125	534	ND	500	107
Barium	ug/L	75-125	557	13.0	500	109
Beryllium	ug/L	75-125	538	ND	500	108
Boron	ug/L	75-125	537	ND	500	107
Cadmium	ug/L	75-125	520	ND	500	104
Calcium	ug/L	75-125	8470	2970	5000	110
Chromium	ug/L	75-125	525	ND	500	105
Copper	ug/L	75-125	519	0.97J	500	104
Molybdenum	ug/L	75-125	527	ND	500	105
Nickel	ug/L	75-125	518	ND	500	104
Selenium	ug/L	75-125	546	ND	500	109
Silver	ug/L	75-125	259	ND	250	103
Hardness, Total(SM 2340B)	ug/L	75-125	50400	15200	33100	107
Vanadium	ug/L	75-125	521	ND	500	104
Zinc	ug/L	75-125	531	4.0J	500	105

SAMPLE NO.

4302451MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	75-125	547	ND	500	109
Arsenic	ug/L	75-125	538	ND	500	108
Barium	ug/L	75-125	552	13.0	500	108
Beryllium	ug/L	75-125	542	ND	500	108
Boron	ug/L	75-125	540	ND	500	108
Cadmium	ug/L	75-125	524	ND	500	105
Calcium	ug/L	75-125	8150	2970	5000	104
Chromium	ug/L	75-125	529	ND	500	106
Copper	ug/L	75-125	524	0.97J	500	105
Molybdenum	ug/L	75-125	532	ND	500	106
Nickel	ug/L	75-125	523	ND	500	104
Selenium	ug/L	75-125	551	ND	500	110
Silver	ug/L	75-125	261	ND	250	104
Hardness, Total(SM 2340B)	ug/L	75-125	49900	15200	33100	105
Vanadium	ug/L	75-125	525	ND	500	105
Zinc	ug/L	75-125	535	4.0J	500	106

SAMPLE NO.

4302452MS

FORM V INORGANIC-3

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture: not from this SDG.

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	75-125	559	ND	500	112
Arsenic	ug/L	75-125	547	ND	500	109
Barium	ug/L	75-125	572	40.8	500	106
Beryllium	ug/L	75-125	549	ND	500	110
Boron	ug/L	75-125	2000	1400	500	121
Cadmium	ug/L	75-125	520	ND	500	104
Calcium	ug/L	75-125	40900	35300	5000	112
Chromium	ug/L	75-125	533	ND	500	106
Copper	ug/L	75-125	536	ND	500	107
Molybdenum	ug/L	75-125	539	ND	500	108
Nickel	ug/L	75-125	513	0.90J	500	102
Selenium	ug/L	75-125	556	ND	500	111
Silver	ug/L	75-125	268	ND	250	107
Hardness, Total(SM 2340B)	ug/L	75-125	182000	143000	33100	117
Vanadium	ug/L	75-125	529	ND	500	106
Zinc	ug/L	75-125	525	ND	500	105

SAMPLE NO.

4302453MSD

FORM V INORGANIC-4

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture: not from this SDG

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	75-125	554	ND	500	111
Arsenic	ug/L	75-125	544	ND	500	109
Barium	ug/L	75-125	576	40.8	500	107
Beryllium	ug/L	75-125	543	ND	500	109
Boron	ug/L	75-125	1990	1400	500	118
Cadmium	ug/L	75-125	516	ND	500	103
Calcium	ug/L	75-125	41300	35300	5000	119
Chromium	ug/L	75-125	527	ND	500	105
Copper	ug/L	75-125	533	ND	500	107
Molybdenum	ug/L	75-125	535	ND	500	107
Nickel	ug/L	75-125	510	0.90J	500	102
Selenium	ug/L	75-125	552	ND	500	110
Silver	ug/L	75-125	265	ND	250	106
Hardness, Total(SM 2340B)	ug/L	75-125	183000	143000	33100	119
Vanadium	ug/L	75-125	525	ND	500	105
Zinc	ug/L	75-125	522	ND	500	104

SAMPLE NO.

4302011PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92712987001

not from this SDG

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	70-130	1	380	1	3.6U	500	76.0
Arsenic	ug/L	70-130	1	392	1	2.5U	500	78.3
Barium	ug/L	70-130	1	469	1	3.3J	500	93.1
Beryllium	ug/L	70-130	1	387	1	0.16U	500	77.4
Boron	ug/L	70-130	1	395	1	4.0U	500	79.0
Cadmium	ug/L	70-130	1	370	1	0.29U	500	74.1
Calcium	ug/L	70-130	1	24200	1	19900	5000	84.6
Chromium	ug/L	70-130	1	370	1	0.63U	500	74.0
Copper	ug/L	70-130	1	376	1	2.5J	500	74.7
Molybdenum	ug/L	70-130	1	378	1	2.6U	500	75.6
Nickel	ug/L	70-130	1	370	1	0.88U	500	73.9
Selenium	ug/L	70-130	1	403	1	4.1U	500	80.6
Vanadium	ug/L	70-130	1	387	1	15.9	500	74.2
Zinc	ug/L	70-130	1	376	1	3.0U	500	75.3

SAMPLE NO.

4308353PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 021324NMW1

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	70-130	1	399	1	3.6U	500	79.8
Arsenic	ug/L	70-130	1	403	1	2.5U	500	80.5
Barium	ug/L	70-130	1	516	1	13.0	500	100.6
Beryllium	ug/L	70-130	1	404	1	0.16U	500	80.8
Boron	ug/L	70-130	1	405	1	4.0U	500	80.9
Cadmium	ug/L	70-130	1	390	1	0.29U	500	78.1
Calcium	ug/L	70-130	1	7790	1	2970	5000	96.4
Chromium	ug/L	70-130	1	395	1	0.63U	500	79.0
Copper	ug/L	70-130	1	389	1	0.97J	500	77.6
Molybdenum	ug/L	70-130	1	397	1	2.6U	500	79.5
Nickel	ug/L	70-130	1	389	1	0.88U	500	77.9
Selenium	ug/L	70-130	1	412	1	4.1U	500	82.3
Silver	ug/L	70-130	1	196	1	0.49U	250	78.6
Vanadium	ug/L	70-130	1	390	1	1.6U	500	78.1
Zinc	ug/L	70-130	1	399	1	4.0J	500	79.0

75-125%

SAMPLE NO.

4308354PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92713247001

not from this SDG

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Antimony	ug/L	70-130	1	382	1	3.6U	500	76.5
Arsenic	ug/L	70-130	1	380	1	2.5U	500	76.1
Barium	ug/L	70-130	1	547	1	40.8	500	101.2
Beryllium	ug/L	70-130	1	378	1	0.16U	500	75.6
Boron	ug/L	70-130	1	1800	1	1400	500	79.0
Cadmium	ug/L	70-130	1	360	1	0.29U	500	72.0
Calcium	ug/L	70-130	1	39000	1	35300	5000	74.3
Chromium	ug/L	70-130	1	367	1	0.63U	500	73.3
Copper	ug/L	70-130	1	369	1	0.62U	500	73.9
Molybdenum	ug/L	70-130	1	375	1	2.6U	500	75.0
Nickel	ug/L	70-130	1	355	1	0.90J	500	70.8
Selenium	ug/L	70-130	1	386	1	4.1U	500	77.2
Silver	ug/L	70-130	1	186	1	0.49U	250	74.4
Vanadium	ug/L	70-130	1	365	1	1.6U	500	73.1
Zinc	ug/L	70-130	1	364	1	3.0U	500	72.7

SAMPLE NO.

4301224MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Antimony	20	501	505	1
Arsenic	20	509	512	1
Barium	20	495	510	3
Beryllium	20	506	509	1
Boron	20	509	513	1
Cadmium	20	482	484	0
Calcium	20	24800	25200	2
Chromium	20	486	489	1
Copper	20	493	495	0
Molybdenum	20	491	494	1
Nickel	20	484	486	0
Selenium	20	519	525	1
Silver	20	244	245	1
Hardness, Total(SM 2340B)	20	138000	139000	1
Vanadium	20	506	506	0
Zinc	20	491	493	0

SAMPLE NO.

4302451MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Antimony	20	541	547	1
Arsenic	20	534	538	1
Barium	20	557	552	1
Beryllium	20	538	542	1
Boron	20	537	540	1
Cadmium	20	520	524	1
Calcium	20	8470	8150	4
Chromium	20	525	529	1
Copper	20	519	524	1
Molybdenum	20	527	532	1
Nickel	20	518	523	1
Selenium	20	546	551	1
Silver	20	259	261	1
Hardness, Total(SM 2340B)	20	50400	49900	1
Vanadium	20	521	525	1
Zinc	20	531	535	1

SAMPLE NO.

4302453MSD

FORM VI INORGANIC-2
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Antimony	20	559	554	1
Arsenic	20	547	544	1
Barium	20	572	576	1
Beryllium	20	549	543	1
Boron	20	2000	1990	1
Cadmium	20	520	516	1
Calcium	20	40900	41300	1
Chromium	20	533	527	1
Copper	20	536	533	1
Molybdenum	20	539	535	1
Nickel	20	513	510	1
Selenium	20	556	552	1
Silver	20	268	265	1
Hardness, Total(SM 2340B)	20	182000	183000	0
Vanadium	20	529	525	1
Zinc	20	525	522	1

SAMPLE NO.

4301222LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Antimony	ug/L	500	474	95	80	120
Arsenic	ug/L	500	482	96	80	120
Barium	ug/L	500	472	94	80	120
Beryllium	ug/L	500	479	96	80	120
Boron	ug/L	500	482	96	80	120
Cadmium	ug/L	500	466	93	80	120
Calcium	ug/L	5000	4520	90	80	120
Chromium	ug/L	500	468	94	80	120
Copper	ug/L	500	471	94	80	120
Molybdenum	ug/L	500	478	96	80	120
Nickel	ug/L	500	473	95	80	120
Selenium	ug/L	500	480	96	80	120
Silver	ug/L	250	232	93	80	120
Hardness, Total(SM 2340B)	ug/L	33100	30000	91	80	120
Vanadium	ug/L	500	467	93	80	120
Zinc	ug/L	500	478	96	80	120

SAMPLE NO.

4302449LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Antimony	ug/L	500	524	105	80	120
Arsenic	ug/L	500	518	104	80	120
Barium	ug/L	500	537	107	80	120
Beryllium	ug/L	500	516	103	80	120
Boron	ug/L	500	515	103	80	120
Cadmium	ug/L	500	508	102	80	120
Calcium	ug/L	5000	5180	104	80	120
Chromium	ug/L	500	510	102	80	120
Copper	ug/L	500	517	103	80	120
Molybdenum	ug/L	500	522	104	80	120
Nickel	ug/L	500	509	102	80	120
Selenium	ug/L	500	509	102	80	120
Silver	ug/L	250	252	101	80	120
Hardness, Total(SM 2340B)	ug/L	33100	33300	101	80	120
Vanadium	ug/L	500	510	102	80	120
Zinc	ug/L	500	515	103	80	120

SAMPLE NO.

4302008SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92712987001

not from this SDG

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Antimony	ug/L	3.6U	18.6J		20
Arsenic	ug/L	2.5U	12.3U		20
Barium	ug/L	3.3J	4.0U		20
Beryllium	ug/L	0.16U	0.80U		20
Boron	ug/L	4.0U	20.2U		20
Cadmium	ug/L	0.29U	1.5U		20
Calcium	ug/L	19900	19700	1.2	20
Chromium	ug/L	0.63U	3.2U		20
Copper	ug/L	2.5J	3.1U		20
Molybdenum	ug/L	2.6U	13.2U		20
Nickel	ug/L	0.88U	4.4U		20
Selenium	ug/L	4.1U	20.6U		20
Silver	ug/L	0.49U	2.5U		20
Vanadium	ug/L	15.9	16.2J	1.4	20
Zinc	ug/L	3.0U	15.2U		20

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

SAMPLE NO.

4303405SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 021324NMW1

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Antimony	ug/L	3.6U	17.9U		20
Arsenic	ug/L	2.5U	12.3U		20
Barium	ug/L	13.0	13.4J	3.5	20
Beryllium	ug/L	0.16U	0.80U		20
Boron	ug/L	4.0U	20.2U		20
Cadmium	ug/L	0.29U	1.5U		20
Calcium	ug/L	2970	3070	3.3	20
Chromium	ug/L	0.63U	3.2U		20
Copper	ug/L	0.97J	3.1U		20
Molybdenum	ug/L	2.6U	13.2U		20
Nickel	ug/L	0.88U	4.4U		20
Selenium	ug/L	4.1U	20.6U		20
Silver	ug/L	0.49U	2.5U		20
Vanadium	ug/L	1.6U	7.8U		20
Zinc	ug/L	4.0J	15.2U		20

10%

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

SAMPLE NO.

4303406SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92713247001

not from this SDG

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Antimony	ug/L	3.6U	17.9U		20
Arsenic	ug/L	2.5U	12.3U		20
Barium	ug/L	40.8	37.9	7.2	20
Beryllium	ug/L	0.16U	0.80U		20
Boron	ug/L	1400	1610	14.6	20
Cadmium	ug/L	0.29U	1.5U		20
Calcium	ug/L	35300	32100	9.1	20
Chromium	ug/L	0.63U	3.2U		20
Copper	ug/L	0.62U	3.1U		20
Molybdenum	ug/L	2.6U	13.2U		20
Nickel	ug/L	0.90J	4.4U		20
Selenium	ug/L	4.1U	20.6U		20
Silver	ug/L	0.49U	2.5U		20
Vanadium	ug/L	1.6U	7.8U		20
Zinc	ug/L	3.0U	15.2U		20

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 93ICP6

Concentration Units: ug/L

Analyte	PQL	IDL	IDL Date
Antimony	5.0	2.5	11/01/2022
Arsenic	10.0	5.0	11/01/2022
Barium	5.0	2.5	11/01/2022
Beryllium	1.0	0.50	11/01/2022
Boron	50.0	25.0	11/01/2022
Cadmium	1.0	0.50	11/01/2022
Calcium	100	50.0	11/01/2022
Chromium	5.0	2.5	11/01/2022
Copper	5.0	2.5	11/01/2022
Molybdenum	5.0	2.5	11/01/2022
Nickel	5.0	2.5	11/01/2022
Selenium	10.0	5.0	11/01/2022
Silver	5.0	2.5	11/01/2022
Vanadium	5.0	2.5	11/01/2022
Zinc	10.0	5.0	11/01/2022

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Instrument ID: 93ICP6

Concentration Units: ug/L

Analyte	PQL	MDL	MDL Date
Antimony	5.0	3.6	11/07/2023
Arsenic	10.0	2.5	11/07/2023
Barium	5.0	0.79	11/07/2023
Beryllium	1.0	0.16	11/07/2023
Boron	50.0	4.0	11/07/2023
Cadmium	1.0	0.29	11/07/2023
Calcium	100	14.7	11/07/2023
Chromium	5.0	0.63	11/07/2023
Copper	5.0	0.62	11/07/2023
Hardness, Total(SM 2340B)	662	36.8	11/07/2023
Molybdenum	5.0	2.6	11/07/2023
Nickel	5.0	0.88	11/07/2023
Selenium	10.0	4.1	11/07/2023
Silver	5.0	0.49	11/07/2023
Vanadium	5.0	1.6	11/07/2023
Zinc	10.0	3.0	11/07/2023

FORM XI - INORGANIC-1
LINEAR DYNAMIC RANGES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWM

Instrument ID: 93ICP6 Effective Date:12/01/2022

Analyte	Concentration (ug/L)
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Boron	10000
Cadmium	10000
Calcium	100000
Chromium	10000
Copper	10000
Molybdenum	10000
Nickel	10000
Selenium	10000
Silver	100
Vanadium	10000
Zinc	10000

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Batch: MPRP 59968

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4301221	4301221BLANK	02/14/2024	15	15
4301222	4301222LCS	02/14/2024	15	15
4301223	4301223MS	02/14/2024	15	15
4301224	4301224MSD	02/14/2024	15	15
92712989001	021224NMW13	02/14/2024	15	15
92712989002	021224NMW31	02/14/2024	15	15
92712989003	021224NMW32S	02/14/2024	15	15
92712989004	021224NMW32D	02/14/2024	15	15
92712989005	021224NWPFDDUPLICAT	02/14/2024	15	15

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Batch: MPRP 59985

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4302448	4302448BLANK	02/15/2024	15	15
4302449	4302449LCS	02/15/2024	15	15
4302450	4302450MS	02/15/2024	15	15
4302451	4302451MSD	02/15/2024	15	15
4302452	4302452MS	02/15/2024	15	15
4302453	4302453MSD	02/15/2024	15	15
92712989006	021324NMW1	02/15/2024	15	15
92712989007	021324NMW12	02/15/2024	15	15

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Start Date: 02/20/2024 10:11 End Date: 02/20/2024 21:39

Sample Name	Time	Y1	Y2	Y3
29016035CAL0	10:11	100.0	100.0	100.0
29016052CAL3	10:14	98.0	98.0	99.0
29016053ICV	10:17	99.0	98.0	100.0
29016054ICB	10:20	102.0	101.0	102.0
29016055CRDL	10:30	103.0	102.0	104.0
29016056ICSA	10:33	95.0	96.0	99.0
29016057ICSAB	10:36	96.0	96.0	99.0
29016058CCV	10:53	102.0	102.0	104.0
29016059CCB	10:56	104.0	104.0	106.0
29016075CCV	14:37	106.0	103.0	109.0
29016076CCB	14:40	107.0	105.0	111.0
29016077ICSA	14:43	101.0	99.0	105.0
29016078ICSAB	14:45	100.0	99.0	105.0
4301221BLANK	14:54	109.0	106.0	112.0
4301222LCS	14:57	107.0	105.0	111.0
92712987001	15:00	108.0	105.0	111.0
4301223MS	15:03	106.0	103.0	110.0
4301224MSD	15:05	107.0	103.0	111.0
4302011PDS	15:08	107.0	103.0	110.0
4302008SD	15:11	108.0	105.0	111.0
29021902CCV	15:17	107.0	104.0	110.0
29021903CCB	15:20	109.0	106.0	112.0
021224NMW13	15:25	106.0	105.0	109.0
021224NMW31	15:28	109.0	106.0	112.0
021224NMW32S	15:31	109.0	106.0	113.0
021224NMW32D	15:34	108.0	105.0	110.0
021224NWPFDDUPLICA	15:37	109.0	106.0	112.0
29021905CCV	15:45	108.0	105.0	111.0
29021906CCB	15:48	109.0	106.0	111.0
29021907ICSA	15:51	102.0	100.0	107.0
29021908ICSAB	15:54	102.0	100.0	106.0
29021914CCV	18:29	110.0	107.0	112.0
29021915CCB	18:32	112.0	109.0	114.0
29021916ICSA	18:35	103.0	102.0	108.0
29021917ICSAB	18:38	103.0	102.0	108.0
29021927CCV	21:31	113.0	113.0	114.0
29021928CCB	21:34	116.0	116.0	117.0
29021929ICSA	21:36	108.0	108.0	110.0
29021930ICSAB	21:39	107.0	108.0	111.0

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Start Date: 02/22/2024 10:58 End Date: 02/22/2024 14:27

Sample Name	Time	Y1	Y2	Y3
29045568CAL0	10:58	100.0	100.0	100.0
29045569CAL3	11:01	101.0	100.0	99.0
29045570ICV	11:04	103.0	101.0	100.0
29045571ICB	11:07	102.0	101.0	99.0
29045572CRDL	11:23	98.0	101.0	98.0
29045573ICSA	11:26	97.0	97.0	96.0
29045574ICSAB	11:29	97.0	96.0	96.0
29045575CCV	11:46	102.0	99.0	100.0
29045576CCB	11:49	102.0	100.0	100.0
29045580CCV	12:54	103.0	100.0	100.0
29045581CCB	12:57	105.0	101.0	103.0
4302448BLANK	13:16	106.0	102.0	105.0
4302449LCS	13:19	105.0	101.0	104.0
021324NMW1	13:22	105.0	102.0	104.0
4302450MS	13:24	105.0	100.0	103.0
4302451MSD	13:27	104.0	100.0	103.0
4303405SD	13:30	106.0	101.0	104.0
4308353PDS	13:33	104.0	100.0	103.0
021324NMW12	13:36	104.0	100.0	103.0
29045582CCV	13:44	104.0	99.0	102.0
29045583CCB	13:47	104.0	100.0	103.0
92713247001	13:50	103.0	99.0	102.0
4302452MS	13:53	102.0	98.0	102.0
4302453MSD	13:56	102.0	99.0	102.0
4303406SD	13:59	105.0	100.0	105.0
4308354PDS	14:01	103.0	98.0	102.0
29045585CCV	14:18	104.0	99.0	103.0
29045586CCB	14:21	104.0	100.0	103.0
29045587ICSA	14:24	98.0	95.0	99.0
29045588ICSAB	14:27	99.0	94.0	99.0

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Start Date: 02/20/2024 10:11 End Date: 02/20/2024 18:32

Sample Name	Time	Y1	Y2	Y3
29016035CAL0	10:11	100.0	100.0	100.0
29016052CAL3	10:14	98.0	98.0	99.0
29016053ICV	10:17	99.0	98.0	100.0
29016054ICB	10:20	102.0	101.0	102.0
29016055CRDL	10:30	103.0	102.0	104.0
29016056ICSA	10:33	95.0	96.0	99.0
29016057ICSAB	10:36	96.0	96.0	99.0
29016058CCV	10:53	102.0	102.0	104.0
29016059CCB	10:56	104.0	104.0	106.0
29016075CCV	14:37	106.0	103.0	109.0
29016076CCB	14:40	107.0	105.0	111.0
4301221BLANK	14:54	109.0	106.0	112.0
4301222LCS	14:57	107.0	105.0	111.0
92712987001	15:00	108.0	105.0	111.0
4301223MS	15:03	106.0	103.0	110.0
4301224MSD	15:05	107.0	103.0	111.0
4302011PDS	15:08	107.0	103.0	110.0
4302008SD	15:11	108.0	105.0	111.0
29021902CCV	15:17	107.0	104.0	110.0
29021903CCB	15:20	109.0	106.0	112.0
021224NMW13	15:25	106.0	105.0	109.0
021224NMW31	15:28	109.0	106.0	112.0
021224NMW32S	15:31	109.0	106.0	113.0
021224NMW32D	15:34	108.0	105.0	110.0
021224NWPFDDUPLICA	15:37	109.0	106.0	112.0
29021905CCV	15:45	108.0	105.0	111.0
29021906CCB	15:48	109.0	106.0	111.0
29021914CCV	18:29	110.0	107.0	112.0
29021915CCB	18:32	112.0	109.0	114.0

60-125%

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICP6 Start Date: 02/22/2024 10:58 End Date: 02/22/2024 14:21

Sample Name	Time	Y1	Y2	Y3
29045568CAL0	10:58	100.0	100.0	100.0
29045569CAL3	11:01	101.0	100.0	99.0
29045570ICV	11:04	103.0	101.0	100.0
29045571ICB	11:07	102.0	101.0	99.0
29045572CRDL	11:23	98.0	101.0	98.0
29045573ICSA	11:26	97.0	97.0	96.0
29045574ICSAB	11:29	97.0	96.0	96.0
29045575CCV	11:46	102.0	99.0	100.0
29045576CCB	11:49	102.0	100.0	100.0
29045580CCV	12:54	103.0	100.0	100.0
29045581CCB	12:57	105.0	101.0	103.0
4302448BLANK	13:16	106.0	102.0	105.0
4302449LCS	13:19	105.0	101.0	104.0
021324NMW1	13:22	105.0	102.0	104.0
4302450MS	13:24	105.0	100.0	103.0
4302451MSD	13:27	104.0	100.0	103.0
4303405SD	13:30	106.0	101.0	104.0
4308353PDS	13:33	104.0	100.0	103.0
021324NMW12	13:36	104.0	100.0	103.0
29045582CCV	13:44	104.0	99.0	102.0
29045583CCB	13:47	104.0	100.0	103.0
92713247001	13:50	103.0	99.0	102.0
4302452MS	13:53	102.0	98.0	102.0
4302453MSD	13:56	102.0	99.0	102.0
4303406SD	13:59	105.0	100.0	105.0
4308354PDS	14:01	103.0	98.0	102.0
29045585CCV	14:18	104.0	99.0	103.0
29045586CCB	14:21	104.0	100.0	103.0

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989001_45209x1 **Analysis Time: 2/20/2024 3:25:45 PM**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	-0.15	ppb	71.73	206.76	~Y (371.029 nm)	-0.34	0.2	-0.3
Al 237.312	Al A	125.13	ppb	586.87	1.24	~Y (371.029 nm)	123.68	126.76	124.94
As 188.980	As A	0.02	ppb	-4.51	3038.65	~Y (371.029 nm)	-0.59	0.22	0.42
B 249.678	B A	23.96	ppb	1262.57	1.73	~Y (371.029 nm)	23.62	23.84	24.42
Ba 455.403	Ba R	57.19	ppb	15079.11	0.92	~Y (488.368 nm)	56.62	57.3	57.66
Be 234.861	Be A	-0.03	ppb	29.18	5.58	~Y (371.029 nm)	-0.03	-0.04	-0.03
Ca 315.887	Ca R	52040.06	ppb	49644.09	0.75	~Y (488.368 nm)	51599.92	52166.94	52353.32
Cd 214.439	Cd A	0.73	ppb	253.28	1.14	~Y (371.029 nm)	0.72	0.73	0.74
Co 238.892	Co A	3.83	ppb	285.81	3.7	~Y (371.029 nm)	3.68	3.85	3.96
Cr 267.716	Cr A	0.54	ppb	117.15	11.19	~Y (371.029 nm)	0.53	0.48	0.6
Cu 327.395	Cu A	1.18	ppb	11.47	5.28	~Y (371.029 nm)	1.25	1.12	1.17
Fe 259.940	Fe R	1162.61	ppb	5707.37	0.68	~Y (488.368 nm)	1154.15	1163.94	1169.74
K 766.491	K R	293.41	ppb	269.64	10.67	~Y (488.368 nm)	266.03	327.56	286.64
Li 670.783	Li R	1.46	ppb	83.73	49.34	~Y (488.368 nm)	2.24	0.82	1.32
Mg 383.829	Mg A	9959.61	ppb	96679.5	0.92	~Y (371.029 nm)	9856.33	9990.64	10031.85
Mn 257.610	Mn R	898.59	ppb	33604.43	1.01	~Y (488.368 nm)	889.7	898.14	907.92
Mo 202.032	Mo A	0	ppb	26.53	1722.84	~Y (371.029 nm)	-0.01	-0.06	0.09
Na 588.995	Na R	13135.85	ppb	145597.25	1.02	~Y (488.368 nm)	13001.49	13136.59	13269.47
Ni 231.604	Ni A	8.96	ppb	297.61	1.62	~Y (371.029 nm)	8.82	8.97	9.11
Pb 220.353	Pb A	0.42	ppb	45	86.04	~Y (371.029 nm)	0.33	0.83	0.11
Sb 206.834	Sb A	2.2	ppb	41.23	34.62	~Y (371.029 nm)	3.07	1.66	1.86
Se 196.026	Se A	1.46	ppb	19	33.72	~Y (371.029 nm)	1.96	0.97	1.46
Si 251.611	Si A	10843.15	ppb	143990.96	0.58	~Y (371.029 nm)	10786.33	10831.92	10911.21
Sn 189.925	Sn A	0.33	ppb	14.94	126.99	~Y (371.029 nm)	-0.13	0.69	0.44
Sr 421.552	Sr R	123.29	ppb	51381.78	0.95	~Y (488.368 nm)	121.93	123.83	124.09
Ti 336.122	Ti A	2.61	ppb	746.51	1.63	~Y (371.029 nm)	2.56	2.64	2.63
Tl 190.794	Tl A	-0.87	ppb	-11.2	54.36	~Y (371.029 nm)	-0.79	-0.44	-1.37
V 292.401	V A	0.66	ppb	39.38	9.43	~Y (371.029 nm)	0.68	0.59	0.72
Zn 206.200	Zn A	10.9	ppb	529.43	0.59	~Y (371.029 nm)	10.83	10.92	10.95
Y 224.303	~Y	1.06	Ratio	2342.03	0.71	-	1.05	1.07	1.06
Y 371.029	~Y	1.05	Ratio	234707.83	0.37	-	1.05	1.05	1.06
Y 488.368	~Y	1.09	Ratio	26231.86	0.57	-	1.09	1.09	1.1

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989001_45209x1 **Analysis Time:**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		-0.26	ppb			-	-	-	-
~Al 237.312		125.13	ppb			-	-	-	-
~As 188.980		0.02	ppb			-	-	-	-
~B 249.678		23.96	ppb			-	-	-	-
~Ba 455.403		57.19	ppb			-	-	-	-
~Be 234.861		-0.03	ppb			-	-	-	-
~Ca 315.887		52040.05	ppb			-	-	-	-
~Cd 214.439		0.71	ppb			-	-	-	-
~Co 238.892		3.78	ppb			-	-	-	-
~Cr 267.716		0.36	ppb			-	-	-	-
~Cu 327.395		1.18	ppb			-	-	-	-
~Fe 259.940		1162.61	ppb			-	-	-	-
~K 766.491		293.41	ppb			-	-	-	-
~Li 670.783		1.46	ppb			-	-	-	-
~Mg 383.829		9959.61	ppb			-	-	-	-
~Mn 257.610		898.59	ppb			-	-	-	-
~Mo 202.032		0	ppb			-	-	-	-
~Na 588.995		13135.85	ppb			-	-	-	-
~Ni 231.604		9.02	ppb			-	-	-	-
~Pb 220.353		0.29	ppb			-	-	-	-
~Sb 206.834		2.16	ppb			-	-	-	-
~Se 196.026		1.07	ppb			-	-	-	-
~Si 251.611		10843.14	ppb			-	-	-	-
~Sn 189.925		0.33	ppb			-	-	-	-
~Sr 421.552		123.29	ppb			-	-	-	-
~Ti 336.122		2.61	ppb			-	-	-	-
~Tl 190.794		-0.7	ppb			-	-	-	-
~V 292.401		0.65	ppb			-	-	-	-
~Zn 206.200		10.9	ppb			-	-	-	-

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989002_45209x1 **Analysis Time: 2/20/2024 3:28:35 PM**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	-0.05	ppb	82.54	45.16	~Y (371.029 nm)	-0.07	-0.02	-0.06
Al 237.312	Al A	12.97	ppb	63.39	18.22	~Y (371.029 nm)	15.45	12.7	10.75
As 188.980	As A	-0.2	ppb	-5.37	460.6	~Y (371.029 nm)	-0.01	0.6	-1.18
B 249.678	B A	10.16	ppb	603.46	1.35	~Y (371.029 nm)	10.16	10.02	10.29
Ba 455.403	Ba R	58.11	ppb	15319.55	1.77	~Y (488.368 nm)	56.99	58.31	59.02
Be 234.861	Be A	-0.06	ppb	10.35	6.94	~Y (371.029 nm)	-0.05	-0.05	-0.06
Ca 315.887	Ca R	11664.73	ppb	11139.24	1.47	~Y (488.368 nm)	11498.03	11654.64	11841.52
Cd 214.439	Cd A	0.28	ppb	150.69	9.89	~Y (371.029 nm)	0.26	0.27	0.31
Co 238.892	Co A	3.08	ppb	236.01	2.05	~Y (371.029 nm)	3.02	3.07	3.15
Cr 267.716	Cr A	0.76	ppb	135.19	20.25	~Y (371.029 nm)	0.7	0.64	0.93
Cu 327.395	Cu A	9.45	ppb	659.51	1.2	~Y (371.029 nm)	9.33	9.49	9.55
Fe 259.940	Fe R	345.66	ppb	1706.1	1.75	~Y (488.368 nm)	340.09	344.8	352.1
K 766.491	K R	313.2	ppb	285.64	5.35	~Y (488.368 nm)	301.35	305.9	332.37
Li 670.783	Li R	1.26	ppb	72.21	32.29	~Y (488.368 nm)	1.44	1.54	0.79
Mg 383.829	Mg A	4140.22	ppb	40144.65	1.14	~Y (371.029 nm)	4086.22	4160.13	4174.3
Mn 257.610	Mn R	278.2	ppb	10410.44	1.33	~Y (488.368 nm)	274.45	278.28	281.86
Mo 202.032	Mo A	-0.03	ppb	25.24	728.54	~Y (371.029 nm)	-0.3	0.06	0.15
Na 588.995	Na R	11511.4	ppb	127695.95	1.86	~Y (488.368 nm)	11273.12	11571.8	11689.26
Ni 231.604	Ni A	6.5	ppb	212.39	1.36	~Y (371.029 nm)	6.58	6.52	6.41
Pb 220.353	Pb A	0.54	ppb	46.17	83.4	~Y (371.029 nm)	0.33	1.05	0.23
Sb 206.834	Sb A	1.22	ppb	37.93	133.36	~Y (371.029 nm)	2.52	1.73	-0.6
Se 196.026	Se A	2.77	ppb	24.34	42.03	~Y (371.029 nm)	3.21	3.65	1.45
Si 251.611	Si A	13672.38	ppb	181473.85	0.94	~Y (371.029 nm)	13527.18	13718.05	13771.92
Sn 189.925	Sn A	-0.37	ppb	8.98	101.34	~Y (371.029 nm)	-0.69	0.04	-0.47
Sr 421.552	Sr R	62.58	ppb	26105.24	1.87	~Y (488.368 nm)	61.3	62.83	63.61
Ti 336.122	Ti A	0.19	ppb	195.22	9.74	~Y (371.029 nm)	0.2	0.17	0.21
Tl 190.794	Tl A	-0.27	ppb	-9.38	594.54	~Y (371.029 nm)	-1.78	1.38	-0.41
V 292.401	V A	0.02	ppb	9.07	844.06	~Y (371.029 nm)	0.15	-0.18	0.09
Zn 206.200	Zn A	8.86	ppb	434.85	0.95	~Y (371.029 nm)	8.78	8.94	8.87
Y 224.303	~Y	1.09	Ratio	2403.87	0.35	-	1.09	1.09	1.08
Y 371.029	~Y	1.06	Ratio	235580.42	0.55	-	1.05	1.06	1.06
Y 488.368	~Y	1.12	Ratio	26946.97	0.57	-	1.12	1.13	1.12

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989002_45209x1 **Analysis Time:**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		-0.09	ppb			-	-	-	-
~Al 237.312		12.97	ppb			-	-	-	-
~As 188.980		-0.19	ppb			-	-	-	-
~B 249.678		10.16	ppb			-	-	-	-
~Ba 455.403		58.11	ppb			-	-	-	-
~Be 234.861		-0.06	ppb			-	-	-	-
~Ca 315.887		11664.73	ppb			-	-	-	-
~Cd 214.439		0.28	ppb			-	-	-	-
~Co 238.892		3.06	ppb			-	-	-	-
~Cr 267.716		0.7	ppb			-	-	-	-
~Cu 327.395		9.45	ppb			-	-	-	-
~Fe 259.940		345.66	ppb			-	-	-	-
~K 766.491		313.2	ppb			-	-	-	-
~Li 670.783		1.26	ppb			-	-	-	-
~Mg 383.829		4140.22	ppb			-	-	-	-
~Mn 257.610		278.2	ppb			-	-	-	-
~Mo 202.032		-0.03	ppb			-	-	-	-
~Na 588.995		11511.4	ppb			-	-	-	-
~Ni 231.604		6.52	ppb			-	-	-	-
~Pb 220.353		0.49	ppb			-	-	-	-
~Sb 206.834		1.2	ppb			-	-	-	-
~Se 196.026		2.65	ppb			-	-	-	-
~Si 251.611		13672.38	ppb			-	-	-	-
~Sn 189.925		-0.37	ppb			-	-	-	-
~Sr 421.552		62.58	ppb			-	-	-	-
~Ti 336.122		0.19	ppb			-	-	-	-
~Tl 190.794		-0.22	ppb			-	-	-	-
~V 292.401		0.02	ppb			-	-	-	-
~Zn 206.200		8.86	ppb			-	-	-	-

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989003_45209x1 **Analysis Time: 2/20/2024 3:31:25 PM**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	1.7	ppb	280.82	11.51	~Y (371.029 nm)	1.7	1.89	1.5
Al 237.312	Al A	176.95	ppb	828.73	0.5	~Y (371.029 nm)	177.49	175.93	177.43
As 188.980	As A	-1.57	ppb	-10.85	65.71	~Y (371.029 nm)	-1.28	-2.72	-0.72
B 249.678	B A	9.01	ppb	548.67	1.7	~Y (371.029 nm)	9.08	9.12	8.84
Ba 455.403	Ba R	11.25	ppb	3017.3	1.23	~Y (488.368 nm)	11.12	11.25	11.39
Be 234.861	Be A	-0.05	ppb	13.1	22.55	~Y (371.029 nm)	-0.04	-0.05	-0.06
Ca 315.887	Ca R	4391.58	ppb	4203.03	2.02	~Y (488.368 nm)	4293.14	4416.43	4465.17
Cd 214.439	Cd A	0.01	ppb	89.94	200.02	~Y (371.029 nm)	0.02	-0.02	0.04
Co 238.892	Co A	-0.12	ppb	23.15	101.04	~Y (371.029 nm)	-0.22	0.02	-0.16
Cr 267.716	Cr A	0.64	ppb	125.73	19.98	~Y (371.029 nm)	0.75	0.68	0.5
Cu 327.395	Cu A	0.57	ppb	-36.41	43.58	~Y (371.029 nm)	0.73	0.28	0.69
Fe 259.940	Fe R	241.44	ppb	1195.65	1.37	~Y (488.368 nm)	238.03	241.66	244.64
K 766.491	K R	1486.74	ppb	1234.67	1.07	~Y (488.368 nm)	1469.52	1500.77	1489.92
Li 670.783	Li R	-0.43	ppb	-24.39	33.97	~Y (488.368 nm)	-0.26	-0.55	-0.47
Mg 383.829	Mg A	2726.66	ppb	26412.04	0.74	~Y (371.029 nm)	2703.6	2734.51	2741.85
Mn 257.610	Mn R	2.59	ppb	106.63	2.08	~Y (488.368 nm)	2.54	2.59	2.65
Mo 202.032	Mo A	-0.04	ppb	25.14	529.18	~Y (371.029 nm)	0.06	-0.25	0.08
Na 588.995	Na R	7173.74	ppb	79895.58	1.76	~Y (488.368 nm)	7029.01	7231.67	7260.54
Ni 231.604	Ni A	0.64	ppb	9.79	23.6	~Y (371.029 nm)	0.71	0.47	0.75
Pb 220.353	Pb A	1.42	ppb	55.48	50.37	~Y (371.029 nm)	0.84	1.19	2.22
Sb 206.834	Sb A	1.98	ppb	40.49	33.24	~Y (371.029 nm)	2.73	1.65	1.55
Se 196.026	Se A	1.16	ppb	17.79	36.35	~Y (371.029 nm)	1.4	0.68	1.42
Si 251.611	Si A	8431.52	ppb	112040.47	0.67	~Y (371.029 nm)	8366.89	8467.8	8459.86
Sn 189.925	Sn A	-0.03	ppb	11.82	1378.41	~Y (371.029 nm)	0.16	0.32	-0.58
Sr 421.552	Sr R	28.43	ppb	11884	1.51	~Y (488.368 nm)	27.94	28.56	28.77
Ti 336.122	Ti A	5.3	ppb	1359.72	2.3	~Y (371.029 nm)	5.19	5.43	5.28
Tl 190.794	Tl A	-1.56	ppb	-13.3	98.15	~Y (371.029 nm)	-2.34	0.2	-2.53
V 292.401	V A	0.34	ppb	24.14	46.97	~Y (371.029 nm)	0.16	0.42	0.44
Zn 206.200	Zn A	1.67	ppb	100.17	2.68	~Y (371.029 nm)	1.72	1.63	1.65
Y 224.303	~Y	1.09	Ratio	2405.67	0.32	-	1.09	1.09	1.09
Y 371.029	~Y	1.06	Ratio	235634.89	0.73	-	1.05	1.06	1.07
Y 488.368	~Y	1.13	Ratio	27042.46	0.7	-	1.13	1.12	1.12

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989003_45209x1 **Analysis Time:**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		1.7	ppb			-	-	-	-
~Al 237.312		176.95	ppb			-	-	-	-
~As 188.980		-1.57	ppb			-	-	-	-
~B 249.678		9.01	ppb			-	-	-	-
~Ba 455.403		11.25	ppb			-	-	-	-
~Be 234.861		-0.05	ppb			-	-	-	-
~Ca 315.887		4391.57	ppb			-	-	-	-
~Cd 214.439		0.01	ppb			-	-	-	-
~Co 238.892		-0.12	ppb			-	-	-	-
~Cr 267.716		0.64	ppb			-	-	-	-
~Cu 327.395		0.57	ppb			-	-	-	-
~Fe 259.940		241.44	ppb			-	-	-	-
~K 766.491		1486.74	ppb			-	-	-	-
~Li 670.783		-0.43	ppb			-	-	-	-
~Mg 383.829		2726.66	ppb			-	-	-	-
~Mn 257.610		2.59	ppb			-	-	-	-
~Mo 202.032		-0.04	ppb			-	-	-	-
~Na 588.995		7173.74	ppb			-	-	-	-
~Ni 231.604		0.64	ppb			-	-	-	-
~Pb 220.353		1.41	ppb			-	-	-	-
~Sb 206.834		1.96	ppb			-	-	-	-
~Se 196.026		1.17	ppb			-	-	-	-
~Si 251.611		8431.5	ppb			-	-	-	-
~Sn 189.925		-0.03	ppb			-	-	-	-
~Sr 421.552		28.43	ppb			-	-	-	-
~Ti 336.122		5.3	ppb			-	-	-	-
~Tl 190.794		-1.54	ppb			-	-	-	-
~V 292.401		0.33	ppb			-	-	-	-
~Zn 206.200		1.67	ppb			-	-	-	-

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989004_45209x1 **Analysis Time: 2/20/2024 3:34:15 PM**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	-0.07	ppb	80.77	200.05	~Y (371.029 nm)	-0.06	0.06	-0.2
Al 237.312	Al A	11.82	ppb	58.03	13.45	~Y (371.029 nm)	13.64	11.09	10.72
As 188.980	As A	-0.95	ppb	-8.38	78.47	~Y (371.029 nm)	-1.65	-1.04	-0.17
B 249.678	B A	0.91	ppb	161.96	15.6	~Y (371.029 nm)	0.88	0.79	1.07
Ba 455.403	Ba R	5.28	ppb	1448.75	1.76	~Y (488.368 nm)	5.18	5.29	5.37
Be 234.861	Be A	-0.05	ppb	14.78	9.15	~Y (371.029 nm)	-0.06	-0.05	-0.05
Ca 315.887	Ca R	27310.33	ppb	26060.02	1.54	~Y (488.368 nm)	26853.28	27396.77	27680.95
Cd 214.439	Cd A	0.03	ppb	93.68	181.08	~Y (371.029 nm)	0.05	-0.03	0.08
Co 238.892	Co A	-0.22	ppb	16.16	71.21	~Y (371.029 nm)	-0.38	-0.06	-0.23
Cr 267.716	Cr A	0.28	ppb	94.88	15.5	~Y (371.029 nm)	0.23	0.29	0.31
Cu 327.395	Cu A	0.56	ppb	-36.85	11.01	~Y (371.029 nm)	0.49	0.6	0.6
Fe 259.940	Fe R	238.33	ppb	1180.39	1.45	~Y (488.368 nm)	235.1	237.89	241.99
K 766.491	K R	1611.45	ppb	1335.53	0.97	~Y (488.368 nm)	1612.49	1595.31	1626.54
Li 670.783	Li R	1.82	ppb	104.26	15	~Y (488.368 nm)	2.13	1.68	1.65
Mg 383.829	Mg A	4222.24	ppb	40941.55	0.87	~Y (371.029 nm)	4179.71	4243.17	4243.85
Mn 257.610	Mn R	45.57	ppb	1713.32	1.98	~Y (488.368 nm)	44.64	45.61	46.45
Mo 202.032	Mo A	0.19	ppb	33.19	60.5	~Y (371.029 nm)	0.14	0.11	0.33
Na 588.995	Na R	8015.64	ppb	89173.16	1.38	~Y (488.368 nm)	7889.45	8062.09	8095.38
Ni 231.604	Ni A	0.24	ppb	-4.25	55.27	~Y (371.029 nm)	0.25	0.1	0.36
Pb 220.353	Pb A	1.09	ppb	51.97	93.08	~Y (371.029 nm)	2.25	0.54	0.47
Sb 206.834	Sb A	1.1	ppb	37.53	40.44	~Y (371.029 nm)	1.51	1.15	0.63
Se 196.026	Se A	-0.33	ppb	11.7	289.82	~Y (371.029 nm)	0.34	0.09	-1.42
Si 251.611	Si A	11232.72	ppb	149152.06	0.62	~Y (371.029 nm)	11162.22	11234.32	11301.6
Sn 189.925	Sn A	0.57	ppb	16.96	24.87	~Y (371.029 nm)	0.74	0.48	0.51
Sr 421.552	Sr R	265.31	ppb	110518.74	1.32	~Y (488.368 nm)	261.39	266.42	268.11
Ti 336.122	Ti A	0.46	ppb	256	9.03	~Y (371.029 nm)	0.5	0.42	0.46
Tl 190.794	Tl A	-0.15	ppb	-9.02	613.32	~Y (371.029 nm)	-0.49	0.89	-0.85
V 292.401	V A	0.01	ppb	8.37	569.42	~Y (371.029 nm)	0.01	-0.03	0.04
Zn 206.200	Zn A	2.36	ppb	132.62	4.86	~Y (371.029 nm)	2.24	2.47	2.38
Y 224.303	~Y	1.08	Ratio	2377.62	1.5	-	1.09	1.06	1.08
Y 371.029	~Y	1.05	Ratio	234993.02	0.36	-	1.05	1.05	1.06
Y 488.368	~Y	1.1	Ratio	26447.71	0.63	-	1.11	1.1	1.1

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989004_45209x1 **Analysis Time:**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		-0.07	ppb			-	-	-	-
~Al 237.312		11.82	ppb			-	-	-	-
~As 188.980		-0.95	ppb			-	-	-	-
~B 249.678		0.91	ppb			-	-	-	-
~Ba 455.403		5.28	ppb			-	-	-	-
~Be 234.861		-0.05	ppb			-	-	-	-
~Ca 315.887		27310.33	ppb			-	-	-	-
~Cd 214.439		0.03	ppb			-	-	-	-
~Co 238.892		-0.23	ppb			-	-	-	-
~Cr 267.716		0.27	ppb			-	-	-	-
~Cu 327.395		0.56	ppb			-	-	-	-
~Fe 259.940		238.33	ppb			-	-	-	-
~K 766.491		1611.45	ppb			-	-	-	-
~Li 670.783		1.82	ppb			-	-	-	-
~Mg 383.829		4222.24	ppb			-	-	-	-
~Mn 257.610		45.57	ppb			-	-	-	-
~Mo 202.032		0.19	ppb			-	-	-	-
~Na 588.995		8015.64	ppb			-	-	-	-
~Ni 231.604		0.24	ppb			-	-	-	-
~Pb 220.353		1.07	ppb			-	-	-	-
~Sb 206.834		1.09	ppb			-	-	-	-
~Se 196.026		-0.35	ppb			-	-	-	-
~Si 251.611		11232.71	ppb			-	-	-	-
~Sn 189.925		0.57	ppb			-	-	-	-
~Sr 421.552		265.31	ppb			-	-	-	-
~Ti 336.122		0.46	ppb			-	-	-	-
~Tl 190.794		-0.14	ppb			-	-	-	-
~V 292.401		0	ppb			-	-	-	-
~Zn 206.200		2.36	ppb			-	-	-	-

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989005_45209x1 **Analysis Time: 2/20/2024 3:37:05 PM**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	-0.14	ppb	72.03	40.45	~Y (371.029 nm)	-0.16	-0.08	-0.19
Al 237.312	Al A	11.25	ppb	55.4	27.81	~Y (371.029 nm)	7.89	14.09	11.78
As 188.980	As A	-1.02	ppb	-8.64	21.42	~Y (371.029 nm)	-0.94	-0.85	-1.26
B 249.678	B A	9.84	ppb	588.16	0.63	~Y (371.029 nm)	9.86	9.88	9.77
Ba 455.403	Ba R	56.01	ppb	14768.31	1.79	~Y (488.368 nm)	54.85	56.48	56.68
Be 234.861	Be A	-0.07	ppb	1.52	1.97	~Y (371.029 nm)	-0.06	-0.07	-0.07
Ca 315.887	Ca R	11254.04	ppb	10747.57	1.11	~Y (488.368 nm)	11113.64	11293.36	11355.12
Cd 214.439	Cd A	0.29	ppb	152.4	15.4	~Y (371.029 nm)	0.26	0.34	0.27
Co 238.892	Co A	3.1	ppb	237.36	1.74	~Y (371.029 nm)	3.1	3.04	3.15
Cr 267.716	Cr A	0.82	ppb	140.1	2.45	~Y (371.029 nm)	0.84	0.8	0.81
Cu 327.395	Cu A	9.31	ppb	648.08	1.53	~Y (371.029 nm)	9.14	9.38	9.4
Fe 259.940	Fe R	325.03	ppb	1605.04	2.09	~Y (488.368 nm)	318.29	324.92	331.88
K 766.491	K R	305.85	ppb	279.7	5.18	~Y (488.368 nm)	288.62	319.79	309.15
Li 670.783	Li R	1.75	ppb	100.34	23.7	~Y (488.368 nm)	2.19	1.69	1.37
Mg 383.829	Mg A	4026.53	ppb	39040.24	0.97	~Y (371.029 nm)	3981.85	4042.44	4055.31
Mn 257.610	Mn R	270.37	ppb	10118.02	1.42	~Y (488.368 nm)	266	271.96	273.17
Mo 202.032	Mo A	-0.09	ppb	23.23	155.12	~Y (371.029 nm)	0.01	-0.25	-0.03
Na 588.995	Na R	11088.33	ppb	123033.78	1.39	~Y (488.368 nm)	10911.95	11157.35	11195.68
Ni 231.604	Ni A	6.06	ppb	197.3	2.63	~Y (371.029 nm)	5.95	6.25	5.99
Pb 220.353	Pb A	0.34	ppb	44.11	222.39	~Y (371.029 nm)	-0.53	0.85	0.69
Sb 206.834	Sb A	0.44	ppb	35.32	68.98	~Y (371.029 nm)	0.31	0.23	0.79
Se 196.026	Se A	2.16	ppb	21.86	3.43	~Y (371.029 nm)	2.17	2.23	2.08
Si 251.611	Si A	13278.12	ppb	176250.45	1.05	~Y (371.029 nm)	13118.45	13338.5	13377.4
Sn 189.925	Sn A	0.22	ppb	13.95	195.35	~Y (371.029 nm)	0.6	0.29	-0.24
Sr 421.552	Sr R	60.4	ppb	25197.01	1.71	~Y (488.368 nm)	59.22	60.83	61.14
Ti 336.122	Ti A	0.19	ppb	195.74	41.55	~Y (371.029 nm)	0.11	0.21	0.26
Tl 190.794	Tl A	-0.91	ppb	-11.34	83.84	~Y (371.029 nm)	-0.03	-1.38	-1.33
V 292.401	V A	-0.01	ppb	7.75	1687.71	~Y (371.029 nm)	-0.06	0.13	-0.09
Zn 206.200	Zn A	9.18	ppb	449.45	1.95	~Y (371.029 nm)	9.11	9.38	9.04
Y 224.303	~Y	1.09	Ratio	2409.06	0.21	-	1.09	1.09	1.09
Y 371.029	~Y	1.06	Ratio	236350.42	0.59	-	1.06	1.06	1.07
Y 488.368	~Y	1.12	Ratio	27012.19	0.73	-	1.12	1.12	1.13

Agilent 5110 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240220_ICP6.esws
Report Generation Time: 2/21/2024 4:31:47 PM

Sample: 92712989005_45209x1 **Analysis Time:**
Type: Sample **Description:**
Dilution: 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)		Internal Std.	Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		-0.18	ppb			-	-	-	-
~Al 237.312		11.25	ppb			-	-	-	-
~As 188.980		-1.02	ppb			-	-	-	-
~B 249.678		9.84	ppb			-	-	-	-
~Ba 455.403		56.01	ppb			-	-	-	-
~Be 234.861		-0.07	ppb			-	-	-	-
~Ca 315.887		11254.04	ppb			-	-	-	-
~Cd 214.439		0.28	ppb			-	-	-	-
~Co 238.892		3.08	ppb			-	-	-	-
~Cr 267.716		0.76	ppb			-	-	-	-
~Cu 327.395		9.31	ppb			-	-	-	-
~Fe 259.940		325.03	ppb			-	-	-	-
~K 766.491		305.85	ppb			-	-	-	-
~Li 670.783		1.75	ppb			-	-	-	-
~Mg 383.829		4026.53	ppb			-	-	-	-
~Mn 257.610		270.37	ppb			-	-	-	-
~Mo 202.032		-0.09	ppb			-	-	-	-
~Na 588.995		11088.33	ppb			-	-	-	-
~Ni 231.604		6.08	ppb			-	-	-	-
~Pb 220.353		0.3	ppb			-	-	-	-
~Sb 206.834		0.42	ppb			-	-	-	-
~Se 196.026		2.04	ppb			-	-	-	-
~Si 251.611		13278.12	ppb			-	-	-	-
~Sn 189.925		0.22	ppb			-	-	-	-
~Sr 421.552		60.4	ppb			-	-	-	-
~Ti 336.122		0.19	ppb			-	-	-	-
~Tl 190.794		-0.86	ppb			-	-	-	-
~V 292.401		-0.01	ppb			-	-	-	-
~Zn 206.200		9.18	ppb			-	-	-	-

Agilent 5900 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240222_ICP6-B.esws
Report Generation Time: 2/22/2024 5:48:52 PM

Sample: 92712989006_45218x1
Type: Sample
Sample Date Time:
Dilution: 1

Analysis Time: 2/22/2024 1:22:09 PM
Description:
Volume (ml): 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)			Internal Std.		Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	-0.04	ppb	61.37	307.3	19.34	~Y (371.029 nm)		0.09	-0.06	-0.14
Al 237.312	Al A	68.91	ppb	306.57	4.5	4.31	~Y (371.029 nm)		65.6	69.38	71.74
As 188.980	As A	-0.72	ppb	-12.88	129.18	25.8	~Y (371.029 nm)		-1.65	0.2	-0.7
B 249.678	B A	1.25	ppb	206.45	9.33	2.43	~Y (371.029 nm)		1.12	1.28	1.35
Ba 455.403	Ba R	13	ppb	3170.02	1.08	1.06	~Y (488.368 nm)		12.87	12.97	13.15
Be 234.861	Be A	0.01	ppb	11.38	72.42	42.13	~Y (371.029 nm)		0.01	0.01	0
Ca 315.887	Ca R	2970.73	ppb	2630.17	1.22	1.21	~Y (488.368 nm)		2929.04	2990.37	2992.78
Cd 214.439	Cd A	-0.01	ppb	81.47	495.7	9.52	~Y (371.029 nm)		-0.04	-0.01	0.03
Co 238.892	Co A	0.74	ppb	72.01	17.17	10.66	~Y (371.029 nm)		0.85	0.76	0.6
Cr 267.716	Cr A	0.36	ppb	112.34	45.89	11.01	~Y (371.029 nm)		0.54	0.22	0.33
Cu 327.395	Cu A	0.97	ppb	-22.54	14.21	42	~Y (371.029 nm)		0.87	1.13	0.92
Fe 259.940	Fe R	167.48	ppb	774.45	2.25	2.17	~Y (488.368 nm)		163.21	170.37	168.87
K 766.491	K R	957.11	ppb	747.77	1.38	1.3	~Y (488.368 nm)		958.77	943.11	969.46
Li 670.783	Li R	0.31	ppb	16.11	248.11	> 100.00	~Y (488.368 nm)		0.8	-0.58	0.71
Mg 383.829	Mg A	1881.05	ppb	16280.25	0.23	0.23	~Y (371.029 nm)		1876.19	1882.69	1884.25
Mn 257.610	Mn R	37.11	ppb	1284.58	1.63	1.62	~Y (488.368 nm)		36.54	37.74	37.05
Mo 202.032	Mo A	0	ppb	28.77	3218.8	16.92	~Y (371.029 nm)		0.01	-0.16	0.14
Na 588.995	Na R	5751.06	ppb	59007.55	1.03	1.01	~Y (488.368 nm)		5683.03	5779.16	5790.98
Ni 231.604	Ni A	0.53	ppb	-6.96	45.43	> 100.00	~Y (371.029 nm)		0.77	0.29	0.53
Pb 220.353	Pb A	1	ppb	50.36	43.64	8.23	~Y (371.029 nm)		0.6	1.46	0.92
Sb 206.834	Sb A	0.57	ppb	39.06	176.32	7.74	~Y (371.029 nm)		0.32	-0.29	1.68
Se 196.026	Se A	-1.56	ppb	17.27	52.38	17.72	~Y (371.029 nm)		-0.71	-2.34	-1.63
Si 251.611	Si A	8245.82	ppb	99504.97	0.86	0.86	~Y (371.029 nm)		8173.64	8248.63	8315.18
Sn 189.925	Sn A	-0.34	ppb	13.02	129.81	26.32	~Y (371.029 nm)		-0.7	0.15	-0.47
Sr 421.552	Sr R	21.79	ppb	8346.63	1.67	1.66	~Y (488.368 nm)		21.39	21.9	22.09
Ti 336.122	Ti A	1.28	ppb	505.97	0.77	0.4	~Y (371.029 nm)		1.29	1.27	1.28
Tl 190.794	Tl A	1.23	ppb	-8.43	57.95	24.17	~Y (371.029 nm)		0.42	1.75	1.52
V 292.401	V A	0.38	ppb	31.74	42.56	21.42	~Y (371.029 nm)		0.37	0.54	0.22
Zn 206.200	Zn A	4.04	ppb	190.73	2.58	2.36	~Y (371.029 nm)		4.15	4.03	3.94
Y 224.303	~Y	1.05	Ratio	2481.9	0.64	0.64	-		1.04	1.05	1.05
Y 371.029	~Y	1.02	Ratio	242254.68	0.51	0.51	-		1.01	1.02	1.02
Y 488.368	~Y	1.04	Ratio	26791.56	0.49	0.49	-		1.04	1.03	1.04

Agilent 5900 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240222_ICP6-B.esws
Report Generation Time: 2/22/2024 5:48:52 PM

Sample: 92712989006_45218x1
Type: Sample
Sample Date Time:
Dilution: 1

Analysis Time:
Description:
Volume (ml): 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)			Internal Std.		Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		-0.04	ppb				-		-	-	-
~Al 237.312		68.91	ppb				-		-	-	-
~As 188.980		-0.71	ppb				-		-	-	-
~B 249.678		1.25	ppb				-		-	-	-
~Ba 455.403		13	ppb				-		-	-	-
~Be 234.861		0.01	ppb				-		-	-	-
~Ca 315.887		2970.73	ppb				-		-	-	-
~Cd 214.439		-0.01	ppb				-		-	-	-
~Co 238.892		0.73	ppb				-		-	-	-
~Cr 267.716		0.35	ppb				-		-	-	-
~Cu 327.395		0.97	ppb				-		-	-	-
~Fe 259.940		167.48	ppb				-		-	-	-
~K 766.491		957.11	ppb				-		-	-	-
~Li 670.783		0.31	ppb				-		-	-	-
~Mg 383.829		1881.05	ppb				-		-	-	-
~Mn 257.610		37.11	ppb				-		-	-	-
~Mo 202.032		0	ppb				-		-	-	-
~Na 588.995		5751.06	ppb				-		-	-	-
~Ni 231.604		0.53	ppb				-		-	-	-
~Pb 220.353		0.99	ppb				-		-	-	-
~Sb 206.834		0.56	ppb				-		-	-	-
~Se 196.026		-1.58	ppb				-		-	-	-
~Si 251.611		8245.81	ppb				-		-	-	-
~Sn 189.925		-0.34	ppb				-		-	-	-
~Sr 421.552		21.79	ppb				-		-	-	-
~Ti 336.122		1.28	ppb				-		-	-	-
~Tl 190.794		1.24	ppb				-		-	-	-
~V 292.401		0.37	ppb				-		-	-	-
~Zn 206.200		4.04	ppb				-		-	-	-

Agilent 5900 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240222_ICP6-B.esws
Report Generation Time: 2/22/2024 5:48:52 PM

Sample: 92712989007_45218x1
Type: Sample
Sample Date Time:
Dilution: 1

Analysis Time: 2/22/2024 1:36:20 PM
Description:
Volume (ml): 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)			Internal Std.		Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
Ag 328.068	Ag A	0.22	ppb	87.48	51.57	13.11	~Y (371.029 nm)		0.34	0.12	0.2
Al 237.312	Al A	6.17	ppb	38.85	37.99	25.76	~Y (371.029 nm)		4.28	8.8	5.44
As 188.980	As A	0.42	ppb	-8.79	339.69	58.61	~Y (371.029 nm)		-1.04	0.48	1.83
B 249.678	B A	1209.59	ppb	52091.33	0.25	0.24	~Y (371.029 nm)		1206.2	1210.86	1211.71
Ba 455.403	Ba R	62.95	ppb	15143.85	0.9	0.89	~Y (488.368 nm)		62.5	62.76	63.58
Be 234.861	Be A	0.02	ppb	17.3	55.17	39.99	~Y (371.029 nm)		0.01	0.02	0.02
Ca 315.887	Ca R	34548.36	ppb	30357.61	1.51	1.51	~Y (488.368 nm)		34241.56	34254.26	35149.25
Cd 214.439	Cd A	0.02	ppb	88.05	47.57	2.71	~Y (371.029 nm)		0.04	0.01	0.02
Co 238.892	Co A	-0.21	ppb	14.3	96.08	87.31	~Y (371.029 nm)		-0.27	0.01	-0.39
Cr 267.716	Cr A	0.28	ppb	106.08	4.47	0.87	~Y (371.029 nm)		0.27	0.29	0.27
Cu 327.395	Cu A	0.33	ppb	-66.34	87.2	30	~Y (371.029 nm)		0.29	0.06	0.64
Fe 259.940	Fe R	3687.29	ppb	16455.31	1.2	1.2	~Y (488.368 nm)		3656.72	3667.13	3738.02
K 766.491	K R	697.9	ppb	557.29	4.63	4.26	~Y (488.368 nm)		660.7	713.8	719.2
Li 670.783	Li R	0.08	ppb	4.17	544.7	> 100.00	~Y (488.368 nm)		0.22	-0.41	0.43
Mg 383.829	Mg A	7907.9	ppb	68670.24	0.69	0.69	~Y (371.029 nm)		7849.89	7914.93	7958.88
Mn 257.610	Mn R	368.99	ppb	12688.57	1.4	1.4	~Y (488.368 nm)		366.09	365.94	374.95
Mo 202.032	Mo A	0.43	ppb	42.82	79.66	25.86	~Y (371.029 nm)		0.04	0.56	0.69
Na 588.995	Na R	14196.55	ppb	144360.92	0.89	0.89	~Y (488.368 nm)		14108.43	14139.1	14342.13
Ni 231.604	Ni A	1.32	ppb	18.25	9.52	21.95	~Y (371.029 nm)		1.2	1.32	1.45
Pb 220.353	Pb A	0.8	ppb	48.53	52.36	8.27	~Y (371.029 nm)		0.38	0.82	1.22
Sb 206.834	Sb A	1.27	ppb	41.16	81.91	7.6	~Y (371.029 nm)		1.67	0.09	2.05
Se 196.026	Se A	-0.96	ppb	19.53	126.09	23.19	~Y (371.029 nm)		-0.31	-0.22	-2.36
Si 251.611	Si A	13000.51	ppb	156670.08	0.51	0.51	~Y (371.029 nm)		12926.1	13019.56	13055.86
Sn 189.925	Sn A	0.13	ppb	16.68	546.58	33.16	~Y (371.029 nm)		-0.66	0.32	0.72
Sr 421.552	Sr R	121.68	ppb	46478.38	1.1	1.1	~Y (488.368 nm)		120.57	121.3	123.16
Ti 336.122	Ti A	-0.21	ppb	199.46	50.19	10.93	~Y (371.029 nm)		-0.28	-0.27	-0.09
Tl 190.794	Tl A	1.72	ppb	-7.05	9.49	6.6	~Y (371.029 nm)		1.63	1.61	1.9
V 292.401	V A	0.09	ppb	19.47	336.29	63.96	~Y (371.029 nm)		0.43	-0.1	-0.07
Zn 206.200	Zn A	1.88	ppb	97.24	3.61	3.01	~Y (371.029 nm)		1.81	1.87	1.95
Y 224.303	~Y	1.04	Ratio	2460.85	0.4	0.4	-		1.04	1.05	1.04
Y 371.029	~Y	1	Ratio	238669.44	0.38	0.38	-		1	1	1
Y 488.368	~Y	1.03	Ratio	26675.94	1.09	1.09	-		1.03	1.04	1.02

Agilent 5900 ICP-OES Report
Analyst:
File: Worksheet exported from: 20240222_ICP6-B.esws
Report Generation Time: 2/22/2024 5:48:52 PM

Sample: 92712989007_45218x1
Type: Sample
Sample Date Time:
Dilution: 1

Analysis Time:
Description:
Volume (ml): 1

Element	Element Label	Calc. Conc.	Unit	Intensity (c/s)			Internal Std.		Conc. Rep. 1	Conc. Rep. 2	Conc. Rep. 3
~Ag 328.068		0.17	ppb				-		-	-	-
~Al 237.312		6.17	ppb				-		-	-	-
~As 188.980		0.42	ppb				-		-	-	-
~B 249.678		1209.59	ppb				-		-	-	-
~Ba 455.403		62.95	ppb				-		-	-	-
~Be 234.861		0.01	ppb				-		-	-	-
~Ca 315.887		34548.36	ppb				-		-	-	-
~Cd 214.439		-0.04	ppb				-		-	-	-
~Co 238.892		-0.29	ppb				-		-	-	-
~Cr 267.716		0.2	ppb				-		-	-	-
~Cu 327.395		0.33	ppb				-		-	-	-
~Fe 259.940		3687.29	ppb				-		-	-	-
~K 766.491		697.9	ppb				-		-	-	-
~Li 670.783		0.08	ppb				-		-	-	-
~Mg 383.829		7907.9	ppb				-		-	-	-
~Mn 257.610		368.99	ppb				-		-	-	-
~Mo 202.032		0.43	ppb				-		-	-	-
~Na 588.995		14196.55	ppb				-		-	-	-
~Ni 231.604		1.34	ppb				-		-	-	-
~Pb 220.353		0.68	ppb				-		-	-	-
~Sb 206.834		1.2	ppb				-		-	-	-
~Se 196.026		-1.09	ppb				-		-	-	-
~Si 251.611		13000.5	ppb				-		-	-	-
~Sn 189.925		0.13	ppb				-		-	-	-
~Sr 421.552		121.68	ppb				-		-	-	-
~Ti 336.122		-0.21	ppb				-		-	-	-
~Tl 190.794		1.83	ppb				-		-	-	-
~V 292.401		0.04	ppb				-		-	-	-
~Zn 206.200		1.88	ppb				-		-	-	-

Prep Log Report

Batch Information: WETA 96729,96730 IC

LOG | WC Automated Analysis Traceability Log (ASHV)

Prep Method	EPA 9056A	Analysis Method	EPA 9056A	Prepared By	CDC	Prep Date/Time	02/13/2024 20:10:52:832
Instrument	93WTA1	Anion Eluent	260496	IC Suppressant	260047	Pipette ID 1	93P086
Pipette ID 2		Pipette ID 3		Reviewed By	JCM	Reviewed By Date	02/14/2024 20:54
Batch Notes							

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
9056 W48	BLANK	**4300169**	10	10		Water			
9056 W48	LCS	**4300170**	10	10		Water		248518 (10)	
9056 W48	PS	**92712991001**	10	10		Water			
9056 W48	PS	**92712988002**	10	10		Water			
9056 W48	PS	**92712988001**	10	10		Water			
9056 W48	PS	**92712987001**	10	10		Water			
9056 W48	PS	**92712989004**	10	10		Water			
9056 W48	PS	**92712989002**	10	10		Water			
9056 W48	PS	**92712989005**	10	10		Water			
9056 W48	PS	**92712989003**	10	10		Water			
9056 W48	PS	**92712989001**	10	10		Water			
9056 W48	MS	**4300171**	10	10		Water			239719 (.05)
9056 W48	MSD	**4300172**	10	10		Water			239719 (.05)
9056 W48	PS	**92712990001**	10	10		Water			
3000 W28	BLANK	**4300191**	10	10		Water			
3000 W28	LCS	**4300192**	10	10		Water		248518 (10)	
3000 W28	PS	**92713143002**	10	10		Water			
3000 W28	MS	**4300193**	10	10		Water			239719 (.05)
3000 W28	MSD	**4300194**	10	10		Water			239719 (.05)
3000 W28	PS	**92712690001**	10	10		Water			
3000 W28	PS	**92713015001**	10	10		Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
3000 W28	PS	**92713015002**	10	10		Water			
3000 W28	PS	**92713015003**	10	10		Water			
3000 W28	PS	**92713015004**	10	10		Water			
3000 W28	PS	**92713015005**	10	10		Water			
3000 W28	PS	**92713015006**	10	10		Water			
3000 W28	PS	**92713015007**	10	10		Water			
3000 W28	MS	**4300195**	10	10		Water			239719 (.05)
3000 W28	MSD	**4300196**	10	10		Water			239719 (.05)
3000 W28	PS	**92713015008**	10	10		Water			
3000 W28	PS	**92713015009**	10	10		Water			
3000 W28	PS	**92713015010**	10	10		Water			
3000 W28	PS	**92713015011**	10	10		Water			
3000 W28	PS	**92713015012**	10	10		Water			
3000 W28	PS	**92713015013**	10	10		Water			
3000 W28	PS	**92713025001**	10	10		Water			
3000 W28	PS	**92713025002**	10	10		Water			
3000 W28	PS	**92713025003**	10	10		Water			
3000 W28	PS	**92713208001**	10	10		Water			
3000 W28	PS	**92713208002**	10	10		Water			

Standard Notes:

239719: IC_Stdmix 2_WETA_AVL

248518: weta_AVL_IC ICV/LCS

Prep Log Report

Batch Information: WETA 96757.96759 IC

LOG | WC Automated Analysis Traceability Log (ASHV)

Prep Method	EPA 9056A	Analysis Method	EPA 9056A	Prepared By	CDC	Prep Date/Time	02/14/2024 20:28:17:008
Instrument	93WTA1	Anion Eluent	260496	IC Suppressant	260047	Pipette ID 1	93P086
Pipette ID 2		Pipette ID 3		Reviewed By	JCM	Reviewed By Date	02/15/2024 18:16
Batch Notes							

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
9056 W48	BLANK	**4301587**	10	10		Water			
9056 W48	LCS	**4301588**	10	10		Water		248518 (10)	
9056 W48	PS	**92713259007**	10	10		Water			
9056 W48	PS	**92713259001**	10	10		Water			
9056 W48	PS	**92712989007**	10	10		Water			
9056 W48	PS	**92712990003**	10	10		Water			
9056 W48	PS	**92713259004**	10	10		Water			
9056 W48	RQS	**92712989006**	10	10		Water			
9056 W48	MS	**4301589**	10	10		Water			239719 (.05)
9056 W48	MSD	**4301590**	10	10		Water			239719 (.05)
9056 W48	PS	**92713248001**	10	10		Water			
9056 W48	PS	**92713259005**	10	10		Water			
9056 W48	PS	**92712990002**	10	10		Water			
9056 W48	PS	**92713248002**	10	10		Water			
9056 W48	PS	**92713259002**	10	10		Water			
9056 W48	PS	**92713248005**	10	10		Water			
9056 W48	PS	**92713248004**	10	10		Water			
9056 W48	PS	**92713248003**	10	10		Water			
9056 W48	PS	**92713259003**	10	10		Water			
9056 W48	RQS	**92713247001**	10	10		Water			
9056 W48	MS	**4301591**	10	10		Water			239719 (.05)

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
9056 W48	MSD	**4301592**	10	10		Water			239719 (.05)
9056 W48	PS	**92713259006**	10	10		Water			
3000 W28	BLANK	**4301647**	10	10		Water			
3000 W28	LCS	**4301648**	10	10		Water		248518 (10)	
3000 W28	PS	**92713294001**	10	10		Water			
3000 W28	MS	**4301649**	10	10		Water			239719 (.05)
3000 W28	MSD	**4301650**	10	10		Water			239719 (.05)
3000 W28	PS	**92713294002**	10	10		Water			
3000 W28	PS	**92713294003**	10	10		Water			
3000 W28	PS	**92713294004**	10	10		Water			
3000 W28	PS	**92713294005**	10	10		Water			
3000 W28	PS	**92713294006**	10	10		Water			
3000 W28	PS	**92713294007**	10	10		Water			
3000 W28	PS	**92713294008**	10	10		Water			
3000 W28	PS	**92713294009**	10	10		Water			
3000 W28	PS	**92713276001**	10	10		Water			
3000 W28	PS	**92713276002**	10	10		Water			
3000 W28	MS	**4301651**	10	10		Water			239719 (.05)
3000 W28	MSD	**4301652**	10	10		Water			239719 (.05)
3000 W28	PS	**92713276003**	10	10		Water			
3000 W28	PS	**92713276004**	10	10		Water			
3000 W28	PS	**92713276005**	10	10		Water			
3000 W28	PS	**92713276006**	10	10		Water			
3000 W28	PS	**92713276007**	10	10		Water			
3000 W28	PS	**92713276008**	10	10		Water			
3000 W28	PS	**92713276009**	10	10		Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
3000 W28	PS	**92713276010**	10	10		Water			
3000 W28	PS	**92713276011**	10	10		Water			

Standard Notes:

239719: IC_Stdmix 2_WETA_AVL

248518: weta_AVL_IC ICV/LCS

SAMPLE NO.

021224NMW13

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	4.6		ug/L	1	02/14/2024 21:47
7439-89-6	Iron	1180		ug/L	1	02/14/2024 21:47
7439-92-1	Lead	ND	U	ug/L	1	02/14/2024 21:47
7439-93-2	Lithium	1.9	J	ug/L	1	02/14/2024 21:47
7439-96-5	Manganese	947		ug/L	10	02/15/2024 17:43
7440-28-0	Thallium	ND	U	ug/L	1	02/14/2024 21:47
7440-31-5	Tin	ND	U	ug/L	1	02/14/2024 21:47

SAMPLE NO.

021224NMW31

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	3.6		ug/L	1	02/14/2024 21:52
7439-89-6	Iron	353		ug/L	1	02/14/2024 21:52
7439-92-1	Lead	ND	U	ug/L	1	02/14/2024 21:52
7439-93-2	Lithium	1.9	J	ug/L	1	02/14/2024 21:52
7439-96-5	Manganese	301		ug/L	3	02/15/2024 17:48
7440-28-0	Thallium	ND	U	ug/L	1	02/14/2024 21:52
7440-31-5	Tin	ND	U	ug/L	1	02/14/2024 21:52

SAMPLE NO.

021224NMW32S

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	ND	U	ug/L	1	02/14/2024 21:56
7439-89-6	Iron	182		ug/L	1	02/14/2024 21:56
7439-92-1	Lead	0.081	J	ug/L	1	02/14/2024 21:56
7439-93-2	Lithium	ND	U	ug/L	1	02/14/2024 21:56
7439-96-5	Manganese	2.5		ug/L	1	02/14/2024 21:56
7440-28-0	Thallium	ND	U	ug/L	1	02/14/2024 21:56
7440-31-5	Tin	ND	U	ug/L	1	02/14/2024 21:56

SAMPLE NO.

021224NMW32D

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	ND	U	ug/L	1	02/14/2024 22:01
7439-89-6	Iron	227		ug/L	1	02/14/2024 22:01
7439-92-1	Lead	ND	U	ug/L	1	02/14/2024 22:01
7439-93-2	Lithium	2.5	J	ug/L	1	02/14/2024 22:01
7439-96-5	Manganese	45.4		ug/L	1	02/14/2024 22:01
7440-28-0	Thallium	ND	U	ug/L	1	02/14/2024 22:01
7440-31-5	Tin	ND	U	ug/L	1	02/14/2024 22:01

SAMPLE NO.

021224NWPFDDUPLICATE

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	3.6		ug/L	1	02/14/2024 22:06
7439-89-6	Iron	336		ug/L	1	02/14/2024 22:06
7439-92-1	Lead	ND	U	ug/L	1	02/14/2024 22:06
7439-93-2	Lithium	1.9	J	ug/L	1	02/14/2024 22:06
7439-96-5	Manganese	288		ug/L	3	02/15/2024 17:53
7440-28-0	Thallium	ND	U	ug/L	1	02/14/2024 22:06
7440-31-5	Tin	ND	U	ug/L	1	02/14/2024 22:06

SAMPLE NO.

021324NMW1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	1.1		ug/L	1	02/15/2024 23:27
7439-89-6	Iron	149		ug/L	1	02/15/2024 23:27
7439-92-1	Lead	ND	U	ug/L	1	02/15/2024 23:27
7439-93-2	Lithium	ND	U	ug/L	1	02/15/2024 23:27
7439-96-5	Manganese	37.3		ug/L	1	02/15/2024 23:27
7440-28-0	Thallium	ND	U	ug/L	1	02/15/2024 23:27
7440-31-5	Tin	ND	U	ug/L	1	02/15/2024 23:27

SAMPLE NO.

021324NMW12

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7440-48-4	Cobalt	0.053	J	ug/L	1	02/16/2024 00:17
7439-89-6	Iron	3430		ug/L	1	02/16/2024 00:17
7439-92-1	Lead	ND	U	ug/L	1	02/16/2024 00:17
7439-93-2	Lithium	0.62	J	ug/L	1	02/16/2024 00:17
7439-96-5	Manganese	343		ug/L	3	02/16/2024 20:17
7440-28-0	Thallium	ND	U	ug/L	1	02/16/2024 00:17
7440-31-5	Tin	ND	U	ug/L	1	02/16/2024 00:17

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 260227

Continuing Calibration Verification Source: 260225

Concentration Units: ug/L Instrument ID: 92ICM3

	Initial Calibration Verification				Continuing Calibration Verification						
	02/14/2024 12:40				02/14/2024 13:20			02/14/2024 20:18			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Cobalt	100	102	101.6	90-110	50	49.9	99.9	50	50.3	100.7	90-110
Iron	2500	2560	102.3	90-110	1250	1310	104.6	1250	1300	104.0	90-110
Lead	100	101	100.6	90-110	50	49.7	99.5	50	49.1	98.2	90-110
Lithium	100	105	104.7	90-110	50	52.4	104.7	50	51.6	103.2	90-110
Manganese	100	104	103.5	90-110	50	50.7	101.4	50	50.7	101.3	90-110
Thallium	50	49.6	99.2	90-110	25	25.1	100.3	25	24.3	97.2	90-110
Tin	100	98.5	98.5	90-110	50	49.8	99.5	50	49.8	99.5	90-110

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260225

Concentration Units: ug/L Instrument ID: 92ICM3

	Continuing Calibration Verification									
	02/14/2024 21:14 ✔			02/14/2024 22:20 ✔			02/14/2024 23:30			Control Limit
Analyte	True	Found	%R	True	Found	%R	True	Found	%R	
Cobalt	50	50.2	100.4	50	50.9	101.8	50	50.9	101.8	90-110
Iron	1250	1310	104.6	1250	1320	105.7	1250	1340	107.0	90-110
Lead	50	48.7	97.4	50	49.2	98.4	50	49.8	99.6	90-110
Lithium	50	52.4	104.8	50	51.6	103.2	50	52.1	104.3	90-110
Manganese	50	50.0	99.9	50	51.2	102.4	50	51.9	103.7	90-110
Thallium	25	24.3	97.3	25	24.7	98.7	25	25.1	100.5	90-110
Tin	50	49.6	99.2	50	49.8	99.6	50	50.6	101.1	90-110

✔ ✔ ✔

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 260993

Continuing Calibration Verification Source: 260991

Concentration Units: ug/L Instrument ID: 92ICM3

	Initial Calibration Verification				Continuing Calibration Verification						
	02/16/2024 10:23				02/16/2024 11:17			02/16/2024 17:24			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Manganese	100	103	102.7	90-110	50	50.7	101.5	50	50.5	101.1	90-110

not bracketing samples

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260991

Concentration Units: ug/L Instrument ID: 92ICM3

	Continuing Calibration Verification						
	02/16/2024 19:35 ✔			02/16/2024 20:35 ✔			Control Limit
Analyte	True	Found	%R	True	Found	%R	
Manganese	50	50.2	100.5	50	50.6	101.2	90-110

✔ ✔

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 260993

Continuing Calibration Verification Source: 260991

Concentration Units: ug/L Instrument ID: 93ICM2

	Initial Calibration Verification				Continuing Calibration Verification						
	02/15/2024 14:13				02/15/2024 15:04			02/15/2024 17:08			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Cobalt	100	101	100.7	90-110	50	49.9	99.8	50	50.7	101.4	90-110
Iron	2500	2550	102.1	90-110	1250	1280	102.4	1250	1300	104.1	90-110
Lead	100	101	101.4	90-110	50	49.8	99.7	50	50.9	101.8	90-110
Lithium	100	102	102.4	90-110	50	48.8	97.6	50	49.4	98.7	90-110
Manganese	100	103	102.8	90-110	50	50.1	100.1	50	52.2	104.5	90-110
Thallium	50	49.5	99.0	90-110	25	24.4	97.6	25	24.8	99.2	90-110
Tin	100	100	100.0	90-110	50	49.8	99.5	50	50.0	100.0	90-110

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260991

Concentration Units: ug/L Instrument ID: 93ICM2

	Continuing Calibration Verification									
	02/15/2024 18:13			02/15/2024 21:17			02/15/2024 22:38 ✔			Control Limit
Analyte	True	Found	%R	True	Found	%R	True	Found	%R	
Cobalt	50	50.9	101.9	50	51.0	102.0	50	50.5	101.0	90-110
Iron	1250	1310	104.7	1250	1310	104.7	1250	1280	102.5	90-110
Lead	50	50.4	100.7	50	50.5	101.0	50	50.5 ✓	101.0 ✓	90-110
Lithium	50	50.0	99.9	50	50.2	100.5	50	49.5	99.1	90-110
Manganese	50	50.6	101.2	50	51.8	103.6	50	51.4	102.8	90-110
Thallium	25	24.6	98.4	25	24.8	99.2	25	25.0	100.2	90-110
Tin	50	49.1	98.1	50	49.6	99.2	50	50.2	100.3	90-110

not bracketing samples ✔

FORM II INORGANIC-3

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260991

Concentration Units: ug/L Instrument ID: 93ICM2

	Continuing Calibration Verification						
	02/15/2024 23:42			02/16/2024 00:57			Control Limit
Analyte	True	Found	%R	True	Found	%R	
Cobalt	50	51.8	103.5	50	50.6	101.2	90-110
Iron	1250	1300	103.8	1250	1290	102.8	90-110
Lead	50	52.0	104.1	50	50.5	101.0	90-110
Lithium	50	51.0	101.9	50	49.9	99.9	90-110
Manganese	50	50.6	101.2	50	51.1	102.2	90-110
Thallium	25	25.2	100.9	25	25.4	101.5	90-110
Tin	50	50.6	101.3	50	49.3	98.5	90-110

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 260223 Analysis Date/Time: 02/14/2024 12:56

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Cobalt	1.0	1.0	102.3	70-130
Iron	50	50.7	101.5	70-130
Lead	1.0	0.94	94.4	70-130
Lithium	2.5	2.5	100.3	70-130
Manganese	2.0	2.1	104.8	70-130
Thallium	0.1	0.10	102.0	70-130
Tin	1.0	1.0	99.8	70-130

Closing CRDL not analyzed, not method requirement but it's a procedural issue, no qualifications.

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 260989 Analysis Date/Time: 02/16/2024 10:54

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Manganese	2.0	2.1	103.4	70-130

Closing CRDL not analyzed, not method requirement but it's a procedural issue, no qualifications.

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 260989 Analysis Date/Time: 02/15/2024 14:35

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%F	Control Limit %R
Cobalt	1.0	1.0	101.7	70-130
Iron	50	50.7	101.4	70-130
Lead	1.0	0.95	95.4	70-130
Lithium	2.5	2.6	102.2	70-130
Manganese	2.0	2.1	103.1	70-130
Thallium	0.1	0.10	100.0	70-130
Tin	1.0	0.99	99.0	70-130

Closing CRDL not analyzed, not method requirement but it's a procedural issue, no qualifications.

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 92ICM3

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	02/14/2024 12:44 ✔	C	02/14/2024 13:24	C	02/14/2024 20:22 ✔	C	02/14/2024 21:19 ✔	C	4300574 ✔	C
Cobalt	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Iron	25.0	U	25.0	U	25.0	U	25.0	U	ND	U
Lead	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Lithium	1.2	U	1.2	U	1.2	U	1.2	U	ND	U
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	ND	U
Thallium	0.050	U	0.050	U	0.050	U	0.050	U	ND	U
Tin	0.50	U	0.50	U	0.50	U	0.50	U	ND	U

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FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 92ICM3

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)					
		C	02/14/2024 22:24	C	02/14/2024 23:34	C	02/15/2024 04:15	C
Cobalt			0.50	U	0.50	U	0.50	U
Iron			25.0	U	25.0	U	25.0	U
Lead			0.50	U	0.50	U	0.50	U
Lithium			1.2	U	1.2	U	1.2	U
Manganese			1.0	U	1.0	U	1.0	U
Thallium			0.050	U	0.050	U	0.050	U
Tin			0.50	U	0.50	U	0.50	U

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 92ICM3

Method Blank Concentration Units:

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)					
	02/16/2024 10:39 ✔	C	02/16/2024 11:29	C	02/16/2024 17:29	C	02/16/2024 19:44 ✔	C
Manganese	1.0	U	1.0	U	1.0	U	1.0	U

✔

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 92ICM3

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)					
		C	02/16/2024 20:40 ✔	C		C		C
Manganese			1.0	U				

✔

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93ICM2

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	02/15/2024 14:25	C	02/15/2024 15:09	C	02/15/2024 17:13	C	02/15/2024 18:18	C	4302470	C
Cobalt	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Iron	25.0	U	25.0	U	25.0	U	25.0	U	ND	U
Lead	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Lithium	1.2	U	1.2	U	1.2	U	1.2	U	ND	U
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	ND	U
Thallium	0.050	U	0.050	U	0.050	U	0.050	U	ND	U
Tin	0.50	U	0.50	U	0.50	U	0.50	U	ND	U

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 93ICM2

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)					
		C	02/15/2024 21:27	C	02/15/2024 22:48 ✔	C	02/15/2024 23:47 ✔	C
Cobalt			0.50	U	0.50	U	0.50	U
Iron			25.0	U	25.0	U	25.0	U
Lead			0.50	U	0.50	U	0.50	U
Lithium			1.2	U	1.2	U	1.2	U
Manganese			1.0	U	1.0	U	1.0	U
Thallium			0.050	U	0.050	U	0.050	U
Tin			0.50	U	0.50	U	0.50	U

✔

FORM III INORGANIC-3

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 93ICM2

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)					
		C	02/16/2024 01:02 ✔	C		C		C
Cobalt			0.50	U				
Iron			25.0	U				
Lead			0.50	U				
Lithium			1.2	U				
Manganese			1.0	U				
Thallium			0.050	U				
Tin			0.50	U				

✔

FORM IV INORGANIC-1
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/14/2024 13:01

ICS Source: 260228,260229 Solution AB Run Date: 02/14/2024 13:06

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51469.731	102.9	55111.318	110.1	80-120
Calcium	50000	50625	50435.877	100.9	52992.556	104.7	80-120
Cobalt		50	0.056	>MDL(0.05)	51.119	102.2	80-120
Iron	50000	50625	50434.146	100.9	51962.042	102.6	80-120
Lead		50	0.002		50.975	102	80-120
Lithium		50	0.212		51.897	103.8	80-120
Magnesium	50000	50625	51064.737	102.1	54358.675	107.4	80-120
Manganese		50	0.551		52.16	104.3	80-120
Molybdenum	1000	1050	1025.821	102.6	1089.866	103.8	80-120
Potassium	50000	50625	50231.514	100.5	52018.064	102.8	80-120
Sodium	50000	50625	51236.496	102.5	54884.972	108.4	80-120
Thallium		25	0.002		25.991	104	80-120
Tin		50	0.033		50.151	100.3	80-120
Titanium	1000	1050	967.428	96.7	1016.925	96.9	80-120

not bracketing samples

FORM IV INORGANIC-2
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/14/2024 15:18

ICS Source: 260228,260229 Solution AB Run Date: 02/14/2024 15:23

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	52493.839	105	54311.999	108.5	80-120
Calcium	50000	50625	51522.514	103	53414.868	105.5	80-120
Cobalt		50	0.047		50.676	101.4	80-120
Iron	50000	50625	50772.253	101.5	51586.321	101.9	80-120
Lead		50	-0.011		51.109	102.2	80-120
Lithium		50	0.231		53.51	107	80-120
Magnesium	50000	50625	51880.327	103.8	54745.942	108.1	80-120
Manganese		50	0.542		51.613	103.2	80-120
Molybdenum	1000	1050	1029.594	103	1081.083	103	80-120
Potassium	50000	50625	50386.767	100.8	51418.131	101.6	80-120
Sodium	50000	50625	53058.54	106.1	55393.596	109.4	80-120
Thallium		25	0.002		25.661	102.6	80-120
Tin		50	0.039		50.126	100.3	80-120
Titanium	1000	1050	973.226	97.3	1009.82	96.2	80-120

not bracketing samples

FORM IV INORGANIC-3
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/14/2024 18:09

ICS Source: 260228,260229 Solution AB Run Date: 02/14/2024 18:14

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51569.182	103.1	54336.306	108.6	80-120
Calcium	50000	50625	51610.067	103.2	54153.939	107	80-120
Cobalt		50	0.05		50.97	101.9	80-120
Iron	50000	50625	50815.01	101.6	52274.483	103.3	80-120
Lead		50	-0.018		50.786	101.6	80-120
Lithium		50	0.244		53.451	106.9	80-120
Magnesium	50000	50625	51957.051	103.9	54582.209	107.8	80-120
Manganese		50	0.532		51.546	103.1	80-120
Molybdenum	1000	1050	1025.278	102.5	1077.353	102.6	80-120
Potassium	50000	50625	49644.862	99.3	51721.305	102.2	80-120
Sodium	50000	50625	52548.425	105.1	54818.144	108.3	80-120
Thallium		25	0.001		25.254	101	80-120
Tin		50	0.047		50.19	100.4	80-120
Titanium	1000	1050	964.175	96.4	1010.301	96.2	80-120

all <MDLs

FORM IV INORGANIC-4
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/14/2024 21:24

ICS Source: 260228,260229 Solution AB Run Date: 02/14/2024 21:28

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	52253.957	104.5	56034.803	112	80-120
Calcium	50000	50625	50475.222	101	52820.879	104.3	80-120
Cobalt		50	0.044		49.923	99.8	80-120
Iron	50000	50625	49766.561	99.5	51465.057	101.7	80-120
Lead		50	-0.011		50.004	100	80-120
Lithium		50	0.236		53.306	106.6	80-120
Magnesium	50000	50625	52310.104	104.6	55667.349	110	80-120
Manganese		50	0.507		50.839	101.7	80-120
Molybdenum	1000	1050	1006.05	100.6	1050.858	100.1	80-120
Potassium	50000	50625	49613.258	99.2	52570.564	103.8	80-120
Sodium	50000	50625	52767.281	105.5	56457.149	111.5	80-120
Thallium		25	0.001		24.987	99.9	80-120
Tin		50	0.047		49.229	98.5	80-120
Titanium	1000	1050	956.77	95.7	1025.96	97.7	80-120

all <MDLs

FORM IV INORGANIC-5
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/14/2024 22:29

ICS Source: 260228,260229 Solution AB Run Date: 02/14/2024 22:34

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51438.06	102.9	55145.402	110.2	80-120
Calcium	50000	50625	50764.051	101.5	52803.166	104.3	80-120
Cobalt		50	0.043		50.051	100.1	80-120
Iron	50000	50625	51296.614	102.6	52071.484	102.9	80-120
Lead		50	-0.017		49.993	100	80-120
Lithium		50	0.216		52.133	104.3	80-120
Magnesium	50000	50625	51774.107	103.5	55213.84	109.1	80-120
Manganese		50	0.555		51.335	102.7	80-120
Molybdenum	1000	1050	1017.044	101.7	1073.676	102.3	80-120
Potassium	50000	50625	50357.325	100.7	52602.643	103.9	80-120
Sodium	50000	50625	52423.295	104.8	55857.201	110.3	80-120
Thallium		25	0.001		25.238	101	80-120
Tin		50	0.057		50.436	100.9	80-120
Titanium	1000	1050	956.117	95.6	1016.248	96.8	80-120

all <MDLs

FORM IV INORGANIC-6
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/15/2024 04:19

ICS Source: 260228,260229 Solution AB Run Date: 02/15/2024 04:24

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	54060.908	108.1	54841.194	109.6	80-120
Calcium	50000	50625	51330.801	102.7	53668.367	106	80-120
Cobalt		50	0.054		50.129	100.3	80-120
Iron	50000	50625	52222.847	104.4	53371.105	105.4	80-120
Lead		50	0.006		49.318	98.6	80-120
Lithium		50	0.248		52.596	105.2	80-120
Magnesium	50000	50625	54062.1	108.1	54992.813	108.6	80-120
Manganese		50	0.516		52.32	104.6	80-120
Molybdenum	1000	1050	1017.537	101.8	1045.555	99.6	80-120
Potassium	50000	50625	51894.944	103.8	52687.852	104.1	80-120
Sodium	50000	50625	55392.164	110.8	56141.028	110.9	80-120
Thallium		25	0.009		24.689	98.8	80-120
Tin		50	0.067		50.054	100.1	80-120
Titanium	1000	1050	975.081	97.5	999.506	95.2	80-120

not bracketing samples

FORM IV INORGANIC-1
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/16/2024 10:59

ICS Source: 260994,260995 Solution AB Run Date: 02/16/2024 11:03

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51527.866	103.1	53717.388	107.3	80-120
Calcium	50000	50625	50780.633	101.6	53319.253	105.3	80-120
Cobalt		50	0.051		51.013	102	80-120
Iron	50000	50625	51076.615	102.2	51447.702	101.6	80-120
Lead		50	0.038		50.322	100.6	80-120
Lithium		50	0.217		51.512	103	80-120
Magnesium	50000	50625	51431.758	102.9	53436.88	105.6	80-120
Manganese		50	0.429		51.002	102	80-120
Molybdenum	1000	1050	1067.35	106.7	1119.18	106.6	80-120
Potassium	50000	50625	49857.032	99.7	51463.836	101.7	80-120
Sodium	50000	50625	52527.297	105.1	54193.397	107	80-120
Thallium		25	0.001		25.056	100.2	80-120
Tin		50	0.062		50.188	100.4	80-120
Titanium	1000	1050	981.03	98.1	1013.459	96.5	80-120

not bracketing samples

FORM IV INORGANIC-2
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/16/2024 17:33

ICS Source: 260994,260995 Solution AB Run Date: 02/16/2024 17:38

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	52618.821	105.2	54885.802	109.7	80-120
Calcium	50000	50625	51732.332	103.5	53593.98	105.9	80-120
Cobalt		50	0.055	<MDL=0.05	52.144	104.3	80-120
Iron	50000	50625	51289.312	102.6	52888.798	104.5	80-120
Lead		50	0.006		50.364	100.7	80-120
Lithium		50	0.218		52.173	104.3	80-120
Magnesium	50000	50625	52904.368	105.8	54902.203	108.4	80-120
Manganese		50	0.397		51.903	103.8	80-120
Molybdenum	1000	1050	1067.835	106.8	1113.769	106.1	80-120
Potassium	50000	50625	49904.92	99.8	51605.312	101.9	80-120
Sodium	50000	50625	53305.594	106.6	55542.861	109.7	80-120
Thallium		25	0.002		24.612	98.4	80-120
Tin		50	0.076		50.868	101.7	80-120
Titanium	1000	1050	989.377	98.9	1019.526	97.1	80-120

only Mn reported from this run

FORM IV INORGANIC-3
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/16/2024 20:45

ICS Source: 260994,260995 Solution AB Run Date: 02/16/2024 20:49

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	54247.663	108.5	55946.562	111.8	80-120
Calcium	50000	50625	52711.611	105.4	54288.158	107.2	80-120
Cobalt		50	0.063		51.615	103.2	80-120
Iron	50000	50625	51434.697	102.9	52823.192	104.3	80-120
Lead		50	0.019		50.777	101.6	80-120
Lithium		50	0.243		51.144	102.3	80-120
Magnesium	50000	50625	54283.107	108.6	56491.131	111.6	80-120
Manganese		50	0.489		51.53	103.1	80-120
Molybdenum	1000	1050	1056.09	105.6	1107.695	105.5	80-120
Potassium	50000	50625	50575.506	101.2	52675.222	104	80-120
Sodium	50000	50625	54855.617	109.7	56802.305	112.2	80-120
Thallium		25	0.011		24.756	99	80-120
Tin		50	0.07		51.943	103.9	80-120
Titanium	1000	1050	997.179	99.7	1040.004	99	80-120

only Mn reported from this run.

FORM IV INORGANIC-4
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Solution A Run Date: 02/16/2024 22:55

ICS Source: 260994,260995 Solution AB Run Date: 02/16/2024 23:00

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	53925.611	107.9	56845.725	113.6	80-120
Calcium	50000	50625	52318.818	104.6	54368.445	107.4	80-120
Cobalt		50	0.087		51.538	103.1	80-120
Iron	50000	50625	51587.481	103.2	52797.968	104.3	80-120
Lead		50			51.087	102.2	80-120
Lithium		50	0.29		51.96	103.9	80-120
Magnesium	50000	50625	54127.49	108.3	57184.155	113	80-120
Manganese		50	0.533		51.876	103.8	80-120
Molybdenum	1000	1050	1057.953	105.8	1112.922	106	80-120
Potassium	50000	50625	50025.207	100.1	53081.002	104.9	80-120
Sodium	50000	50625	54568.251	109.1	57598.991	113.8	80-120
Thallium		25			24.9	99.6	80-120
Tin		50	0.083		51.84	103.7	80-120
Titanium	1000	1050	974.558	97.5	1052.242	100.2	80-120

not bracketing samples.

FORM IV INORGANIC-1
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Solution A Run Date: 02/15/2024 14:44

ICS Source: 260994,260995 Solution AB Run Date: 02/15/2024 14:49

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51637.392	103.3	54099.349	108.1	80-120
Calcium	50000	50625	49718.73	99.4	52878.461	104.5	80-120
Cobalt		50	0.052		50.302	100.6	80-120
Iron	50000	50625	50961.803	101.9	51523.68	101.8	80-120
Lead		50	0.029		50.668	101.3	80-120
Lithium		50	0.211		49.925	99.9	80-120
Magnesium	50000	50625	51398.1	102.8	53996.541	106.7	80-120
Manganese		50	0.415		50.475	101	80-120
Molybdenum	1000	1050	1057.367	105.7	1110.989	105.8	80-120
Potassium	50000	50625	48702.348	97.4	51385.313	101.5	80-120
Sodium	50000	50625	51455.845	102.9	53875.437	106.4	80-120
Thallium		25	0		24.808	99.2	80-120
Tin		50	0.065		48.799	97.6	80-120
Titanium	1000	1050	979.003	97.9	1040.97	99.1	80-120

not bracketing samples

FORM IV INORGANIC-3
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Solution A Run Date: 02/15/2024 18:23

ICS Source: 260994,260995 Solution AB Run Date: 02/15/2024 18:28

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	52125.697	104.3	55524.78	110.9	80-120
Calcium	50000	50625	51036.226	102.1	54024.157	106.7	80-120
Cobalt		50	0.049		52.001	104	80-120
Iron	50000	50625	51428.229	102.9	53478.376	105.6	80-120
Lead		50	-0.01		51.655	103.3	80-120
Lithium		50	0.253		50.995	102	80-120
Magnesium	50000	50625	52544.178	105.1	55211.277	109.1	80-120
Manganese		50	0.414		52.573	105.1	80-120
Molybdenum	1000	1050	1084.568	108.5	1132.853	107.9	80-120
Potassium	50000	50625	50082.109	100.2	52605.87	103.9	80-120
Sodium	50000	50625	52094.594	104.2	55434.654	109.5	80-120
Thallium		25	0		25.41	101.6	80-120
Tin		50	0.049		49.774	99.5	80-120
Titanium	1000	1050	999.945	100	1058.837	100.8	80-120

all <MDLs

FORM IV INORGANIC-4
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Solution A Run Date: 02/15/2024 21:32

ICS Source: 260994,260995 Solution AB Run Date: 02/15/2024 21:37

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	53964.4	107.9	55781.641	111.5	80-120
Calcium	50000	50625	52194.488	104.4	54925.326	108.5	80-120
Cobalt		50	0.046		52.703	105.4	80-120
Iron	50000	50625	52925.566	105.9	54255.521	107.2	80-120
Lead		50	-0.018		53.253	106.5	80-120
Lithium		50	0.287		52.192	104.4	80-120
Magnesium	50000	50625	54114.147	108.2	56291.024	111.2	80-120
Manganese		50	0.478		53.272	106.5	80-120
Molybdenum	1000	1050	1115.195	111.5	1164.861	110.9	80-120
Potassium	50000	50625	51208.94	102.4	52978.978	104.6	80-120
Sodium	50000	50625	53942.201	107.9	55817.994	110.3	80-120
Thallium		25	0		26.17	104.7	80-120
Tin		50	0.047		51.052	102.1	80-120
Titanium	1000	1050	1026.949	102.7	1066.261	101.5	80-120

all <MDLs

FORM IV INORGANIC-5
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Solution A Run Date: 02/15/2024 23:52

ICS Source: 260994,260995 Solution AB Run Date: 02/15/2024 23:57

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	50793.115	101.6	54762.803	109.4	80-120
Calcium	50000	50625	51186.226	102.4	54007.69	106.7	80-120
Cobalt		50	0.05		52.733	105.5	80-120
Iron	50000	50625	50963.424	101.9	53412.706	105.5	80-120
Lead		50	-0.012		52.472	104.9	80-120
Lithium		50	0.245		51.148	102.3	80-120
Magnesium	50000	50625	51162.98	102.3	54900.399	108.4	80-120
Manganese		50	0.579		52.685	105.4	80-120
Molybdenum	1000	1050	1089.301	108.9	1145.119	109.1	80-120
Potassium	50000	50625	48156.304	96.3	51992.083	102.7	80-120
Sodium	50000	50625	51183.952	102.4	55133.892	108.9	80-120
Thallium		25	0.002		25.788	103.2	80-120
Tin		50	0.058		50.276	100.6	80-120
Titanium	1000	1050	983.23	98.3	1068.935	101.8	80-120

all <MDLs

FORM IV INORGANIC-6
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Solution A Run Date: 02/16/2024 02:12

ICS Source: 260994,260995 Solution AB Run Date: 02/16/2024 02:17

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51237.043	102.5	54242.019	108.4	80-120
Calcium	50000	50625	51715.454	103.4	54542.258	107.7	80-120
Cobalt		50	0.045		52.995	106	80-120
Iron	50000	50625	51251.349	102.5	54043.607	106.8	80-120
Lead		50	0.017		53.134	106.3	80-120
Lithium		50	0.272		51.298	102.6	80-120
Magnesium	50000	50625	51524.839	103	54634.558	107.9	80-120
Manganese		50	0.622		52.866	105.7	80-120
Molybdenum	1000	1050	1105.131	110.5	1183.648	112.7	80-120
Potassium	50000	50625	48902.602	97.8	51449.024	101.6	80-120
Sodium	50000	50625	51557.044	103.1	54334.992	107.3	80-120
Thallium		25	0		25.975	103.9	80-120
Tin		50	0.05		51.568	103.1	80-120
Titanium	1000	1050	993.332	99.3	1052.79	100.3	80-120

all <MDLs

FORM IV INORGANIC-7
INTERFERENCE CHECK SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Solution A Run Date: 02/16/2024 06:58

ICS Source: 260994,260995 Solution AB Run Date: 02/16/2024 07:03

Concentration Units: ug/L

Analyte	True		Found				
	Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R	Limits
Aluminum	50000	50050	51965.922	103.9	56530.297	112.9	80-120
Calcium	50000	50625	52367.186	104.7	55298.67	109.2	80-120
Cobalt		50	0.049		54.248	108.5	80-120
Iron	50000	50625	51915.604	103.8	54962.947	108.6	80-120
Lead		50	-0.012		54.589	109.2	80-120
Lithium		50	0.269		51.518	103	80-120
Magnesium	50000	50625	52404.243	104.8	56574.181	111.8	80-120
Manganese		50	0.536		53.927	107.9	80-120
Molybdenum	1000	1050	1121.653	112.2	1208.703	115.1	80-120
Potassium	50000	50625	49116.242	98.2	53860.695	106.4	80-120
Sodium	50000	50625	52009.597	104	56499.22	111.6	80-120
Thallium		25	0.003		26.954	107.8	80-120
Tin		50	0.067		52.617	105.2	80-120
Titanium	1000	1050	1007.57	100.8	1107.894	105.5	80-120

not bracketing samples

SAMPLE NO.

4300576MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92712987001

not from this SDG

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	51.3	0.34J	50.0	102
Iron	ug/L	75-125	1740	313	1250	114
Lead	ug/L	75-125	51.2	ND	50.0	102
Lithium	ug/L	75-125	48.3	ND	50.0	96
Manganese	ug/L	75-125	55.9	3.0	50.0	106
Thallium	ug/L	75-125	25.6	ND	25.0	102
Tin	ug/L	75-125	50.9	ND	50.0	102

SAMPLE NO.

4300577MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92712987001

Percent Moisture: not from this SDG

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	51.9	0.34J	50.0	103
Iron	ug/L	75-125	1760	313	1250	115
Lead	ug/L	75-125	50.7	ND	50.0	101
Lithium	ug/L	75-125	49.0	ND	50.0	97
Manganese	ug/L	75-125	55.5	3.0	50.0	105
Thallium	ug/L	75-125	25.6	ND	25.0	102
Tin	ug/L	75-125	50.6	ND	50.0	101

SAMPLE NO.

4302472MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	53.4	1.1	50.0	105
Iron	ug/L	75-125	1460	149	1250	105
Lead	ug/L	75-125	53.5	ND	50.0	107
Lithium	ug/L	75-125	52.4	ND	50.0	104
Manganese	ug/L	75-125	85.3	37.3	50.0	96
Thallium	ug/L	75-125	26.0	ND	25.0	104
Tin	ug/L	75-125	52.0	ND	50.0	104

SAMPLE NO.

4302473MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	55.6	1.1	50.0	109
Iron	ug/L	75-125	1520	149	1250	110
Lead	ug/L	75-125	54.9	ND	50.0	110
Lithium	ug/L	75-125	53.9	ND	50.0	107
Manganese	ug/L	75-125	88.6	37.3	50.0	103
Thallium	ug/L	75-125	26.6	ND	25.0	106
Tin	ug/L	75-125	54.9	ND	50.0	109

SAMPLE NO.

4302474MS

FORM V INORGANIC-3

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

not from this SDG

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	51.8	ND	50.0	104
Iron	ug/L	75-125	1310	ND	1250	104
Lead	ug/L	75-125	53.6	ND	50.0	107
Lithium	ug/L	75-125	58.5	7.1	50.0	103
Manganese	ug/L	75-125	55.7	4.3	50.0	103
Thallium	ug/L	75-125	26.2	ND	25.0	105
Tin	ug/L	75-125	52.8	ND	50.0	106

SAMPLE NO.

4302475MSD

FORM V INORGANIC-4

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture: not from this SDG

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	51.7	ND	50.0	103
Iron	ug/L	75-125	1310	ND	1250	104
Lead	ug/L	75-125	53.6	ND	50.0	107
Lithium	ug/L	75-125	58.7	7.1	50.0	103
Manganese	ug/L	75-125	55.5	4.3	50.0	102
Thallium	ug/L	75-125	26.3	ND	25.0	105
Tin	ug/L	75-125	52.8	ND	50.0	105

SAMPLE NO.

4301986PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92712987001

not from this SDG

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	1	48.7	1	0.34J	50	96.8
Iron	ug/L	75-125	1	1630	1	313	1250	105.3
Lead	ug/L	75-125	1	47.9	1	0.077U	50	95.9
Lithium	ug/L	75-125	1	37.3	1	0.50U	50	74.7*
Manganese	ug/L	75-125	1	52.3	1	3.0	50	98.7
Thallium	ug/L	75-125	1	23.8	1	0.050U	25	95.4
Tin	ug/L	75-125	1	48.5	1	0.43U	50	97.0

SAMPLE NO.

4303455PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 021324NMW1

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	1	48.1	1	1.1	50	94.0
Iron	ug/L	75-125	1	1340	1	149	1250	95.5
Lead	ug/L	75-125	1	46.8	1	0.077U	50	93.5
Lithium	ug/L	75-125	1	43.3	1	0.50U	50	86.6
Manganese	ug/L	75-125	1	81.4	1	37.3	50	88.3
Thallium	ug/L	75-125	1	23.3	1	0.050U	25	93.1
Tin	ug/L	75-125	1	46.5	1	0.43U	50	93.0

SAMPLE NO.

4303457PDS

FORM V INORGANIC-1

POST-DIGESTION SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92713247001

not from this SDG

Analyte	Units	Control Limit %R	DF	Spiked Sample Result (SSR)	DF	Sample Result (SR)	Spike Added (SA)	%R
Cobalt	ug/L	75-125	1	41.2	1	0.050U	50	82.4
Iron	ug/L	75-125	1	1050	1	20.9U	1250	84.1
Lead	ug/L	75-125	1	42.7	1	0.077U	50	85.4
Lithium	ug/L	75-125	1	42.5	1	7.1	50	70.9*
Manganese	ug/L	75-125	1	45.0	1	4.3	50	81.3
Thallium	ug/L	75-125	1	21.3	1	0.050U	25	85.4
Tin	ug/L	75-125	1	42.3	1	0.43U	50	84.5

SAMPLE NO.

4300577MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Cobalt	20	51.3	51.9	1
Iron	20	1740	1760	1
Lead	20	51.2	50.7	1
Lithium	20	48.3	49.0	2
Manganese	20	55.9	55.5	1
Thallium	20	25.6	25.6	0
Tin	20	50.9	50.6	1

SAMPLE NO.

4302473MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Cobalt	20	53.4	55.6	4
Iron	20	1460	1520	4
Lead	20	53.5	54.9	3
Lithium	20	52.4	53.9	3
Manganese	20	85.3	88.6	4
Thallium	20	26.0	26.6	2
Tin	20	52.0	54.9	5

SAMPLE NO.

4302475MSD

FORM VI INORGANIC-2
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Cobalt	20	51.8	51.7	0
Iron	20	1310	1310	0
Lead	20	53.6	53.6	0
Lithium	20	58.5	58.7	0
Manganese	20	55.7	55.5	0
Thallium	20	26.2	26.3	0
Tin	20	52.8	52.8	0

SAMPLE NO.

4300575LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Cobalt	ug/L	50.0	50.6	101	80	120
Iron	ug/L	1250	1300	104	80	120
Lead	ug/L	50.0	50.1	100	80	120
Lithium	ug/L	50.0	51.4	103	80	120
Manganese	ug/L	50.0	50.9	102	80	120
Thallium	ug/L	25.0	25.0	100	80	120
Tin	ug/L	50.0	49.6	99	80	120

SAMPLE NO.

4302471LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Cobalt	ug/L	50.0	53.7	107	80	120
Iron	ug/L	1250	1340	107	80	120
Lead	ug/L	50.0	54.2	108	80	120
Lithium	ug/L	50.0	53.7	107	80	120
Manganese	ug/L	50.0	52.3	105	80	120
Thallium	ug/L	25.0	26.2	105	80	120
Tin	ug/L	50.0	52.4	105	80	120

SAMPLE NO.

4301987SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92712987001

not from this SDG

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Cobalt	ug/L	0.34J	0.32J	5.5	20
Iron	ug/L	313	379	21.1*	20
Lead	ug/L	0.077U	0.38U		20
Lithium	ug/L	0.50U	2.5U		20
Manganese	ug/L	3.0	5.1U		20
Thallium	ug/L	0.050U	0.25U		20
Tin	ug/L	0.43U	2.1U		20

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

05/14/2024 09:57

SAMPLE NO.

4303456SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 021324NMW1

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Cobalt	ug/L	1.1	1.0J	4.4	10%
Iron	ug/L	149	161J	-8.3	
Lead	ug/L	0.077U	0.38U		
Lithium	ug/L	0.50U	2.5U		
Manganese	ug/L	37.3	35.7	4.3	
Thallium	ug/L	0.050U	0.25U		
Tin	ug/L	0.43U	2.1U		

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

05/14/2024 09:57

SAMPLE NO.

4303458SD

FORM VIII INORGANIC-1
SERIAL DILUTIONS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Matrix: Water Parent Sample ID: 92713247001

not from this SDG

Analyte	Units	Initial Sample Result	Serial Dilution Result	% Difference	Control Limit %D
Cobalt	ug/L	0.050U	0.25U		
Iron	ug/L	20.9U	105U		
Lead	ug/L	0.077U	0.38U		
Lithium	ug/L	7.1	7.7J	-9.5	
Manganese	ug/L	4.3	5.1U		
Thallium	ug/L	0.050U	0.25U		
Tin	ug/L	0.43U	2.1U		

* Indicates that the % Difference exceeds the control limit.
No difference is calculated if either result is a non-detect.

05/14/2024 09:57

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 92ICM3

Concentration Units: ug/L

Analyte	PQL	IDL	IDL Date
Cobalt	0.50	0.50	03/05/2021
Iron	25.0	25.0	03/05/2021
Lead	0.50	0.50	03/05/2021
Lithium	1.2	1.2	03/05/2021
Manganese	1.0	1.0	03/05/2021
Thallium	0.050	0.050	03/05/2021
Tin	0.50	0.50	03/05/2021

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Instrument ID: 92ICM3

Concentration Units: ug/L

Analyte	PQL	MDL	MDL Date
Cobalt	1.0	0.050	02/16/2022
Iron	50.0	20.9	02/16/2022
Lead	1.0	0.077	02/16/2022
Lithium	2.5	0.50	02/16/2022
Manganese	2.0	1.0	02/16/2022
Thallium	0.20	0.050	02/16/2022
Tin	1.0	0.43	02/16/2022

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 93ICM2

Concentration Units: ug/L

Analyte	PQL	IDL	IDL Date
Cobalt	0.50	0.50	03/05/2021
Iron	25.0	25.0	03/05/2021
Lead	0.50	0.50	03/05/2021
Lithium	1.2	1.2	03/05/2021
Manganese	1.0	1.0	03/05/2021
Thallium	0.050	0.050	03/05/2021
Tin	0.50	0.50	03/05/2021

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Instrument ID: 93ICM2

Concentration Units: ug/L

Analyte	PQL	MDL	MDL Date
Cobalt	1.0	0.050	02/16/2022
Iron	50.0	20.9	02/16/2022
Lead	1.0	0.077	02/16/2022
Lithium	2.5	0.50	02/16/2022
Manganese	2.0	1.0	02/16/2022
Thallium	0.20	0.050	02/16/2022
Tin	1.0	0.43	02/16/2022

FORM XI - INORGANIC-1
LINEAR DYNAMIC RANGES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWM

Instrument ID: 92ICM3 Effective Date:03/19/2021

Analyte	Concentration (ug/L)
Cobalt	200
Iron	5000
Lead	200
Lithium	200
Manganese	200
Thallium	100
Tin	100

FORM XI - INORGANIC-1
LINEAR DYNAMIC RANGES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWM

Instrument ID: 93ICM2 Effective Date:03/23/2021

Analyte	Concentration (ug/L)
Cobalt	200
Iron	5000
Lead	200
Lithium	200
Manganese	200
Thallium	100
Tin	100

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Batch: MPRP 59957

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4300574	4300574BLANK	02/14/2024	15	15
4300575	4300575LCS	02/14/2024	15	15
4300576	4300576MS	02/14/2024	15	15
4300577	4300577MSD	02/14/2024	15	15
92712989001	021224NMW13	02/14/2024	15	15
92712989002	021224NMW31	02/14/2024	15	15
92712989003	021224NMW32S	02/14/2024	15	15
92712989004	021224NMW32D	02/14/2024	15	15
92712989005	021224NWPFDDUPLICAT	02/14/2024	15	15

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 3010A Batch: MPRP 59987

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4302470	4302470BLANK	02/15/2024	15	15
4302471	4302471LCS	02/15/2024	15	15
4302472	4302472MS	02/15/2024	15	15
4302473	4302473MSD	02/15/2024	15	15
4302474	4302474MS	02/15/2024	15	15
4302475	4302475MSD	02/15/2024	15	15
92712989006	021324NMW1	02/15/2024	15	15
92712989007	021324NMW12	02/15/2024	15	15

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Analysis Method: EPA 6020B

Start Date: 02/14/2024 12:11 End Date: 02/15/2024 04:24

Sample Name	Lab Sample ID	D/F	Date	Time	Co	Fe	Li	Mn	Pb	Sn	Tl
28972132CAL0	28972132CAL0	1	02/14/2024	12:11	X	X	X	X	X	X	X
28972133CAL1	28972133CAL1	1	02/14/2024	12:15	X	X	X	X	X	X	X
28972134CAL2	28972134CAL2	1	02/14/2024	12:20	X	X	X	X	X	X	X
28972135CAL3	28972135CAL3	1	02/14/2024	12:25	X	X	X	X	X	X	X
28972136CAL4	28972136CAL4	1	02/14/2024	12:30	X	X	X	X	X	X	X
28972137ICV	28972137ICV	1	02/14/2024	12:40	X	X	X	X	X	X	X
28972138ICB	28972138ICB	1	02/14/2024	12:44	X	X	X	X	X	X	X
28972139CRDL	28972139CRDL	1	02/14/2024	12:56	X	X	X	X	X	X	X
28972140ICSA	28972140ICSA	1	02/14/2024	13:01	X	X	X	X	X	X	X
28972141ICSAB	28972141ICSAB	1	02/14/2024	13:06	X	X	X	X	X	X	X
28972142CCV	28972142CCV	1	02/14/2024	13:20	X	X	X	X	X	X	X
28972143CCB	28972143CCB	1	02/14/2024	13:24	X	X	X	X	X	X	X
28972151ICSA	28972151ICSA	1	02/14/2024	15:18	X	X	X	X	X	X	X
28972152ICSAB	28972152ICSAB	1	02/14/2024	15:23	X	X	X	X	X	X	X
28972169ICSA	28972169ICSA	1	02/14/2024	18:09	X	X	X	X	X	X	X
28972170ICSAB	28972170ICSAB	1	02/14/2024	18:14	X	X	X	X	X	X	X
28972172CCV	28972172CCV	1	02/14/2024	20:18	X	X	X	X	X	X	X
28972173CCB	28972173CCB	1	02/14/2024	20:22	X	X	X	X	X	X	X
4300574BLANK	4300574	1	02/14/2024	20:27	X	X	X	X	X	X	X
4300575LCS	4300575	1	02/14/2024	20:32	X	X	X	X	X	X	X
92712987001	92712987001	1	02/14/2024	20:36	X	X	X	X	X	X	X
4300576MS	4300576	1	02/14/2024	20:41	X	X	X	X	X	X	X
4300577MSD	4300577	1	02/14/2024	20:46	X	X	X	X	X	X	X
4301986PDS	4301986	1	02/14/2024	20:50	X	X	X	X	X	X	X
4301987SD	4301987	5	02/14/2024	20:55	X	X	X	X	X	X	X
28972177CCV	28972177CCV	1	02/14/2024	21:14	X	X	X	X	X	X	X
28972178CCB	28972178CCB	1	02/14/2024	21:19	X	X	X	X	X	X	X
28972179ICSA	28972179ICSA	1	02/14/2024	21:24	X	X	X	X	X	X	X
28972180ICSAB	28972180ICSAB	1	02/14/2024	21:28	X	X	X	X	X	X	X
021224NMW13	92712989001	1	02/14/2024	21:47	X	X	X		X	X	X
021224NMW31	92712989002	1	02/14/2024	21:52	X	X	X		X	X	X
021224NMW32S	92712989003	1	02/14/2024	21:56	X	X	X	X	X	X	X
021224NMW32D	92712989004	1	02/14/2024	22:01	X	X	X	X	X	X	X
021224NWPFDDUPLICATE	92712989005	1	02/14/2024	22:06	X	X	X		X	X	X
28981268CCV	28981268CCV	1	02/14/2024	22:20	X	X	X	X	X	X	X
28981269CCB	28981269CCB	1	02/14/2024	22:24	X	X	X	X	X	X	X
28981270ICSA	28981270ICSA	1	02/14/2024	22:29	X	X	X	X	X	X	X
28981271ICSAB	28981271ICSAB	1	02/14/2024	22:34	X	X	X	X	X	X	X
28981272CCV	28981272CCV	1	02/14/2024	23:30	X	X	X	X	X	X	X
28981273CCB	28981273CCB	1	02/14/2024	23:34	X	X	X	X	X	X	X
28981287CCV	28981287CCV	1	02/15/2024	04:10	X	X	X	X	X	X	X
28981288CCB	28981288CCB	1	02/15/2024	04:15	X	X	X	X	X	X	X
28981289ICSA	28981289ICSA	1	02/15/2024	04:19	X	X	X	X	X	X	X
28981290ICSAB	28981290ICSAB	1	02/15/2024	04:24	X	X	X	X	X	X	X

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Analysis Method: EPA 6020B

Start Date: 02/16/2024 09:54 End Date: 02/16/2024 23:00

Sample Name	Lab Sample ID	D/F	Date	Time	Mn
28990581CAL0	28990581CAL0	1	02/16/2024	09:54	X
28990582CAL1	28990582CAL1	1	02/16/2024	09:59	X
28991384CAL2	28991384CAL2	1	02/16/2024	10:04	X
28991385CAL3	28991385CAL3	1	02/16/2024	10:08	X
28991386CAL4	28991386CAL4	1	02/16/2024	10:13	X
28990583ICV	28990583ICV	1	02/16/2024	10:23	X
28991387ICB	28991387ICB	1	02/16/2024	10:39	X
28991388CRDL	28991388CRDL	1	02/16/2024	10:54	X
28991389ICSA	28991389ICSA	1	02/16/2024	10:59	X
28991390ICSAB	28991390ICSAB	1	02/16/2024	11:03	X
28991391CCV	28991391CCV	1	02/16/2024	11:17	X
28991392CCB	28991392CCB	1	02/16/2024	11:29	X
28996897ICSA	28996897ICSA	1	02/16/2024	17:33	X
28996898ICSAB	28996898ICSAB	1	02/16/2024	17:38	X
28996901CCV	28996901CCV	1	02/16/2024	19:35	X
28996902CCB	28996902CCB	1	02/16/2024	19:44	X
021324NMW12	92712989007	3	02/16/2024	20:17	X
28996903CCV	28996903CCV	1	02/16/2024	20:35	X
28996904CCB	28996904CCB	1	02/16/2024	20:40	X
28996905ICSA	28996905ICSA	1	02/16/2024	20:45	X
28996906ICSAB	28996906ICSAB	1	02/16/2024	20:49	X
28996909CCV	28996909CCV	1	02/16/2024	22:46	X
28996910CCB	28996910CCB	1	02/16/2024	22:50	X
28996911ICSA	28996911ICSA	1	02/16/2024	22:55	X
28996912ICSAB	28996912ICSAB	1	02/16/2024	23:00	X

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Analysis Method: EPA 6020B

Start Date: 02/15/2024 13:41 End Date: 02/16/2024 07:03

Sample Name	Lab Sample ID	D/F	Date	Time	Co	Fe	Li	Mn	Pb	Sn	Tl
28984860CAL0	28984860CAL0	1	02/15/2024	13:41	X	X	X	X	X	X	X
28984861CAL1	28984861CAL1	1	02/15/2024	13:47	X	X	X	X	X	X	X
28984862CAL2	28984862CAL2	1	02/15/2024	13:52	X	X	X	X	X	X	X
28984863CAL3	28984863CAL3	1	02/15/2024	13:57	X	X	X	X	X	X	X
28984864CAL4	28984864CAL4	1	02/15/2024	14:03	X	X	X	X	X	X	X
28984865ICV	28984865ICV	1	02/15/2024	14:13	X	X	X	X	X	X	X
28984866ICB	28984866ICB	1	02/15/2024	14:25	X	X	X	X	X	X	X
28984867CRDL	28984867CRDL	1	02/15/2024	14:35	X	X	X	X	X	X	X
28984868ICSA	28984868ICSA	1	02/15/2024	14:44	X	X	X	X	X	X	X
28984869ICSAB	28984869ICSAB	1	02/15/2024	14:49	X	X	X	X	X	X	X
28984870CCV	28984870CCV	1	02/15/2024	15:04	X	X	X	X	X	X	X
28984871CCB	28984871CCB	1	02/15/2024	15:09	X	X	X	X	X	X	X
28984892CCV	28984892CCV	1	02/15/2024	17:08	X	X	X	X	X	X	X
28984893CCB	28984893CCB	1	02/15/2024	17:13	X	X	X	X	X	X	X
28984894ICSA	28984894ICSA	1	02/15/2024	17:18	X	X	X	X	X	X	X
28984895ICSAB	28984895ICSAB	1	02/15/2024	17:23	X	X	X	X	X	X	X
021224NMW13	92712989001	10	02/15/2024	17:43				X			
021224NMW31	92712989002	3	02/15/2024	17:48				X			
021224NWPFDDUPLICATE	92712989005	3	02/15/2024	17:53				X			
28984904CCV	28984904CCV	1	02/15/2024	18:13	X	X	X	X	X	X	X
28984905CCB	28984905CCB	1	02/15/2024	18:18	X	X	X	X	X	X	X
28984906ICSA	28984906ICSA	1	02/15/2024	18:23	X	X	X	X	X	X	X
28984907ICSAB	28984907ICSAB	1	02/15/2024	18:28	X	X	X	X	X	X	X
28984941ICSA	28984941ICSA	1	02/15/2024	21:32	X	X	X	X	X	X	X
28984942ICSAB	28984942ICSAB	1	02/15/2024	21:37	X	X	X	X	X	X	X
28985456CCV	28985456CCV	1	02/15/2024	22:38	X	X	X	X	X	X	X
28985457CCB	28985457CCB	1	02/15/2024	22:48	X	X	X	X	X	X	X
4302470BLANK	4302470	1	02/15/2024	23:17	X	X	X	X	X	X	X
4302471LCS	4302471	1	02/15/2024	23:22	X	X	X	X	X	X	X
021324NMW1	92712989006	1	02/15/2024	23:27	X	X	X	X	X	X	X
4302472MS	4302472	1	02/15/2024	23:32	X	X	X	X	X	X	X
4302473MSD	4302473	1	02/15/2024	23:37	X	X	X	X	X	X	X
28985458CCV	28985458CCV	1	02/15/2024	23:42	X	X	X	X	X	X	X
28985459CCB	28985459CCB	1	02/15/2024	23:47	X	X	X	X	X	X	X
28985460ICSA	28985460ICSA	1	02/15/2024	23:52	X	X	X	X	X	X	X
28985461ICSAB	28985461ICSAB	1	02/15/2024	23:57	X	X	X	X	X	X	X
4303455PDS	4303455	1	02/16/2024	00:07	X	X	X	X	X	X	X
4303456SD	4303456	5	02/16/2024	00:12	X	X	X	X	X	X	X
021324NMW12	92712989007	1	02/16/2024	00:17	X	X	X		X	X	X
92713247001	92713247001	1	02/16/2024	00:32	X	X	X	X	X	X	X
4302474MS	4302474	1	02/16/2024	00:37	X	X	X	X	X	X	X
4302475MSD	4302475	1	02/16/2024	00:42	X	X	X	X	X	X	X
4303457PDS	4303457	1	02/16/2024	00:47	X	X	X	X	X	X	X
4303458SD	4303458	5	02/16/2024	00:52	X	X	X	X	X	X	X
28985462CCV	28985462CCV	1	02/16/2024	00:57	X	X	X	X	X	X	X

FORM XIII INORGANIC-2
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Analysis Method: EPA 6020B

Start Date: 02/15/2024 13:41 End Date: 02/16/2024 07:03

Sample Name	Lab Sample ID	D/F	Date	Time	Co	Fe	Li	Mn	Pb	Sn	Tl
28985463CCB	28985463CCB	1	02/16/2024	01:02	X	X	X	X	X	X	X
28985464CCV	28985464CCV	1	02/16/2024	01:57	X	X	X	X	X	X	X
28985465CCB	28985465CCB	1	02/16/2024	02:07	X	X	X	X	X	X	X
28985466ICSA	28985466ICSA	1	02/16/2024	02:12	X	X	X	X	X	X	X
28985467ICSAB	28985467ICSAB	1	02/16/2024	02:17	X	X	X	X	X	X	X
28985514CCV	28985514CCV	1	02/16/2024	06:48	X	X	X	X	X	X	X
28985515CCB	28985515CCB	1	02/16/2024	06:53	X	X	X	X	X	X	X
28985516ICSA	28985516ICSA	1	02/16/2024	06:58	X	X	X	X	X	X	X
28985517ICSAB	28985517ICSAB	1	02/16/2024	07:03	X	X	X	X	X	X	X

US EPA Tune Check Report

Operator Name	93metals user
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches\20240214MS2.b
Acq. Date-Time	2/14/2024 4:06:22 PM
Report Comment	---
Instrument Name	G8403A SG20034722

not applied

[H2]

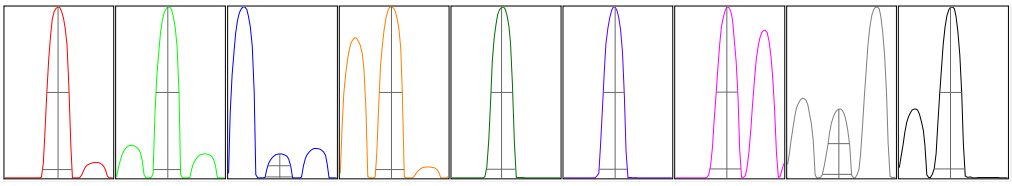
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		7803	78031.04			1.476	5.000
24		77490	774896.26			1.288	5.000
25		10932	109320.42			1.597	5.000
26		13444	134443.19			1.643	5.000
59		270733	2707332.17			1.593	5.000
115		532557	5325565.12			1.321	5.000
206		105295	1052948.27			1.479	5.000
207		91364	913644.83			1.564	5.000
208		226155	2261552.67			1.322	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	7758.82	9.00	8.90 - 9.10	
24	77937.52	23.95	23.90 - 24.10	
25	11053.29	24.95	24.90 - 25.10	

US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
26	13467.73	25.95	25.90 - 26.10	
59	278238.80	58.90	58.90 - 59.10	
115	553161.20	114.95	114.90 - 115.10	
206	106817.15	205.95	205.90 - 206.10	
207	92165.05	206.95	206.90 - 207.10	
208	228007.99	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.60	0.808	0.850	
24	0.62	0.744	0.850	
25	0.62	0.743	0.850	
26	0.63	0.779	0.850	
59	0.60	0.801	0.850	
115	0.57	0.777	0.850	
206	0.59	0.849	0.850	
207	0.59	0.797	0.850	
208	0.59	0.839	0.850	

Integration Time [sec]	0.1
Acquisition Time [sec]	47.0000000000001
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.30 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.5 V	Deflect	1.6 V
Extract 2	-215.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-115 V	Cell Exit	-70 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	2.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	128	Axis Gain	1.0001	QP Bias	-13.0 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.2 mm		

EM

Discriminator	3.4 mV	Analog HV	2161 V	Pulse HV	1117 V

US EPA Tune Check Report

[He]

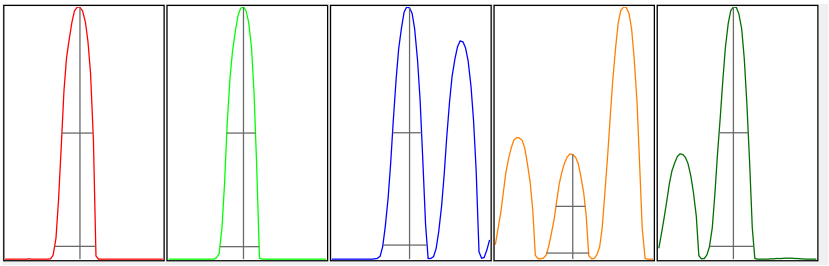
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
59		51986	519864.00			1.302	5.000
115		108212	1082124.59			1.344	5.000
206		61503	615025.50			0.919	5.000
207		53429	534286.49			1.129	5.000
208		129804	1298043.68			1.623	5.000

Mass	RSD% (Flag)
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
59	52195.52	58.95	58.90 - 59.10	
115	109262.11	114.95	114.90 - 115.10	
206	61887.89	206.00	205.90 - 206.10	
207	53518.61	207.00	206.90 - 207.10	
208	128797.52	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
59	0.59	0.770	0.900	
115	0.54	0.731	0.900	
206	0.54	0.826	0.900	
207	0.55	0.787	0.900	
208	0.54	0.828	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 27.34

Y Axis Linear

Tune Parameters

Plasma Parameters

US EPA Tune Check Report

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.30 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	11.8 V	Deflect	-74.0 V
Extract 2	-210.0 V	Cell Entrance	-125 V	Plate Bias	-150 V
Omega Bias	-115 V	Cell Exit	-150 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	7.0 V
He Flow	10.0 mL/min	OctP Bias	-100.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	128	Axis Gain	1.0001	QP Bias	-93.0 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.2 mm		

EM

Discriminator	3.4 mV	Analog HV	2161 V	Pulse HV	1117 V

[NoGas]

Sensitivity

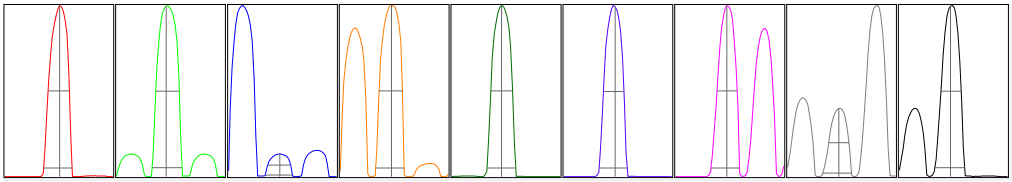
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		35634	356340.47			1.450	5.000
24		187169	1871688.24			0.929	5.000
25		24762	247622.03			1.170	5.000
26		28854	288539.07			1.468	5.000
59		381930	3819296.78			1.257	5.000
115		638334	6383337.63			1.110	5.000
206		146035	1460348.75			1.301	5.000
207		127597	1275969.94			1.358	5.000
208		314635	3146345.37			1.167	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	36098.30	9.05	8.90 - 9.10	
24	188063.79	23.90	23.90 - 24.10	
25	24982.77	24.95	24.90 - 25.10	
26	28717.19	25.95	25.90 - 26.10	
59	393706.77	58.90	58.90 - 59.10	
115	653776.33	114.95	114.90 - 115.10	
206	145403.70	205.95	205.90 - 206.10	
207	125548.08	206.95	206.90 - 207.10	
208	314681.61	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.58	0.778	0.850	
24	0.64	0.820	0.850	
25	0.63	0.741	0.850	
26	0.64	0.781	0.850	
59	0.60	0.782	0.850	
115	0.56	0.773	0.850	
206	0.55	0.784	0.850	
207	0.56	0.782	0.850	
208	0.55	0.819	0.850	

Integration Time [sec] 0.1

Acquisition Time [sec] 47.0000000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.30 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	16.0 V
Extract 2	-220.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Omega Bias	-95 V	Cell Exit	-56 V		

US EPA Tune Check Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	128	Axis Gain	1.0001	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.2 mm

EM

Discriminator	3.4 mV	Analog HV	2161 V	Pulse HV	1117 V

US EPA Tune Check Report

Operator Name	93metals user
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\20240214MS3.b
Acq. Date-Time	02/14/2024 11:29:50
Report Comment	---
Instrument Name	G8403A JP16071303

[H2]

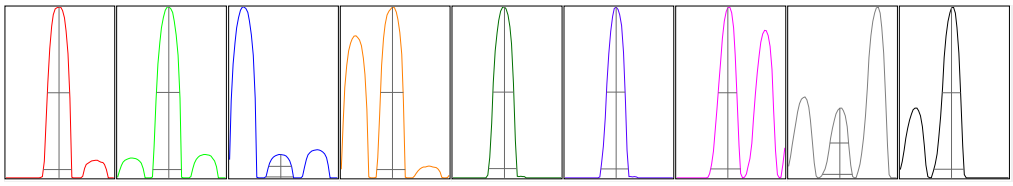
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		6199	61986.16			1.968	5.000
24		59927	599272.12			1.175	5.000
25		8270	82702.11			1.644	5.000
26		9934	99342.83			1.577	5.000
59		157581	1575809.88			0.983	5.000
115		223162	2231619.01			0.952	5.000
206		49196	491956.97			1.453	5.000
207		42711	427107.96			1.481	5.000
208		104299	1042990.04			1.221	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	6170.29	9.00	8.90 - 9.10	
24	60776.33	23.95	23.90 - 24.10	
25	8357.42	24.95	24.90 - 25.10	

US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
26	10053.52	25.95	25.90 - 26.10	
59	161623.35	58.95	58.90 - 59.10	
115	227668.72	114.95	114.90 - 115.10	
206	49605.16	205.95	205.90 - 206.10	
207	43037.49	206.95	206.90 - 207.10	
208	104681.64	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.771	0.850	
24	0.63	0.782	0.850	
25	0.62	0.756	0.850	
26	0.62	0.775	0.850	
59	0.57	0.772	0.850	
115	0.50	0.754	0.850	
206	0.51	0.816	0.850	
207	0.51	0.814	0.850	
208	0.50	0.825	0.850	

Integration Time [sec]	0.1
Acquisition Time [sec]	47.0000000000001
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.50 V	Nebulizer Pump	0.15 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	0.0 V
Extract 2	-180.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	2.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	143	Axis Gain	0.9952	QP Bias	-13.0 V
Mass Offset	125	Axis Offset	0.15		

Hardware Settings

Torch

Torch H	0.8 mm	Torch V	0.4 mm		

EM

Discriminator	3.7 mV	Analog HV	2162 V	Pulse HV	1052 V

US EPA Tune Check Report

[He]

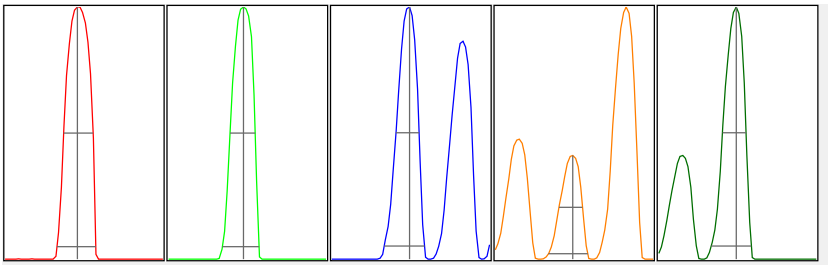
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
59		21957	219573.60			1.264	5.000
115		41973	419726.28			1.552	5.000
206		24728	247277.02			1.466	5.000
207		21430	214295.32			1.401	5.000
208		52197	521973.70			1.400	5.000

Mass	RSD% (Flag)
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
59	22564.19	58.90	58.90 - 59.10	
115	42392.84	114.95	114.90 - 115.10	
206	24491.92	206.00	205.90 - 206.10	
207	21164.45	207.00	206.90 - 207.10	
208	51487.92	208.00	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
59	0.55	0.726	0.900	
115	0.47	0.686	0.900	
206	0.43	0.754	0.900	
207	0.44	0.735	0.900	
208	0.44	0.751	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 27.34

Y Axis Linear

Tune Parameters

Plasma Parameters

US EPA Tune Check Report

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.50 V	Nebulizer Pump	0.15 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	-80.0 V
Extract 2	-180.0 V	Cell Entrance	-130 V	Plate Bias	-150 V
Omega Bias	-80 V	Cell Exit	-150 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	8.0 V
He Flow	10.0 mL/min	OctP Bias	-100.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	143	Axis Gain	0.9952	QP Bias	-92.0 V
Mass Offset	125	Axis Offset	0.15		

Hardware Settings

Torch

Torch H	0.8 mm	Torch V	0.4 mm		

EM

Discriminator	3.7 mV	Analog HV	2162 V	Pulse HV	1052 V

[NoGas]

Sensitivity

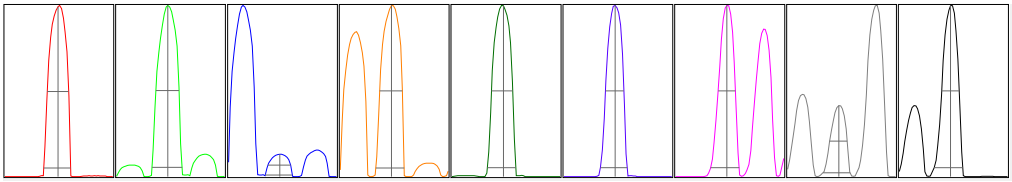
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		30760	307604.94			1.143	5.000
24		125648	1256479.20			1.159	5.000
25		16762	167620.29			1.118	5.000
26		19900	199002.10			1.719	5.000
59		234278	2342779.27			1.099	5.000
115		343884	3438836.32			1.374	5.000
206		73590	735900.26			1.777	5.000
207		63469	634691.37			1.515	5.000
208		154356	1543561.35			1.725	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	30941.98	9.00	8.90 - 9.10	
24	129514.00	23.95	23.90 - 24.10	
25	16875.72	24.95	24.90 - 25.10	
26	19997.76	25.95	25.90 - 26.10	
59	242652.06	58.95	58.90 - 59.10	
115	353232.18	114.95	114.90 - 115.10	
206	74892.94	205.95	205.90 - 206.10	
207	64556.14	206.95	206.90 - 207.10	
208	155603.52	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.58	0.732	0.850	
24	0.63	0.822	0.850	
25	0.62	0.740	0.850	
26	0.62	0.776	0.850	
59	0.58	0.776	0.850	
115	0.50	0.734	0.850	
206	0.47	0.780	0.850	
207	0.48	0.742	0.850	
208	0.48	0.784	0.850	

Integration Time [sec] 0.1

Acquisition Time [sec] 47.0000000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.50 V	Nebulizer Pump	0.15 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	10.0 V
Extract 2	-180.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

US EPA Tune Check Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	143	Axis Gain	0.9952	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	0.15		

Hardware Settings

Torch

Torch H	0.8 mm	Torch V	0.4 mm		

EM

Discriminator	3.7 mV	Analog HV	2162 V	Pulse HV	1052 V

Sample Name	92712989001_16384x1
Sample Type	Sample
Operator	ADM
Instrument	92ICM3 - 200.8 6020 6020A
Batch Name	20240214MS3.b
Data File Name	089SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA
Acq. Date Time	02/14/2024 21:47:23
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	1.930917	0.8
Be	9	1	He	0.047815	16.3
B	11	3	H2	23.381260	0.4
Na	23	2	H2	13347.53587	0.6
Mg	24	2	H2	10554.93697	0.4
Al	27	2	H2	115.974339	6.0
K	39	2	H2	263.447268	2.9
Ca	40	1	He	51676.63991	1.1
Ca	44	3	H2	52834.20406	1.0
Ti	47	2	H2	2.886341	2.5
V	51	2	H2	0.429017	5.1
Cr	52	2	H2	0.254588	25.0
Mn	55	2	H2	913.913640	3.0
Fe	56	2	H2	1182.779956	3.9
Co	59	2	H2	4.616250	3.1
Ni	60	2	H2	9.112763	1.0
Cu	63	2	H2	0.973725	5.2
Zn	66	2	H2	11.741231	1.2
As	75	2	H2	0.116108	25.9
Se	78	1	He	0.096478	21.4
[Se]	82	1	He	54.092661	7.2
Sr	88	2	H2	121.828231	1.6
Mo	95	2	H2	0.088468	37.8
[Cd]	106	2	H2	0.012668	31.0
Ag	107	2	H2	0.002170	94.6
[Cd]	108	2	H2	0.018595	17.2
Cd	111	2	H2	0.746101	2.0
Sn	118	2	H2	0.096904	13.2
Sb	121	2	H2	0.006886	308.3
Sb	123	2	H2	0.092434	28.1
Ba	137	2	H2	56.149789	1.9
Tl	205	2	H2	0.003193	21.1
[Pb]	206	2	H2	0.078973	13.3
[Pb]	207	2	H2	0.082377	6.6
Pb	208	2	H2	0.067873	2.6
U	238	2	H2	0.015898	12.4

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	113.2056918
Sc	45	2	H2	110.2780903
Sc	45	3	H2	108.1260840
Ge	72	2	H2	107.8639036
Y	89	2	H2	108.6644682
In	115	1	He	103.6027894
In	115	2	H2	109.2746695
Tb	159	2	H2	110.4435146
Bi	209	2	H2	109.5423872
Th	232	2	H2	109.5282886

Sample Name	92712989002_16384x1
Sample Type	Sample
Operator	ADM
Instrument	92ICM3 - 200.8 6020 6020A
Batch Name	20240214MS3.b
Data File Name	090SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA
Acq. Date Time	02/14/2024 21:52:04
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	1.933148	1.5
Be	9	1	He	0.007049	33.1
B	11	3	H2	10.890792	1.6
Na	23	2	H2	12141.27437	0.7
Mg	24	2	H2	4537.733496	0.6
Al	27	2	H2	16.228849	23.7
K	39	2	H2	298.825714	1.6
Ca	40	1	He	11707.93500	0.5
Ca	44	3	H2	12185.99536	0.5
Ti	47	2	H2	0.092421	67.7
V	51	2	H2	0.048068	4.9
Cr	52	2	H2	0.368489	26.1
Mn	55	2	H2	290.757642	0.2
Fe	56	2	H2	353.149472	0.6
Co	59	2	H2	3.597085	2.7
Ni	60	2	H2	6.367489	5.8
Cu	63	2	H2	9.649052	1.1
Zn	66	2	H2	9.859300	4.7
As	75	2	H2	0.046478	51.6
Se	78	1	He	1.023085	2.3
[Se]	82	1	He	14.329270	1.2
Sr	88	2	H2	63.058829	0.4
Mo	95	2	H2	0.165931	20.2
[Cd]	106	2	H2	-0.005510	
Ag	107	2	H2	0.055131	16.9
[Cd]	108	2	H2	0.011056	20.7
Cd	111	2	H2	0.286657	8.6
Sn	118	2	H2	0.053942	13.0
Sb	121	2	H2	0.021157	174.9
Sb	123	2	H2	0.059773	14.5
Ba	137	2	H2	58.285555	1.3
Tl	205	2	H2	0.008247	38.7
[Pb]	206	2	H2	-0.020062	
[Pb]	207	2	H2	-0.023463	
Pb	208	2	H2	-0.024909	
U	238	2	H2	0.015707	14.9

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	115.6983044
Sc	45	2	H2	109.9089319
Sc	45	3	H2	107.7336426
Ge	72	2	H2	108.1969479
Y	89	2	H2	108.6125288
In	115	1	He	104.8236418
In	115	2	H2	109.1508180
Tb	159	2	H2	109.9759587
Bi	209	2	H2	110.8156628
Th	232	2	H2	110.2966292

Sample Name	92712989003_16384x1
Sample Type	Sample
Operator	ADM
Instrument	92ICM3 - 200.8 6020 6020A
Batch Name	20240214MS3.b
Data File Name	091SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA
Acq. Date Time	02/14/2024 21:56:48
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.445573	2.1
Be	9	1	He	0.000680	149.3
B	11	3	H2	1.142671	2.1
Na	23	2	H2	4153.120482	0.6
Mg	24	2	H2	2939.714884	0.5
Al	27	2	H2	146.104196	10.7
K	39	2	H2	1439.551057	0.9
Ca	40	1	He	4402.251748	0.7
Ca	44	3	H2	4593.501644	0.7
Ti	47	2	H2	4.997028	8.2
V	51	2	H2	0.347965	3.1
Cr	52	2	H2	0.151401	19.8
Mn	55	2	H2	2.541745	6.0
Fe	56	2	H2	181.873445	1.6
Co	59	2	H2	0.032547	20.1
Ni	60	2	H2	0.576000	12.2
Cu	63	2	H2	0.460142	4.1
Zn	66	2	H2	3.067998	5.7
As	75	2	H2	0.046146	67.2
Se	78	1	He	0.211027	15.9
[Se]	82	1	He	5.635096	1.4
Sr	88	2	H2	27.225820	1.6
Mo	95	2	H2	0.022459	49.6
[Cd]	106	2	H2	-0.010818	
Ag	107	2	H2	0.700024	7.8
[Cd]	108	2	H2	0.002550	77.2
Cd	111	2	H2	0.012881	37.4
Sn	118	2	H2	0.028366	6.7
Sb	121	2	H2	0.037479	32.2
Sb	123	2	H2	0.105715	19.0
Ba	137	2	H2	10.338959	2.8
Tl	205	2	H2	0.000767	149.2
[Pb]	206	2	H2	0.077380	5.3
[Pb]	207	2	H2	0.077145	19.0
Pb	208	2	H2	0.081256	7.6
U	238	2	H2	0.002822	22.2

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	109.8502468
Sc	45	2	H2	107.6339300
Sc	45	3	H2	104.6144752
Ge	72	2	H2	105.8320955
Y	89	2	H2	105.9084125
In	115	1	He	103.7743517
In	115	2	H2	107.3495470
Tb	159	2	H2	108.6424593
Bi	209	2	H2	107.5864368
Th	232	2	H2	107.7012417

Sample Name	92712989004_16384x1
Sample Type	Sample
Operator	ADM
Instrument	92ICM3 - 200.8 6020 6020A
Batch Name	20240214MS3.b
Data File Name	092SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA
Acq. Date Time	02/14/2024 22:01:27
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	2.473513	2.4
Be	9	1	He	0.003096	22.6
B	11	3	H2	0.992243	7.1
Na	23	2	H2	8127.820225	1.6
Mg	24	2	H2	4557.806751	1.8
Al	27	2	H2	14.515658	8.3
K	39	2	H2	1638.375430	1.0
Ca	40	1	He	26515.76249	0.9
Ca	44	3	H2	27966.67597	1.8
Ti	47	2	H2	0.474136	17.6
V	51	2	H2	0.057054	6.1
Cr	52	2	H2	-0.072967	
Mn	55	2	H2	45.447575	0.2
Fe	56	2	H2	226.741903	1.2
Co	59	2	H2	0.007939	18.1
Ni	60	2	H2	0.216669	9.9
Cu	63	2	H2	0.532397	2.3
Zn	66	2	H2	2.782563	3.9
As	75	2	H2	0.136481	8.6
Se	78	1	He	0.033061	40.2
[Se]	82	1	He	4.688703	9.2
Sr	88	2	H2	259.314591	1.0
Mo	95	2	H2	0.514698	13.1
[Cd]	106	2	H2	-0.004151	
Ag	107	2	H2	0.029976	23.7
[Cd]	108	2	H2	0.002897	54.6
Cd	111	2	H2	0.003175	34.0
Sn	118	2	H2	0.064738	22.5
Sb	121	2	H2	0.047457	119.2
Sb	123	2	H2	0.070324	26.0
Ba	137	2	H2	5.193740	4.1
Tl	205	2	H2	-0.002277	
[Pb]	206	2	H2	0.000941	310.8
[Pb]	207	2	H2	-0.014663	
Pb	208	2	H2	-0.009724	
U	238	2	H2	0.128445	6.8

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	113.7404730
Sc	45	2	H2	109.8111466
Sc	45	3	H2	107.8532428
Ge	72	2	H2	109.2014843
Y	89	2	H2	106.4053477
In	115	1	He	103.5348210
In	115	2	H2	108.7616534
Tb	159	2	H2	108.9118997
Bi	209	2	H2	109.4731415
Th	232	2	H2	108.8636206

Sample Name	92712989005_16384x1
Sample Type	Sample
Operator	ADM
Instrument	92ICM3 - 200.8 6020 6020A
Batch Name	20240214MS3.b
Data File Name	093SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA
Acq. Date Time	02/14/2024 22:06:10
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	1.895366	0.8
Be	9	1	He	0.009145	35.4
B	11	3	H2	9.909596	0.8
Na	23	2	H2	11832.91131	1.8
Mg	24	2	H2	4452.428098	1.3
Al	27	2	H2	18.528961	9.1
K	39	2	H2	279.581199	3.1
Ca	40	1	He	11389.91650	0.5
Ca	44	3	H2	12016.90732	0.6
Ti	47	2	H2	0.077351	130.0
V	51	2	H2	0.060953	18.3
Cr	52	2	H2	0.381695	29.3
Mn	55	2	H2	282.080508	1.5
Fe	56	2	H2	336.208722	1.5
Co	59	2	H2	3.637116	1.4
Ni	60	2	H2	6.116545	3.3
Cu	63	2	H2	9.590573	1.3
Zn	66	2	H2	9.854450	1.7
As	75	2	H2	0.037780	5.5
Se	78	1	He	1.035267	3.1
[Se]	82	1	He	7.367041	7.4
Sr	88	2	H2	61.586838	2.2
Mo	95	2	H2	0.096655	6.0
[Cd]	106	2	H2	0.000605	781.2
Ag	107	2	H2	0.067942	45.9
[Cd]	108	2	H2	0.005125	23.8
Cd	111	2	H2	0.261498	6.7
Sn	118	2	H2	0.054136	9.0
Sb	121	2	H2	0.048526	20.9
Sb	123	2	H2	0.076022	92.6
Ba	137	2	H2	56.300774	1.6
Tl	205	2	H2	0.007386	19.9
[Pb]	206	2	H2	-0.016489	
[Pb]	207	2	H2	-0.023233	
Pb	208	2	H2	-0.023711	
U	238	2	H2	0.016730	1.2

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	115.3565522
Sc	45	2	H2	108.7783818
Sc	45	3	H2	106.5232077
Ge	72	2	H2	106.8303326
Y	89	2	H2	107.0632351
In	115	1	He	104.7158290
In	115	2	H2	108.2156533
Tb	159	2	H2	109.5400040
Bi	209	2	H2	109.0670710
Th	232	2	H2	109.0288592

US EPA Tune Check Report

Operator Name	93metals user
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches\20240215MS2.b
Acq. Date-Time	2/15/2024 12:22:49 PM
Report Comment	---
Instrument Name	G8403A SG20034722

[H2]

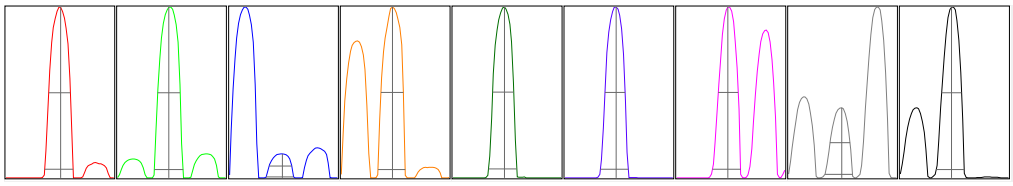
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		6495	64954.89			1.834	5.000
24		62818	628175.06			1.230	5.000
25		8908	89076.12			1.692	5.000
26		10812	108115.83			1.704	5.000
59		206631	2066312.60			1.263	5.000
115		416934	4169342.39			1.054	5.000
206		85182	851819.75			1.609	5.000
207		73312	733115.14			1.327	5.000
208		178220	1782202.34			1.446	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	6515.14	9.05	8.90 - 9.10	
24	62748.92	23.95	23.90 - 24.10	
25	8878.09	25.00	24.90 - 25.10	

US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
26	11095.09	25.95	25.90 - 26.10	
59	214564.88	58.95	58.90 - 59.10	
115	430612.94	114.95	114.90 - 115.10	
206	86098.34	205.95	205.90 - 206.10	
207	74496.52	207.00	206.90 - 207.10	
208	180750.24	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.59	0.779	0.850	
24	0.61	0.782	0.850	
25	0.62	0.745	0.850	
26	0.62	0.742	0.850	
59	0.58	0.773	0.850	
115	0.55	0.766	0.850	
206	0.54	0.771	0.850	
207	0.55	0.751	0.850	
208	0.54	0.769	0.850	

Integration Time [sec]	0.1
Acquisition Time [sec]	47.0000000000001
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.30 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.5 V	Deflect	1.6 V
Extract 2	-215.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-115 V	Cell Exit	-70 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	2.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	129	Axis Gain	1.0001	QP Bias	-13.0 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.2 mm		

EM

Discriminator	3.3 mV	Analog HV	2162 V	Pulse HV	1121 V

US EPA Tune Check Report

[He]

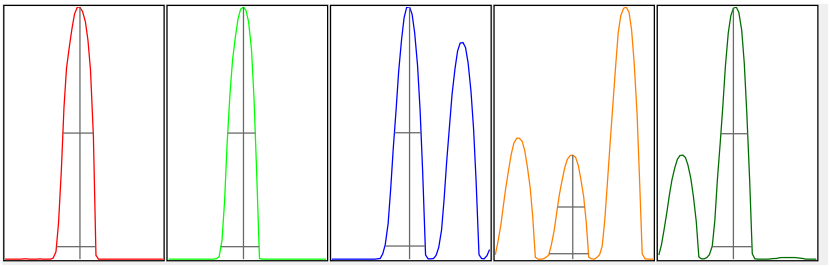
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
59		40951	409512.45			1.285	5.000
115		85133	851326.08			1.333	5.000
206		51464	514637.32			1.563	5.000
207		44350	443498.20			1.578	5.000
208		107333	1073334.10			1.232	5.000

Mass	RSD% (Flag)
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
59	41135.53	58.95	58.90 - 59.10	
115	86029.05	114.95	114.90 - 115.10	
206	51533.55	206.00	205.90 - 206.10	
207	44280.29	207.00	206.90 - 207.10	
208	106675.18	207.95	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
59	0.57	0.737	0.900	
115	0.51	0.713	0.900	
206	0.50	0.752	0.900	
207	0.51	0.739	0.900	
208	0.50	0.749	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 27.34

Y Axis Linear

Tune Parameters

Plasma Parameters

US EPA Tune Check Report

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.30 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	11.8 V	Deflect	-74.0 V
Extract 2	-210.0 V	Cell Entrance	-125 V	Plate Bias	-150 V
Omega Bias	-115 V	Cell Exit	-150 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	7.0 V
He Flow	10.0 mL/min	OctP Bias	-100.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	129	Axis Gain	1.0001	QP Bias	-93.0 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.2 mm		

EM

Discriminator	3.3 mV	Analog HV	2162 V	Pulse HV	1121 V

[NoGas]

Sensitivity

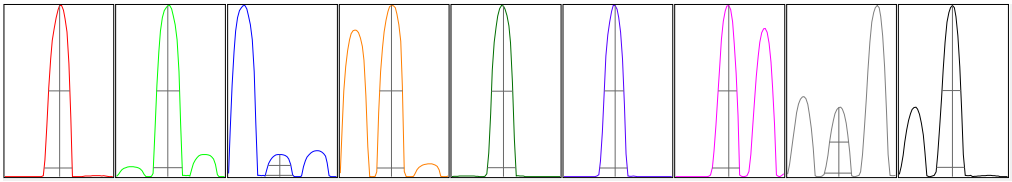
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		29455	294551.81			1.406	5.000
24		153125	1531246.54			1.311	5.000
25		20190	201900.09			1.565	5.000
26		23536	235356.19			1.274	5.000
59		297758	2977583.92			1.234	5.000
115		508388	5083875.35			1.245	5.000
206		121989	1219887.73			1.358	5.000
207		105244	1052444.67			1.346	5.000
208		256243	2562434.40			1.394	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	30129.31	9.05	8.90 - 9.10	
24	155560.74	23.95	23.90 - 24.10	
25	20150.76	24.95	24.90 - 25.10	
26	23533.46	25.95	25.90 - 26.10	
59	305389.48	58.95	58.90 - 59.10	
115	525438.50	114.95	114.90 - 115.10	
206	120284.13	206.00	205.90 - 206.10	
207	103861.21	206.95	206.90 - 207.10	
208	257318.78	208.00	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.58	0.768	0.850	
24	0.63	0.786	0.850	
25	0.62	0.754	0.850	
26	0.63	0.745	0.850	
59	0.58	0.774	0.850	
115	0.53	0.756	0.850	
206	0.51	0.747	0.850	
207	0.52	0.737	0.850	
208	0.51	0.768	0.850	

Integration Time [sec] 0.1

Acquisition Time [sec] 47.0000000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.30 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	16.0 V
Extract 2	-220.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Omega Bias	-95 V	Cell Exit	-56 V		

US EPA Tune Check Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	129	Axis Gain	1.0001	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.3 mm	Torch V	-0.2 mm

EM

Discriminator	3.3 mV	Analog HV	2162 V	Pulse HV	1121 V

Sample Name	92712989001_16384x10
Sample Type	Sample
Operator	ADM
Instrument	93ICM2 - 200.8 6020 6020A
Batch Name	20240215MS2.b
Data File Name	052SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches
Acq. Date Time	2/15/2024 5:43:38 PM
Comment	

Mn

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.288876	4.1
Be	9	1	He	-0.013701	
B	11	3	H2	13.051798	0.9
Na	23	2	H2	1407.438316	0.9
Mg	24	2	H2	1108.176433	1.2
Al	27	2	H2	12.716706	6.9
K	39	2	H2	15.185763	21.5
Ca	40	1	He	5523.347538	0.7
Ca	44	3	H2	5709.273690	0.4
Ti	47	2	H2	0.314651	31.5
V	51	2	H2	0.038084	44.6
Cr	52	2	H2	0.029739	178.6
Mn	55	2	H2	94.695298	1.3 ✔
Fe	56	2	H2	122.695109	1.2
Co	59	2	H2	0.478825	4.8
Ni	60	2	H2	0.940349	5.1
Cu	63	2	H2	0.168670	12.0
Zn	66	2	H2	1.701394	5.2
As	75	2	H2	0.002631	39.4
Se	78	1	He	-0.015806	
[Se]	82	1	He	35.495343	1.5
Sr	88	2	H2	12.906249	0.5
Mo	95	2	H2	0.037473	33.8
[Cd]	106	2	H2	0.006507	22.4
Ag	107	2	H2	0.006005	112.4
[Cd]	108	2	H2	0.005727	20.1
Cd	111	2	H2	0.063004	25.5
Sn	118	2	H2	0.016526	44.0
Sb	121	2	H2	0.006701	140.6
Sb	123	2	H2	0.005163	381.3
Ba	137	2	H2	5.854663	2.6
Tl	205	2	H2	0.000288	578.7
[Pb]	206	2	H2	-0.022867	
[Pb]	207	2	H2	-0.029525	
Pb	208	2	H2	-0.026463	
U	238	2	H2	0.001142	116.8

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	109.3244656
Sc	45	2	H2	111.0112718
Sc	45	3	H2	109.9808949
Ge	72	2	H2	111.4634351
Y	89	2	H2	110.8511559
In	115	1	He	112.8068606
In	115	2	H2	114.1548648
Tb	159	2	H2	111.6655762
Bi	209	2	H2	111.3332876
Th	232	2	H2	110.3991632

Sample Name	92712989002_16384x3
Sample Type	Sample
Operator	ADM
Instrument	93ICM2 - 200.8 6020 6020A
Batch Name	20240215MS2.b
Data File Name	053SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches
Acq. Date Time	2/15/2024 5:48:36 PM
Comment	

Mn

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.764459	3.9
Be	9	1	He	-0.012881	
B	11	3	H2	10.663030	1.5
Na	23	2	H2	4209.261404	3.0
Mg	24	2	H2	1568.739092	2.8
Al	27	2	H2	7.506342	1.1
K	39	2	H2	95.935134	13.1
Ca	40	1	He	4189.291356	0.9
Ca	44	3	H2	4378.910426	0.8
Ti	47	2	H2	0.005329	894.4
V	51	2	H2	0.027207	10.3
Cr	52	2	H2	0.188193	9.3
Mn	55	2	H2	100.279036	0.5
Fe	56	2	H2	123.373746	1.1
Co	59	2	H2	1.269347	0.8
Ni	60	2	H2	2.208476	4.4
Cu	63	2	H2	3.441288	1.8
Zn	66	2	H2	3.805898	1.5
As	75	2	H2	0.004179	86.7
Se	78	1	He	0.333935	11.0
[Se]	82	1	He	13.473637	2.2
Sr	88	2	H2	21.715411	3.1
Mo	95	2	H2	0.075902	30.2
[Cd]	106	2	H2	0.008271	15.1
Ag	107	2	H2	0.022586	39.7
[Cd]	108	2	H2	0.006214	29.5
Cd	111	2	H2	0.105633	6.5
Sn	118	2	H2	0.029211	25.4
Sb	121	2	H2	0.008466	130.5
Sb	123	2	H2	0.000650	604.4
Ba	137	2	H2	20.499882	4.4
Tl	205	2	H2	0.001744	44.4
[Pb]	206	2	H2	-0.029177	
[Pb]	207	2	H2	-0.034665	
Pb	208	2	H2	-0.033415	
U	238	2	H2	0.003495	59.6

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	107.5778915
Sc	45	2	H2	106.1463755
Sc	45	3	H2	108.7277530
Ge	72	2	H2	107.5610687
Y	89	2	H2	106.7964382
In	115	1	He	111.8847179
In	115	2	H2	111.4258459
Tb	159	2	H2	108.1017553
Bi	209	2	H2	110.5636330
Th	232	2	H2	108.1202628

Sample Name	92712989005_16384x3
Sample Type	Sample
Operator	ADM
Instrument	93ICM2 - 200.8 6020 6020A
Batch Name	20240215MS2.b
Data File Name	054SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches
Acq. Date Time	2/15/2024 5:53:35 PM
Comment	

MN

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.683583	1.2
Be	9	1	He	-0.012207	
B	11	3	H2	8.957595	0.7
Na	23	2	H2	3994.714635	0.7
Mg	24	2	H2	1505.743022	1.2
Al	27	2	H2	7.075039	29.9
K	39	2	H2	89.658849	1.6
Ca	40	1	He	3859.614607	0.4
Ca	44	3	H2	4318.896279	0.3
Ti	47	2	H2	0.035592	33.1
V	51	2	H2	0.027337	12.9
Cr	52	2	H2	0.143462	14.3
Mn	55	2	H2	95.875853	1.6
Fe	56	2	H2	114.968294	1.5
Co	59	2	H2	1.216917	4.5
Ni	60	2	H2	2.002568	3.1
Cu	63	2	H2	3.447020	1.5
Zn	66	2	H2	3.702987	7.5
As	75	2	H2	-0.001097	
Se	78	1	He	0.312434	8.7
[Se]	82	1	He	3.705334	8.8
Sr	88	2	H2	20.431436	1.4
Mo	95	2	H2	0.049770	42.6
[Cd]	106	2	H2	0.006808	45.3
Ag	107	2	H2	0.026046	30.1
[Cd]	108	2	H2	0.003869	35.7
Cd	111	2	H2	0.084582	9.1
Sn	118	2	H2	0.021915	28.3
Sb	121	2	H2	0.018055	73.2
Sb	123	2	H2	0.000989	759.2
Ba	137	2	H2	18.939957	3.2
Tl	205	2	H2	0.001795	61.9
[Pb]	206	2	H2	-0.037271	
[Pb]	207	2	H2	-0.040834	
Pb	208	2	H2	-0.035532	
U	238	2	H2	0.003190	99.3

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	108.4842035
Sc	45	2	H2	107.8082257
Sc	45	3	H2	107.9875293
Ge	72	2	H2	108.4844176
Y	89	2	H2	109.0702324
In	115	1	He	112.5646269
In	115	2	H2	113.6600794
Tb	159	2	H2	111.0397800
Bi	209	2	H2	112.9455609
Th	232	2	H2	110.3159370

Sample Name	92712989006_16396x1
Sample Type	Sample
Operator	ADM
Instrument	93ICM2 - 200.8 6020 6020A
Batch Name	20240215MS2.b
Data File Name	121SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches
Acq. Date Time	2/15/2024 11:27:54 P
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.412044	4.0
Be	9	1	He	0.000028	3475.2
B	11	3	H2	43.210921	0.9
Na	23	2	H2	5446.654049	0.6
Mg	24	2	H2	1905.834204	0.6
Al	27	2	H2	69.426624	2.7
K	39	2	H2	863.923453	0.7
Ca	40	1	He	2855.181538	0.5
Ca	44	3	H2	3008.515592	0.5
Ti	47	2	H2	1.328234	11.9
V	51	2	H2	0.280778	0.9
Cr	52	2	H2	0.304970	17.2
Mn	55	2	H2	37.266096	2.0
Fe	56	2	H2	148.895080	1.4
Co	59	2	H2	1.071899	2.7
Ni	60	2	H2	0.369857	11.8
Cu	63	2	H2	0.758197	4.7
Zn	66	2	H2	4.092103	2.8
As	75	2	H2	0.076160	9.8
Se	78	1	He	0.034397	30.6
[Se]	82	1	He	9.629111	13.1
Sr	88	2	H2	19.739417	0.7
Mo	95	2	H2	0.076929	25.2
[Cd]	106	2	H2	0.012678	10.5
Ag	107	2	H2	0.016595	41.3
[Cd]	108	2	H2	0.016682	30.3
Cd	111	2	H2	0.032223	28.3
Sn	118	2	H2	0.228598	1.9
Sb	121	2	H2	0.008010	99.5
Sb	123	2	H2	-0.004935	
Ba	137	2	H2	11.464304	2.9
Tl	205	2	H2	0.005157	11.5
[Pb]	206	2	H2	0.066918	17.2
[Pb]	207	2	H2	0.069618	0.9
Pb	208	2	H2	0.071616	11.9
U	238	2	H2	0.017868	7.2

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	115.6080489
Sc	45	2	H2	115.1501003
Sc	45	3	H2	117.8233617
Ge	72	2	H2	115.6663034
Y	89	2	H2	117.9880855
In	115	1	He	120.6452028
In	115	2	H2	123.3413494
Tb	159	2	H2	121.3910168
Bi	209	2	H2	123.1598186
Th	232	2	H2	122.4317380

Sample Name	92712989007_16396x1
Sample Type	Sample
Operator	ADM
Instrument	93ICM2 - 200.8 6020 6020A
Batch Name	20240215MS2.b
Data File Name	131SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\93ICM2 Batches
Acq. Date Time	2/16/2024 12:17:37 A
Comment	

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.619374	2.5
Be	9	1	He	0.022859	12.3
B	11	3	H2	1343.692540	1.0
Na	23	2	H2	13811.63424	1.2
Mg	24	2	H2	7790.624020	0.2
Al	27	2	H2	11.570594	17.2
K	39	2	H2	624.473908	0.8
Ca	40	1	He	33708.98150	0.2
Ca	44	3	H2	33090.44698	0.1
Ti	47	2	H2	0.224748	33.2
V	51	2	H2	0.098258	12.3
Cr	52	2	H2	0.142363	36.8
Mn	55	2	H2	340.670718	1.2
Fe	56	2	H2	3429.124972	1.3
Co	59	2	H2	0.053138	3.7
Ni	60	2	H2	0.689662	12.4
Cu	63	2	H2	0.261511	4.8
Zn	66	2	H2	2.576780	1.5
As	75	2	H2	0.177558	13.4
Se	78	1	He	0.001394	1253.5
[Se]	82	1	He	2.294251	23.8
Sr	88	2	H2	110.229911	1.4
Mo	95	2	H2	0.118924	20.3
[Cd]	106	2	H2	0.006552	48.9
Ag	107	2	H2	0.005938	70.3
[Cd]	108	2	H2	0.010924	36.2
Cd	111	2	H2	0.003645	15.6
Sn	118	2	H2	0.304960	10.7
Sb	121	2	H2	0.005064	60.9
Sb	123	2	H2	-0.001735	
Ba	137	2	H2	57.110790	1.8
Tl	205	2	H2	0.003501	37.7
[Pb]	206	2	H2	-0.014709	
[Pb]	207	2	H2	-0.026189	
Pb	208	2	H2	-0.015059	
U	238	2	H2	0.021753	5.6

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	115.3853298
Sc	45	2	H2	114.8231713
Sc	45	3	H2	119.3852304
Ge	72	2	H2	118.8551539
Y	89	2	H2	118.5924643
In	115	1	He	120.8715423
In	115	2	H2	122.3923416
Tb	159	2	H2	120.5656917
Bi	209	2	H2	122.0375280
Th	232	2	H2	121.7317289

US EPA Tune Check Report

Operator Name	93metals user
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\20240216MS3.b
Acq. Date-Time	02/16/2024 9:07:53
Report Comment	---
Instrument Name	G8403A JP16071303

[H2]

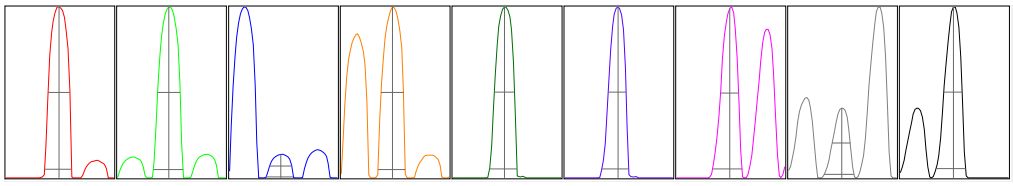
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		7920	79201.09			1.751	5.000
24		77175	771752.83			1.451	5.000
25		10701	107009.24			1.684	5.000
26		12824	128239.39			1.200	5.000
59		193457	1934572.92			1.122	5.000
115		251243	2512433.07			1.185	5.000
206		54875	548746.35			1.401	5.000
207		47800	478002.87			1.487	5.000
208		116858	1168579.28			1.276	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	7934.20	9.00	8.90 - 9.10	
24	77681.21	23.95	23.90 - 24.10	
25	10737.18	24.95	24.90 - 25.10	

US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
26	12800.91	25.95	25.90 - 26.10	
59	193704.06	58.95	58.90 - 59.10	
115	250602.32	115.00	114.90 - 115.10	
206	54705.73	206.00	205.90 - 206.10	
207	47928.93	207.00	206.90 - 207.10	
208	117523.28	208.00	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.59	0.736	0.850	
24	0.61	0.813	0.850	
25	0.61	0.743	0.850	
26	0.62	0.742	0.850	
59	0.55	0.749	0.850	
115	0.49	0.735	0.850	
206	0.49	0.811	0.850	
207	0.49	0.812	0.850	
208	0.50	0.814	0.850	

Integration Time [sec]	0.1
Acquisition Time [sec]	47.0000000000001
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.50 V	Nebulizer Pump	0.15 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	0.0 V
Extract 2	-180.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	2.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	142	Axis Gain	0.9952	QP Bias	-13.0 V
Mass Offset	125	Axis Offset	0.16		

Hardware Settings

Torch

Torch H	0.9 mm	Torch V	0.4 mm		

EM

Discriminator	3.7 mV	Analog HV	2156 V	Pulse HV	1052 V

US EPA Tune Check Report

[He]

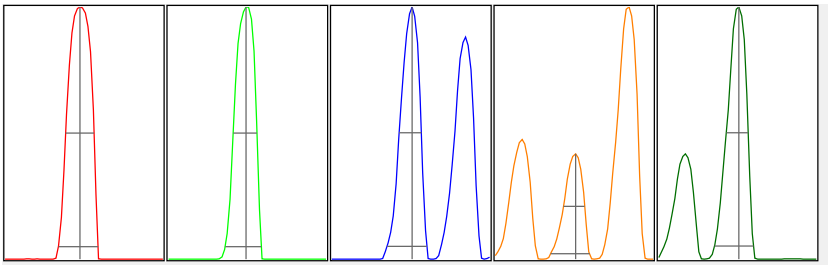
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
59		27424	274237.16			1.539	5.000
115		50160	501595.04			1.306	5.000
206		27089	270889.27			1.356	5.000
207		23513	235133.25			1.644	5.000
208		57485	574845.22			1.729	5.000

Mass	RSD% (Flag)
59	
115	
206	
207	
208	

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
59	27762.57	58.95	58.90 - 59.10	
115	50122.34	115.00	114.90 - 115.10	
206	27351.86	206.05	205.90 - 206.10	
207	24074.39	207.05	206.90 - 207.10	
208	57667.77	208.05	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
59	0.53	0.743	0.900	
115	0.45	0.679	0.900	
206	0.42	0.747	0.900	
207	0.40	0.731	0.900	
208	0.41	0.732	0.900	

Integration Time [sec] 0.1

Acquisition Time [sec] 27.34

Y Axis Linear

Tune Parameters

Plasma Parameters

US EPA Tune Check Report

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.50 V	Nebulizer Pump	0.15 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	-80.0 V
Extract 2	-180.0 V	Cell Entrance	-130 V	Plate Bias	-150 V
Omega Bias	-80 V	Cell Exit	-150 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	8.0 V
He Flow	10.0 mL/min	OctP Bias	-100.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	142	Axis Gain	0.9952	QP Bias	-92.0 V
Mass Offset	125	Axis Offset	0.16		

Hardware Settings

Torch

Torch H	0.9 mm	Torch V	0.4 mm		

EM

Discriminator	3.7 mV	Analog HV	2156 V	Pulse HV	1052 V

[NoGas]

Sensitivity

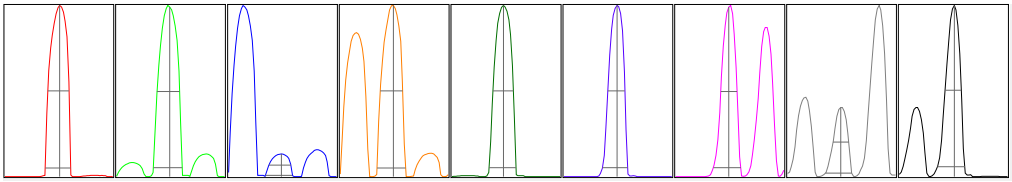
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/(ug/l)]	Resp (Flag)	RSD%	RSD% (Required)
9		38075	380750.13			1.448	5.000
24		159973	1599729.45			1.435	5.000
25		21435	214353.74			1.548	5.000
26		25330	253304.10			1.450	5.000
59		287140	2871395.53			1.292	5.000
115		400938	4009375.80			1.551	5.000
206		82303	823027.00			2.473	5.000
207		71389	713886.07			2.643	5.000
208		174411	1744112.11			2.629	5.000

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	39186.71	9.05	8.90 - 9.10	
24	161245.29	24.00	23.90 - 24.10	
25	21436.21	25.00	24.90 - 25.10	
26	25468.60	26.00	25.90 - 26.10	
59	288610.81	58.95	58.90 - 59.10	
115	402878.19	115.00	114.90 - 115.10	
206	83618.31	206.00	205.90 - 206.10	
207	73476.86	207.00	206.90 - 207.10	
208	181756.97	208.05	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.58	0.690	0.850	
24	0.62	0.786	0.850	
25	0.60	0.740	0.850	
26	0.62	0.781	0.850	
59	0.56	0.736	0.850	
115	0.47	0.690	0.850	
206	0.45	0.754	0.850	
207	0.43	0.717	0.850	
208	0.44	0.745	0.850	

Integration Time [sec] 0.1

Acquisition Time [sec] 47.0000000000001

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.85 L/min	Dilution Gas	0.25 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.50 V	Nebulizer Pump	0.15 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	10.0 V
Extract 2	-180.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

US EPA Tune Check Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	142	Axis Gain	0.9952	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	0.16		

Hardware Settings

Torch

Torch H	0.9 mm	Torch V	0.4 mm		

EM

Discriminator	3.7 mV	Analog HV	2156 V	Pulse HV	1052 V

Sample Name	92712989007_16396x3
Sample Type	Sample
Operator	ADM
Instrument	92ICM3 - 200.8 6020 6020A
Batch Name	20240216MS3.b
Data File Name	119SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA
Acq. Date Time	02/16/2024 20:17:06
Comment	

MN

Analytes

Name	Mass	Tune Step	Tune Mode	Conc.	Conc %RSD
Li	7	1	He	0.260743	6.7
Be	9	1	He	0.001036	181.4
B	11	3	H2	371.508331	0.7
Na	23	2	H2	4734.564414	1.3
Mg	24	2	H2	2754.883814	0.4
Al	27	2	H2	5.156409	25.9
K	39	2	H2	206.089088	1.9
Ca	40	1	He	11487.66220	1.0
Ca	44	3	H2	11504.42028	0.2
Ti	47	2	H2	0.029325	158.8
V	51	2	H2	0.012914	35.0
Cr	52	2	H2	-0.292813	
Mn	55	2	H2	114.469447	3.4
Fe	56	2	H2	1196.657352	4.3
Co	59	2	H2	0.007659	20.6
Ni	60	2	H2	0.237598	21.1
Cu	63	2	H2	0.079781	24.8
Zn	66	2	H2	0.820566	7.4
As	75	2	H2	0.058547	3.7
Se	78	1	He	-0.013705	
[Se]	82	1	He	2.902800	3.2
Sr	88	2	H2	36.032354	1.1
Mo	95	2	H2	0.025568	44.9
[Cd]	106	2	H2	0.001168	661.0
Ag	107	2	H2	0.001669	108.6
[Cd]	108	2	H2	-0.000452	
Cd	111	2	H2	0.004399	39.6
Sn	118	2	H2	0.092095	14.2
Sb	121	2	H2	0.004684	476.8
Sb	123	2	H2	0.060965	56.5
Ba	137	2	H2	18.079255	4.9
Tl	205	2	H2	-0.001120	
[Pb]	206	2	H2	-0.033112	
[Pb]	207	2	H2	-0.018732	
Pb	208	2	H2	-0.021028	
U	238	2	H2	0.003886	61.9

ISTD

Name	Mass	Tune Step	Tune Mode	% Rec
Sc	45	1	He	106.4392654
Sc	45	2	H2	101.0422249
Sc	45	3	H2	104.9622382
Ge	72	2	H2	106.6486899
Y	89	2	H2	108.5488960
In	115	1	He	113.6079528
In	115	2	H2	114.4765574
Tb	159	2	H2	125.5939107
Bi	209	2	H2	127.9506008
Th	232	2	H2	126.5333763

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Start Date: 02/14/2024 12:11 End Date: 02/15/2024 04:24

Sample Name	Time	Bi-209-IS2	Ge-72-IS2	In-115-IS1	In-115-IS2	Sc-45-IS	Sc-45-IS1	Sc-45-IS2
28972132CAL0	12:11	100.0	100.0	100.0	100.0	100.0	100.0	100.0
28972133CAL1	12:15	98.5	98.7	98.0	99.2	97.8	99.3	99.8
28972134CAL2	12:20	97.3	96.2	95.9	97.2	99.1	99.8	99.7
28972135CAL3	12:25	100.3	99.8	96.7	99.1	97.7	99.7	102.0
28972136CAL4	12:30	101.7	98.3	96.9	99.9	98.8	102.3	101.0
28972137ICV	12:40	102.3	98.9	97.9	101.1	98.7	100.3	102.0
28972138ICB	12:44	103.4	99.3	97.9	100.8	98.5	99.1	98.9
28972139CRDL	12:56	97.8	96.0	97.7	96.9	96.3	98.4	97.0
28972140ICSA	13:01	96.1	97.0	95.4	97.2	98.6	100.9	98.6
28972141ICSAB	13:06	96.8	98.6	96.1	97.7	100.4	101.6	100.0
28972142CCV	13:20	102.2	99.5	98.2	100.6	98.4	99.2	99.8
28972143CCB	13:24	103.7	98.8	98.6	101.3	97.6	98.6	100.3
28972151ICSA	15:18	102.2	99.4	97.6	100.4	100.4	100.6	100.8
28972152ICSAB	15:23	102.5	101.1	97.4	101.3	100.3	101.7	102.4
28972169ICSA	18:09	103.8	102.5	100.2	103.1	101.6	103.5	104.5
28972170ICSAB	18:14	104.8	103.5	99.7	105.2	102.4	104.1	106.4
28972172CCV	20:18	107.2	102.4	100.4	104.4	99.9	101.0	103.6
28972173CCB	20:22	107.7	104.2	101.8	105.4	100.6	102.5	104.6
4300574BLANK	20:27	105.0	99.7	98.6	102.9	97.8	98.0	100.6
4300575LCS	20:32	106.4	102.0	100.4	104.3	100.2	102.0	103.1
92712987001	20:36	105.3	100.3	98.8	102.8	102.4	110.6	101.6
4300576MS	20:41	104.7	101.9	97.7	102.7	100.3	111.6	101.5
4300577MSD	20:46	105.0	100.0	97.6	102.9	100.9	110.9	101.8
4301986PDS	20:50	105.6	102.5	98.8	104.5	102.3	111.6	103.2
4301987SD	20:55	109.3	104.6	102.7	106.6	101.7	106.5	104.7
28972177CCV	21:14	106.8	102.0	99.3	103.8	100.3	101.4	105.8
28972178CCB	21:19	107.5	102.8	101.0	103.8	99.6	102.1	103.2
28972179ICSA	21:24	105.3	105.0	98.7	104.5	102.7	102.8	105.4
28972180ICSAB	21:28	105.7	104.4	99.9	105.9	103.0	105.2	103.9
021224NMW13	21:47	109.5	107.9	103.6	109.3	108.1	113.2	110.3
021224NMW31	21:52	110.8	108.2	104.8	109.2	107.7	115.7	109.9
021224NMW32S	21:56	107.6	105.8	103.8	107.3	104.6	109.9	107.6
021224NMW32D	22:01	109.5	109.2	103.5	108.8	107.9	113.7	109.8
021224NWPFDDUPLICA	22:06	109.1	106.8	104.7	108.2	106.5	115.4	108.8
28981268CCV	22:20	108.3	104.1	105.2	106.8	104.5	106.8	108.7
28981269CCB	22:24	110.1	108.9	105.4	108.6	105.8	105.5	108.7
28981270ICSA	22:29	107.9	107.1	103.4	108.2	109.5	109.1	110.9
28981271ICSAB	22:34	109.0	109.7	106.6	109.6	108.5	111.5	110.8
28981272CCV	23:30	110.9	107.7	105.9	110.1	107.1	107.9	110.2
28981273CCB	23:34	111.3	108.6	106.2	108.8	104.5	106.0	108.9

60-125%

10/09/2024 10:46

FORM XV INORGANIC-2

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Start Date: 02/14/2024 12:11 End Date: 02/15/2024 04:24

Sample Name	Time	Bi-209-IS2	Ge-72-IS2	In-115-IS1	In-115-IS2	Sc-45-IS	Sc-45-IS1	Sc-45-IS2
28981287CCV	04:10	125.5	117.3	114.0	119.6	115.2	116.4	119.3
28981288CCB	04:15	124.5	116.6	114.4	119.4	113.4	115.3	119.1
28981289ICSA	04:19	121.2	117.4	113.7	119.3	117.3	118.1	119.0
28981290ICSAB	04:24	122.0	118.7	114.5	121.5	121.4	120.6	122.8

Sample Name	Time	Tb-159-IS2	Th-232-IS2
28972132CAL0	12:11	100.0	100.0
28972133CAL1	12:15	99.2	98.3
28972134CAL2	12:20	96.4	97.9
28972135CAL3	12:25	99.9	99.9
28972136CAL4	12:30	101.2	102.6
28972137ICV	12:40	101.9	102.9
28972138ICB	12:44	102.3	103.4
28972139CRDL	12:56	98.8	98.9
28972140ICSA	13:01	100.6	100.6
28972141ICSAB	13:06	100.5	100.6
28972142CCV	13:20	102.3	102.8
28972143CCB	13:24	103.1	103.7
28972151ICSA	15:18	105.2	105.1
28972152ICSAB	15:23	105.2	106.7
28972169ICSA	18:09	108.6	107.6
28972170ICSAB	18:14	108.0	108.7
28972172CCV	20:18	105.1	107.3
28972173CCB	20:22	106.7	107.0
4300574BLANK	20:27	104.6	104.7
4300575LCS	20:32	106.2	107.1
92712987001	20:36	105.5	105.3
4300576MS	20:41	105.3	105.7
4300577MSD	20:46	104.8	104.8
4301986PDS	20:50	105.2	106.9
4301987SD	20:55	107.8	108.9
28972177CCV	21:14	104.9	106.0
28972178CCB	21:19	106.3	107.2
28972179ICSA	21:24	108.2	109.9
28972180ICSAB	21:28	108.3	108.6
021224NMW13	21:47	110.4	109.5
021224NMW31	21:52	110.0	110.3
021224NMW32S	21:56	108.6	107.7
021224NMW32D	22:01	108.9	108.9

FORM XV INORGANIC-3

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Start Date: 02/14/2024 12:11 End Date: 02/15/2024 04:24

Sample Name	Time	Tb-159-IS2	Th-232-IS2
021224NWPFDDUPLICA	22:06	109.5	109.0
28981268CCV	22:20	108.4	107.8
28981269CCB	22:24	109.9	109.8
28981270ICSA	22:29	112.1	112.1
28981271ICSAB	22:34	112.1	112.4
28981272CCV	23:30	111.1	111.1
28981273CCB	23:34	110.9	111.8
28981287CCV	04:10	123.5	125.0
28981288CCB	04:15	123.7	124.3
28981289ICSA	04:19	125.2	125.9
28981290ICSAB	04:24	124.6	125.0

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Start Date: 02/16/2024 09:54 End Date: 02/16/2024 23:00

for Mn

Sample Name	Time	Bi-209-IS2	Ge-72-IS2	In-115-IS1	In-115-IS2	Sc-45-IS	Sc-45-IS1	Sc-45-IS2
28990581CAL0	09:54	100.0	100.0	100.0	100.0	100.0	100.0	100.0
28990582CAL1	09:59	106.8	103.7	106.1	106.0	105.3	105.2	106.6
28991384CAL2	10:04	104.4	103.6	102.8	103.5	103.6	103.8	104.3
28991385CAL3	10:08	109.5	106.2	107.4	108.4	107.5	108.2	107.9
28991386CAL4	10:13	108.0	108.0	106.5	109.7	107.2	110.1	108.7
28990583ICV	10:23	111.0	107.1	108.4	108.2	107.6	108.8	107.3
28991387ICB	10:39	102.4	98.3	99.8	98.2	99.7	96.6	98.7
28991388CRDL	10:54	109.3	104.2	104.8	104.8	103.6	102.2	104.4
28991389ICSA	10:59	104.8	101.0	101.7	101.7	105.5	103.9	100.9
28991390ICSAB	11:03	104.2	103.3	102.3	103.0	106.9	104.9	103.5
28991391CCV	11:17	108.9	103.2	105.3	104.2	103.8	101.8	103.0
28991392CCB	11:29	103.5	100.6	100.0	99.7	100.6	96.6	99.6
28996897ICSA	17:33	122.8	115.0	115.5	117.6	118.4	113.6	112.8
28996898ICSAB	17:38	122.6	113.5	115.7	118.2	116.7	114.0	114.7
28996901CCV	19:35	134.6	112.5	118.0	121.0	112.1	107.6	108.8
28996902CCB	19:44	130.1	111.2	113.9	116.6	108.5	103.8	105.9
021324NMW12	20:17	128.0	106.6	113.6	114.5	105.0	106.4	101.0
28996903CCV	20:35	133.9	111.7	114.3	120.8	109.0	105.1	106.3
28996904CCB	20:40	128.5	109.4	109.9	115.5	105.4	100.8	103.1
28996905ICSA	20:45	128.7	113.0	112.4	119.3	112.3	106.6	108.0
28996906ICSAB	20:49	128.8	114.5	114.1	121.3	114.0	110.8	110.6
28996909CCV	22:46	139.6	117.3	121.0	127.2	115.6	111.9	114.2
28996910CCB	22:50	131.1	112.9	113.6	119.1	109.1	105.2	106.4
28996911ICSA	22:55	131.3	114.4	114.4	121.3	114.7	110.2	111.7
28996912ICSAB	23:00	128.2	114.6	114.5	120.7	113.8	110.1	110.1

Sample Name	Time	Tb-159-IS2	Th-232-IS2
28990581CAL0	09:54	100.0	100.0
28990582CAL1	09:59	107.2	106.9
28991384CAL2	10:04	104.4	104.5
28991385CAL3	10:08	109.2	109.0
28991386CAL4	10:13	109.1	109.3
28990583ICV	10:23	110.5	111.4
28991387ICB	10:39	101.6	102.0
28991388CRDL	10:54	109.0	108.0
28991389ICSA	10:59	107.9	106.9
28991390ICSAB	11:03	107.8	109.0
28991391CCV	11:17	108.7	108.0
28991392CCB	11:29	103.9	102.5

10/09/2024 10:46

FORM XV INORGANIC-2

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92ICM3 Start Date: 02/16/2024 09:54 End Date: 02/16/2024 23:00

Sample Name	Time	Tb-159-IS2	Th-232-IS2
28996897ICSA	17:33	126.9	125.9
28996898ICSAB	17:38	127.1	125.6
28996901CCV	19:35	132.4	132.3
28996902CCB	19:44	127.0	126.4
021324NMW12	20:17	125.6	126.5
28996903CCV	20:35	131.9	132.5
28996904CCB	20:40	126.5	125.4
28996905ICSA	20:45	132.5	131.9
28996906ICSAB	20:49	131.7	131.4
28996909CCV	22:46	135.8	134.8
28996910CCB	22:50	128.2	127.4
28996911ICSA	22:55	133.5	133.6
28996912ICSAB	23:00	131.0	131.0

FORM XV INORGANIC-1

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Start Date: 02/15/2024 13:41 End Date: 02/16/2024 07:03

Sample Name	Time	Bi-209-IS2	Ge-72-IS2	In-115-IS1	In-115-IS2	Sc-45-IS	Sc-45-IS1	Sc-45-IS2
28984860CAL0	13:41	100.0	100.0	100.0	100.0	100.0	100.0	100.0
28984861CAL1	13:47	106.7	103.9	106.5	107.8	106.2	105.6	106.8
28984862CAL2	13:52	105.9	102.6	104.5	106.4	104.3	104.5	101.8
28984863CAL3	13:57	109.9	108.8	108.8	109.9	107.2	107.6	106.7
28984864CAL4	14:03	109.3	107.4	106.6	110.1	107.0	105.5	108.3
28984865ICV	14:13	110.7	108.5	108.8	111.4	108.7	108.2	108.9
28984866ICB	14:25	103.1	100.4	103.5	104.9	102.5	103.4	103.7
28984867CRDL	14:35	109.0	106.5	108.3	110.9	107.3	107.2	106.1
28984868ICSA	14:44	106.2	103.9	103.1	108.1	107.1	103.1	105.0
28984869ICSAB	14:49	106.5	106.4	105.8	109.2	107.6	104.8	105.6
28984870CCV	15:04	111.7	109.5	110.3	112.2	108.7	107.9	107.4
28984871CCB	15:09	104.2	103.6	104.4	105.6	103.7	103.2	103.6
28984892CCV	17:08	111.9	111.2	113.0	113.5	110.8	110.2	110.2
28984893CCB	17:13	106.1	105.1	108.9	109.3	106.2	107.0	109.2
28984894ICSA	17:18	108.6	108.6	107.8	112.2	110.2	105.7	108.9
28984895ICSAB	17:23	109.3	110.5	109.7	112.2	110.3	106.3	110.6
021224NMW13	17:43	111.3	111.5	112.8	114.2	110.0	109.3	111.0
021224NMW31	17:48	110.6	107.6	111.9	111.4	108.7	107.6	106.1
021224NWPFDDUPLICA	17:53	112.9	108.5	112.6	113.7	108.0	108.5	107.8
28984904CCV	18:13	115.0	110.1	114.1	115.8	111.2	109.5	110.1
28984905CCB	18:18	107.5	106.3	108.8	109.5	103.2	105.8	106.9
28984906ICSA	18:23	111.5	109.0	109.6	112.2	110.0	105.7	109.6
28984907ICSAB	18:28	110.7	110.1	110.2	114.6	112.1	107.3	111.7
28984941ICSA	21:32	117.0	114.5	115.0	119.1	116.6	110.3	113.7
28984942ICSAB	21:37	115.3	116.7	117.1	120.2	119.3	113.3	118.2
28985456CCV	22:38	122.8	121.3	124.3	123.5	119.0	119.0	119.5
28985457CCB	22:48	116.3	115.3	118.4	117.4	116.4	115.0	115.9
4302470BLANK	23:17	121.3	117.3	121.8	121.6	119.5	117.7	115.7
4302471LCS	23:22	122.5	118.7	121.4	123.4	118.2	115.6	115.3
021324NMW1	23:27	123.2	115.7	120.6	123.3	117.8	115.6	115.2
4302472MS	23:32	120.0	117.1	119.2	122.0	117.4	114.3	112.1
4302473MSD	23:37	120.8	116.2	118.8	118.2	117.9	114.3	115.8
28985458CCV	23:42	122.1	118.1	121.2	122.9	119.2	116.6	118.1
28985459CCB	23:47	116.6	112.9	116.1	118.0	116.3	112.4	112.6
28985460ICSA	23:52	119.2	116.8	116.1	121.0	118.2	113.4	116.7
28985461ICSAB	23:57	119.6	117.8	118.5	122.9	121.4	115.8	117.0
4303455PDS	00:07	120.2	118.7	122.2	123.5	120.4	117.1	115.0
4303456SD	00:12	120.7	116.4	121.0	122.2	117.5	115.8	116.4
021324NMW12	00:17	122.0	118.9	120.9	122.4	119.4	115.4	114.8
92713247001	00:32	121.3	117.1	120.6	120.9	120.3	116.2	116.6

10/09/2024 10:46

FORM XV INORGANIC-2

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Start Date: 02/15/2024 13:41 End Date: 02/16/2024 07:03

Sample Name	Time	Bi-209-IS2	Ge-72-IS2	In-115-IS1	In-115-IS2	Sc-45-IS	Sc-45-IS1	Sc-45-IS2
4302474MS	00:37	119.2	119.6	119.8	121.2	117.9	115.0	117.0
4302475MSD	00:42	119.5	118.5	118.5	120.8	118.1	114.1	115.5
4303457PDS	00:47	119.4	119.1	119.4	121.0	120.0	115.6	115.8
4303458SD	00:52	119.9	119.5	118.7	121.4	118.3	113.5	115.5
28985462CCV	00:57	123.2	118.4	122.4	123.3	119.5	117.4	117.5
28985463CCB	01:02	114.2	112.9	116.0	117.4	116.9	113.2	112.7
28985464CCV	01:57	116.7	112.1	115.9	117.6	113.1	112.0	109.6
28985465CCB	02:07	112.5	108.1	110.7	111.9	110.0	107.5	108.0
28985466ICSA	02:12	114.4	111.4	111.1	115.0	115.5	107.0	110.2
28985467ICSAB	02:17	114.2	110.9	112.4	114.6	115.6	109.4	112.4
28985514CCV	06:48	118.9	113.0	115.2	115.9	113.2	109.1	109.4
28985515CCB	06:53	112.0	108.7	111.6	111.7	110.2	106.8	107.1
28985516ICSA	06:58	116.9	112.1	111.7	115.7	115.1	106.9	111.0
28985517ICSAB	07:03	113.4	112.9	114.0	115.8	117.5	110.0	110.7

Sample Name	Time	Tb-159-IS2	Th-232-IS2
28984860CAL0	13:41	100.0	100.0
28984861CAL1	13:47	105.8	107.3
28984862CAL2	13:52	105.4	107.3
28984863CAL3	13:57	108.3	111.2
28984864CAL4	14:03	108.4	109.5
28984865ICV	14:13	109.7	111.0
28984866ICB	14:25	103.4	103.1
28984867CRDL	14:35	108.0	108.2
28984868ICSA	14:44	107.6	109.3
28984869ICSAB	14:49	108.7	109.5
28984870CCV	15:04	110.4	110.1
28984871CCB	15:09	104.7	105.0
28984892CCV	17:08	110.5	111.6
28984893CCB	17:13	106.9	105.4
28984894ICSA	17:18	110.8	111.5
28984895ICSAB	17:23	111.5	112.2
021224NMW13	17:43	111.7	110.4
021224NMW31	17:48	108.1	108.1
021224NWPFDDUPLICA	17:53	111.0	110.3
28984904CCV	18:13	112.8	114.0
28984905CCB	18:18	109.1	107.6
28984906ICSA	18:23	112.5	113.5
28984907ICSAB	18:28	113.2	113.3

FORM XV INORGANIC-3

INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93ICM2 Start Date: 02/15/2024 13:41 End Date: 02/16/2024 07:03

Sample Name	Time	Tb-159-IS2	Th-232-IS2
28984941ICSA	21:32	119.3	119.8
28984942ICSAB	21:37	119.4	117.9
28985456CCV	22:38	122.7	121.0
28985457CCB	22:48	116.7	116.3
4302470BLANK	23:17	119.7	119.7
4302471LCS	23:22	121.1	123.4
021324NMW1	23:27	121.4	122.4
4302472MS	23:32	120.0	121.3
4302473MSD	23:37	121.5	122.0
28985458CCV	23:42	121.5	122.9
28985459CCB	23:47	117.7	117.7
28985460ICSA	23:52	122.2	123.5
28985461ICSAB	23:57	122.7	123.3
4303455PDS	00:07	120.1	120.5
4303456SD	00:12	120.2	118.9
021324NMW12	00:17	120.6	121.7
92713247001	00:32	121.9	122.8
4302474MS	00:37	120.7	121.7
4302475MSD	00:42	120.8	120.7
4303457PDS	00:47	121.7	122.6
4303458SD	00:52	119.7	119.6
28985462CCV	00:57	123.6	124.0
28985463CCB	01:02	115.5	115.9
28985464CCV	01:57	116.1	117.5
28985465CCB	02:07	113.1	113.7
28985466ICSA	02:12	117.6	119.4
28985467ICSAB	02:17	117.9	118.4
28985514CCV	06:48	117.7	120.3
28985515CCB	06:53	113.7	114.2
28985516ICSA	06:58	118.5	120.9
28985517ICSAB	07:03	116.7	116.4

Prep Log Report

Batch Information: MPRP 59957/59958/59959/59960/59961 **3005/3010/3020 | ICP_ICPMS Water**

Prep Method	EPA 3010A	Analysis Method	EPA 6020B	Prepared By	KML	Witnessed By	TMM
Block ID	93HB5	Thermometer ID	93T007	Correction Factor (C)	0	Block Temp (C)	93.1
Corrected Temp. (C)	93.10	Therm. Position	L7	Acceptance Range	90-95 C	Digestion Start Date/Time	02/14/2024 13:35:35:371
Digestion End Date/Time	02/14/2024 17:35:46:771	Digestion Vessel	260904	Metals Pipette 1	93P104	Metals Pipette 2	
Metals Pipette 3		Metals Pipette 4		Dispenser ID 1		Dispenser ID 2	
Dispenser ID 3		Dispenser ID 4		Reviewed By		Reviewed By Date	
Batch Notes							

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	LCS	**4300575**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712987001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4300574**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4300576**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4300577**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712988001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712988002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712989001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712989002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712989003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712989004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712989005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712990001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712991001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4300578**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	LCS	**4300579**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713015001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4300580**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4300581**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713015002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015008**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015009**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015010**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015011**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015012**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713015013**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713025001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713025002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4300593**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713025003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713025004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4300591**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	LCS	**4300592**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713208001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208009**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713208010**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	RQS	**92713208011**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MSD	**4300594**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	BLANK	**4300603**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4300604**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713004001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4300605**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4300606**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713004002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	PS	**92713004007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004008**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004009**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004010**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004011**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713004012**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4300608**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4300609**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713029001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4300610**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4300611**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713029002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029008**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029009**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029010**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029011**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029012**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	PS	**92713029013**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029014**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029015**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029016**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029017**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029018**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029019**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713029020**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Standard Notes:

260852: AVL ICPMS Spike A

260853: AVL ICPMS Spike B

Prep Log Report

Batch Information: MPRP 59981/59982/59987/59986/59988 **3005/3010/3020 | ICP_ICPMS Water**

Prep Method	EPA 3010A	Analysis Method	EPA 6020B	Prepared By	KML	Witnessed By	TMM
Block ID	93HB5	Thermometer ID	93T007	Correction Factor (C)	0	Block Temp (C)	93.1
Corrected Temp. (C)	93.10	Therm. Position	L2	Acceptance Range	90-95 C	Digestion Start Date/Time	02/15/2024 13:55:53:481
Digestion End Date/Time	02/15/2024 17:55:17:018	Digestion Vessel	260904	Metals Pipette 1	93P104	Metals Pipette 2	
Metals Pipette 3		Metals Pipette 4		Dispenser ID 1		Dispenser ID 2	
Dispenser ID 3		Dispenser ID 4		Reviewed By		Reviewed By Date	
Batch Notes							

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	BLANK	**4302383**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4302384**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712940001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	RQS	**92712940003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4302422**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4302423**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712940004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940008**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940009**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940010**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940011**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	PS	**92712940012**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940013**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940014**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940015**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940016**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940017**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940018**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940019**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940020**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4302394**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4302395**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712940021**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4302396**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4302397**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712940022**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940023**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940024**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940025**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940026**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940027**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940028**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940029**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	PS	**92712940030**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940031**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712940032**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4302470**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4302471**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	RQS	**92712989006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4302472**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4302473**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712989007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712990002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712990003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	RQS	**92713247001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4302474**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4302475**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713248001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713248002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713248003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713248004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713248005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4302458**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4302459**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712842001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	Conc. HCL (mL)	Final Volume (mL)	Centrifuged	Sample Notes	6020-SPK (mL)	6020-SPK2 (mL)
6020 W_P	MS	**4302460**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4302461**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92712842002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712842003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712842004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712842005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712842006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712842007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92712842008**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	BLANK	**4302489**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	LCS	**4302490**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713294001**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	MS	**4302491**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	MSD	**4302492**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes		260852 (.15)	260853 (.15)
6020 W_P	PS	**92713294002**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294003**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294004**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294005**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294006**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294007**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294008**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			
6020 W_P	PS	**92713294009**	Water	Yes	15	260709 (0.3)	260243 (0.15)	15	Yes			

SAMPLE NO.

021224NMW13

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/15/2024 12:35

SAMPLE NO.

021224NMW31

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/15/2024 12:41

SAMPLE NO.

021224NMW32S

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/15/2024 12:43

SAMPLE NO.

021224NMW32D

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/15/2024 12:45

SAMPLE NO.

021224NWPFDDUPLICATE

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/15/2024 12:47

SAMPLE NO.

021324NMW1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/17/2024 11:27

SAMPLE NO.

021324NMW12

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
7439-97-6	Mercury	ND	U	ug/L	1	02/17/2024 11:38

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 261128

Continuing Calibration Verification Source: 261125

Concentration Units: ug/L Instrument ID: 93HG2

	Initial Calibration Verification				Continuing Calibration Verification						
	02/15/2024 11:45				02/15/2024 12:37			02/15/2024 13:02			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Mercury	2.5	2.5	101.5	77-123	2.5	2.4	97.6	2.5	2.5	98.7	77-123

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 261377

Continuing Calibration Verification Source: 261374

Concentration Units: ug/L Instrument ID: 93HG2

	Initial Calibration Verification				Continuing Calibration Verification						
	02/17/2024 09:22				02/17/2024 09:49			02/17/2024 11:04			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Mercury	2.5	2.6	103.1	77-123	2.5	2.4	96.2	2.5	2.4	95.5	77-123

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 261374

Concentration Units: ug/L Instrument ID: 93HG2

	Continuing Calibration Verification			
	02/17/2024 11:55 ✔			Control Limit
Analyte	True	Found	%R	
Mercury	2.5	2.4 ✔	94.4 ✔	77-123

✔

FORM II INORGANIC-1
CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 261123 Analysis Date/Time: 02/15/2024 11:49

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Mercury	0.2	0.21	105.5	50-150

FORM II INORGANIC-1
CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 261372 Analysis Date/Time: 02/17/2024 09:26

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Mercury	0.2	0.21	104.5	50-150

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93HG2

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	02/15/2024 11:47	C	02/15/2024 12:39	C	02/15/2024 13:04	C		C	4300422	C
Mercury	0.25	U	0.25	U	0.25	U			ND	U

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93HG2

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	02/17/2024 09:24	C	02/17/2024 09:51	C	02/17/2024 11:06	C	02/17/2024 11:57	C	4302881	C
Mercury	0.25	U	0.25	U	0.25	U	0.25	U	ND	U

SAMPLE NO.

4300424MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92712351005

Percent Moisture:

not from this SDG

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Mercury	ug/L	75-125	2.5	ND	2.5	98

SAMPLE NO.

4300425MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92712351005

not from this SDG

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Mercury	ug/L	75-125	2.5	ND	2.5	97

SAMPLE NO.

4302883MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Mercury	ug/L	75-125	2.4	ND	2.5	96

SAMPLE NO.

4302884MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Mercury	ug/L	75-125	2.5	ND	2.5	97

SAMPLE NO.

4300425MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Mercury	25	2.5	2.5	1

SAMPLE NO.

4302884MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Mercury	25	2.4	2.5	1

SAMPLE NO.

4300423LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Mercury	ug/L	2.5	2.5	100	80	120

SAMPLE NO.

4302882LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Mercury	ug/L	2.5	2.4	97	80	120

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 93HG2

Concentration Units: ug/L

Analyte	PQL	IDL	IDL Date
Mercury	0.25	0.25	02/26/2018

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 7470A Instrument ID: 93HG2

Concentration Units: ug/L

Analyte	PQL	MDL	MDL Date
Mercury	0.20	0.12	05/05/2020

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 7470A Batch: MERP 23434

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4300422	4300422BLANK	02/14/2024	10	10
4300423	4300423LCS	02/14/2024	10	10
4300424	4300424MS	02/14/2024	10	10
4300425	4300425MSD	02/14/2024	10	10
92712989001	021224NMW13	02/14/2024	10	10
92712989002	021224NMW31	02/14/2024	10	10
92712989003	021224NMW32S	02/14/2024	10	10
92712989004	021224NMW32D	02/14/2024	10	10
92712989005	021224NWPFDDUPLICAT	02/14/2024	10	10

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 7470A Batch: MERP 23444

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4302881	4302881BLANK	02/15/2024	10	10
4302882	4302882LCS	02/15/2024	10	10
4302883	4302883MS	02/15/2024	10	10
4302884	4302884MSD	02/15/2024	10	10
92712989006	021324NMW1	02/15/2024	10	10
92712989007	021324NMW12	02/15/2024	10	10

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93HG2 Analysis Method: EPA 7470A

Start Date: 02/15/2024 11:32 End Date: 02/15/2024 13:04

Sample Name	Lab Sample ID	D/F	Date	Time	Hg
28979945CAL0	28979945CAL0	1	02/15/2024	11:32	X
28979946CAL1	28979946CAL1	1	02/15/2024	11:34	X
28979947CAL2	28979947CAL2	1	02/15/2024	11:36	X
28979948CAL3	28979948CAL3	1	02/15/2024	11:38	X
28979949CAL4	28979949CAL4	1	02/15/2024	11:40	X
28979950CAL5	28979950CAL5	1	02/15/2024	11:42	X
28979951ICV	28979951ICV	1	02/15/2024	11:45	X
28979952ICB	28979952ICB	1	02/15/2024	11:47	X
28979953CRDL	28979953CRDL	1	02/15/2024	11:49	X
4300422BLANK	4300422	1	02/15/2024	11:51	X
4300423LCS	4300423	1	02/15/2024	11:53	X
92712351005	92712351005	1	02/15/2024	12:10	X
4300424MS	4300424	1	02/15/2024	12:16	X
4300425MSD	4300425	1	02/15/2024	12:18	X
021224NMW13	92712989001	1	02/15/2024	12:35	X
28979960CCV	28979960CCV	1	02/15/2024	12:37	X
28979961CCB	28979961CCB	1	02/15/2024	12:39	X
021224NMW31	92712989002	1	02/15/2024	12:41	X
021224NMW32S	92712989003	1	02/15/2024	12:43	X
021224NMW32D	92712989004	1	02/15/2024	12:45	X
021224NWPFDDUPLICATE	92712989005	1	02/15/2024	12:47	X
28979965CCV	28979965CCV	1	02/15/2024	13:02	X
28979966CCB	28979966CCB	1	02/15/2024	13:04	X

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93HG2 Analysis Method: EPA 7470A

Start Date: 02/17/2024 09:09 End Date: 02/17/2024 11:57

Sample Name	Lab Sample ID	D/F	Date	Time	Hg
28997245CAL0	28997245CAL0	1	02/17/2024	09:09	X
28997246CAL1	28997246CAL1	1	02/17/2024	09:11	X
28997247CAL2	28997247CAL2	1	02/17/2024	09:13	X
28997248CAL3	28997248CAL3	1	02/17/2024	09:16	X
28997249CAL4	28997249CAL4	1	02/17/2024	09:18	X
28997250CAL5	28997250CAL5	1	02/17/2024	09:20	X
28997251ICV	28997251ICV	1	02/17/2024	09:22	X
28997252ICB	28997252ICB	1	02/17/2024	09:24	X
28997253CRDL	28997253CRDL	1	02/17/2024	09:26	X
28997254CCV	28997254CCV	1	02/17/2024	09:49	X
28997255CCB	28997255CCB	1	02/17/2024	09:51	X
28997262CCV	28997262CCV	1	02/17/2024	11:04	X
28997263CCB	28997263CCB	1	02/17/2024	11:06	X
4302881BLANK	4302881	1	02/17/2024	11:09	X
4302882LCS	4302882	1	02/17/2024	11:11	X
021324NMW1	92712989006	1	02/17/2024	11:27	X
4302883MS	4302883	1	02/17/2024	11:34	X
4302884MSD	4302884	1	02/17/2024	11:36	X
021324NMW12	92712989007	1	02/17/2024	11:38	X
28997266CCV	28997266CCV	1	02/17/2024	11:55	X
28997267CCB	28997267CCB	1	02/17/2024	11:57	X

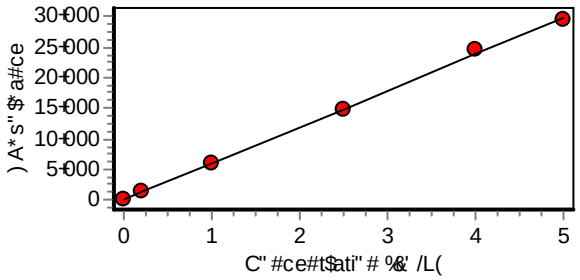
Report Generated By Teledyne Leeman QuickTrace
Analyst: 93metalsuser
Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\ ! "! #$%& ' ("(!)* s+,
Creation Date: -#$- ! " ##:!(:!3 A.
Comment:

Results

Sample Name	Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Reco e!y
CAL0	STD	02/15/24 11:32:02 am	0.000	208	14.41			1.0000	N/A
Replicates	184.4	184.3	246.5	217.7					
CAL1	STD	02/15/24 11:34:06 am	0.200	1368	9.23	3.92		1.0000	N/A
Replicates	1217.0	1311.5	1482.2	1462.0					
CAL2	STD	02/15/24 11:36:11 am	1.000	5888	7.60	!2.81		1.0000	N/A
Replicates	5320.0	5757.8	6141.1	6332.7					
CAL3	STD	02/15/24 11:38:16 am	2.500	14706	7.41	!1.50		1.0000	N/A
Replicates	13295.8	14426.7	15367.6	15734.1					
CAL4	STD	02/15/24 11:40:21 am	4.000	24450	9.36	2.74		1.0000	N/A
Replicates	21753.7	23678.2	25221.6	27145.6					
CAL5	STD	02/15/24 11:42:27 am	5.000	29340	9.37	!1.27		1.0000	N/A
Replicates	26060.5	28375.5	30463.5	32459.8					

Cali* $ati" #
, - &ati" #: A* s / 5915.5940 1 138.645
R2: 0.99914 RS, : 3.40
S, , : 402.0646
. la' s:

ICAL evaluated and included in support doc



2C3	2C3	02/15/24 11:45:06 am	2.538	15151	8.33			1.0000	101.51
Replicates	13618.4	14730.7	15770.8	16484.1					
2C4	2C4	02/15/24 11:47:10 am	0.010	198	53.71			1.0000	N/A
Replicates	172.1	176.7	242.0	202.3					
CRDL	CRDL	02/15/24 11:49:15 am	0.211	1386	9.95			1.0000	105.44
Replicates	1237.8	1332.5	1466.0	1508.4					
430042252570101	6N7	02/15/24 11:51:20 am	0.022	267	43.49			1.0000	N/A
Replicates	224.1	220.3	337.4	285.3					
430042352570101	6N7	02/15/24 11:53:26 am	2.501	14934	8.07			1.0000	N/A
Replicates	13420.4	14624.7	15508.8	16182.7					
92712340000152570101	6N7	02/15/24 11:55:31 am	0.042	386	22.86			1.0000	N/A
Replicates	333.9	350.8	459.9	398.4					
9271234200152570101	6N7	02/15/24 11:57:36 am	0.012	208	76.21			1.0000	N/A
Replicates	161.1	205.2	282.5	183.1					

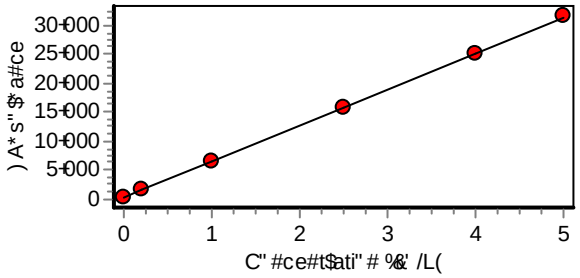
Report Generated By Teledyne Leeman QuickTrace
Analyst: 93metalsuser
Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\ ! "! #$%& ' $"$! () s*+
Creation Date: ,#$, ! " -:33:. 3 A/
Comment:

Results

Sample Name	Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Reco e!y
CAL0	STD	02/17/24 09:09:49 am	0.000	316	17.28			1.0000	N/A
Replicates	274.8	308.7	395.6	286.5					
CAL1	STD	02/17/24 09:11:54 am	0.200	1621	7.72	8.64		1.0000	N/A
Replicates	1480.9	1599.5	1785.0	1618.6					
CAL2	STD	02/17/24 09:13:59 am	1.000	6459	5.86	!0.94		1.0000	N/A
Replicates	5969.9	6433.4	6885.8	6546.8					
CAL3	STD	02/17/24 09:16:04 am	2.500	15719	6.35	!1.16		1.0000	N/A
Replicates	14424.6	15448.6	16590.0	16413.3					
CAL4	STD	02/17/24 09:18:09 am	4.000	25182	6.54	!0.41		1.0000	N/A
Replicates	22991.8	24846.5	26568.6	26322.6					
CAL5	STD	02/17/24 09:20:14 am	5.000	31721	6.69	0.58		1.0000	N/A
Replicates	28874.5	31405.7	33688.1	32917.5					

Cali* $ati" #
, - &ati" #: A* s / 6255.8240 1 261.719
R2: 0.99989 RS, : 5.08
S, , : 153.6543
. la' s:

ICAL evaluated and included in support doc



2C3	2C3	02/17/24 09:22:21 am	2.577	16384	7.04			1.0000	103.08
Replicates	14924.2	16050.0	17203.5	17356.9					
2C4	2C4	02/17/24 09:24:26 am	0.003	281	217.87			1.0000	N/A
Replicates	248.2	279.3	338.7	255.9					
CRDL	CRDL	02/17/24 09:26:30 am	0.209	1569	8.90			1.0000	104.46
Replicates	1422.4	1558.6	1705.3	1588.3					
430273352570801	6 N7	02/17/24 09:28:35 am	0.016	363	47.61			1.0000	N/A
Replicates	324.6	344.2	434.1	350.7					
430273452570801	6 N7	02/17/24 09:30:41 am	2.550	16216	7.39			1.0000	N/A
Replicates	14598.8	16184.0	17350.3	16731.8					
92712842001525708O1	6 N7	02/17/24 09:32:46 am	0.013	344	67.17			1.0000	N/A
Replicates	315.7	324.6	425.4	308.5					
430273552570801	6 N7	02/17/24 09:34:51 am	2.566	16316	6.97			1.0000	N/A
Replicates	14796.5	16167.6	17273.7	17025.9					

Prep Log Report

Batch Information: MERP 2451 W92_P 23433 / 7470 W92_P 23434 **7470/245.1 | CVAA_HG Water**

Prep Method	EPA 245.1 Rev 3.0 1994	Analysis Method	EPA 245.1 Rev 3.0 1994	Prepared By	BM	Witnessed By	
Block ID	93HB10	Thermometer ID	93T048	Correction Factor (C)	0	Block Temp (C)	93.6
Corrected Temp. (C)	93.60	Acceptance Range	95 +/- 3C	Therm. Position	I4	Digestion Start Date/Time	02/14/2024 13:59:24:073
Digestion End Date/Time	02/14/2024 15:59:38:314	Block End Temp (C)	93.6	Corrected End Temp. (C)	93.60	Digestion Vessel	260498
Metals Pipette 1	93P026	Metals Pipette 2	93P094	Metals Pipette 3	93P101	Metals Pipette 4	
Dispenser ID 1	93BTD008	Dispenser ID 2		Dispenser ID 3		Reviewed By	
Reviewed By Date		Batch Notes					

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	H2SO4 - Conc. (mL)	Potassium Permaganate Soln. (mL)	Potassium Persulfate Solution (mL)	Final Volume (mL)	Sample Notes	MERCURY-SPK (mL)
2451 W92_P	BLANK	**4300416**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
2451 W92_P	LCS	**4300417**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
2451 W92_P	PS	**92711846001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
2451 W92_P	PS	**92712858002**	Water	No	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	3*	
2451 W92_P	RQS	**92712683001**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	2*	
2451 W92_P	MS	**4300418**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	2*	259478 (.05)
2451 W92_P	MSD	**4300419**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	2*	259478 (.05)
2451 W92_P	PS	**92712683002**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	2*	
2451 W92_P	PS	**92712683003**	Water	Yes	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	6*	
2451 W92_P	PS	**92712683004**	Water	Yes	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	6*	
2451 W92_P	PS	**92712683005**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	1*	
2451 W92_P	PS	**92712683006**	Water	Yes	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	6*	
2451 W92_P	PS	**92712683007**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	1*	
2451 W92_P	PS	**92712683008**	Water	No	0.2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	1*	
2451 W92_P	PS	**92712683009**	Water	Yes	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	5*	

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	H2SO4 - Conc. (mL)	Potassium Permaganate Soln. (mL)	Potassium Persulfate Solution (mL)	Final Volume (mL)	Sample Notes	MERCURY-SPK (mL)
2451 W92_P	PS	**92712743002**	Water	Yes	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	6*	
2451 W92_P	PS	**92713119001**	Water	Yes	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	6*	
2451 W92_P	PS	**92713234001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
2451 W92_P	MS	**4300420**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
2451 W92_P	MSD	**4300421**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
2451 W92_P	PS	**92713234002**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
2451 W92_P	PS	**92713234003**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
2451 W92_P	PS	**92713234004**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
2451 W92_P	PS	**92713234005**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	BLANK	**4300422**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	LCS	**4300423**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 W92_P	PS	**92712340001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712342001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712351001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712352001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712351002**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712351003**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712351004**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	RQS	**92712351005**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	MS	**4300424**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 W92_P	MSD	**4300425**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 W92_P	PS	**92712376006**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	H2SO4 - Conc. (mL)	Potassium Permaganate Soln. (mL)	Potassium Persulfate Solution (mL)	Final Volume (mL)	Sample Notes	MERCURY-SPK (mL)
7470 W92_P	PS	**92712376007**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712832008**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712966046**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712966047**	Water	No	2	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10	4*	
7470 W92_P	PS	**92712966048**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712987001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712989001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712989002**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712989003**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712989004**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712989005**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 WD92P	BLANK	**4300730**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 WD92P	LCS	**4300731**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 WD92P	PS	**92712966046**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 WD92P	PS	**92712966047**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 WD92P	MS	**4300732**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 WD92P	MSD	**4300733**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 WD92P	PS	**92712966048**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	BLANK	**4300426**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	LCS	**4300427**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 W92_P	RQS	**92712623001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	MS	**4300428**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Matrix	pH < 2	Initial Volume (mL)	Conc. HNO3 (mL)	H2SO4 - Conc. (mL)	Potassium Permaganate Soln. (mL)	Potassium Persulfate Solution (mL)	Final Volume (mL)	Sample Notes	MERCURY-SPK (mL)
7470 W92_P	MSD	**4300429**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		259478 (.05)
7470 W92_P	PS	**92712623002**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712623003**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712623004**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712623005**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712623006**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684002**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684003**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684004**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684005**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684006**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684007**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684008**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684009**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684010**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684011**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712684012**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712988001**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		
7470 W92_P	PS	**92712988002**	Water	Yes	10	254673 (0.25)	250113 (0.5)	260371 (1.5)	260403 (0.8)	10		

Sample Notes:

1*: failed pH, prepped @ 10x and 50x, 50x passed, p4 and D3 flag

2*: failed pH, prepped @ 10x, 20x and 50x, 50x passed, p4 and D3 flag

3*: failed pH, prepped @ 5x, D3 flag

4*: sample failed pH, prepped @ 5x, P4 and D3 flag

SAMPLE NO.

021224NMW13

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	10.1		mg/L	1	02/14/2024 00:51
16984-48-8	Fluoride	ND	U	mg/L	1	02/14/2024 00:51
14797-55-8	Nitrate as N	0.15		mg/L	1	02/14/2024 00:51
14808-79-8	Sulfate	158		mg/L	3	02/14/2024 01:34

SAMPLE NO.

021224NMW31

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	2.0		mg/L	1	02/13/2024 23:38
16984-48-8	Fluoride	ND	U	mg/L	1	02/13/2024 23:38
14797-55-8	Nitrate as N	0.23		mg/L	1	02/13/2024 23:38
14808-79-8	Sulfate	46.1		mg/L	1	02/13/2024 23:38

SAMPLE NO.

021224NMW32S

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	3.3		mg/L	1	02/14/2024 00:36
16984-48-8	Fluoride	0.072	J	mg/L	1	02/14/2024 00:36
14797-55-8	Nitrate as N	0.91		mg/L	1	02/14/2024 00:36
14808-79-8	Sulfate	2.4		mg/L	1	02/14/2024 00:36

SAMPLE NO.

021224NMW32D

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	3.0		mg/L	1	02/13/2024 23:24
16984-48-8	Fluoride	0.14		mg/L	1	02/13/2024 23:24
14797-55-8	Nitrate as N	0.087	J	mg/L	1	02/13/2024 23:24
14808-79-8	Sulfate	11.0		mg/L	1	02/13/2024 23:24

SAMPLE NO.

021224NWPFDDUPLICATE

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	2.0		mg/L	1	02/14/2024 00:22
16984-48-8	Fluoride	ND	U	mg/L	1	02/14/2024 00:22
14797-55-8	Nitrate as N	0.16		mg/L	1	02/14/2024 00:22
14808-79-8	Sulfate	45.9		mg/L	1	02/14/2024 00:22

SAMPLE NO.

021324NMW1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	2.6		mg/L	1	02/15/2024 00:38
16984-48-8	Fluoride	0.070	J	mg/L	1	02/15/2024 00:38
14797-55-8	Nitrate as N	0.10		mg/L	1	02/15/2024 00:38
14808-79-8	Sulfate	3.1		mg/L	1	02/15/2024 00:38

SAMPLE NO.

021324NMW12

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
16887-00-6	Chloride	3.6		mg/L	1	02/14/2024 23:11
16984-48-8	Fluoride	0.055	J	mg/L	1	02/14/2024 23:11
14797-55-8	Nitrate as N	ND	U	mg/L	1	02/14/2024 23:11
14808-79-8	Sulfate	86.7		mg/L	1	02/14/2024 23:11

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 248518

Continuing Calibration Verification Source: 239743

Concentration Units: mg/L Instrument ID: 93WTA1

	Initial Calibration Verification				Continuing Calibration Verification						
	01/12/2024 11:05				01/12/2024 12:18			02/13/2024 21:00			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Chloride	50	50.4	100.7	90-110	50	50.5	101.1	50	49.3	98.7	90-110
Fluoride	2.5	2.5	98.8	90-110	2.5	2.5	101.3	2.5	2.5	100.8	90-110
Nitrate as N	2.5	2.4	97.1	90-110	2.5	2.5	98.6	2.5	2.4	96.0	90-110
Sulfate	50	50.7	101.4	90-110	50	50.3	100.6	50	49.9	99.9	90-110

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 239743

Concentration Units: mg/L Instrument ID: 93WTA1

	Continuing Calibration Verification									
	02/13/2024 23:53 ✔			02/14/2024 02:50 ✔			02/14/2024 21:15 ✔			Control Limit
Analyte	True	Found	%R	True	Found	%R	True	Found	%R	
Chloride	50	49.1	98.1	50	49.4	98.8	50	49.5	98.9	90-110
Fluoride	2.5	2.6	103.3	2.5	2.5	101.0	2.5	2.5	101.8	90-110
Nitrate as N	2.5	2.4	95.5	2.5	2.4	96.4	2.5	2.4	96.0	90-110
Sulfate	50	50.0	100.0	50	50.0 ✔	100.1 ✔	50	50.3	100.6	90-110

FORM II INORGANIC-3

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 239743

Concentration Units: mg/L Instrument ID: 93WTA1

	Continuing Calibration Verification						
	02/15/2024 00:10 ✔			02/15/2024 05:56 ✔			Control Limit
Analyte	True	Found	%R	True	Found	%R	
Chloride	50	49.5	98.9	50	49.4 ✔	98.8 ✔	90-110
Fluoride	2.5	2.6	104.5	2.5	2.6	103.8	90-110
Nitrate as N	2.5	2.4	95.5	2.5	2.4	95.4	90-110
Sulfate	50	51.1	102.2	50	50.8	101.5	90-110

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 239740 Analysis Date/Time: 01/12/2024 11:58

Concentration Units: mg/L

Analyte	CRDL Check Standard				
	True	Found	%R	Control Limit %R	
Chloride	1.0	1.0	100.1	50-150	70-130%
Fluoride	0.1	0.064	64.0	50-150	
Nitrate as N	0.1	0.10	105.0	50-150	
Sulfate	1.0	0.74	74.1	50-150	

not bracketing samples.

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 239740 Analysis Date/Time: 02/13/2024 20:40

Concentration Units: mg/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Chloride	1.0	1.1	105.5	50-150
Fluoride	0.1	0.069	69.0	50-150
Nitrate as N	0.1	0.12	121.0	50-150
Sulfate	1.0	0.93	93.1	50-150

UJ/J- R S001 to S005

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 239740 Analysis Date/Time: 02/14/2024 20:55

Concentration Units: mg/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Chloride	1.0	0.95	94.9	50-150
Fluoride	0.1	0.066	66.0	50-150
Nitrate as N	0.1	0.11	109.0	50-150
Sulfate	1.0	0.76	75.6	50-150

UJ/J- R for all samples.

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93WTA1

Method Blank Concentration Units: mg/L

Analyte	Initial Calibration Blank (mg/L)		Continuing Calibration Blank (mg/L)						Method Blank	
	01/12/2024 11:20	C	01/12/2024 12:33	C	02/13/2024 21:14	C	02/14/2024 00:07	C	4300169	C
Chloride	0.50	U	0.50	U	0.50	U	0.50	U	ND	U
Fluoride	0.050	U	0.050	U	0.050	U	0.050	U	ND	U
Nitrate as N	0.050	U	0.050	U	0.050	U	0.050	U	ND	U
Sulfate	0.50	U	0.50	U	0.50	U	0.50	U	ND	U

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93WTA1

Method Blank Concentration Units: mg/L

Analyte	Initial Calibration Blank		Continuing Calibration Blank (mg/L)						Method Blank	
		C	02/14/2024 03:04 ✔	C	02/14/2024 21:29 ✔	C	02/15/2024 00:24 ✔	C	4301587	C
Chloride			0.50	U	0.50	U	0.50	U	ND	U
Fluoride			0.050	U	0.050	U	0.050	U	ND	U
Nitrate as N			0.050	U	0.050	U	0.050	U	ND	U
Sulfate			0.50	U	0.50	U	0.50	U	ND	U

✔ ✔

FORM III INORGANIC-3

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Instrument ID: 93WTA1

Method Blank Concentration Units:

Analyte	Initial Calibration Blank		Continuing Calibration Blank (mg/L)					
		C	02/15/2024 06:10 ✔	C		C		C
Chloride			0.50	U				
Fluoride			0.050	U				
Nitrate as N			0.050	U				
Sulfate			0.50	U				

✔

SAMPLE NO.

4300171MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021224NMW13

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chloride	mg/L	90-110	60.6	10.1	50.0	101
Fluoride	mg/L	90-110	4.8	ND	2.5	192*
Nitrate as N	mg/L	90-110	2.6	0.15	2.5	98
Sulfate	mg/L	90-110	185	158	50.0	54*

F: J M S003,004

SO4: J- M S001 to 005

MS/MSD is associated with samples 1-5 only

* Spike Recovery outside QC Limits

SAMPLE NO.

4300172MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021224NMW13

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R ✔	
Chloride	mg/L	90-110	61.7	10.1	50.0	103	75-125 %
Fluoride	mg/L	90-110	2.0	ND	2.5	76*	
Nitrate as N	mg/L	90-110	2.7	0.15	2.5	100	
Sulfate	mg/L	90-110	185	158	50.0	56*	

SO4: J- M S001 to 005

* Spike Recovery outside QC Limits

SAMPLE NO.

4301589MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chloride	mg/L	90-110	52.2	2.6	50.0	99
Fluoride	mg/L	90-110	3.6	0.070J	2.5	140*
Nitrate as N	mg/L	90-110	2.5	0.10	2.5	96
Sulfate	mg/L	90-110	58.3	3.1	50.0	110

F: J+ M S006,007

MS/MSD associated with samples 6 and 7 only

* Spike Recovery outside QC Limits

SAMPLE NO.

4301590MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chloride	mg/L	90-110	53.0	2.6	50.0	101
Fluoride	mg/L	90-110	3.3	0.070J	2.5	129*
Nitrate as N	mg/L	90-110	2.5	0.10	2.5	97
Sulfate	mg/L	90-110	56.6	3.1	50.0	107

FI: J+ M S006,007

* Spike Recovery outside QC Limits

SAMPLE NO.

4301591MS

FORM V INORGANIC-3

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chloride	mg/L	90-110	62.0	12.7	50.0	99
Fluoride	mg/L	90-110	2.9	0.052J	2.5	113*
Nitrate as N	mg/L	90-110	2.4	ND	2.5	95
Sulfate	mg/L	90-110	87.6	37.4	50.0	100

not from this SDG, no eval.

* Spike Recovery outside QC Limits

SAMPLE NO.

4301592MSD

FORM V INORGANIC-4

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chloride	mg/L	90-110	63.4	12.7	50.0	101
Fluoride	mg/L	90-110	3.0	0.052J	2.5	116*
Nitrate as N	mg/L	90-110	2.4	ND	2.5	98
Sulfate	mg/L	90-110	88.8	37.4	50.0	103

Not from this SDG, no eval.

* Spike Recovery outside QC Limits

SAMPLE NO.

4300172MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: _____ Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Chloride	10	60.6	61.7	2
Fluoride	10	4.8	2.0	85*
Nitrate as N	10	2.6	2.7	2
Sulfate	10	185	185	0

J MP S003,004

* RPD outside QC Limits

SAMPLE NO.

4301590MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Chloride	10	52.2	53.0	2
Fluoride	10	3.6	3.3	8
Nitrate as N	10	2.5	2.5	2
Sulfate	10	58.3	56.6	3

SAMPLE NO.

4301592MSD

FORM VI INORGANIC-2
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Chloride	10	62.0	63.4	2
Fluoride	10	2.9	3.0	3
Nitrate as N	10	2.4	2.4	3
Sulfate	10	87.6	88.8	1

SAMPLE NO.

4300170LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Chloride	mg/L	50.0	48.7	97	90	110
Fluoride	mg/L	2.5	2.5	99	90	110
Nitrate as N	mg/L	2.5	2.3	94	90	110
Sulfate	mg/L	50.0	49.2	98	90	110

SAMPLE NO.

4301588LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Chloride	mg/L	50.0	48.9	98	90	110
Fluoride	mg/L	2.5	2.5	101	90	110
Nitrate as N	mg/L	2.5	2.4	94	90	110
Sulfate	mg/L	50.0	49.6	99	90	110

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 93WTA1

Concentration Units: mg/L

Analyte	PQL	IDL	IDL Date
Chloride	0.50	0.50	03/05/2018
Fluoride	0.050	0.050	03/05/2018
Nitrate as N	0.050	0.050	03/05/2018
Sulfate	0.50	0.50	03/05/2018

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 9056A Instrument ID: 93WTA1

Concentration Units: mg/L

Analyte	PQL	MDL	MDL Date
Chloride	1.0	0.60	05/14/2020
Fluoride	0.10	0.050	05/14/2020
Nitrate as N	0.10	0.060	05/14/2020
Sulfate	1.0	0.50	05/14/2020

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 9056A Batch: WETA 96729

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4300169	4300169BLANK	02/13/2024	10	10
4300170	4300170LCS	02/13/2024	10	10
4300171	4300171MS	02/14/2024	10	10
4300171	4300171MS	02/14/2024	10	10
4300172	4300172MSD	02/14/2024	10	10
4300172	4300172MSD	02/14/2024	10	10
92712989001	021224NMW13	02/14/2024	10	10
92712989001	021224NMW13	02/14/2024	10	10
92712989002	021224NMW31	02/13/2024	10	10
92712989003	021224NMW32S	02/14/2024	10	10
92712989004	021224NMW32D	02/13/2024	10	10
92712989005	021224NWPFDDUPLICAT	02/14/2024	10	10

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 9056A Batch: WETA 96757

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4301587	4301587BLANK	02/14/2024	10	10
4301588	4301588LCS	02/14/2024	10	10
4301589	4301589MS	02/15/2024	10	10
4301590	4301590MSD	02/15/2024	10	10
4301591	4301591MS	02/15/2024	10	10
4301592	4301592MSD	02/15/2024	10	10
92712989006	021324NMW1	02/15/2024	10	10
92712989007	021324NMW12	02/14/2024	10	10

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93WTA1 Analysis Method: EPA 9056A

Start Date: 01/12/2024 08:42 End Date: 02/15/2024 06:10

Sample Name	Lab Sample ID	D/F	Date	Time	Cl	F	SO4	no3N
28754243CAL0	28754243CAL0	1	01/12/2024	08:42	X	X	X	X
28754244CAL1	28754244CAL1	1	01/12/2024	09:02	X	X	X	X
28754245CAL2	28754245CAL2	1	01/12/2024	09:17	X	X	X	X
28754246CAL3	28754246CAL3	1	01/12/2024	09:32	X	X	X	X
28754247CAL4	28754247CAL4	1	01/12/2024	09:47	X	X	X	X
28754248CAL5	28754248CAL5	1	01/12/2024	10:02	X	X	X	X
28754249ICV	28754249ICV	1	01/12/2024	11:05	X	X	X	X
28754250ICB	28754250ICB	1	01/12/2024	11:20	X	X	X	X
28754251CRDL	28754251CRDL	1	01/12/2024	11:58	X	X	X	X
28754252CCV	28754252CCV	1	01/12/2024	12:18	X	X	X	X
28754253CCB	28754253CCB	1	01/12/2024	12:33	X	X	X	X
28963360CRDL	28963360CRDL	1	02/13/2024	20:40	X	X	X	X
28963361CCV	28963361CCV	1	02/13/2024	21:00	X	X	X	X
28963362CCB	28963362CCB	1	02/13/2024	21:14	X	X	X	X
4300169BLANK	4300169	1	02/13/2024	21:29	X	X	X	X
4300170LCS	4300170	1	02/13/2024	21:43	X	X	X	X
021224NMW32D	92712989004	1	02/13/2024	23:24	X	X	X	X
021224NMW31	92712989002	1	02/13/2024	23:38	X	X	X	X
28963363CCV	28963363CCV	1	02/13/2024	23:53	X	X	X	X
28963364CCB	28963364CCB	1	02/14/2024	00:07	X	X	X	X
021224NWPFDDUPLICATE	92712989005	1	02/14/2024	00:22	X	X	X	X
021224NMW32S	92712989003	1	02/14/2024	00:36	X	X	X	X
021224NMW13	92712989001	1	02/14/2024	00:51	X	X		X
4300171MS	4300171	1	02/14/2024	01:05	X	X		X
4300172MSD	4300172	1	02/14/2024	01:19	X			X
021224NMW13	92712989001	3	02/14/2024	01:34			X	
4300172MSD	4300172	3	02/14/2024	02:02		X	X	
4300171MS	4300171	3	02/14/2024	02:17			X	
28963369CCV	28963369CCV	1	02/14/2024	02:50	X	X	X	X
28963370CCB	28963370CCB	1	02/14/2024	03:04	X	X	X	X
28978864CRDL	28978864CRDL	1	02/14/2024	20:55	X	X	X	X
28978865CCV	28978865CCV	1	02/14/2024	21:15	X	X	X	X
28978866CCB	28978866CCB	1	02/14/2024	21:29	X	X	X	X
4301587BLANK	4301587	1	02/14/2024	21:43	X	X	X	X
4301588LCS	4301588	1	02/14/2024	21:58	X	X	X	X
021324NMW12	92712989007	1	02/14/2024	23:11	X	X	X	X
28978868CCV	28978868CCV	1	02/15/2024	00:10	X	X	X	X
28978869CCB	28978869CCB	1	02/15/2024	00:24	X	X	X	X
021324NMW1	92712989006	1	02/15/2024	00:38	X	X	X	X
4301589MS	4301589	1	02/15/2024	00:53	X	X	X	X
4301590MSD	4301590	1	02/15/2024	01:22	X	X	X	X
92713247001	92713247001	1	02/15/2024	04:15	X	X	X	X
4301591MS	4301591	1	02/15/2024	04:29	X	X	X	X
4301592MSD	4301592	1	02/15/2024	04:44	X	X	X	X
28978874CCV	28978874CCV	1	02/15/2024	05:56	X	X	X	X

FORM XIII INORGANIC-2
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

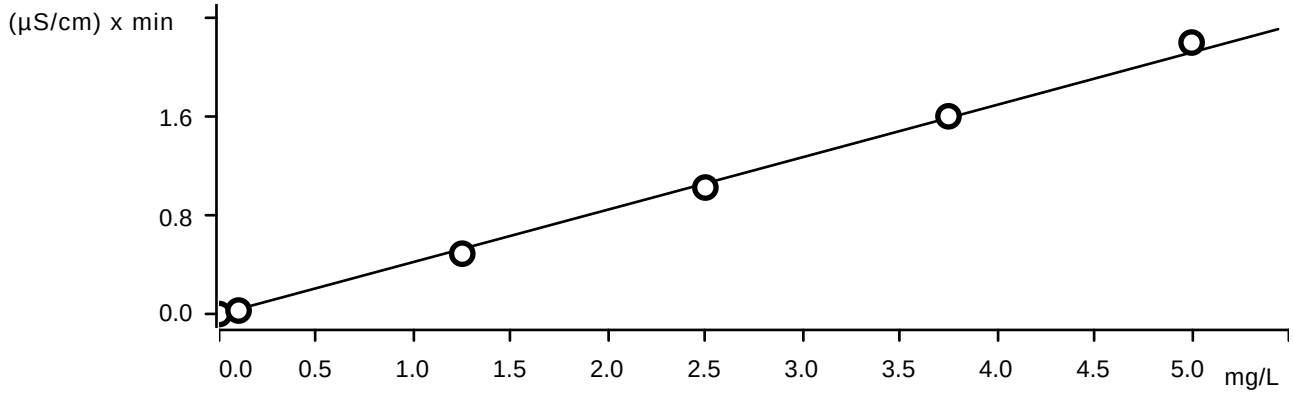
Instrument ID: 93WTA1 Analysis Method: EPA 9056A

Start Date: 01/12/2024 08:42 End Date: 02/15/2024 06:10

Sample Name	Lab Sample ID	D/F	Date	Time	Cl	F	SO4	no3N
28978875CCB	28978875CCB	1	02/15/2024	06:10	X	X	X	X

Fluoride (Anions)

ICALs evaluated and included in support doc.



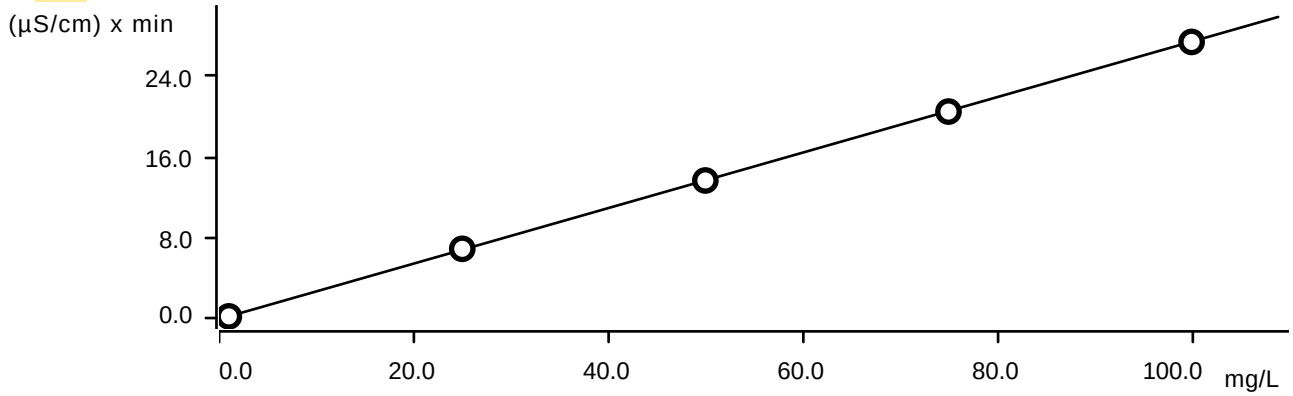
Function: . . . . . *A = 3.93409E-3 + 0.0210960× Q*

Relative standard deviation . . . . . *5.387178 %*

Correlation coefficient *0.998812*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 1	1	0.000	20.0	1.0	1.0	0.0065	CAL0	2024-01-12 08:42:53 UTC-5
Standard 2	1	0.100	20.0	1.0	1.0	0.0347	CAL1	2024-01-12 09:02:33 UTC-5
Standard 3	1	1.250	20.0	1.0	1.0	0.4927	CAL2	2024-01-12 09:17:28 UTC-5
Standard 4	1	2.500	20.0	1.0	1.0	1.0255	CAL3	2024-01-12 09:32:23 UTC-5
Standard 5	1	3.750	20.0	1.0	1.0	1.5992	CAL4	2024-01-12 09:47:18 UTC-5
Standard 6	1	5.000	20.0	1.0	1.0	2.1931	CAL5	2024-01-12 10:02:13 UTC-5

Chloride (Anions)



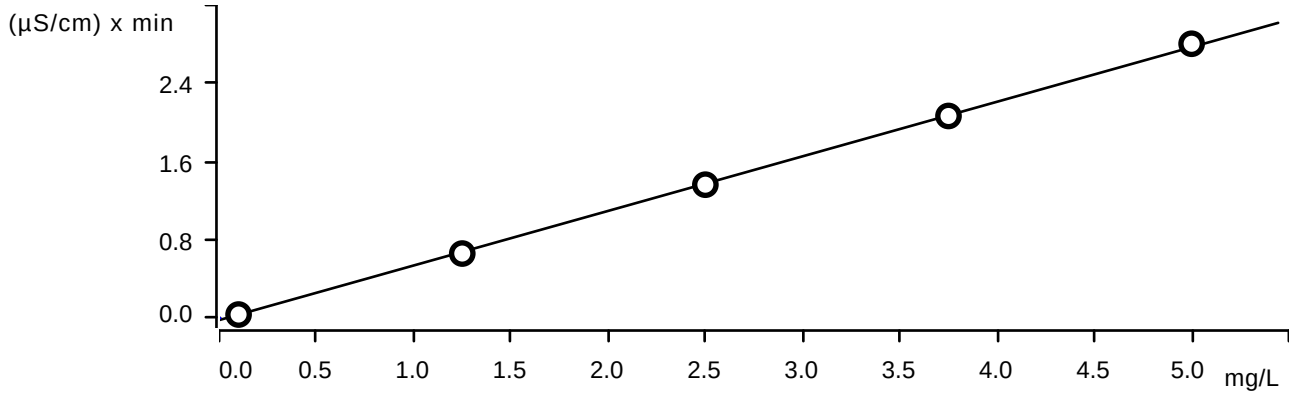
Function: . . . . . *A = - 0.0512373 + 0.0137536× Q*

Relative standard deviation . . . . . *0.467195 %*

Correlation coefficient *0.999987*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 1	1	0.000	20.0	1.0	1.0	n. d.	CAL0	2024-01-12 08:42:53 UTC-5
Standard 2	1	1.000	20.0	1.0	1.0	0.2218	CAL1	2024-01-12 09:02:33 UTC-5
Standard 3	1	25.000	20.0	1.0	1.0	6.9187	CAL2	2024-01-12 09:17:28 UTC-5
Standard 4	1	50.000	20.0	1.0	1.0	13.6943	CAL3	2024-01-12 09:32:23 UTC-5
Standard 5	1	75.000	20.0	1.0	1.0	20.5255	CAL4	2024-01-12 09:47:18 UTC-5
Standard 6	1	100.000	20.0	1.0	1.0	27.4279	CAL5	2024-01-12 10:02:13 UTC-5

Nitrite (Anions)



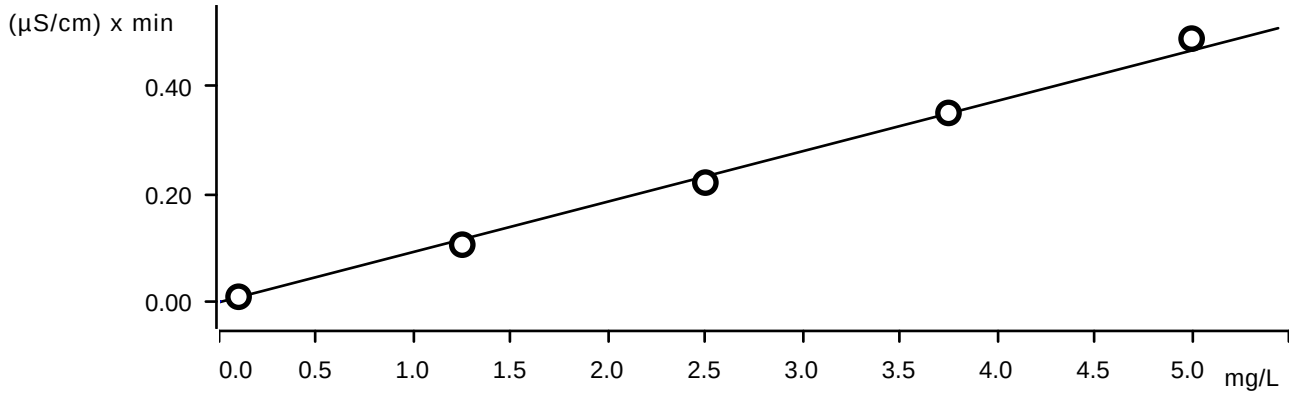
Function: . . . . . *A = - 0.0206705 + 0.0279027× Q*

Relative standard deviation . . . . . *1.694369 %*

Correlation coefficient *0.999829*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 1	1	0.000	20.0	1.0	1.0	n. d.	CAL0	2024-01-12 08:42:53 UTC-5
Standard 2	1	0.100	20.0	1.0	1.0	0.0360	CAL1	2024-01-12 09:02:33 UTC-5
Standard 3	1	1.250	20.0	1.0	1.0	0.6597	CAL2	2024-01-12 09:17:28 UTC-5
Standard 4	1	2.500	20.0	1.0	1.0	1.3634	CAL3	2024-01-12 09:32:23 UTC-5
Standard 5	1	3.750	20.0	1.0	1.0	2.0659	CAL4	2024-01-12 09:47:18 UTC-5
Standard 6	1	5.000	20.0	1.0	1.0	2.8042	CAL5	2024-01-12 10:02:13 UTC-5

Bromide (Anions)



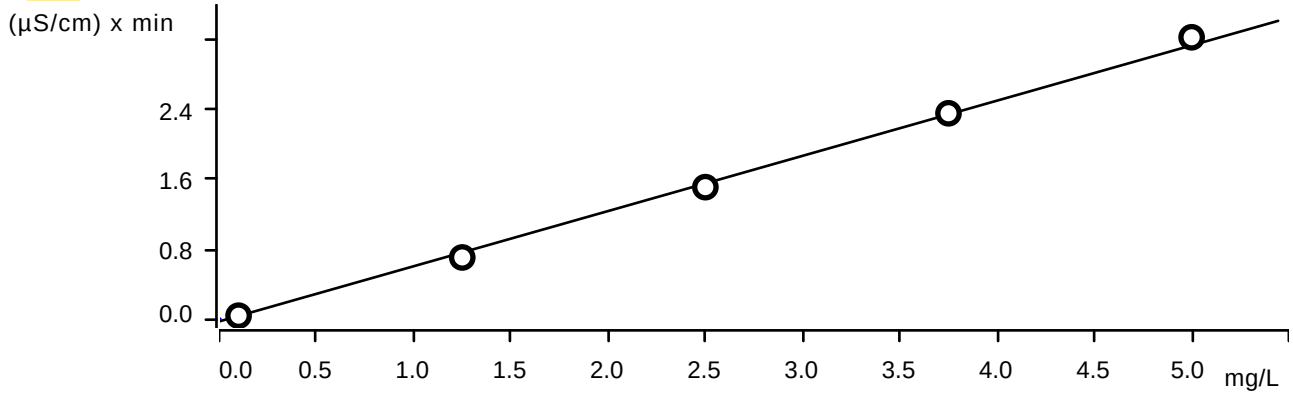
Function: . . . . . *A = - 1.63328E-3 + 4.67778E-3× Q*

Relative standard deviation . . . . . *6.637826 %*

Correlation coefficient *0.997500*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 1	1	0.000	20.0	1.0	1.0	n. d.	CAL0	2024-01-12 08:42:53 UTC-5
Standard 2	1	0.100	20.0	1.0	1.0	0.0086	CAL1	2024-01-12 09:02:33 UTC-5
Standard 3	1	1.250	20.0	1.0	1.0	0.1054	CAL2	2024-01-12 09:17:28 UTC-5
Standard 4	1	2.500	20.0	1.0	1.0	0.2207	CAL3	2024-01-12 09:32:23 UTC-5
Standard 5	1	3.750	20.0	1.0	1.0	0.3503	CAL4	2024-01-12 09:47:18 UTC-5
Standard 6	1	5.000	20.0	1.0	1.0	0.4884	CAL5	2024-01-12 10:02:13 UTC-5

Nitrate (Anions)



Function: . . . . . *A = - 0.0284262 + 0.0316396× Q*

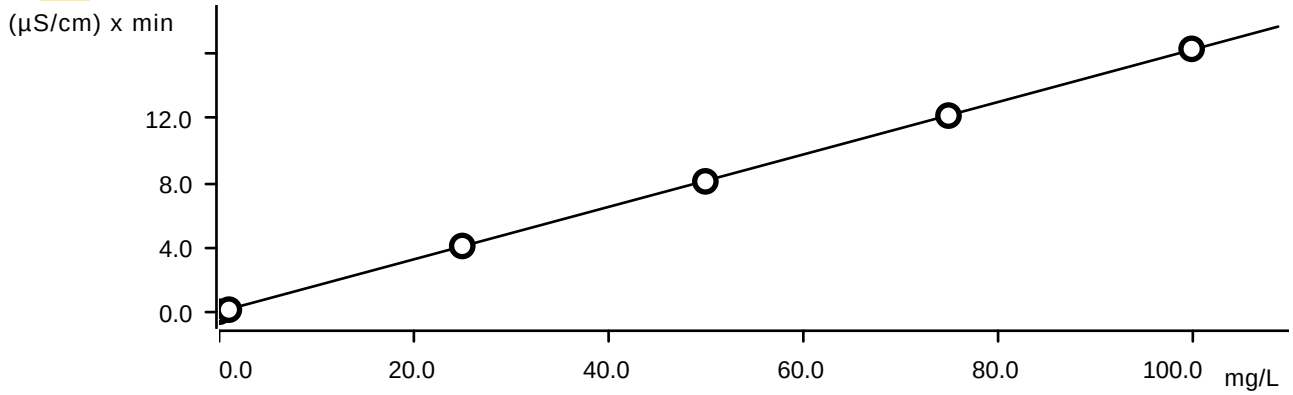
Relative standard deviation . . . . . *4.351787 %*

Correlation coefficient *0.998920*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 1	1	0.000	20.0	1.0	1.0	n. d.	CAL0	2024-01-12 08:42:53 UTC-5

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 2	1	0.100	20.0	1.0	1.0	0.0377	CAL1	2024-01-12 09:02:33 UTC-5
Standard 3	1	1.250	20.0	1.0	1.0	0.7051	CAL2	2024-01-12 09:17:28 UTC-5
Standard 4	1	2.500	20.0	1.0	1.0	1.5109	CAL3	2024-01-12 09:32:23 UTC-5
Standard 5	1	3.750	20.0	1.0	1.0	2.3575	CAL4	2024-01-12 09:47:18 UTC-5
Standard 6	1	5.000	20.0	1.0	1.0	3.2287	CAL5	2024-01-12 10:02:13 UTC-5

Sulfate (Anions)



Function: . . . . . *A = 0.0104840 + 8.11272E-3× Q*

Relative standard deviation . . . . . *0.615721 %*

Correlation coefficient *0.999984*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date
Standard 1	1	0.000	20.0	1.0	1.0	0.0137	CAL0	2024-01-12 08:42:53 UTC-5
Standard 2	1	1.000	20.0	1.0	1.0	0.1397	CAL1	2024-01-12 09:02:33 UTC-5
Standard 3	1	25.000	20.0	1.0	1.0	4.0880	CAL2	2024-01-12 09:17:28 UTC-5
Standard 4	1	50.000	20.0	1.0	1.0	8.0910	CAL3	2024-01-12 09:32:23 UTC-5
Standard 5	1	75.000	20.0	1.0	1.0	12.1647	CAL4	2024-01-12 09:47:18 UTC-5
Standard 6	1	100.000	20.0	1.0	1.0	16.3008	CAL5	2024-01-12 10:02:13 UTC-5

Prep Log Report

Batch Information: WETA 96729,96730 IC

LOG | WC Automated Analysis Traceability Log (ASHV)

Prep Method	EPA 9056A	Analysis Method	EPA 9056A	Prepared By	CDC	Prep Date/Time	02/13/2024 20:10:52:832
Instrument	93WTA1	Anion Eluent	260496	IC Suppressant	260047	Pipette ID 1	93P086
Pipette ID 2		Pipette ID 3		Reviewed By	JCM	Reviewed By Date	02/14/2024 20:54
Batch Notes							

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
9056 W48	BLANK	**4300169**	10	10		Water			
9056 W48	LCS	**4300170**	10	10		Water		248518 (10)	
9056 W48	PS	**92712991001**	10	10		Water			
9056 W48	PS	**92712988002**	10	10		Water			
9056 W48	PS	**92712988001**	10	10		Water			
9056 W48	PS	**92712987001**	10	10		Water			
9056 W48	PS	**92712989004**	10	10		Water			
9056 W48	PS	**92712989002**	10	10		Water			
9056 W48	PS	**92712989005**	10	10		Water			
9056 W48	PS	**92712989003**	10	10		Water			
9056 W48	PS	**92712989001**	10	10		Water			
9056 W48	MS	**4300171**	10	10		Water			239719 (.05)
9056 W48	MSD	**4300172**	10	10		Water			239719 (.05)
9056 W48	PS	**92712990001**	10	10		Water			
3000 W28	BLANK	**4300191**	10	10		Water			
3000 W28	LCS	**4300192**	10	10		Water		248518 (10)	
3000 W28	PS	**92713143002**	10	10		Water			
3000 W28	MS	**4300193**	10	10		Water			239719 (.05)
3000 W28	MSD	**4300194**	10	10		Water			239719 (.05)
3000 W28	PS	**92712690001**	10	10		Water			
3000 W28	PS	**92713015001**	10	10		Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
3000 W28	PS	**92713015002**	10	10		Water			
3000 W28	PS	**92713015003**	10	10		Water			
3000 W28	PS	**92713015004**	10	10		Water			
3000 W28	PS	**92713015005**	10	10		Water			
3000 W28	PS	**92713015006**	10	10		Water			
3000 W28	PS	**92713015007**	10	10		Water			
3000 W28	MS	**4300195**	10	10		Water			239719 (.05)
3000 W28	MSD	**4300196**	10	10		Water			239719 (.05)
3000 W28	PS	**92713015008**	10	10		Water			
3000 W28	PS	**92713015009**	10	10		Water			
3000 W28	PS	**92713015010**	10	10		Water			
3000 W28	PS	**92713015011**	10	10		Water			
3000 W28	PS	**92713015012**	10	10		Water			
3000 W28	PS	**92713015013**	10	10		Water			
3000 W28	PS	**92713025001**	10	10		Water			
3000 W28	PS	**92713025002**	10	10		Water			
3000 W28	PS	**92713025003**	10	10		Water			
3000 W28	PS	**92713208001**	10	10		Water			
3000 W28	PS	**92713208002**	10	10		Water			

Standard Notes:

239719: IC_Stdmix 2_WETA_AVL

248518: weta_AVL_IC ICV/LCS

Prep Log Report

Batch Information: WETA 96757.96759 IC

LOG | WC Automated Analysis Traceability Log (ASHV)

Prep Method	EPA 9056A	Analysis Method	EPA 9056A	Prepared By	CDC	Prep Date/Time	02/14/2024 20:28:17:008
Instrument	93WTA1	Anion Eluent	260496	IC Suppressant	260047	Pipette ID 1	93P086
Pipette ID 2		Pipette ID 3		Reviewed By	JCM	Reviewed By Date	02/15/2024 18:16
Batch Notes							

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
9056 W48	BLANK	**4301587**	10	10		Water			
9056 W48	LCS	**4301588**	10	10		Water		248518 (10)	
9056 W48	PS	**92713259007**	10	10		Water			
9056 W48	PS	**92713259001**	10	10		Water			
9056 W48	PS	**92712989007**	10	10		Water			
9056 W48	PS	**92712990003**	10	10		Water			
9056 W48	PS	**92713259004**	10	10		Water			
9056 W48	RQS	**92712989006**	10	10		Water			
9056 W48	MS	**4301589**	10	10		Water			239719 (.05)
9056 W48	MSD	**4301590**	10	10		Water			239719 (.05)
9056 W48	PS	**92713248001**	10	10		Water			
9056 W48	PS	**92713259005**	10	10		Water			
9056 W48	PS	**92712990002**	10	10		Water			
9056 W48	PS	**92713248002**	10	10		Water			
9056 W48	PS	**92713259002**	10	10		Water			
9056 W48	PS	**92713248005**	10	10		Water			
9056 W48	PS	**92713248004**	10	10		Water			
9056 W48	PS	**92713248003**	10	10		Water			
9056 W48	PS	**92713259003**	10	10		Water			
9056 W48	RQS	**92713247001**	10	10		Water			
9056 W48	MS	**4301591**	10	10		Water			239719 (.05)

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
9056 W48	MSD	**4301592**	10	10		Water			239719 (.05)
9056 W48	PS	**92713259006**	10	10		Water			
3000 W28	BLANK	**4301647**	10	10		Water			
3000 W28	LCS	**4301648**	10	10		Water		248518 (10)	
3000 W28	PS	**92713294001**	10	10		Water			
3000 W28	MS	**4301649**	10	10		Water			239719 (.05)
3000 W28	MSD	**4301650**	10	10		Water			239719 (.05)
3000 W28	PS	**92713294002**	10	10		Water			
3000 W28	PS	**92713294003**	10	10		Water			
3000 W28	PS	**92713294004**	10	10		Water			
3000 W28	PS	**92713294005**	10	10		Water			
3000 W28	PS	**92713294006**	10	10		Water			
3000 W28	PS	**92713294007**	10	10		Water			
3000 W28	PS	**92713294008**	10	10		Water			
3000 W28	PS	**92713294009**	10	10		Water			
3000 W28	PS	**92713276001**	10	10		Water			
3000 W28	PS	**92713276002**	10	10		Water			
3000 W28	MS	**4301651**	10	10		Water			239719 (.05)
3000 W28	MSD	**4301652**	10	10		Water			239719 (.05)
3000 W28	PS	**92713276003**	10	10		Water			
3000 W28	PS	**92713276004**	10	10		Water			
3000 W28	PS	**92713276005**	10	10		Water			
3000 W28	PS	**92713276006**	10	10		Water			
3000 W28	PS	**92713276007**	10	10		Water			
3000 W28	PS	**92713276008**	10	10		Water			
3000 W28	PS	**92713276009**	10	10		Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	3000-ICV (mL)	3000-SPK (mL)
3000 W28	PS	**92713276010**	10	10		Water			
3000 W28	PS	**92713276011**	10	10		Water			

Standard Notes:

239719: IC_Stdmix 2_WETA_AVL

248518: weta_AVL_IC ICV/LCS

SAMPLE NO.

021224NMW13

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	ND	U	ug/L	1	02/13/2024 13:43
7664-41-7	Nitrogen, Ammonia	0.034	J	mg/L	1	03/06/2024 23:44

SAMPLE NO.

021224NMW31

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	0.030		ug/L	1	02/13/2024 12:50
7664-41-7	Nitrogen, Ammonia	ND	U	mg/L	1	03/06/2024 23:45

SAMPLE NO.

021224NMW32S

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	0.089		ug/L	1	02/13/2024 13:25
7664-41-7	Nitrogen, Ammonia	ND	U	mg/L	1	03/06/2024 23:47

SAMPLE NO.

021224NMW32D

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	ND	U	ug/L	1	02/13/2024 12:32
7664-41-7	Nitrogen, Ammonia	ND	U	mg/L	1	03/06/2024 23:48

SAMPLE NO.

021224NWPFDDUPLICATE

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	ND	U	ug/L	1	02/13/2024 13:08
7664-41-7	Nitrogen, Ammonia	ND	U	mg/L	1	03/06/2024 23:52

SAMPLE NO.

021324NMW1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	0.025		ug/L	1	02/14/2024 11:49
7664-41-7	Nitrogen, Ammonia	ND	U	mg/L	1	03/06/2024 23:54

SAMPLE NO.

021324NMW12

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
18540-29-9	Chromium, Hexavalent	ND	U	ug/L	1	02/14/2024 11:11
7664-41-7	Nitrogen, Ammonia	0.060	J	mg/L	1	03/06/2024 23:58

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 260584

Continuing Calibration Verification Source: 260580

Concentration Units: ug/L Instrument ID: 92WA01

	Initial Calibration Verification				Continuing Calibration Verification						
	02/12/2024 12:39				02/13/2024 09:37 ✔			02/13/2024 15:11 ✔			Control Limit
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	
Chromium, Hexavalent	0.1	0.097	97.0	95-105	0.1	0.097	97.0	0.1	0.10	102.0	95-105

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260580, 260972

Concentration Units: ug/L Instrument ID: 92WA01

	Continuing Calibration Verification									
	02/13/2024 18:26			02/14/2024 09:34			02/14/2024 15:22			Control Limit
Analyte	True	Found	%R	True	Found	%R	True	Found	%R	
Chromium, Hexavalent	0.1	0.10	102.0	0.1	0.098	98.0	0.1	0.098	98.0	95-105

FORM II INORGANIC-3

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 260972

Concentration Units: ug/L Instrument ID: 92WA01

	Continuing Calibration Verification			
	02/14/2024 23:43 ✔			Control Limit
Analyte	True	Found	%R	
Chromium, Hexavalent	0.1	0.095	95.0	95-105

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source: 263267

Continuing Calibration Verification Source: 263259

Concentration Units: mg/L Instrument ID: 93WTAE

	Initial Calibration Verification				Continuing Calibration Verification						
	03/06/2024 23:29				03/06/2024 23:32			03/06/2024 23:49			
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	Control Limit
Nitrogen, Ammonia	5.0	5.0	99.4	90-110	5.0	4.9	97.6	5.0	4.9	98.7	90-110

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 263259

Concentration Units: mg/L Instrument ID: 93WTAE

	Continuing Calibration Verification			
	03/07/2024 00:07			Control Limit
Analyte	True	Found	%R	
Nitrogen, Ammonia	5.0	4.9	98.5	90-110

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 239702 Analysis Date/Time: 09/14/2023 17:13 ✔

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Chromium, Hexavalent	0.025	0.027	108.0	50-150

not bracketing samples

FORM II INORGANIC-1
CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 260578 Analysis Date/Time: 02/13/2024 09:02

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Chromium, Hexavalent	0.025	0.023	92.0	50-150

FORM II INORGANIC-1
CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 261022 Analysis Date/Time: 02/14/2024 08:59 ✔

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Chromium, Hexavalent	0.025	0.025	100.0	50-150

✔

FORM II INORGANIC-1

CRDL CHECK STANDARD

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

CRDL Check Standard Source: 260578 Analysis Date/Time: 02/15/2024 08:56 ✔

Concentration Units: ug/L

Analyte	CRDL Check Standard			
	True	Found	%R	Control Limit %R
Chromium, Hexavalent	0.025	0.023	92.0	50-150

✔

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 92WA01

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Method Blank	
	09/14/2023 16:56	C	02/13/2024 09:55	C	02/13/2024 15:29	C	02/13/2024 18:44	C	4299279	C
Chromium, Hexavalent	0.012	U	0.012	U	0.012	U	0.012	U	ND	U

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 92WA01

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank		Continuing Calibration Blank (ug/L)						Method Blank	
		C	02/14/2024 09:52 ✔	C	02/14/2024 15:39 ✔	C	02/15/2024 00:01 ✔	C	4300564 ✔	C
Chromium, Hexavalent			0.012	U	0.012 ✔	U	0.012	U	ND	U

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93WTAE

Method Blank Concentration Units: mg/L

Analyte	Initial Calibration Blank (mg/L)		Continuing Calibration Blank (mg/L)						Method Blank	
	03/06/2024 23:31	C	03/06/2024 23:34	C	03/06/2024 23:51	C	03/07/2024 00:08	C	4323787	C
Nitrogen, Ammonia	0.050	U	0.050	U	0.050	U	0.050	U	ND	U

SAMPLE NO.

4299873MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021224NMW32S

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chromium, Hexavalent	ug/L	90-110	0.19	0.089	0.10	98

SAMPLE NO.

4300566MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chromium, Hexavalent	ug/L	90-110	0.12	0.025	0.10	90

SAMPLE NO.

4300567MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Chromium, Hexavalent	ug/L	90-110	0.12	0.025	0.10	91

SAMPLE NO.

4323789MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Nitrogen, Ammonia	mg/L	90-110	5.2	ND	5.0	104

SAMPLE NO.

4323790MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 021324NMW1

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Nitrogen, Ammonia	mg/L	90-110	5.2	ND	5.0	103

SAMPLE NO.

4323791MS

FORM V INORGANIC-3

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Nitrogen, Ammonia	mg/L	90-110	5.1	0.045J	5.0	100

SAMPLE NO.

4323792MSD

FORM V INORGANIC-4

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Basis: Wet Parent Sample ID: 92713247001

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Nitrogen, Ammonia	mg/L	90-110	5.1	0.045J	5.0	100

SAMPLE NO.

4299872DUP

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Chromium, Hexavalent	20	0.085	0.083	2

SAMPLE NO.

4300567MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: ug/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Chromium, Hexavalent	20	0.12	0.12	1

SAMPLE NO.

4323790MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Nitrogen, Ammonia	10	5.2	5.2	0

SAMPLE NO.

4323792MSD

FORM VI INORGANIC-2
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Nitrogen, Ammonia	10	5.1	5.1	0

SAMPLE NO.

4299280LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Chromium, Hexavalent	ug/L	0.10	0.11	109	85	115

SAMPLE NO.

4300565LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Chromium, Hexavalent	ug/L	0.10	0.094	94	85	115

SAMPLE NO.

4323788LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Nitrogen, Ammonia	mg/L	5.0	4.9	97	90	110

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 92WA01

Concentration Units: ug/L

Analyte	PQL	IDL	IDL Date
Chromium, Hexavalent	0.012	0.012	12/01/2022

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 7199 Instrument ID: 92WA01

Concentration Units: ug/L

Analyte	PQL	MDL	MDL Date
Chromium, Hexavalent	0.025	0.0043	12/10/2022

FORM IX INORGANIC-1
INSTRUMENT DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: None Instrument ID: 93WTAE

Concentration Units: mg/L

Analyte	PQL	IDL	IDL Date
Nitrogen, Ammonia	0.050	0.050	09/30/2020

FORM IX INORGANIC-2
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 350.1 Rev 2.0 1993 Instrument ID: 93WTAE

Concentration Units: mg/L

Analyte	PQL	MDL	MDL Date
Nitrogen, Ammonia	0.10	0.031	03/16/2021

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 7199 Batch: GCSV 59558

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4299279	4299279BLANK	02/13/2024	50	50
4299280	4299280LCS	02/13/2024	50	50
4299872	4299872DUP	02/13/2024	50	50
4299873	4299873MS	02/13/2024	50	50
92712989001	021224NMW13	02/13/2024	50	50
92712989002	021224NMW31	02/13/2024	50	50
92712989003	021224NMW32S	02/13/2024	50	50
92712989004	021224NMW32D	02/13/2024	50	50
92712989005	021224NWPFDDUPLICAT	02/13/2024	50	50

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 7199 Batch: GCSV 59582

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4300564	4300564BLANK	02/14/2024	50	50
4300565	4300565LCS	02/14/2024	50	50
4300566	4300566MS	02/14/2024	50	50
4300567	4300567MSD	02/14/2024	50	50
92712989006	021324NMW1	02/14/2024	50	50
92712989007	021324NMW12	02/14/2024	50	50

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: EPA 350.1 Rev 2.0 1993 Batch: WETA 97390

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4323787	4323787BLANK	03/06/2024	50	50
4323788	4323788LCS	03/06/2024	50	50
4323789	4323789MS	03/06/2024	50	50
4323790	4323790MSD	03/06/2024	50	50
4323791	4323791MS	03/07/2024	50	50
4323792	4323792MSD	03/07/2024	50	50
92712989001	021224NMW13	03/06/2024	50	50
92712989002	021224NMW31	03/06/2024	50	50
92712989003	021224NMW32S	03/06/2024	50	50
92712989004	021224NMW32D	03/06/2024	50	50
92712989005	021224NWPFDDUPLICAT	03/06/2024	50	50
92712989006	021324NMW1	03/06/2024	50	50
92712989007	021324NMW12	03/06/2024	50	50

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 92WA01 Analysis Method: EPA 7199

Start Date: 02/12/2024 10:35 End Date: 02/15/2024 00:01

Sample Name	Lab Sample ID	D/F	Date	Time	Cr6
28945996CAL0	28945996CAL0	1	02/12/2024	10:35	X
28945997CAL1	28945997CAL1	1	02/12/2024	10:53	X
28945998CAL2	28945998CAL2	1	02/12/2024	11:11	X
28945999CAL3	28945999CAL3	1	02/12/2024	11:28	X
28946000CAL4	28946000CAL4	1	02/12/2024	11:46	X
28946001CAL5	28946001CAL5	1	02/12/2024	12:04	X
28946002CAL6	28946002CAL6	1	02/12/2024	12:21	X
28946003ICV	28946003ICV	1	02/12/2024	12:39	X
28946004ICB	28946004ICB	1	02/12/2024	12:57	X
28946005CRDL	28946005CRDL	1	02/12/2024	13:15	X
28960704CRDL	28960704CRDL	1	02/13/2024	09:02	X
28960706CCV	28960706CCV	1	02/13/2024	09:37	X
28960707CCB	28960707CCB	1	02/13/2024	09:55	X
92712987001	92712987001	1	02/13/2024	11:57	X
021224NMW32D	92712989004	1	02/13/2024	12:32	X
021224NMW31	92712989002	1	02/13/2024	12:50	X
021224NWPFDDUPLICATE	92712989005	1	02/13/2024	13:08	X
021224NMW32S	92712989003	1	02/13/2024	13:25	X
021224NMW13	92712989001	1	02/13/2024	13:43	X
28960708CCV	28960708CCV	1	02/13/2024	15:11	X
28960709CCB	28960709CCB	1	02/13/2024	15:29	X
4299872DUP	4299872	1	02/13/2024	16:05	X
4299873MS	4299873	1	02/13/2024	16:22	X
4299279BLANK	4299279	1	02/13/2024	16:40	X
4299280LCS	4299280	1	02/13/2024	16:58	X
28960711CCV	28960711CCV	1	02/13/2024	18:26	X
28960712CCB	28960712CCB	1	02/13/2024	18:44	X
28973080CRDL	28973080CRDL	1	02/14/2024	08:59	X
28973078CCV	28973078CCV	1	02/14/2024	09:34	X
28973077CCB	28973077CCB	1	02/14/2024	09:52	X
021324NMW12	92712989007	1	02/14/2024	11:11	X
021324NMW1	92712989006	1	02/14/2024	11:49	X
28973076CCV	28973076CCV	1	02/14/2024	15:22	X
28973075CCB	28973075CCB	1	02/14/2024	15:39	X
4300566MS	4300566	1	02/14/2024	17:26	X
4300567MSD	4300567	1	02/14/2024	17:44	X
4300564BLANK	4300564	1	02/14/2024	21:21	X
4300565LCS	4300565	1	02/14/2024	21:39	X
28973072CCV	28973072CCV	1	02/14/2024	23:43	X
28973071CCB	28973071CCB	1	02/15/2024	00:01	X

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

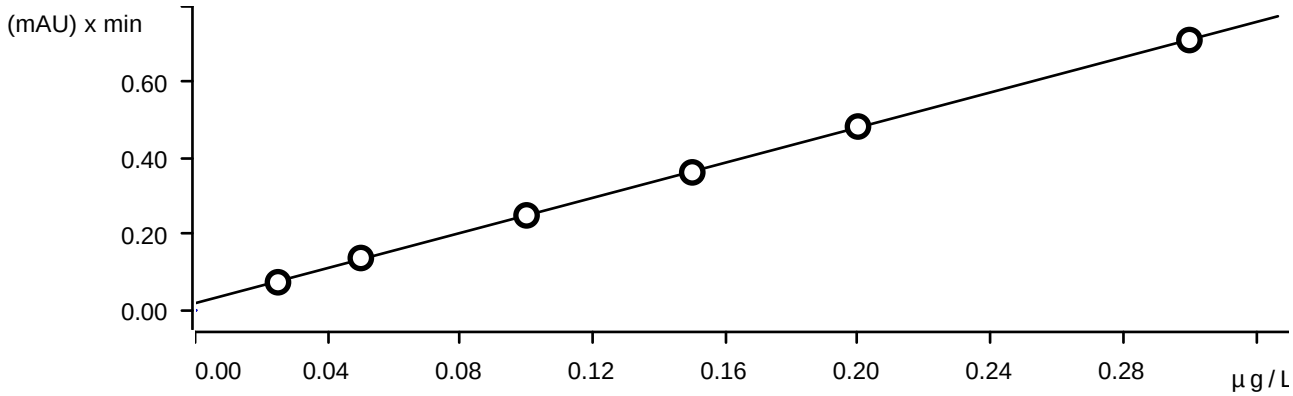
Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93WTAE Analysis Method: EPA 350.1 Rev 2.0 1993

Start Date: 03/06/2024 23:18 End Date: 03/07/2024 00:08

Sample Name	Lab Sample ID	D/F	Date	Time	NH3N
29150189CAL7	29150189CAL7	1	03/06/2024	23:18	X
29150190CAL6	29150190CAL6	1	03/06/2024	23:19	X
29150191CAL5	29150191CAL5	1	03/06/2024	23:21	X
29150192CAL4	29150192CAL4	1	03/06/2024	23:22	X
29150193CAL3	29150193CAL3	1	03/06/2024	23:24	X
29150194CAL2	29150194CAL2	1	03/06/2024	23:25	X
29150195CAL1	29150195CAL1	1	03/06/2024	23:27	X
29150196CAL0	29150196CAL0	1	03/06/2024	23:28	X
29150197ICV	29150197ICV	1	03/06/2024	23:29	X
29150198ICB	29150198ICB	1	03/06/2024	23:31	X
29150199CCV	29150199CCV	1	03/06/2024	23:32	X
29150200CCB	29150200CCB	1	03/06/2024	23:34	X
4323787BLANK	4323787	1	03/06/2024	23:35	X
4323788LCS	4323788	1	03/06/2024	23:37	X
021224NMW13	92712989001	1	03/06/2024	23:44	X
021224NMW31	92712989002	1	03/06/2024	23:45	X
021224NMW32S	92712989003	1	03/06/2024	23:47	X
021224NMW32D	92712989004	1	03/06/2024	23:48	X
29150201CCV	29150201CCV	1	03/06/2024	23:49	X
29150202CCB	29150202CCB	1	03/06/2024	23:51	X
021224NWPFDDUPLICATE	92712989005	1	03/06/2024	23:52	X
021324NMW1	92712989006	1	03/06/2024	23:54	X
4323789MS	4323789	1	03/06/2024	23:55	X
4323790MSD	4323790	1	03/06/2024	23:57	X
021324NMW12	92712989007	1	03/06/2024	23:58	X
92713247001	92713247001	1	03/06/2024	23:59	X
4323791MS	4323791	1	03/07/2024	00:01	X
4323792MSD	4323792	1	03/07/2024	00:02	X
29150203CCV	29150203CCV	1	03/07/2024	00:07	X
29150204CCB	29150204CCB	1	03/07/2024	00:08	X

Cr(VI) (Cr(VI))



Function: . . . . . *A = 0.0186455 + 2.31276E-3× Q*

Relative standard deviation . . . . . *0.840178 %*

Correlation coefficient *0.999943*

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	1000.0	1.0	1.0	n. d.	CAL0	2024-02-12 10:35:45 UTC-5	used
Standard 2	1	0.025	1000.0	1.0	1.0	0.074	CAL1	2024-02-12 10:53:27 UTC-5	used
Standard 3	1	0.050	1000.0	1.0	1.0	0.138	CAL2	2024-02-12 11:11:08 UTC-5	used
Standard 4	1	0.100	1000.0	1.0	1.0	0.250	CAL3	2024-02-12 11:28:50 UTC-5	used
Standard 5	1	0.150	1000.0	1.0	1.0	0.363	CAL4	2024-02-12 11:46:31 UTC-5	used
Standard 6	1	0.200	1000.0	1.0	1.0	0.484	CAL5	2024-02-12 12:04:14 UTC-5	used
Standard 7	1	0.300	1000.0	1.0	1.0	0.712	CAL6	2024-02-12 12:21:56 UTC-5	used

ICAL evaluated and included in support doc

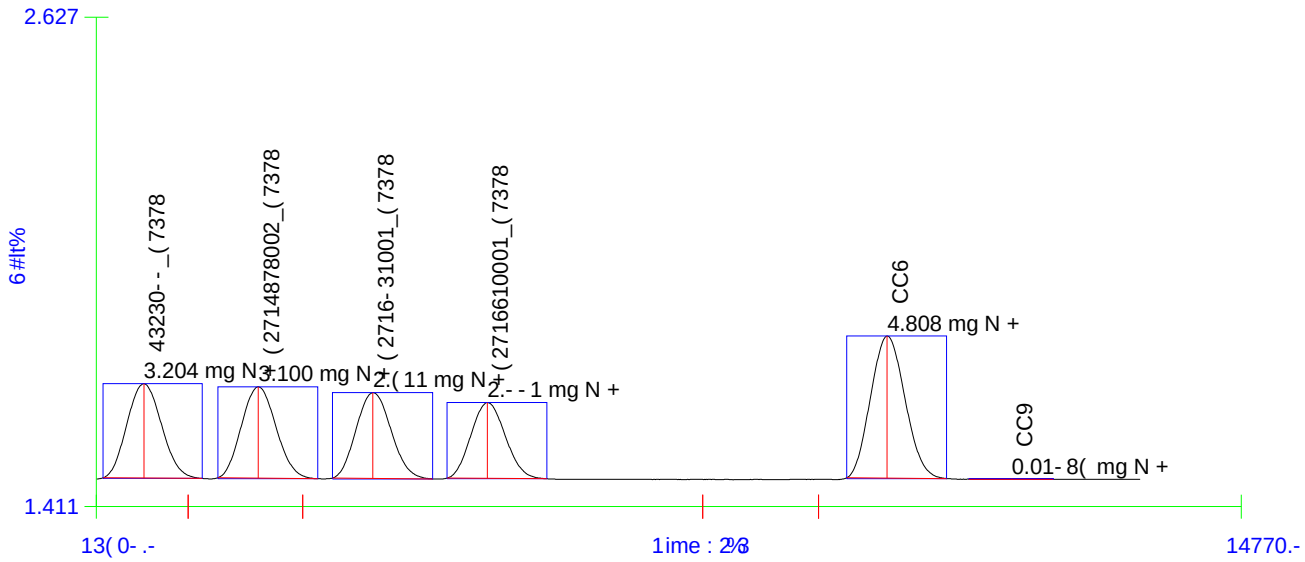
Original Run Filename: OM_3-6-2024_11-17-28PM.OMN Created: 3 6 2024 11:17:28 PM
Original Run ! ut" #r$%&ignature: '(3) etu%er*
Current Run Filename: OM_3-6-2024_11-17-28PM.OMN +a%t M#di,ied: 3 7 2024 4:22:- 6 ! M
Current Run ! ut" #r$%&ignature: '(3) etu%er*

&am. le	Re. .	Cu. N#.	C" annel 1 ! mm#nia C#n0. 2mg N +3	! rea 24.%8	/ ete0ti#n 1ime	M/ F	/ e%0ri. ti#n
C! +7	1	&1	10.00	22.16	3 6 20245 11:18:28 PM		
C! +6	1	&2	- .000	10.80	3 6 20245 11:1(:- 3 PM		
C! +-	1	&3	2.- 00	- .- 28	3 6 20245 11:21:1(PM		
C! +4	1	&4	1.000	2.281	3 6 20245 11:22:44 PM		
C! +3	1	&-	0.- 000	1.162	3 6 20245 11:24:11 PM		
C! +2	1	&6	0.2- 00	0.- 763	3 6 20245 11:2- :37 PM		
C! +1	1	&7	0.1000	0.267-	3 6 20245 11:27:04 PM		
C! +0	1	&8	0.000	0.03164	3 6 20245 11:28:32 PM		
6C4	1	&(	4.(70	10.(7	3 6 20245 11:2(:- 7 PM		
	7n#) n C#n0:		- .000				
6C8	1	&8	0.01280	0.0- 032	3 6 20245 11:31:24 PM		
	7n#) n C#n0:		0.000				
CC4	1	&2	4.881	10.78	3 6 20245 11:32:4(PM		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.00- 76-	0.03482	3 6 20245 11:34:16 PM		
	7n#) n C#n0:		0.000				
4323787_(73(0	1	1	-0.01278	-0.006047	3 6 20245 11:3- :43 PM	1.00	
4323788_(73(0	1	2	4.8- -	10.72	3 6 20245 11:37:0(PM	1.00	
(271- 702001_(73(0	1	3	- .047	11.14	3 6 20245 11:38:3- PM	1.00	
(2712(87001_(73(0	1	4	0.01024	0.04467	3 6 20245 11:40:01 PM	1.00	
(2712(88001_(73(0	1	-	0.004268	0.031- 2	3 6 20245 11:41:27 PM	1.00	
(2712(88002_(73(0	1	6	0.2122	0.48(7	3 6 20245 11:42:- 3 PM	1.00	
(2712(8(001_(73(0	1	7	0.0342(	0.0(76-	3 6 20245 11:44:18 PM	1.00	
(2712(8(002_(73(0	1	8	0.01334	0.0- 1- 1	3 6 20245 11:4- :44 PM	1.00	
(2712(8(003_(73(0	1	(	0.01764	0.060(8	3 6 20245 11:47:0(PM	1.00	
(2712(8(004_(73(0	1	10	0.0227-	0.07224	3 6 20245 11:48:34 PM	1.00	
CC4	1	&2	4.(36	10.(0	3 6 20245 11:4(:- (PM		
	7n#) n C#n0:		- .000				
CC8	1	&8	-0.01147	-0.003160	3 6 20245 11:- 1:26 PM		
	7n#) n C#n0:		0.000				
(2712(8(00- _(73(0	1	11	0.03032	0.088(1	3 6 20245 11:- 2:- 1 PM	1.00	
(2712(8(006_(73(0	1	12	0.0164-	0.0- 83-	3 6 20245 11:- 4:16 PM	1.00	
432378(_(73(0	1	13	- .201	11.48	3 6 20245 11:- - :41 PM	1.00	
43237(0_(73(0	1	14	- .183	11.44	3 6 20245 11:- 7:0- PM	1.00	
(2712(8(007_(73(0	1	1-	0.06008	0.1- 4-	3 6 20245 11:- 8:30 PM	1.00	
(2713247001_(73(0	1	16	0.04- 42	0.1222	3 6 20245 11:- (:- 7 PM	1.00	
43237(1_(73(0	1	17	- .0- 2	11.1-	3 7 20245 12:01:23 ! M	1.00	
43237(2_(73(0	1	18	- .068	11.1(	3 7 20245 12:02:4(! M	1.00	
(2713248001_(73(0	1	1(	-0.01746	-0.01634	3 7 20245 12:04:16 ! M	1.00	
(2713248002_(73(0	1	20	0.007100	0.03776	3 7 20245 12:0- :41 ! M	1.00	
CC4	1	&2	4.(24	10.87	3 7 20245 12:07:07 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.01763	0.060(-	3 7 20245 12:08:34 ! M		
	7n#) n C#n0:		0.000				
(2713248003_(73(0	1	21	0.0186-	0.06321	3 7 20245 12:10:00 ! M	1.00	
(2713247002_(73(0	1	22	0.- 2(3	1.188	3 7 20245 12:11:26 ! M	1.00	
(2713247003_(73(0	1	23	0.02806	0.083(4	3 7 20245 12:12:- 1 ! M	1.00	
(2713247004_(73(0	1	24	0.002726	0.02812	3 7 20245 12:14:17 ! M	1.00	
(271324700- _(73(0	1	2-	-0.00- 73-	0.00(481	3 7 20245 12:1- :42 ! M	1.00	
(2713247006_(73(0	1	26	0.01734	0.06031	3 7 20245 12:17:07 ! M	1.00	
4323807_(73(1	1	27	-0.00132-	0.01(20	3 7 20245 12:18:32 ! M	1.00	
4323808_(73(1	1	28	4.861	10.73	3 7 20245 12:1(:- 7 ! M	1.00	
(271- 121002_(73(1	1	2(	0.03- (-	0.1013	3 7 20245 12:21:22 ! M	1.00	
432380(_(73(1	1	30	- .103	11.26	3 7 20245 12:22:47 ! M	1.00	
CC4	1	&2	4.(08	10.83	3 7 20245 12:24:11 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.00((77	0.04410	3 7 20245 12:2- :3(! M		
	7n#) n C#n0:		0.000				
4323810_(73(1	1	31	- .110	11.28	3 7 20245 12:27:0- ! M	1.00	

(271- 121003_(73(1	1	32	0.040- 0	0.1113	3 7 20245 12:28:32 ! M	1.00	
(271- 24(002_(73(1	1	33	8.746	1(.2(	3 7 20245 12:2(:- 8 ! M	3.00	
(271- 2- 3001_(73(1	1	34	3.808	8.411	3 7 20245 12:31:24 ! M	1.00	
(271- 280001_(73(1	1	3-	0.0401-	0.1106	3 7 20245 12:32:- 1 ! M	1.00	
(271- 763002_(73(1	1	36	2.307	- .104	3 7 20245 12:34:17 ! M	6.00	
(2713248004_(73(1	1	37	0.2062	0.476-	3 7 20245 12:3- :43 ! M	1.00	
(271324800- _(73(1	1	38	0.00746-	0.038- 6	3 7 20245 12:37:08 ! M	1.00	
(2713248006_(73(1	1	3(	-0.002(34	0.01- 6-	3 7 20245 12:38:34 ! M	1.00	
(2713- 3- 001_(73(1	1	40	0.2212	0.- 0(-	3 7 20245 12:40:00 ! M	1.00	
CC4	1	&2	4.8(1	10.80	3 7 20245 12:41:24 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.0103(	0.04- 00	3 7 20245 12:42:- 2 ! M		
	7n#) n C#n0:		0.000				
	Cali9rati#n:		1a9le Fig. : 1				
(2713- 3- 002_(73(1	1	41	0.03101	0.0(043	3 7 20245 12:44:17 ! M	1.00	
(2713- 3- 003_(73(1	1	42	0.21- 6	0.4(70	3 7 20245 12:4- :42 ! M	1.00	
(2713- 3- 004_(73(1	1	43	0.2144	0.4(44	3 7 20245 12:47:07 ! M	1.00	
4323811_(73(1	1	44	- .161	11.3(	3 7 20245 12:48:32 ! M	1.00	
4323812_(73(1	1	4-	- .1(0	11.46	3 7 20245 12:4(:- 7 ! M	1.00	
(2713- 3- 00- _(73(1	1	46	0.028- 2	0.084(4	3 7 20245 12:- 1:24 ! M	1.00	
(2713- 3- 006_(73(1	1	47	0.01264	0.04((7	3 7 20245 12:- 2:- 1 ! M	1.00	
(2713- 3- 007_(73(1	1	48	0.01242	0.04(4(	3 7 20245 12:- 4:17 ! M	1.00	
(2712((0001_(73(1	1	4(	0.02266	0.07203	3 7 20245 12:- - :44 ! M	1.00	
(2712((0002_(73(1	1	- 0	0.3280	0.7447	3 7 20245 12:- 7:10 ! M	1.00	
CC4	1	&2	4.8(8	10.81	3 7 20245 12:- 8:3- ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.01638	0.0- 821	3 7 20245 1:00:03 ! M		
	7n#) n C#n0:		0.000				
(2712((0003_(73(1	1	- 1	0.1410	0.3328	3 7 20245 1:01:28 ! M	1.00	
(2713862001_(73(1	1	- 2	7.6(1	16.(7	3 7 20245 1:02:- 4 ! M	1.00	
4323036_(7364	1	- 3	-0.01(40	-0.02062	3 7 20245 1:04:20 ! M	1.00	
4323037_(7364	1	- 4	4.841	10.6(	3 7 20245 1:0- :46 ! M	1.00	
(27162(- 003_(7364	1	- -	0.00- 47(	0.0341(	3 7 20245 1:07:12 ! M	1.00	
4323038_(7364	1	- 6	4.8- 0	10.71	3 7 20245 1:08:38 ! M	1.00	
432303(_(7364	1	- 7	4.842	10.6(	3 7 20245 1:10:03 ! M	1.00	
(27162(- 004_(7364	1	- 8	1.148	2.- - 2	3 7 20245 1:11:28 ! M	1.00	
4323040_(7364	1	- (	6.0- -	13.36	3 7 20245 1:12:- 3 ! M	1.00	
4323041_(7364	1	60	6.0- -	13.36	3 7 20245 1:14:18 ! M	1.00	
CC4	1	&2	4.886	10.7(	3 7 20245 1:1- :43 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.010(0	0.04612	3 7 20245 1:17:11 ! M		
	7n#) n C#n0:		0.000				
(27162(- 00- _(7364	1	61	0.003321	0.02(43	3 7 20245 1:18:38 ! M	1.00	
(27162(- 006_(7364	1	62	0.00- 303	0.03380	3 7 20245 1:20:04 ! M	1.00	
(27164- 8001_(7364	1	63	14.4-	31.8-	3 7 20245 1:21:32 ! M	1.00	
(2714(44002_(7364	1	64	0.01783	0.0613(	3 7 20245 1:22:- 8 ! M	1.00	
(2714(44003_(7364	1	6-	0.01(04	0.06406	3 7 20245 1:24:24 ! M	1.00	
(271- 022002_(7364	1	66	24.2-	- 3.44	3 7 20245 1:2- :- 1 ! M	1.00	
(271- 02(001_(7364	1	67	0.02016	0.066- 4	3 7 20245 1:27:17 ! M	1.00	
(271- 0- 1001_(7364	1	68	3.- 34	7.808	3 7 20245 1:28:43 ! M	3.00	
(271- 127001_(7364	1	6(	10.22	22.- 3	3 7 20245 1:30:0(! M	3.00	
(271- 127002_(7364	1	70	11.21	24.72	3 7 20245 1:31:3- ! M	3.00	
CC4	1	&2	4.8- 3	10.71	3 7 20245 1:33:00 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.0063(4	0.03620	3 7 20245 1:34:27 ! M		
	7n#) n C#n0:		0.000				
(271- 127003_(7364	1	71	14.62	32.23	3 7 20245 1:3- :- 3 ! M	1.00	
(271- 171001_(7364	1	72	4.6- 0	10.27	3 7 20245 1:37:1(! M	- .00	
(271- - 46001_(7364	1	73	- .074	11.20	3 7 20245 1:38:44 ! M	1.00	
(271- - - 2001_(7364	1	74	- .- 7-	12.30	3 7 20245 1:40:0(! M	1.00	
(271- - 60001_(7364	1	7-	0.- - 23	1.23(	3 7 20245 1:41:34 ! M	1.00	
(271- 247001_(7364	1	76	0.426(	0.(627	3 7 20245 1:43:01 ! M	1.00	
(271- 247002_(7364	1	77	48.36	106.6	3 7 20245 1:44:28 ! M	1.00	
(271- 247003_(7364	1	78	88.77	1(- .6	3 7 20245 1:4- :- - ! M	1.00	
4323042_(736-	1	7(	-0.01- (8	-0.0130(	3 7 20245 1:47:22 ! M	1.00	
4323043_(736-	1	80	4.843	10.6(	3 7 20245 1:48:48 ! M	1.00	
CC4	1	&2	4.8((	10.81	3 7 20245 1:- 0:14 ! M		
	7n#) n C#n0:		- .000				

CC8	1	&8	0.03177	0.0(210	3 7 20245 1:- 1:41 ! M		
	7n#) n C#n0:		0.000				
(271- 74(001_(736-	1	81	0.06410	0.1633	3 7 20245 1:- 3:07 ! M	1.00	
4323044_(736-	1	82	4.(18	10.86	3 7 20245 1:- 4:34 ! M	1.00	
432304- _(736-	1	83	4.(40	10.(0	3 7 20245 1:- 6:00 ! M	1.00	
(271- 7- 1001_(736-	1	84	4(.14	108.3	3 7 20245 1:- 7:26 ! M	1.00	
4323046_(736-	1	8-	- 2.76	116.3	3 7 20245 1:- 8:- 2 ! M	1.00	
4323047_(736-	1	86	- 2.80	116.3	3 7 20245 2:00:18 ! M	1.00	
(271- 762001_(736-	1	87	4.(7(	10.((	3 7 20245 2:01:43 ! M	1.00	
(271- 776001_(736-	1	88	(.0(7	20.06	3 7 20245 2:03:0(! M	6.00	
(271- 780001_(736-	1	8(	1.37-	3.0- 1	3 7 20245 2:04:34 ! M	2- 0.00	
(271- 7((001_(736-	1	(0	- .241	11.- 7	3 7 20245 2:0- :- (! M	- .00	
CC4	1	&2	4.867	10.74	3 7 20245 2:07:24 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.008((-	0.041(3	3 7 20245 2:08:- 2 ! M		
	7n#) n C#n0:		0.000				
(271- 820001_(736-	1	(1	6.2- 2	13.7(	3 7 20245 2:10:1(! M	6.00	
(271- 820002_(736-	1	(2	0.04841	0.1288	3 7 20245 2:11:46 ! M	1.00	
(271- 823001_(736-	1	(3	6.812	1- .03	3 7 20245 2:13:14 ! M	- .00	
(271- 823002_(736-	1	(4	0.02407	0.07- 1-	3 7 20245 2:14:41 ! M	1.00	
(271- 832001_(736-	1	(-	0.01441	0.0- 386	3 7 20245 2:16:08 ! M	1.00	
(271- (- 6001_(736-	1	(6	3.- 23	7.784	3 7 20245 2:17:3- ! M	1.00	
(2716143001_(736-	1	(7	0.3088	0.7024	3 7 20245 2:1(:01 ! M	1.00	
(271- - 43007_(736-	1	(8	0.01641	0.0- 826	3 7 20245 2:20:28 ! M	1.00	
(2716- ((001_(736-	1	((	0.03328	0.0(- 43	3 7 20245 2:21:- 4 ! M	1.00	
(2716- ((002_(736-	1	100	0.004- 71	0.0321(	3 7 20245 2:23:20 ! M	1.00	
CC4	1	&2	4.82-	10.6-	3 7 20245 2:24:4- ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.01011	0.04438	3 7 20245 2:26:12 ! M		
	7n#) n C#n0:		0.000				
(2716- ((003_(736-	1	101	0.00(113	0.0421(	3 7 20245 2:27:3(! M	1.00	
(2716614001_(736-	1	102	0.2787	0.6362	3 7 20245 2:2(:04 ! M	1.00	
(2716614002_(736-	1	103	0.0166(	0.0- 888	3 7 20245 2:30:30 ! M	1.00	
(2716614003_(736-	1	104	0.01080	0.04- (0	3 7 20245 2:31:- 6 ! M	1.00	
43230- 2_(7378	1	10-	0.001- 6-	0.02- - 6	3 7 20245 2:33:21 ! M	1.00	
43230- 3_(7378	1	106	4.7(4	10.- 8	3 7 20245 2:34:4(! M	1.00	
(2714877002_(7378	1	107	1- .06	33.21	3 7 20245 2:36:16 ! M	1.00	
43230- 4_(7378	1	108	1- .- 4	34.27	3 7 20245 2:37:43 ! M	1.00	
43230- - _(7378	1	10(	1- .38	33.(0	3 7 20245 2:3(:10 ! M	1.00	
(2714878002_(7378	1	110	1- .24	33.60	3 7 20245 2:40:37 ! M	1.00	
CC4	1	&2	4.776	10.- 4	3 7 20245 2:42:02 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.0087(0	0.04148	3 7 20245 2:43:2(! M		
	7n#) n C#n0:		0.000				
(2716- 31001_(7378	1	111	27.8(	61.46	3 7 20245 2:44:- 6 ! M	1.00	
(2716610001_(7378	1	112	24.64	- 4.30	3 7 20245 2:46:22 ! M	1.00	
(27164- 8001_(7364	1	113	2.(- -	6.- 32	3 7 20245 2:47:4(! M	- .00	
(271- 022002_(7364	1	114	2.- 67	- .677	3 7 20245 2:4(:16 ! M	10.00	
(271- 127001_(7364	1	11-	6.302	13.(1	3 7 20245 2:- 0:41 ! M	- .00	
(271- 127002_(7364	1	116	6.814	1- .03	3 7 20245 2:- 2:08 ! M	- .00	
(271- 127003_(7364	1	117	3.066	6.776	3 7 20245 2:- 3:34 ! M	- .00	
(271- 247002_(7364	1	118	- .370	11.8-	3 7 20245 2:- - :00 ! M	10.00	
(271- 247003_(7364	1	11(	- .63(	12.4-	3 7 20245 2:- 6:2- ! M	20.00	
(271- 7- 1001_(736-	1	120	2.117	4.686	3 7 20245 2:- 7:- 1 ! M	2- .00	
CC4	1	&2	4.814	10.63	3 7 20245 2:- (:16 ! M		
	7n#) n C#n0:		- .000				
CC8	1	&8	0.01017	0.044- 2	3 7 20245 3:00:44 ! M		
	7n#) n C#n0:		0.000				
4323046_(736-	1	121	2.31-	- .122	3 7 20245 3:02:12 ! M	2- .00	
4323047_(736-	1	122	2.316	- .124	3 7 20245 3:03:3(! M	2- .00	
(2714877002_(7378	1	123	3.101	6.8- 4	3 7 20245 3:0- :07 ! M	- .00	
43230- 4_(7378	1	124	3.187	7.042	3 7 20245 3:06:34 ! M	- .00	
43230- - _(7378	1	12-	3.204	7.081	3 7 20245 3:08:01 ! M	- .00	
(2714878002_(7378	1	126	3.100	6.8- 2	3 7 20245 3:0(:28 ! M	- .00	
(2716- 31001_(7378	1	127	2.(11	6.436	3 7 20245 3:10:- - ! M	10.00	
(2716610001_(7378	1	128	2.- - 1	- .642	3 7 20245 3:12:21 ! M	10.00	
CC4	1	&2	4.808	10.61	3 7 20245 3:17:24 ! M		
	7n#) n C#n0:		- .000				

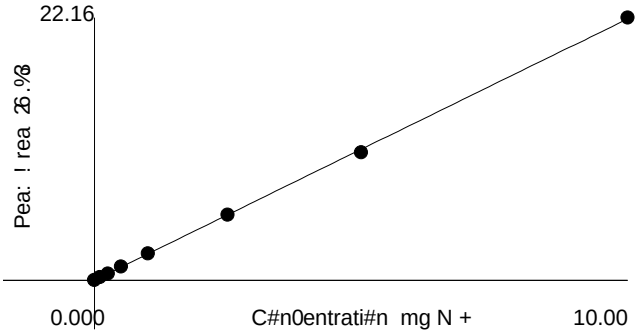
C" annel 1 2 mm#nia3 - &et: 17 17



1a8le : 1 2 mm#nia3

	7n#) n C#n0. 2mg N +3	Re. .	Pea: ! rea 26.%3	Pea: ; eig" t 263	< R&/	< Re%idual	/ et. C#n0 2mg N +3	/ ete0ti#n / ate	/ ete0ti#n 1ime
1	10.00	1	22.16	0.7164	0.0	-0.-	10.0-	3 6 2024	11:18:28 PM
2	- .000	1	10.80	0.3- 1-	0.0	2.2	4.8(1	3 6 2024	11:1(:- 3 PM
3	2.- 00	1	- .- 28	0.1806	0.0	0.0	2.4((	3 6 2024	11:21:1(PM
4	1.000	1	2.281	0.07427	0.0	-2.-	1.026	3 6 2024	11:22:44 PM
-	0.- 000	1	1.162	0.03782	0.0	-3.3	0.- 173	3 6 2024	11:24:11 PM
6	0.2- 00	1	0.- 763	0.01(11	0.0	-0.4	0.2- 1-	3 6 2024	11:2- :37 PM
7	0.1000	1	0.267-	0.008732	0.0	-(.(	0.1114	3 6 2024	11:27:04 PM
8	0.000	1	0.03164	0.001184			0.004321	3 6 2024	11:28:32 PM

Figure : 1 2 mm#nia3



! rea = 2.203 >C#n0 ? 0.02307
C#n0 = 0.4- 3(>! rea - 0.01004
C#rrelati#n C#e,,i0ient 23= 0.((((1

@eig" ting : N#ne

ICAL evaluated and included in support doc.

Prep Log Report

Batch Information: WETA_97364 NH3

LOG | WC Automated Analysis Traceability Log (ASHV)

Prep Method	EPA 350.1 Rev 2.0 1993	Analysis Method	EPA 350.1 Rev 2.0 1993	Prepared By	NCF	Prep Date/Time	03/06/2024 22:23:30:250
Instrument	93WTAE	Sodium Nitroprusside Solution	263579	NH3 buffer	263033	NH3 Carrier	263575
DCIC Solution	263683	FlipMate Filter	None Added	Serum Filters	260156	NH3 Alkaline Donor	262834
Pipette ID 1	93P102	Pipette ID 2	93P087	Pipette ID 3	93P035	Reviewed By	KDF1
Reviewed By Date	03/07/2024 11:02	Batch Notes					

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	NH3/TKN-SPK (mL)	CAL-STD
3501 W	BLANK	**4323036**	50	50	Yes	Water			
3501 W	LCS	**4323037**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92716295003**	50	50	Yes	Water			
3501 W	MS	**4323038**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323039**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92716295004**	50	50	Yes	Water			
3501 W	MS	**4323040**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323041**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92716295005**	50	50	Yes	Water			
3501 W	PS	**92716295006**	50	50	Yes	Water			
3501 W	PS	**92716458001**	50	50	Yes	Water	5x		
3501 W	PS	**92714944002**	50	50	Yes	Water			
3501 W	PS	**92714944003**	50	50	Yes	Water			
3501 W	PS	**92715022002**	50	50	Yes	Water	10x		
3501 W	PS	**92715029001**	50	50	Yes	Water			
3501 W	PS	**92715051001**	50	50	Yes	Water	3x		
3501 W	PS	**92715127001**	50	50	Yes	Water	5x		
3501 W	PS	**92715127002**	50	50	Yes	Water	5x		
3501 W	PS	**92715127003**	50	50	Yes	Water	5x		

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	NH3/TKN-SPK (mL)	CAL-STD
3501 W	PS	**92715171001**	50	50	Yes	Water	5x		
3501 W	PS	**92715546001**	50	50	Yes	Water			
3501 W	PS	**92715552001**	50	50	Yes	Water			
3501 W	PS	**92715560001**	50	50	Yes	Water			
3501 W	PS	**92715247001**	50	50	Yes	Water			
3501 W	PS	**92715247002**	50	50	Yes	Water	10x		
3501 W	PS	**92715247003**	50	50	Yes	Water	20x		
3501 W	BLANK	**4323042**	50	50	Yes	Water			
3501 W	LCS	**4323043**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92715749001**	50	50	Yes	Water			
3501 W	MS	**4323044**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323045**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92715751001**	50	50	Yes	Water	25x		
3501 W	MS	**4323046**	50	50	Yes	Water	25x	250247 (.25)	
3501 W	MSD	**4323047**	50	50	Yes	Water	25x	250247 (.25)	
3501 W	PS	**92715762001**	50	50	Yes	Water			
3501 W	PS	**92715776001**	50	50	Yes	Water	6x		
3501 W	PS	**92715780001**	50	50	Yes	Water	250x		
3501 W	PS	**92715799001**	50	50	Yes	Water	5x		
3501 W	PS	**92715820001**	50	50	Yes	Water	6x		
3501 W	PS	**92715820002**	50	50	Yes	Water			
3501 W	PS	**92715823001**	50	50	Yes	Water	5x		
3501 W	PS	**92715823002**	50	50	Yes	Water			
3501 W	PS	**92715832001**	50	50	Yes	Water			
3501 W	PS	**92715956001**	50	50	Yes	Water			
3501 W	PS	**92716143001**	50	50	Yes	Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	NH3/TKN-SPK (mL)	CAL-STD
3501 W	PS	**92715543007**	50	50	Yes	Water			
3501 W	PS	**92716599001**	50	50	Yes	Water			
3501 W	PS	**92716599002**	50	50	Yes	Water			
3501 W	PS	**92716599003**	50	50	Yes	Water			
3501 W	PS	**92716614001**	50	50	Yes	Water			
3501 W	PS	**92716614002**	50	50	Yes	Water			
3501 W	PS	**92716614003**	50	50	Yes	Water			
3501 S2	BLANK	**4323052**	.5	50	Yes	Solid			
3501 S2	LCS	**4323053**	.5	50	Yes	Solid			
3501 S2	PS	**92714877002**	.51	50	Yes	Solid	5x		
3501 S2	MS	**4323054**	.54	50	Yes	Solid	5x		
3501 S2	MSD	**4323055**	.52	50	Yes	Solid	5x		
3501 S2	PS	**92714878002**	.55	50	Yes	Solid	5x		
3501 S2	PS	**92716531001**	.57	50	Yes	Solid	10x		
3501 S2	PS	**92716610001**	.51	50	Yes	Solid	10x		
3501 W	BLANK	**4323787**	50	50	Yes	Water			
3501 W	LCS	**4323788**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92715702001**	50	50	Yes	Water			
3501 W	PS	**92712987001**	50	50	Yes	Water			
3501 W	PS	**92712988001**	50	50	Yes	Water			
3501 W	PS	**92712988002**	50	50	Yes	Water			
3501 W	PS	**92712989001**	50	50	Yes	Water			
3501 W	PS	**92712989002**	50	50	Yes	Water			
3501 W	PS	**92712989003**	50	50	Yes	Water			
3501 W	PS	**92712989004**	50	50	Yes	Water			
3501 W	PS	**92712989005**	50	50	Yes	Water			
3501 W	RQS	**92712989006**	50	50	Yes	Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	NH3/TKN-SPK (mL)	CAL-STD
3501 W	MS	**4323789**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323790**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92712989007**	50	50	Yes	Water			
3501 W	RQS	**92713247001**	50	50	Yes	Water			
3501 W	MS	**4323791**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323792**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92713248001**	50	50	Yes	Water			
3501 W	PS	**92713248002**	50	50	Yes	Water			
3501 W	PS	**92713248003**	50	50	Yes	Water			
3501 W	PS	**92713247002**	50	50	Yes	Water			
3501 W	PS	**92713247003**	50	50	Yes	Water			
3501 W	PS	**92713247004**	50	50	Yes	Water			
3501 W	PS	**92713247005**	50	50	Yes	Water			
3501 W	PS	**92713247006**	50	50	Yes	Water			
3501 W	BLANK	**4323807**	50	50	Yes	Water			
3501 W	LCS	**4323808**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92715121002**	50	50	Yes	Water			
3501 W	MS	**4323809**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323810**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92715121003**	50	50	Yes	Water			
3501 W	PS	**92715249002**	50	50	Yes	Water	3x		
3501 W	PS	**92715253001**	50	50	Yes	Water			
3501 W	PS	**92715280001**	50	50	Yes	Water			
3501 W	PS	**92715763002**	50	50	Yes	Water	6x		
3501 W	PS	**92713248004**	50	50	Yes	Water			

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	NH3/TKN-SPK (mL)	CAL-STD
3501 W	PS	**92713248005**	50	50	Yes	Water			
3501 W	PS	**92713248006**	50	50	Yes	Water			
3501 W	PS	**92713535001**	50	50	Yes	Water			
3501 W	PS	**92713535002**	50	50	Yes	Water			
3501 W	PS	**92713535003**	50	50	Yes	Water			
3501 W	RQS	**92713535004**	50	50	Yes	Water			
3501 W	MS	**4323811**	50	50	Yes	Water		250247 (.25)	
3501 W	MSD	**4323812**	50	50	Yes	Water		250247 (.25)	
3501 W	PS	**92713535005**	50	50	Yes	Water			
3501 W	PS	**92713535006**	50	50	Yes	Water			
3501 W	PS	**92713535007**	50	50	Yes	Water			
3501 W	PS	**92712990001**	50	50	Yes	Water			
3501 W	PS	**92712990002**	50	50	Yes	Water			
3501 W	PS	**92712990003**	50	50	Yes	Water			
3501 W	PS	**92713862001**	50	50	Yes	Water			
WETA NH3_Q	CCV	**CCV**	1	1		Water			263259 (1)
WETA NH3_Q	CCB	**CCB**	1	1		Water			263266 (1)
WETA NH3_Q	CAL0	**CAL0**	1	1		Water			263266 (1)
WETA NH3_Q	CAL1	**CAL1**	1	1		Water			263265 (1)
WETA NH3_Q	CAL2	**CAL2**	1	1		Water			263264 (1)
WETA NH3_Q	CAL3	**CAL3**	1	1		Water			263262 (1)
WETA NH3_Q	CAL4	**CAL4**	1	1		Water			263261 (1)
WETA NH3_Q	CAL5	**CAL5**	1	1		Water			263260 (1)
WETA NH3_Q	CAL6	**CAL6**	1	1		Water			263259 (1)
WETA NH3_Q	CAL7	**CAL7**	1	1		Water			263258 (1)
WETA NH3_Q	ICB	**ICB**	1	1		Water			263266 (1)

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Initial Amount (g | mL | wipe)	Final Volume (mL)	Filtered	Matrix	Sample Notes	NH3/TKN-SPK (mL)	CAL-STD
WETA NH3_Q	ICV	**ICV**	1	1		Water			263267 (1)

Standard Notes:

250247: WETA CAL STD 1000 PPM NH3 TKN AVL
263258: WETA- NH3 CAL7 10 mg/L
263259: WETA- NH3 CAL6 5 mg/L
263260: WETA- NH3 CAL5 2.5 mg/L
263261: WETA- NH3 CAL4 1.0 mg/L
263262: WETA- NH3 CAL 3 -0.5 mg/L
263264: WETA- NH3 CAL2 0.25 mg/L
263265: WETA- NH3 CAL1 0.1 mg/L
263266: WETA- NH3 CAL0 CCB/ICB
263267: WETA- NH3 ICV 5.0 mg/L

SAMPLE NO.

021224NMW13

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	299		mg/L	1	02/17/2024 01:17

SAMPLE NO.

021224NMW31

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	120		mg/L	1	02/17/2024 01:18

SAMPLE NO.

021224NMW32S

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	54.0		mg/L	1	02/17/2024 01:19

SAMPLE NO.

021224NMW32D

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	128		mg/L	1	02/17/2024 01:21

SAMPLE NO.

021224NWPFDDUPLICATE

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	122		mg/L	1	02/17/2024 01:24

SAMPLE NO.

021324NMW1

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	46.4		mg/L	1	02/17/2024 01:29

SAMPLE NO.

021324NMW12

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Lab Sample ID: 92712989007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
	Total Dissolved Solids	214		mg/L	1	02/20/2024 15:33

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93BAL8

Method Blank Concentration Units: mg/L

Analyte	Initial Calibration Blank		Continuing Calibration Blank						Method Blank	
		C		C		C		C	4305515	C
Total Dissolved Solids									ND	U

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract : Bremo_1SA2024_CCR&VSWMR_P_F

Method Blank Matrix: Water Instrument ID: 93BAL8

Method Blank Concentration Units: mg/L

Analyte	Initial Calibration Blank		Continuing Calibration Blank						Method Blank	
		C		C		C		C	4306953	C
Total Dissolved Solids									ND	U

SAMPLE NO.

4305517DUP

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Total Dissolved Solids	25	46.4	43.6	6

SAMPLE NO.

4306955DUP

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	RPD Control Limit	Sample	Duplicate	RPD
Total Dissolved Solids	25	254	253	0

SAMPLE NO.

4305516LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Total Dissolved Solids	mg/L	250	230	92	80	120

SAMPLE NO.

4306954LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWM

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Total Dissolved Solids	mg/L	250	246	98	80	120

FORM IX INORGANIC-1
METHOD DETECTION LIMITS

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: SM 2540C-2015 Instrument ID: 93BAL8

Concentration Units: mg/L

Analyte	PQL	MDL	MDL Date
Total Dissolved Solids	10.0	10.0	08/01/2021

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: SM 2540C-2015 Batch: WET 113527

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4305515	4305515BLANK	02/17/2024	250	250
4305516	4305516LCS	02/17/2024	50	50
4305517	4305517DUP	02/17/2024	250	250
92712989001	021224NMW13	02/17/2024	250	250
92712989002	021224NMW31	02/17/2024	250	250
92712989003	021224NMW32S	02/17/2024	250	250
92712989004	021224NMW32D	02/17/2024	250	250
92712989005	021224NWPFDDUPLICAT	02/17/2024	250	250
92712989006	021324NMW1	02/17/2024	250	250

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Preparation Method: SM 2540C-2015 Batch: WET 113568

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
4306953	4306953BLANK	02/20/2024	250	250
4306954	4306954LCS	02/20/2024	50	50
4306955	4306955DUP	02/20/2024	250	250
92712989007	021324NMW12	02/20/2024	250	250

FORM XIII INORGANIC-1
ANALYSIS RUN LOG

Lab Name: Pace Analytical - Charlotte SDG No. : 92712989 Contract: Bremo_1SA2024_CCR&VSWMR_P_F

Instrument ID: 93BAL8 Analysis Method: SM 2540C-2015

Start Date: 02/17/2024 01:16 End Date: 02/20/2024 15:35

Sample Name	Lab Sample ID	D/F	Date	Time	tds w
4305515BLANK	4305515	1	02/17/2024	01:16	X
4305516LCS	4305516	1	02/17/2024	01:16	X
021224NMW13	92712989001	1	02/17/2024	01:17	X
021224NMW31	92712989002	1	02/17/2024	01:18	X
021224NMW32S	92712989003	1	02/17/2024	01:19	X
021224NMW32D	92712989004	1	02/17/2024	01:21	X
021224NWPFDDUPLICATE	92712989005	1	02/17/2024	01:24	X
021324NMW1	92712989006	1	02/17/2024	01:29	X
4305517DUP	4305517	1	02/17/2024	01:31	X
4306953BLANK	4306953	1	02/20/2024	15:32	X
4306954LCS	4306954	1	02/20/2024	15:33	X
021324NMW12	92712989007	1	02/20/2024	15:33	X
92713247001	92713247001	1	02/20/2024	15:34	X
4306955DUP	4306955	1	02/20/2024	15:35	X

Prep Log Report

Batch Information: TDS 113527 LL

2540C | TDS

Analysis Method	SM 2540C-2015	Analyzed By	RVS	Instrument	93BAL8	Evap. Oven ID	93OVN6
Acceptance Range	94-98 C	Evap Thermometer ID	93T016	Evap. Correction Factor (C)	0	Evap Temp In1 (C) | Corr | Date/Time | Init	93.00 | 93.00 | 02/17/2024 02:57 | RVS
Evap Temp Out1 (C) | Corr | Date/Time | Init	94.70 | 94.70 | 02/18/2024 11:38 | JAY	Oven ID	93OVN9	Acceptance Range	178-182 C	Thermometer ID	93T025
Oven Correction Factor (C)	0	Oven Temp In1 (C) | Corr | Date/Time | Init	180.6 | 180.6 | 02/18/2024 11:39 | JAY	Oven Temp Out1 (C) | Corr | Date/Time | Init	180.6 | 180.6 | 02/18/2024 14:45 | JAY	Oven Temp In2 (C) | Corr | Date/Time | Init	180.7 | 180.7 | 02/19/2024 15:15 | JAY
Oven Temp Out2 (C) | Corr | Date/Time | Init	180.7 | 180.7 | 02/19/2024 21:15 | MDW	Oven Temp In3 (C) | Corr | Date/Time | Init	180.7 | 180.7 | 02/20/2024 06:51 | JP1	Oven Temp Out3 (C) | Corr | Date/Time | Init	179.4 | 179.4 | 02/20/2024 19:12 | MDW	Oven Temp In4 (C) | Corr | Date/Time | Init	
Reviewed By	JMH1	Reviewed By Date	02/21/2024 11:43	Batch Notes			

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Select	ID	TDS Screen (mg/L)	TDS Residue (g)	TDS Posted (mg/L)	TDS Final (mg/L)	Run Date/Time	TSS Filters ()	Beaker Wt 1 (g)	Beaker Use 1	Initial Volume (mL)	Oven Wt 1 (g)
2540C WLL2	BLANK	**4305515**	Y	Y2		0.0002	0.8000	0.8000	02/17/2024 01:16:06	259694 ()	138.3265	M	250	138.3264
2540C WLL2	LCS	**4305516**	Y	Y1		0.0115	230.00	230.00	02/17/2024 01:16:39	259694 ()	137.9355	M	50	137.9467
2540C WLL2	PS	**92712989001**	Y	BB	252	0.0748	299.20	299.20	02/17/2024 01:17:25	259694 ()	135.3302	M	250	135.4046
2540C WLL2	PS	**92712989002**	Y	ZZ5	100	0.0301	120.40	120.40	02/17/2024 01:18:03	259694 ()	139.1477	M	250	139.1777
2540C WLL2	PS	**92712989003**	Y	M	41	0.0135	54.000	54.000	02/17/2024 01:19:23	259694 ()	136.963	M	250	136.9762
2540C WLL2	PS	**92712989004**	Y	: *	124	0.0320	128.00	128.00	02/17/2024 01:21:22	259694 ()	137.1834	M	250	137.2153
2540C WLL2	PS	**92712989005**	Y	ZZ2	98	0.0306	122.40	122.40	02/17/2024 01:24:57	259694 ()	138.373	M	250	138.4032
2540C WLL2	PS	**92712990001**	Y	Y6	174	0.0479	191.60	191.60	02/17/2024 01:27:43	259694 ()	136.9537	M	250	137.0019
2540C WLL2	PS	**92712991001**	Y	O	2	-0.0010	-4.0000	-4.0000	02/17/2024 01:28:42	259694 ()	132.7021	M	250	132.7017
2540C WLL2	RQS	**92712989006**	Y	TIE	33	0.0116	46.400	46.400	02/17/2024 01:29:11	259694 ()	110.4166	M	250	110.4281
2540C WLL2	DUP	**4305517**	Y	Y8		0.0109	43.600	43.600	02/17/2024 01:31:50	259694 ()	136.8273	M	250	136.8383
2540C WLL2	PS	**92713247003**	Y	A9	508	0.0333	133.20	666.00	02/17/2024 01:33:43	259694 ()	137.0688	M	50	137.1023
2540C WLL2	PS	**92713247004**	Y		308	0.0823	329.20	329.20	02/17/2024 01:34:24	259694 ()	133.2394	M	250	133.3222

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Oven Use 1	Oven Wt 2 (g)	Oven Use 2	Oven %Diff 1&2	Oven Wt Diff 1&2	Oven Wt 3 (g)	Oven Use 3	Oven %Diff 2&3	Oven Wt Diff 2&3	Sample Notes	SOLIDS-SPK (mL)
2540C WLL2	BLANK	**4305515**	N	138.3267	Y	600.0000	0.0003		N				
2540C WLL2	LCS	**4305516**	N	137.947	Y	2.6432	0.0003		N				260864 (50)
2540C WLL2	PS	**92712989001**	N	135.405	Y	0.5362	0.0004		N				
2540C WLL2	PS	**92712989002**	N	139.1778	Y	0.3328	0.0001		N				
2540C WLL2	PS	**92712989003**	N	136.9765	Y	2.2472	0.0003		N				
2540C WLL2	PS	**92712989004**	N	137.2154	Y	0.3130	0.0001		N				
2540C WLL2	PS	**92712989005**	N	138.4036	Y	1.3158	0.0004		N				
2540C WLL2	PS	**92712990001**	N	137.0016	Y	0.6243	0.0003		N				
2540C WLL2	PS	**92712991001**	N	132.7006	N	115.7895	0.0011	132.7011	Y	40.0000	0.0005		
2540C WLL2	RQS	**92712989006**	N	110.4282	Y	0.8658	0.0001		N	200.0420	110.4282		
2540C WLL2	DUP	**4305517**	N	136.8382	Y	0.9132	0.0001		N				
2540C WLL2	PS	**92713247003**	N	137.1021	Y	0.5988	0.0002		N				
2540C WLL2	PS	**92713247004**	N	133.3217	Y	0.6057	0.0005		N				

Standard Notes:

260864: WET solids standard AVL

Prep Log Report

Batch Information: WET_113568_TDS LL

2540C | TDS

Analysis Method	SM 2540C-2015	Analyzed By	JAY	Instrument	93BAL8	Evap. Oven ID	93OVN6
Acceptance Range	94-98 C	Evap Thermometer ID	93T016	Evap. Correction Factor (C)	0	Evap Temp In1 (C) | Corr | Date/Time | Init	91.50 | 91.50 | 02/20/2024 15:57 | JAY
Evap Temp Out1 (C) | Corr | Date/Time | Init	96.80 | 96.80 | 02/22/2024 03:57 | RVS	Oven ID	93OVN9	Acceptance Range	178-182 C	Thermometer ID	93T025
Oven Correction Factor (C)	0	Oven Temp In1 (C) | Corr | Date/Time | Init	180.3 | 180.3 | 02/22/2024 03:57 | RVS	Oven Temp Out1 (C) | Corr | Date/Time | Init	178.8 | 178.8 | 02/22/2024 11:33 | JAY	Oven Temp In2 (C) | Corr | Date/Time | Init	178.8 | 178.8 | 02/22/2024 16:39 | JMH1
Oven Temp Out2 (C) | Corr | Date/Time | Init	178.8 | 178.8 | 02/22/2024 21:32 | RVS	Reviewed By	RVS	Reviewed By Date	02/24/2024 05:14	Batch Notes	

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Select	ID	TDS Screen (mg/L)	TDS Residue (g)	TDS Posted (mg/L)	TDS Final (mg/L)	Run Date/Time	TSS Filters ()	Beaker Wt 1 (g)	Beaker Use 1	Initial Volume (mL)	Oven Wt 1 (g)
2540C WLL2	BLANK	**4306953**	Y	Z0		0.0002	0.8000	0.8000	02/20/2024 15:32:29	259694 ()	135.292	M	250	135.2917
2540C WLL2	LCS	**4306954**	Y	829		0.0123	246.00	246.00	02/20/2024 15:33:02	259694 ()	87.0477	M	50	87.0599
2540C WLL2	PS	**92712989007**	Y	68	176	0.0535	214.00	214.00	02/20/2024 15:33:25	259694 ()	140.7207	M	250	140.7745
2540C WLL2	PS	**92712990002**	Y	ZZ3	145	0.0427	170.80	170.80	02/20/2024 15:34:01	259694 ()	138.3341	M	250	138.3767
2540C WLL2	PS	**92712990003**	Y	ZZ6	182	0.0522	208.80	208.80	02/20/2024 15:34:24	259694 ()	137.7283	M	250	137.7808
2540C WLL2	RQS	**92713247001**	Y	A4	216	0.0634	253.60	253.60	02/20/2024 15:34:50	259694 ()	137.2721	M	250	137.3355
2540C WLL2	DUP	**4306955**	Y	:)		0.0633	253.20	253.20	02/20/2024 15:35:16	259694 ()	136.4026	M	250	136.4659
2540C WLL2	PS	**92713248001**	Y	A	209	0.0579	231.60	231.60	02/20/2024 15:35:38	259694 ()	137.4825	M	250	137.5401
2540C WLL2	PS	**92713248002**	Y	JNS	147	0.0445	178.00	178.00	02/20/2024 15:35:58	259694 ()	135.9519	M	250	135.9966
2540C WLL2	PS	**92713248003**	Y	0_0	67	0.0263	105.20	105.20	02/20/2024 15:36:33	259694 ()	140.2395	M	250	140.2659
2540C WLL2	PS	**92713248004**	Y	^_^	230	0.0711	284.40	284.40	02/20/2024 15:37:01	259694 ()	139.1533	M	250	139.2239
2540C WLL2	PS	**92713248005**	Y	Y7	448	0.1675	670.00	670.00	02/20/2024 15:37:25	259694 ()	141.3072	M	250	141.4748

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Oven Use 1	Oven Wt 2 (g)	Oven Use 2	Oven %Diff 1&2	Oven Wt Diff 1&2	Sample Notes	SOLIDS-SPK (mL)
2540C WLL2	BLANK	**4306953**	N	135.2922	Y	1000.0000	0.0005		
2540C WLL2	LCS	**4306954**	N	87.06	Y	0.8163	0.0001		261314 (50)
2540C WLL2	PS	**92712989007**	N	140.7742	Y	0.5592	0.0003		
2540C WLL2	PS	**92712990002**	N	138.3768	Y	0.2345	0.0001		
2540C WLL2	PS	**92712990003**	N	137.7805	Y	0.5731	0.0003		
2540C WLL2	RQS	**92713247001**	N	137.3355	Y	0	0.0000		
2540C WLL2	DUP	**4306955**	N	136.4659	Y	0	0.0000		
2540C WLL2	PS	**92713248001**	N	137.5404	Y	0.5195	0.0003		
2540C WLL2	PS	**92713248002**	N	135.9964	Y	0.4484	0.0002		
2540C WLL2	PS	**92713248003**	N	140.2658	Y	0.3795	0.0001		
2540C WLL2	PS	**92713248004**	N	139.2244	Y	0.7057	0.0005		
2540C WLL2	PS	**92713248005**	N	141.4747	Y	0.0597	0.0001		

Standard Notes:

261314: WET solids standard AVL

RADIOLOGICAL ANALYSIS SUPPORT DOCUMENTATION

Client Name:	Dominion Energy	EnvStd Project Manager:	Alyssa Reed
Site/Project Name:	Bremo Power Station/2024 GW QA and DM	Reviewed by:	Wendy Zhou
Job Number/Task/Subtask:	2024 GW QA and DM - Bremo West Pond > Professional Services > Level 4 Data Validation	Approved by:	AJC
Laboratory/Location:	Pace Asheville and Charlot/NC	Completion Date:	11/2024
SDG:	92712989	Validation Level:	4
Sample Collection Dates:	2/12 and 2/13/2024		

The following table indicates criteria that were examined, the identified problems, and support documentation attachments.

	Criteria Examined in Detail							Problems Identified **Note:** All problems identified have been included in the Support Document unless otherwise noted.						
	Check (√) if Yes or Footnote Letter for Comments Below													
Parameter/ Method	Rad-226/ 9315	Rad-228/ 9320						Rad-226/ 9315	Rad-228/ 9320					
Condition upon Receipt	√	√												
Sample Preservation	√	√												
Holding Times	√	√												
Blank Analysis Results	√	√						√	√					
Laboratory Control Sample	√	√												
Tracer/Carrier Yield	√	√							√					
Laboratory Duplicate														
Field Duplicate	√	√							√					
Matrix Spike/Matrix Spike Duplicate	√	√												
Sample Preparation	√	√												
Quantitation of Results	√	√												
Detection Limit	√	√												
Efficiency/Energy Calibrations	√	√												
Initial Calibration Verifications	√	√												
Annual Calibration Verifications	√	√												
Continuing Calibration Checks	√	√												
Resolution Checks														
Background Checks	√	√												
Analytical Sequence	√	√												
Standards Preparation Logs	√	√												
Deliverable was Complete	√	√												
Others:														

Comments: All results are usable unless otherwise qualified.

RADIOLOGICAL BLANK CONTAMINATION

Normalized Absolute Difference (NAD) = $\dfrac{\text{ABS (Sample Activity - Blank Activity)}}{\sqrt{(\text{Sample } 2\sigma \text{ Error})^2 + (\text{Blank } 2\sigma \text{ Error})^2}}$

2σ NAD = NAD × 2

Laboratory SDG	
Qualification Limit	2.58
Qualifier	U

Analyte	Blank ID	Sample ID	Sample Activity	Sample 2σ Error*	Blank Activity	Blank 2σ Error*	2σ NAD	Qualifier
Ra-228	FB from 92712991	L1706901-05	0.392	0.2	0.662	0.262	1.64	U
Ra-226	WG2236782 MB	L1706901-02	0.283	0.234	0.142	0.117	1.08	U
Ra-226	WG2236782 MB	L1706901-04	0.586	0.346	0.142	0.117	2.43	U
Ra-226	WG2236782 MB	L1706901-07	0.730	0.402	0.142	0.117	2.81	
Ra-228	WG2238285 MB	L1706901-05	0.392	0.2	0.497	0.145	0.85	U

RADIOLOGICAL FIELD DUPLICATE EVALUATION

Replicate Error Ratio (RER) = $\dfrac{\text{ABS (Sample Activity - Duplicate Activity)}}{\sqrt{(\text{Sample } 2\sigma \text{ Error})^2 + (\text{Duplicate } 2\sigma \text{ Error})^2}}$

2σ RER = RER × 2

Laboratory SDG	**92712989**
Qualification Limit: <	2
Qualifier	J/UJ

Sample ID	Duplicate ID	Analyte	Sample Activity	Sample 2σ Error*	Duplicate Activity	Duplicate 2σ Error*	2σ RER	Qualifier
021224NMW31	021224NWPFDDUPLICA	Ra-226	0.283	0.234	0.370	0.289	0.5	
021224NMW31	021224NWPFDDUPLICA	Ra-228	0.000	0.263	0.392	0.200	2.4	J/UJ

* TPU 2σ or CSU 2σ. Not the counting error.

021224NMW13 L1706901-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 16:40	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 21:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 21:43	SNR	Mt. Juliet, TN

021224NMW31 L1706901-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 15:20	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021224NMW32S L1706901-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 16:00	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021224NMW32D L1706901-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 14:40	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021224NWPFDDUPLICATE L1706901-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/12/24 15:20	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:13	SNR	Mt. Juliet, TN

021324NMW1 L1706901-06 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/13/24 13:10	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2240337	1	03/06/24 18:38	03/15/24 23:27	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/15/24 23:27	SNR	Mt. Juliet, TN

021324NMW12 L1706901-07 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/13/24 12:00	02/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 903.0/9315	WG2236782	1	03/04/24 12:03	03/14/24 22:43	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2238285	1	03/04/24 19:25	03/13/24 17:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2236782	1	03/04/24 12:03	03/14/24 22:43	SNR	Mt. Juliet, TN

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.

[Preliminary Report]

Haley Torrence
Project Manager

Report Revision History

Level II Report - Version 1: 03/22/24 14:58
Level IV Report - Version 2: 03/22/24 15:06
Level II Report - Version 3: 04/25/24 16:32

Project Narrative

T20240411.0241

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.240	J	0.249	0.175	0.379	0.0868	03/14/2024 21:43	WG2236782
(T) Barium	*101*					*30.0-143*	*03/14/2024 21:43*	WG2236782

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	0.250	~~J~~ U	0.272	1.81	0.490	0.255	03/13/2024 17:03	WG2238285
(T) Barium	*113*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*106*					*30.0-136*	*03/13/2024 17:03*	WG2238285

ND, no qual

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.490	J	0.369	0.619	03/14/2024 21:43	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.283		0.234	0.184	0.274	0.0494	03/14/2024 22:13	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.000	U	0.263		0.480	0.251	03/13/2024 17:03	WG2238285
(T) Barium	*125*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*102*					*30.0-136*	*03/13/2024 17:03*	WG2238285

ND, no qual

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.283	J	0.352	0.553	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.111	U	0.238	0.116	0.459	0.111	03/14/2024 22:13	WG2236782
(T) Barium	*104*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.121	U	0.257	2.55	0.466	0.244	03/13/2024 17:03	WG2238285
(T) Barium	*121*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*116*					*30.0-136*	*03/13/2024 17:03*	WG2238285

ND, no qual

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.232	U	0.350	0.654	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.586		0.346	0.323	0.378	0.0849	03/14/2024 22:13	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	U	0.246	1.53	0.441	0.231	03/13/2024 17:03	WG2238285
(T) Barium	*133*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*102*					*30.0-136*	*03/13/2024 17:03*	WG2238285

ND, no qual

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.904		0.425	0.581	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.370	J	0.289	0.234	0.379	0.0850	03/14/2024 22:13	WG2236782
(T) Barium	*103*					*30.0-143*	*03/14/2024 22:13*	WG2236782

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	0.392		0.200	1.24	0.356	0.188	03/13/2024 17:03	WG2238285
(T) Barium	*132*	J+, Y				*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*111*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.762		0.351	0.520	03/14/2024 22:13	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.152	J	0.181	0.119	0.274	0.0490	03/14/2024 22:43	WG2236782
(T) Barium	*104*					*30.0-143*	*03/14/2024 22:43*	WG2236782

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	-0.136	U	0.249	2.78	0.484	0.257	03/15/2024 23:27	WG2240337
(T) Barium	*131*					*30.0-143*	*03/15/2024 23:27*	WG2240337
(T) Yttrium	*106*					*30.0-136*	*03/15/2024 23:27*	WG2240337

ND, no qual

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.152	U	0.308	0.556	03/15/2024 23:27	WG2236782

Radiochemistry by Method 903.0/9315

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
Radium-226	0.730		0.402	0.389	0.458	0.113	03/14/2024 22:43	WG2236782
(T) Barium	*102*					*30.0-143*	*03/14/2024 22:43*	WG2236782

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	0.492	J	0.285	1.31	0.507	0.264	03/13/2024 17:03	WG2238285
(T) Barium	*129*					*30.0-143*	*03/13/2024 17:03*	WG2238285
(T) Yttrium	*115*					*30.0-136*	*03/13/2024 17:03*	WG2238285

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.22		0.493	0.683	03/14/2024 22:43	WG2236782

Method Blank (MB)

(MB) R4048467-1 03/14/24 20:12

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.142		0.117	0.137	0.0248
(T) Barium	*103*		*103*		

U BL S02,04,07

Laboratory Control Sample (LCS)

(LCS) R4048467-2 03/14/24 20:12

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.54	111	80.0-120	
(T) Barium			*102*		

L1706883-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

not from this SDG, no eval

(OS) L1706883-04 03/14/24 21:13 • (MS) R4048467-3 03/14/24 20:12 • (MSD) R4048467-5 03/14/24 20:42

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	0.630	23.2	20.5	113	99.2	1	75.0-125			12.5		20
(T) Barium		*104*			*102*	*103*							

L1706901-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706901-06 03/14/24 22:43 • (MS) R4048467-4 03/14/24 20:12 • (MSD) R4048467-6 03/14/24 20:42

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	0.152	21.5	22.1	107	110	1	75.0-125			2.89		20
(T) Barium		*104*			*103*	*104*							

QUALITY CONTROL SUMMARY

L1706901-01,02,03,04,05,07

Method Blank (MB)

(MB) R4047078-1 03/13/24 17:03

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.497		0.145	0.251	0.132
(T) Barium	*124*		*124*		
(T) Yttrium	*111*		*111*		

U BL S05

L1707769-02 Original Sample (OS) • Duplicate (DUP)

not from this SDG, no eval

(OS) L1707769-02 03/13/24 17:03 • (DUP) R4047078-5 03/13/24 17:03

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.92	0.374	0.625	0.328	1.34	0.390	0.676	0.352	35.9	1.08		20	3
(T) Barium	*134*				*109*	*109*							
(T) Yttrium	*100*				*106*	*106*							

Laboratory Control Sample (LCS)

(LCS) R4047078-2 03/13/24 17:03

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.67	113	80.0-120	
(T) Barium			*130*		
(T) Yttrium			*110*		

L1710452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

not from this SDG, no qual

(OS) L1710452-01 03/13/24 17:03 • (MS) R4047078-3 03/13/24 17:03 • (MSD) R4047078-4 03/13/24 17:03

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	-0.188	17.5	18.3	104	110	1	70.0-130			4.97		20
(T) Barium		*126*			*124*	*116*							
(T) Yttrium		*99.2*			*119*	*108*							

QUALITY CONTROL SUMMARY

L1706901-06

Method Blank (MB)

(MB) R4047930-1 03/15/24 23:27

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.0701	U	0.165	0.310	0.163
(T) Barium	*104*		*104*		
(T) Yttrium	*104*		*104*		

not from this SDG, no eval

L1708671-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1708671-01 03/15/24 23:27 • (DUP) R4047930-5 03/15/24 23:27

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	1.78	0.314	0.534	0.282	2.55	0.298	0.466	0.248	35.8	1.79		20	3
(T) Barium	*117*				*117*	*117*							
(T) Yttrium	*103*				*97.1*	*97.1*							

Laboratory Control Sample (LCS)

(LCS) R4047930-2 03/15/24 23:27

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.83	96.6	80.0-120	
(T) Barium			*137*		
(T) Yttrium			*109*		

L1706901-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1706901-06 03/15/24 23:27 • (MS) R4047930-3 03/15/24 23:27 • (MSD) R4047930-4 03/15/24 23:27

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	-0.136	16.2	16.6	96.9	99.5	1	70.0-130			2.62		20
(T) Barium		*131*			*113*	*125*							
(T) Yttrium		*106*			*116*	*100*							

903.0/9315 Radiochemistry

Radiochemistry Raw Data

RADIUM-226

SDG: WG2236782
METHOD: EPA 903.0/9315
ANALYST: SNR961

	Ra226	2σCE	TPU	SDWA DL	Lc	mda	Units	date prep	date analysis	Analyst	
BACKGROUND DET A	0.000	0.104		0.176	0.062	0.287	pCi/l	3/4/2024	3/14/2024	SNR961	
BACKGROUND DET B	0.000	0.236		0.260	0.141	0.511	pCi/l	3/4/2024	3/14/2024	SNR961	
BACKGROUND DET C	0.000	0.179		0.221	0.107	0.413	pCi/l	3/4/2024	3/14/2024	SNR961	
BACKGROUND DET D	0.000	0.180		0.221	0.107	0.414	pCi/l	3/4/2024	3/14/2024	SNR961	
RA-0070-WS-903-1	591.78	11.383		0.228	0.038	0.279	pCi/l	3/4/2024	3/14/2024	SNR961	**101.9%**
RA-0070-WS-903-2	570.58	11.192		0.259	0.086	0.414	pCi/l	3/4/2024	3/14/2024	SNR961	**98.2%**
RA-0070-WS-903-3	565.83	11.035		0.235	0.064	0.352	pCi/l	3/4/2024	3/14/2024	SNR961	**97.4%**
RA-0070-WS-903-4	575.24	11.220		0.245	0.066	0.358	pCi/l	3/4/2024	3/14/2024	SNR961	**99.0%**
[redacted]					#DIV/0!	#####	[redacted]	3/4/2024	[redacted]	SNR961	
BLANK WG2236782	0.142	0.117	.092	0.094	0.025	0.137	Ci/l	3/4/2024	3/14/2024	SNR961	
LCS WG2236782	5.537	0.694	1.428	0.124	0.057	0.230	pCi/l	3/4/2024	3/14/2024	SNR961	
MS L1706883-04 WG2236782	23.194	2.800	5.871	0.437	0.172	0.757	pCi/l	3/4/2024	3/14/2024	SNR961	
MS L1706901-06 WG2236782	21.514	2.702	5.551	0.438	0.172	0.759	pCi/l	3/4/2024	3/14/2024	SNR961	
MSD L1706883-04 WG2236782	20.466	2.625	5.334	0.375	0.099	0.549	pCi/l	3/4/2024	3/14/2024	SNR961	
MSD L1706901-06 WG2236782	22.135	2.774	5.709	0.497	0.223	0.919	pCi/l	3/4/2024	3/14/2024	SNR961	
L1705226-05 WG2236782	2.805	0.700	1.011	0.218	0.084	0.378	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-01 WG2236782	0.502	0.325	0.290	0.219	0.088	0.379	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-02 WG2236782	0.589	0.325	0.314	0.188	0.049	0.274	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-03 WG2236782	1.086	0.472	0.514	0.249	0.111	0.459	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-04 WG2236782	0.630	0.356	0.340	0.218	0.085	0.378	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-05 WG2236782	0.283	0.263	0.196	0.219	0.087	0.379	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-06 WG2236782	0.501	0.302	0.279	0.187	0.050	0.274	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706883-07 WG2236782	0.199	0.268	0.165	0.248	0.113	0.459	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706899-01 WG2236782	0.239	0.248	0.174	0.218	0.085	0.378	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706901-01 WG2236782	0.240	0.249	0.175	0.219	0.087	0.379	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706901-02 WG2236782	0.283	0.234	0.184	0.187	0.049	0.274	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706901-03 WG2236782	0.111	0.238	0.116	0.248	0.111	0.459	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706901-04 WG2236782	0.586	0.346	0.323	0.218	0.085	0.378	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706901-05 WG2236782	0.370	0.289	0.234	0.219	0.085	0.379	pCi/l	3/4/2024	3/14/2024	SNR961	
L1706901-06 WG2236782	0.152	0.181	0.119	0.187	0.049	0.274	Ci/l	3/4/2024	3/14/2024	SNR961	
L1706901-07 WG2236782	0.730	0.402	0.389	0.248	0.113	0.458	pCi/l	3/4/2024	3/14/2024	SNR961	
L1709268-01 WG2236782	0.726	0.381	0.377	0.221	0.089	0.383	pCi/l	3/4/2024	3/14/2024	SNR961	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#####	pCi/l	3/4/2024	1/0/1900	SNR961	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#####	pCi/l	3/4/2024	1/0/1900	SNR961	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#####	pCi/l	3/4/2024	1/0/1900	SNR961	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#####	pCi/l	3/4/2024	1/0/1900	SNR961	
RA-0070-WS-903-1	579.694	11.266	64.569	0.228	0.038	0.279	pCi/l	3/4/2024	3/15/2024	SNR961	**99.8%**
RA-0070-WS-903-2	572.518	11.211	64.176	0.260	0.086	0.414	pCi/l	3/4/2024	3/15/2024	SNR961	**98.5%**
RA-0070-WS-903-3	568.292	11.059	63.290	0.240	0.064	0.352	pCi/l	3/4/2024	3/15/2024	SNR961	**97.8%**
RA-0070-WS-903-4	563.282	11.102		0.000	0.066	0.358	pCi/l	3/4/2024	3/15/2024	SNR961	**97.0%**
BACKGROUND DET A	0.037	0.127		0.000	0.062	0.287	pCi/l	3/4/2024	3/15/2024	SNR961	
BACKGROUND DET B	-0.190	0.167		0.000	0.141	0.511	pCi/l	3/4/2024	3/15/2024	SNR961	
BACKGROUND DET C	-0.037	0.164		0.000	0.107	0.413	pCi/l	3/4/2024	3/15/2024	SNR961	
BACKGROUND DET D	0.037	0.194		0.000	0.107	0.414	pCi/l	3/4/2024	3/15/2024	SNR961	

Radium EPA 903.0/9315
SDG: WG2236782
METHOD: EPA 903.0/9315
ANALYST: SNR961
Prep Date: 03/04/24

Detector	EFF	BKG COUNTS	COUNT TIME	BKG CPM
Detector A	20.0%	1	60	0.017
Detector B	19.7%	5	60	0.083
Detector C	20.1%	3	60	0.050
Detector D	20.0%	3	60	0.050

Ba Carrier ID: 23K29160
Standardization Date:12/06/23 13:00

planchet tare	planchet gross	net weight
0.08104	0.13520	0.05416
0.08121	0.13523	0.05402
0.08134	0.13548	0.05414

If Background is 0 use 1.

ave = 0.05411

bkg CMP matched raw data

id	sample size	alpha counts	count time	ppt time	time count end		igf	Detector #	CPM back	Bkg Counts	eff	planchet tare (g)	planchet gross (g)	net weight(g)	ba rec	Ba Rec use	
BACKGROUND DET A	1.000	1	60	3/14/24 19:10	3/14/24 19:10	0	1.000	A	0.017	1.0	20.0%			0.00000	100.0%	100.0%	BACKGROUND DET A
BACKGROUND DET B	1.000	5	60	3/14/24 19:10	3/14/24 19:10	0	1.000	B	0.083	5.0	19.7%			0.00000	100.0%	100.0%	BACKGROUND DET B
BACKGROUND DET C	1.000	3	60	3/14/24 19:10	3/14/24 19:10	0	1.000	C	0.050	3.0	20.1%			0.00000	100.0%	100.0%	BACKGROUND DET C
BACKGROUND DET D	1.000	3	60	3/14/24 19:10	3/14/24 19:10	0	1.000	D	0.050	3.0	20.0%			0.00000	100.0%	100.0%	BACKGROUND DET D
RA-0070-WS-903-1	1.000	10384	10	4/6/21 14:15	3/14/24 19:41	25757	4.000	A	0.017	0.2	20.0%			0.00000	98.6%	98.6%	RA-0070-WS-903-1
RA-0070-WS-903-2	1.000	9987	10	4/6/21 14:15	3/14/24 19:41	25757	4.000	B	0.083	0.8	19.7%			0.00000	100.6%	100.0%	RA-0070-WS-903-2
RA-0070-WS-903-3	1.000	10102	10	4/6/21 14:15	3/14/24 19:41	25757	4.000	C	0.050	0.5	20.1%			0.00000	102.2%	100.0%	RA-0070-WS-903-3
RA-0070-WS-903-4	1.000	10100	10	4/6/21 14:15	3/14/24 19:41	25757	4.000	D	0.050	0.5	20.0%			0.00000	98.6%	98.6%	RA-0070-WS-903-4
						0	1.000								0.0%		
BLANK WG2236782	1.000	7	30	3/5/24 15:40	3/14/24 20:12	221	3.433	A	0.017	0.5	20.0%	0.08238	0.13796	0.05558	102.7%	100.0%	BLANK WG2236782
LCS WG2236782	1.000	252	30	3/5/24 15:40	3/14/24 20:12	221	3.433	B	0.083	2.5	19.7%	0.08242	0.13746	0.05504	101.7%	100.0%	LCS WG2236782
MS L1706883-04 WG2236782	0.250	268	30	3/5/24 15:40	3/14/24 20:12	221	3.433	C	0.050	1.5	20.1%	0.08239	0.13774	0.05535	102.3%	100.0%	MS L1706883-04 WG2236782
MS L1706901-06 WG2236782	0.250	248	30	3/5/24 15:40	3/14/24 20:12	221	3.433	D	0.050	1.5	20.0%	0.08236	0.13798	0.05562	102.8%	100.0%	MS L1706901-06 WG2236782
MSD L1706883-04 WG2236782	0.250	235	30	3/5/24 15:40	3/14/24 20:42	221	3.435	A	0.017	0.5	20.0%	0.08286	0.13876	0.05590	103.3%	100.0%	MSD L1706883-04 WG2236782
MSD L1706901-06 WG2236782	0.250	252	30	3/5/24 15:40	3/14/24 20:42	221	3.435	B	0.083	2.5	19.7%	0.08267	0.13889	0.05622	103.9%	100.0%	MSD L1706901-06 WG2236782
L1705226-05 WG2236782	0.500	66	30	3/5/24 15:40	3/14/24 20:42	221	3.435	C	0.050	1.5	20.1%	0.0825	0.1392	0.05670	104.8%	100.0%	L1705226-05 WG2236782
L1706883-01 WG2236782	0.500	13	30	3/5/24 15:40	3/14/24 20:42	221	3.435	D	0.050	1.5	20.0%	0.0849	0.13923	0.05433	100.4%	100.0%	L1706883-01 WG2236782
L1706883-02 WG2236782	0.500	14	30	3/5/24 15:40	3/14/24 21:13	222	3.437	A	0.017	0.5	20.0%	0.08514	0.14176	0.05662	104.6%	100.0%	L1706883-02 WG2236782
L1706883-03 WG2236782	0.500	27	30	3/5/24 15:40	3/14/24 21:13	222	3.437	B	0.083	2.5	19.7%	0.08507	0.14142	0.05635	104.1%	100.0%	L1706883-03 WG2236782
L1706883-04 WG2236782	0.500	16	30	3/5/24 15:40	3/14/24 21:13	222	3.437	C	0.050	1.5	20.1%	0.08503	0.14121	0.05618	103.8%	100.0%	L1706883-04 WG2236782
L1706883-05 WG2236782	0.500	8	30	3/5/24 15:40	3/14/24 21:13	222	3.437	D	0.050	1.5	20.0%	0.085	0.13978	0.05478	101.2%	100.0%	L1706883-05 WG2236782
L1706883-06 WG2236782	0.500	12	30	3/5/24 15:40	3/14/24 21:43	222	3.439	A	0.017	0.5	20.0%	0.08529	0.13984	0.05455	100.8%	100.0%	L1706883-06 WG2236782
L1706883-07 WG2236782	0.500	7	30	3/5/24 15:40	3/14/24 21:43	222	3.439	B	0.083	2.5	19.7%	0.08495	0.14032	0.05537	102.3%	100.0%	L1706883-07 WG2236782
L1706899-01 WG2236782	0.500	7	30	3/5/24 15:40	3/14/24 21:43	222	3.439	C	0.050	1.5	20.1%	0.08508	0.14097	0.05589	103.3%	100.0%	L1706899-01 WG2236782
L1706901-01 WG2236782	0.500	7	30	3/5/24 15:40	3/14/24 21:43	222	3.439	D	0.050	1.5	20.0%	0.08497	0.13984	0.05487	101.4%	100.0%	L1706901-01 WG2236782
L1706901-02 WG2236782	0.500	7	30	3/5/24 15:40	3/14/24 22:13	223	3.441	A	0.017	0.5	20.0%	0.08516	0.14087	0.05571	103.0%	100.0%	L1706901-02 WG2236782
L1706901-03 WG2236782	0.500	5	30	3/5/24 15:40	3/14/24 22:13	223	3.441	B	0.083	2.5	19.7%	0.08518	0.14158	0.05640	104.2%	100.0%	L1706901-03 WG2236782
L1706901-04 WG2236782	0.500	15	30	3/5/24 15:40	3/14/24 22:13	223	3.441	C	0.050	1.5	20.1%	0.08502	0.1409	0.05588	103.3%	100.0%	L1706901-04 WG2236782
L1706901-05 WG2236782	0.500	10	30	3/5/24 15:40	3/14/24 22:13	223	3.441	D	0.050	1.5	20.0%	0.08509	0.14108	0.05599	103.5%	100.0%	L1706901-05 WG2236782
L1706901-06 WG2236782	0.500	4	30	3/5/24 15:40	3/14/24 22:43	223	3.443	A	0.017	0.5	20.0%	0.08499	0.1411	0.05611	103.7%	100.0%	L1706901-06 WG2236782
L1706901-07 WG2236782	0.500	19	30	3/5/24 15:40	3/14/24 22:43	223	3.443	B	0.083	2.5	19.7%	0.08491	0.1401	0.05519	102.0%	100.0%	L1706901-07 WG2236782
L1709268-01 WG2236782	0.500	18	30	3/5/24 15:40	3/14/24 22:43	223	3.443	C	0.050	1.5	20.1%	0.08487	0.13822	0.05335	98.6%	98.6%	L1709268-01 WG2236782
						0	1.000		FALSE	0.0	FALSE			0.00000	0.0%	0.0%	0
						0	1.000		FALSE	0.0	FALSE			0.00000	0.0%	0.0%	0
						0	1.000		FALSE	0.0	FALSE			0.00000	0.0%	0.0%	0
						0	1.000		FALSE	0.0	FALSE			0.00000	0.0%	0.0%	0
RA-0070-WS-903-1	1.000	10172	10	4/6/21 14:15	3/15/24 11:52	25774	4.000	A	0.017	0.2	20.0%			0.00000	98.6%	98.6%	RA-0070-WS-903-1
RA-0070-WS-903-2	1.000	10021	10	4/6/21 14:15	3/15/24 11:52	25774	4.000	B	0.083	0.8	19.7%			0.00000	100.6%	100.0%	RA-0070-WS-903-2
RA-0070-WS-903-3	1.000	10146	10	4/6/21 14:15	3/15/24 11:52	25774	4.000	C	0.050	0.5	20.1%			0.00000	102.2%	100.0%	RA-0070-WS-903-3
RA-0070-WS-903-4	1.000	9890	10	4/6/21 14:15	3/15/24 11:52	25774	4.000	D	0.050	0.5	20.0%			0.00000	98.6%	98.6%	RA-0070-WS-903-4
BACKGROUND DET A	1.000	2	60	3/15/24 11:21	3/15/24 11:21	0	1.000	A	0.017	1.0	20.0%			0.00000	100.0%	100.0%	BACKGROUND DET A
BACKGROUND DET B	1.000	0	60	3/15/24 11:21	3/15/24 11:21	0	1.000	B	0.083	5.0	19.7%			0.00000	100.0%	100.0%	BACKGROUND DET B
BACKGROUND DET C	1.000	2	60	3/15/24 11:21	3/15/24 11:21	0	1.000	C	0.050	3.0	20.1%			0.00000	100.0%	100.0%	BACKGROUND DET C
BACKGROUND DET D	1.000	4	60	3/15/24 11:21	3/15/24 11:21	0	1.000	D	0.050	3.0	20.0%			0.00000	100.0%	100.0%	BACKGROUND DET D

0

QC REPORT

ANALYTE: Ra226
METHOD: EPA 903.0/9315
SDG: WG2236782
UNITS: pCi/L
STD ID: 23K02021 Vol. 1 ml

	Ra226	2σCE	TPU	SDWA DL	Lc	mda	known	%REC	LIMITS LOW	LIMITS HIGH	RPD	LIMITS	RER	LIMITS
BLANK WG2236782	0.142	0.117	0.092	0.094	0.025	0.137								
LCS WG2236782	5.537	0.694	1.428	0.124	0.057	0.230	5.00	110.7%	80%	120%				
MS L1706883-04 WG2236782	23.194	2.800	5.871	0.437	0.172	0.757		✔						
MSD L1706883-04 WG2236782	20.466	2.625	5.334	0.375	0.099	0.549					12.50%	20%	0.711	3
L1706883-01 WG2236782	0.502	0.325	0.290	0.219	0.088	0.379								
MS L1706883-04 WG2236782	23.194	2.800	5.871	0.437	0.172	0.757	20.0	113.4%	75%	125%				
MSD L1706883-04 WG2236782	20.466	2.625	5.334	0.375	0.099	0.549	20.0	99.7%	75%	125%	12.50%			
L1706901-06 WG2236782	0.152	0.181	0.119	0.187	0.049	0.274								
MS L1706901-06 WG2236782	21.514	2.702	5.551	0.438	0.172	0.759	20.0	105.0%	75%	125%				
MSD L1706901-06 WG2236782	22.135	2.774	5.709	0.497	0.223	0.919	20.0	108.1%	75%	125%	2.85%			

*** - Outside Control Limits**

DECAY CALCUALTION

Ra226 Source
No.3613
RA226-3613-WS4
23K02021

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	02-Nov-23
DATE OF CALIBRATION	04-Mar-24

Ao =	588.80	pCi/ml
N =	0.00	
T(1/2) =	1600.00	years
T =	0.34	years
Standard Volume	4.25	
Final Volume =	500.00	
dilution =	117.65	
A =	588.718	pCi/ml
A =	11.109	dpm/ml
A =	5.00	pCi/ml
A =	5.00	pCi/ml

Uncertainty	3.70%
Weight	0.00%
Volume (1000 ml	0.03%
Volume (100 ml	0.40%
Volume (1000 ml	0.03%
CSU	3.72%

Activity 5.00 +/- 0.186 pCi/ml

R&D 1 x 5ML

Amersham International
Amersham Laboratories

ESC37429

BAT ff 3613
Recd 8-10-98

NAMAS
CALIBRATION No. 0146

Certificate of calibration of radioactive reference solution

M 29913

Description	Principal radionuclide:	Radium-226	Product code: RAY.24
			Solution number: R4/131/127
Measurement	Reference time:	1200 GMT on 19 February 1998	
	Radioactive concentration of radium-226:	4.376	kilobecquerels per gram of solution
	which is equivalent to:	118.3	nanocuries per gram of solution
	Mass of solution:	5.0345	grams
	Total activity of radium-226:	22.03	kilobecquerels
	which is equivalent to:	595.4	nanocuries
	Recommended half life:	1600.00	years

Method of measurement:
The activity of the solution was measured in a high pressure re-entrant ionisation chamber calibrated with a large number of absolutely standardised solutions.

Accuracy: Overall uncertainty in the radioactive concentration quoted above: ± 3.7 %

Random uncertainty: ± 0.7 % Systematic uncertainty: ± 3.0 %

The limits of overall uncertainty were taken as the arithmetic sum of the uncertainty due to random variations, calculated at the 99.7% confidence level, and the estimated systematic uncertainties in the measurement.

Radionuclide Purity: The estimated activities of any radioactive impurities found by high-resolution gamma ray spectrometry, or in any other examination of the solution, are listed below expressed as percentages of the activity of the principal radionuclide at the reference time.

ENVIRONMENT AGENCY SCIENCE GROUP

Chemical Composition: Carrier free in 0.5M HCl

Remarks: At the reference date radium-226 was shown to be in radioactive equilibrium with its daughter nuclides down the decay chain to polonium-214 and thallium-210, the precursors of lead-210. The ionisation chamber was calibrated using a standard supplied by the National Institute of Standards and Technology, Washington DC, USA.

This product meets the quality assurance requirements of the NRC Regulatory Guide 4.15 for achieving implicit NIST traceability as defined in NCRP 58 (1985).

Approved Signatory: B D D Singleton

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Page 1 of 1

Amersham
The Health Science Group

Calibration Data EPA 903/9315

id	sample size	counts	time	ppt time	count time	Hours	igf	det	BKG	planchet tare	planchet gross	ba rec	eff		
RA-0070-WS-903-1	1	15633	15	4/6/21 14:15	1/9/24 9:48	24187.6	4.000	A	0.042	7.85288	7.91579	98.6%	20.2%	0.06291	
RA-0070-WS-903-4	1	15539	15	4/6/21 14:15	1/9/24 12:59	24190.7	4.000	A	0.042	7.85288	7.91579	98.6%	20.1%	0.06291	
RA-0070-WS-903-3	1	15365	15	4/6/21 14:15	1/9/24 10:57	24188.7	4.000	A	0.042	7.86129	7.92648	102.2%	19.9%	0.06519	Avg
RA-0070-WS-903-2	1	15487	15	4/6/21 14:15	1/9/24 10:36	24188.4	4.000	A	0.042	7.84269	7.90683	100.6%	20.0%	0.06414	
												100.0%	**20.0%**	0.06379	
RA-0070-WS-903-2	1	15420	15	4/6/21 14:15	1/9/24 9:48	24187.6	4.000	B	0.058				19.9%		
RA-0070-WS-903-1	1	15451	15	4/6/21 14:15	1/9/24 12:59	24190.7	4.000	B	0.058				20.0%		
RA-0070-WS-903-4	1	14935	15	4/6/21 14:15	1/9/24 10:57	24188.7	4.000	B	0.058				19.3%		
RA-0070-WS-903-3	1	15209	15	4/6/21 14:15	1/9/24 10:36	24188.4	4.000	B	0.058				19.7%		
													19.7%		
RA-0070-WS-903-3	1	15638	15	4/6/21 14:15	1/9/24 9:48	24187.6	4.000	C	0.083				20.2%		
RA-0070-WS-903-2	1	15656	15	4/6/21 14:15	1/9/24 12:59	24190.7	4.000	C	0.083				20.2%		
RA-0070-WS-903-1	1	15631	15	4/6/21 14:15	1/9/24 10:57	24188.7	4.000	C	0.083				20.2%		
RA-0070-WS-903-4	1	15314	15	4/6/21 14:15	1/9/24 10:36	24188.4	4.000	C	0.083				19.8%		
													20.1%		
RA-0070-WS-903-4	1	15288	15	4/6/21 14:15	1/9/24 9:48	24187.6	4.000	D	0.033				19.8%		
RA-0070-WS-903-3	1	15449	15	4/6/21 14:15	1/9/24 12:59	24190.7	4.000	D	0.033				20.0%		
RA-0070-WS-903-2	1	15671	15	4/6/21 14:15	1/9/24 10:57	24188.7	4.000	D	0.033				20.2%		
RA-0070-WS-903-1	1	15651	15	4/6/21 14:15	1/9/24 10:36	24188.4	4.000	D	0.033				20.2%		
													20.0%		

eff matched working sheet

DECAY CALCUALTION

ACTIVITY FORMULA A = Ao(e^^-NT)

Source: Ra-226
Lot No. R4/131/35
ID: **RA-0070-WS1**
19L06745

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 01-Nov-16
DATE OF CALIBRATION 09-Jan-24

Ao =	58.28	nCi
N =	0.00	
T(1/2) =	1600.00	years
T =	7.19	years
VOLUME OF STD	1.00	
FINAL VOL	100.00	
dilution =	100.00	
A =	58.10	nCi
A =	1289.82	dpm/ml
A =	**581**	pCi/ml

Uncertainty 3.70%

Volume 0.04%

CSU 3.70%

Activity 581 +/- 21 pCi/ml

RAD 1x5mL

RH-0065-V5

Amersham International p
Amersham Laboratories

NAMAS
CALIBRATION
No. 0146

Certificate of calibration of radioactive reference solution

M 28796

ESC38625

Description	Principal radionuclide:	Radium-226	Product code: RAY.44
			Solution number: R4/131/35
Measurement	Reference time:		1200 GMT on 2 September 1996
	Radioactive concentration of radium-226:	43.80	kilobecquerels per gram of solution
	which is equivalent to:	1.184	microcuries per gram of solution
	Mass of solution:	5.0330	grams
	Total activity of radium-226:	220.5	kilobecquerels
	which is equivalent to:	5.959	microcuries
	Recommended half life:	1600	years

Method of measurement used:
The activity of the solution was measured in a high pressure re-entrant ionisation chamber calibrated with a large number of absolutely standardised solutions.

ENVIRONMENTAL CARE

Accuracy: Overall uncertainty in the radioactive concentration quoted above: ± 3.7 %

Random uncertainty: ± 0.7 % Systematic uncertainty: ± 3.0 %

The limits of overall uncertainty were taken as the arithmetic sum of the uncertainty due to random variations, calculated at the 99.7% confidence level, and the estimated systematic uncertainties in the measurement.

Radionuclidic Purity: The estimated activities of any radioactive impurities found by high resolution gamma ray spectrometry, or in any other examination of the solution, are listed below expressed as percentages of the activity of the principal radionuclide at the reference time.

Chemical Composition: Carrier free in 0.5M HCl

Remarks: At the reference time radium-226 was shown to be in radioactive equilibrium with its daughter nuclides down the decay chain to polonium-214 and thallium-210, the precursors of lead-210. The ionisation chamber was calibrated using a standard supplied by the National Institute of Standards and Technology, Washington DC, USA.

This product meets the quality assurance requirements of the NRC Regulatory Guide 4.15 for achieving implicit NIST traceability as defined in NCRP 58 (1985).

Approved Signatory

W. F. Case

W F Case

Amersham
The Health Science Group

Pace Analytical

View as PDF (CreatePDF?batchnum=WG2236782)

RA-226 903.0 Radiochemistry Prep Benchsheet

Batch: WG2236782

Analyst: ASN4036 Prep Start Date/Time: 03/04/24 12:03 Prep End Date/Time: 03/06/24 10:23 Method: EPA 903.0 SOP: ENV-SOP-MTJL-0353/0370 Pipet ID: E11,E122,E14,126,62 Bal ID: RADBAL3

Stirrer ID's: St23,St7,St15,St27 Hot Plate ID: NA Centrifuge ID: C4

LCS/D Standard: 23K02021 Amt. Used: 1 mL Exp. Date:11/02/24 MS/D Standard: 23K02021 Amt. Used: 1 mL Exp. Date:11/02/24 16 mg/mL Barium Carrier: 23K29160 Amt. Used: 2 Exp. Date:10/31/24

Lead Nitrate Carrier: 23K08049 Amt. Used: 1 Exp. Date:11/08/24 Citric Acid: 24B26684 Amt. Used: 5 Exp. Date:12/04/24 1:1 H2SO4: 24B16421 Amt. Used: 20 Exp. Date:02/16/25

0.25M EDTA: 24C01568 Amt. Used: 15 Exp. Date:03/01/25 200 mg/mL Ammonium Sulfate: 23L06197 Amt. Used: 1 Exp. Date:12/06/24 Bromocresol Green: 23K29157 Amt. Used: 0.50 Exp. Date:11/29/24

Acetic Acid: 23L18873 Amt. Used: 3 Exp. Date:10/13/25

Sample Number	Collect Date	Sample Volume (mL)	Precipitation Time	Tare Wt (g) ✔	Gross Wt (g) ✔	Final Wt (g)	Review Analyst	Review Date
BLANK		1000	03/05/2024 15:40:00	0.08238	0.13796	0.05558	SNR961	03/15/24 14:56:51
LCS		1000	03/05/2024 15:40:00	0.08242	0.13746	0.05504	SNR961	03/15/24 14:56:51
MS(L1706883-04)		250	03/05/2024 15:40:00	0.08239	0.13774	0.05535	SNR961	03/15/24 14:56:51
MS(L1706901-06)		250	03/05/2024 15:40:00	0.08236	0.13798	0.05562	SNR961	03/15/24 14:56:51
MSD(L1706883-04)		250	03/05/2024 15:40:00	0.08286	0.13876	0.0559	SNR961	03/15/24 14:56:51
MSD(L1706901-06)		250	03/05/2024 15:40:00	0.08267	0.13889	0.05622	SNR961	03/15/24 14:56:51
1. L1705226-05	02/18/24 12:39	500	03/05/2024 15:40:00	0.08250	0.13920	0.0567	SNR961	03/15/24 14:56:51
2. L1706883-01	02/14/24 15:25	500	03/05/2024 15:40:00	0.08490	0.13923	0.05433	SNR961	03/15/24 14:56:51
3. L1706883-02	02/14/24 16:00	500	03/05/2024 15:40:00	0.08514	0.14176	0.05662	SNR961	03/15/24 14:56:51
4. L1706883-03	02/14/24 16:30	500	03/05/2024 15:40:00	0.08507	0.14142	0.05635	SNR961	03/15/24 14:56:51
5. L1706883-04	02/14/24 13:30	500	03/05/2024 15:40:00	0.08503	0.14121	0.05618	SNR961	03/15/24 14:56:51
6. L1706883-05	02/14/24 16:10	500	03/05/2024 15:40:00	0.08500	0.13978	0.05478	SNR961	03/15/24 14:56:51
7. L1706883-06	02/14/24 14:50	500	03/05/2024 15:40:00	0.08529	0.13984	0.05455	SNR961	03/15/24 14:56:51
8. L1706883-07	02/14/24 15:00	500	03/05/2024 15:40:00	0.08495	0.14032	0.05537	SNR961	03/15/24 14:56:51
9. L1706899-01	02/12/24 13:20	500	03/05/2024 15:40:00	0.08508	0.14097	0.05589	SNR961	03/15/24 14:56:51
10. L1706901-01	02/12/24 16:40	500	03/05/2024 15:40:00	0.08497	0.13984	0.05487	SNR961	03/15/24 14:56:51
11. L1706901-02	02/12/24 15:20	500	03/05/2024 15:40:00	0.08516	0.14087	0.05571	SNR961	03/15/24 14:56:51
12. L1706901-03	02/12/24 16:00	500	03/05/2024 15:40:00	0.08518	0.14158	0.0564	SNR961	03/15/24 14:56:51
13. L1706901-04	02/12/24 14:40	500	03/05/2024 15:40:00	0.08502	0.14090	0.05588	SNR961	03/15/24 14:56:51
14. L1706901-05	02/12/24 15:20	500	03/05/2024 15:40:00	0.08509	0.14108	0.05599	SNR961	03/15/24 14:56:51
15. L1706901-06	02/13/24 13:10	500	03/05/2024 15:40:00	0.08499	0.14110	0.05611	SNR961	03/15/24 14:56:51
16. L1706901-07	02/13/24 12:00	500	03/05/2024 15:40:00	0.08491	0.14010	0.05519	SNR961	03/15/24 14:56:51
17. L1709268-01	01/16/24 11:00	500	03/05/2024 15:40:00	0.08487	0.13822	0.05335	SNR961	03/15/24 14:56:51

matched working sheet

Comments:
50mL Tubes: 920128, 1mL tips: 2243, 2mL tips: 2215, 10mL electric tips: 2332, 10mL manual tips: P7565750, Transfer pipettes: 23140187

Reviewed By:SNR961 on 03/15/24 14:56:51

G5020 Run Log Ra-226 Waters by 903.0 WG2236782

Sample Order Verified by SNR961

Sample ID	Det	Alpha	LT	Analyst	Start	End
RA_BKG	A	1	60	SNR961	3/14/2024 18:10	3/14/2024 19:10
RA_BKG	B	5	60	SNR961	3/14/2024 18:10	3/14/2024 19:10
RA_BKG	C	3	60	SNR961	3/14/2024 18:10	3/14/2024 19:10
RA_BKG	D	3	60	SNR961	3/14/2024 18:10	3/14/2024 19:10
903 STD 1	A	10384	10	SNR961	3/14/2024 19:31	3/14/2024 19:41
903 STD 2	B	9987	10	SNR961	3/14/2024 19:31	3/14/2024 19:41
903 STD 3	C	10102	10	SNR961	3/14/2024 19:31	3/14/2024 19:41
903 STD 4	D	10100	10	SNR961	3/14/2024 19:31	3/14/2024 19:41
BLANK WG2236782	A	7	30	SNR961	3/14/2024 19:42	3/14/2024 20:12
LCS WG2236782	B	252	30	SNR961	3/14/2024 19:42	3/14/2024 20:12
MS L1706883-04 WG2236782	C	268	30	SNR961	3/14/2024 19:42	3/14/2024 20:12
MS L1706901-06 WG2236782	D	248	30	SNR961	3/14/2024 19:42	3/14/2024 20:12
MSD L1706883-04 WG2236782	A	235	30	SNR961	3/14/2024 20:12	3/14/2024 20:42
MSD L1706901-06 WG2236782	B	252	30	SNR961	3/14/2024 20:12	3/14/2024 20:42
L1705226-05 WG2236782	C	66	30	SNR961	3/14/2024 20:12	3/14/2024 20:42
L1706883-01 WG2236782	D	13	30	SNR961	3/14/2024 20:12	3/14/2024 20:42
L1706883-02 WG2236782	A	14	30	SNR961	3/14/2024 20:43	3/14/2024 21:13
L1706883-03 WG2236782	B	27	30	SNR961	3/14/2024 20:43	3/14/2024 21:13
L1706883-04 WG2236782	C	16	30	SNR961	3/14/2024 20:43	3/14/2024 21:13
L1706883-05 WG2236782	D	8	30	SNR961	3/14/2024 20:43	3/14/2024 21:13
L1706883-06 WG2236782	A	12	30	SNR961	3/14/2024 21:13	3/14/2024 21:43
L1706883-07 WG2236782	B	7	30	SNR961	3/14/2024 21:13	3/14/2024 21:43
L1706899-01 WG2236782	C	7	30	SNR961	3/14/2024 21:13	3/14/2024 21:43
L1706901-01 WG2236782	D	7	30	SNR961	3/14/2024 21:13	3/14/2024 21:43
L1706901-02 WG2236782	A	7	30	SNR961	3/14/2024 21:43	3/14/2024 22:13
L1706901-03 WG2236782	B	5	30	SNR961	3/14/2024 21:43	3/14/2024 22:13
L1706901-04 WG2236782	C	15	30	SNR961	3/14/2024 21:43	3/14/2024 22:13
L1706901-05 WG2236782	D	10	30	SNR961	3/14/2024 21:43	3/14/2024 22:13
L1706901-06 WG2236782	A	4	30	SNR961	3/14/2024 22:13	3/14/2024 22:43
L1706901-07 WG2236782	B	19	30	SNR961	3/14/2024 22:13	3/14/2024 22:43
L1709268-01 WG2236782	C	18	30	SNR961	3/14/2024 22:13	3/14/2024 22:43
RA_BKG	A	2	60	SNR961	3/15/2024 10:21	3/15/2024 11:21
RA_BKG	B	0	60	SNR961	3/15/2024 10:21	3/15/2024 11:21
RA_BKG	C	2	60	SNR961	3/15/2024 10:21	3/15/2024 11:21
RA_BKG	D	4	60	SNR961	3/15/2024 10:21	3/15/2024 11:21
903 STD 1	A	10172	10	SNR961	3/15/2024 11:42	3/15/2024 11:52
903 STD 2	B	10021	10	SNR961	3/15/2024 11:42	3/15/2024 11:52
903 STD 3	C	10146	10	SNR961	3/15/2024 11:42	3/15/2024 11:52
903 STD 4	D	9890	10	SNR961	3/15/2024 11:42	3/15/2024 11:52

Pace National
G-5400W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Test Date: 06/19/2023 11:04
System Serial #: 042101

Counting Time: 1 min 0 sec
Sample Position: 42 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR4702136
Isotope Name: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 5 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1803	1803	0
1520	2062	2061	1
1540	2378	2378	0
1560	2635	2635	0
1580	2888	2887	1
1600	3004	3003	1
1620	3140	3140	0
1640	3417	3416	1
1660	3439	3435	4
1680	3464	3462	2
1700	3607	3606	1
1720	3598	3597	1
1740	3528	3521	7
1760	3641	3618	23
1780	3653	3611	42
1800	3552	3467	85

Special Notes:

Report Generated: 06/22/2023

G5400HV.RPT ver 1.0

Collected By: SWR961 **Date:** 6/19/23

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740

Approved By: [signature] **Date:** 7/12/23

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Pace National
G-5400W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Test Date: 06/19/2023 11:36
System Serial #: 042101

Counting Time: 1 min 0 sec
Sample Position: 42 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR4702137
Isotope Name: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 5 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1995	1993	2
1520	2314	2314	0
1540	2791	2788	3
1560	3382	3380	2
1580	3832	3829	3
1600	4038	4034	4
1620	4546	4544	2
1640	4845	4838	7
1660	4979	4974	5
1680	5117	5108	9
1700	5164	5154	10
1720	5257	5245	12
1740	5429	5414	15
1760	5388	5362	26
1780	5530	5477	53
1800	5632	5495	137

Special Notes:

Report Generated: 06/22/2023 **G5400HV.RPT ver 1.0**

Collected By: SWR961 **Date:** 6/19/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

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Pace National
G-5400W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Test Date: 06/19/2023 12:35
System Serial #: 042101

Counting Time: 1 min 0 sec
Sample Position: 42 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR4702139
Isotope Name: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 5 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2059	2058	1
1520	2443	2440	3
1540	2824	2821	3
1560	3226	3225	1
1580	3521	3518	3
1600	3658	3654	4
1620	4123	4123	0
1640	4349	4347	2
1660	4500	4494	6
1680	4552	4550	2
1700	4540	4531	9
1720	4648	4639	9
1740	4651	4648	3
1760	4956	4926	30
1780	4814	4745	69
1800	4863	4757	106

Special Notes:

Report Generated: 06/22/2023 **G5400HV.RPT ver 1.0**

Collected By: SNR961 **Date:** 6/19/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

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Pace National
G-5400W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Test Date:** 06/19/2023 12:55
User ID: Meier **System Serial #:** 042101

Counting Time: 1 min 0 sec
Sample Position: 42 **Detector:** D **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR4702136
Voltage Step: 20 **Isotope Name:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 5 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1533	1533	0
1520	1769	1768	1
1540	2054	2052	2
1560	2377	2377	0
1580	2657	2656	1
1600	2756	2756	0
1620	2936	2934	2
1640	3315	3314	1
1660	3445	3445	0
1680	3615	3613	2
1700	3460	3460	0
1720	3644	3637	7
1740	3534	3525	9
1760	3629	3605	24
1780	3674	3610	64
1800	3696	3573	123

Special Notes:

Report Generated: 06/22/2023 **G5400HV.RPT ver 1.0**

Collected By: SWR961 **Date:** 6/19/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/11/23

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Pace National
G-5400W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Sample Position: 42 **Detector:** A
Counting Time: 1 min 0 sec **Voltage:** 1740
Degrees of Freedom: N - 1 **Conf Level:** 95.0 %

Test Date: 07/13/2023 10:34
System Serial #: 042101
Number of Counts Performed: 20
Source Certificate: 92SR4702137
Isotope: Sr-90
Emission Type: Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 5 - 899	Chn 900 - 1023
1	5577	13
2	5421	13
3	5510	13
4	5500	15
5	5594	12
6	5568	10
7	5484	20
8	5622	11
9	5571	12
10	5494	13
11	5480	10
12	5447	10
13	5511	7
14	5427	16
15	5588	10
16	5530	11
17	5381	13
18	5407	8
19	5531	15
20	5520	12

(Xbar) Mean:	5508.15	12.20
Calculated Chi-Sqr Value:	15.63	13.21

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/13/2023 **G5400CHISQR.RPT ver 1.0**

Collected By: SNReci **Date:** 7/13/23
Changes Needed: Yes (No) (Circle One)
Approved By: [signature] **Date:** 7/13/23

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Pace National
G-5400W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Sample Position: 42 **Detector:** B
Counting Time: 1 min 0 sec **Voltage:** 1740
Degrees of Freedom: N - 1 **Conf Level:** 95.0 %

Test Date: 06/19/2023 14:18
System Serial #: 042101
Number of Counts Performed: 20
Source Certificate: 92SR4702137
Isotope: Sr-90
Emission Type: Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 5 - 899	Chn 900 - 1023
1	5391	11
2	5433	13
3	5372	15
4	5468	9
5	5302	7
6	5512	8
7	5518	7
8	5398	11
9	5394	13
10	5499	12
11	5498	13
12	5299	9
13	5455	14
14	5402	15
15	5555	8
16	5425	14
17	5365	14
18	5503	13
19	5422	16
20	5452	10

(Xbar) Mean:	5433.15	11.60
Calculated Chi-Sqr Value:	17.12	13.17

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 06/22/2023 **G5400CHISQR.RPT ver 1.0**

Collected By: SWR961 **Date:** 6/19/23
Changes Needed: Yes No (Circle One)
Approved By: [signature] **Date:** 7/12/23

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Pace National
G-5400W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Sample Position: 42 **Detector:** C
Counting Time: 1 min 0 sec **Voltage:** 1740
Degrees of Freedom: N - 1 **Conf Level:** 95.0 %

Test Date: 06/19/2023 13:50
System Serial #: 042101
Number of Counts Performed: 20
Source Certificate: 92SR4702139
Isotope: Sr-90
Emission Type: Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 5 - 899	Chn 900 - 1023
1	4749	12
2	4806	8
3	4684	10
4	4737	14
5	4854	9
6	4666	4
7	4764	12
8	4680	13
9	4618	16
10	4739	11
11	4743	10
12	4771	12
13	4814	16
14	4812	15
15	4728	10
16	4745	6
17	4880	14
18	4795	8
19	4726	15
20	4791	7

(Xbar) Mean:	4755.10	11.10
Calculated Chi-Sqr Value:	16.36	19.98

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 06/22/2023 **G5400CHISQR.RPT ver 1.0**

Collected By: SNR561 **Date:** 6/19/23
Changes Needed: Yes No (Circle One)
Approved By: [signature] **Date:** 7/6/23

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Pace National
G-5400W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Sample Position: 42 **Detector:** D
Counting Time: 1 min 0 sec **Voltage:** 1740
Degrees of Freedom: N - 1 **Conf Level:** 95.0 %

Test Date: 06/22/2023 16:17
System Serial #: 042101
Number of Counts Performed: 20
Source Certificate: 92SR4702136
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 5 - 899	Alpha ROI Counts Chn 900 - 1023
1	3730	8
2	3592	7
3	3700	7
4	3678	7
5	3744	10
6	3680	2
7	3747	10
8	3672	7
9	3578	8
10	3647	8
11	3727	3
12	3593	8
13	3815	9
14	3662	9
15	3753	10
16	3663	5
17	3733	4
18	3600	4
19	3689	5
20	3771	7

(Xbar) Mean:	3688.70	6.90
Calculated Chi-Sqr Value:	21.90	15.33

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 06/22/2023 **G5400CHISQR.RPT ver 1.0**

Collected By: SWR961 **Date:** 6/22/23
Changes Needed: Yes (No) (Circle One)
Approved By: _____ **Date:** 7/12/23

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2136

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	16100	dpm	805	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	7694.29	dpm	384.71	dpm

44-9 PROBE
CPM Acceptance Range

1693	**50**	
1354	**1304**	**Low**
2031	**2081**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

3511	**176**	
3160	**2984**	**Low**
3862	**4038**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2137

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	23800	dpm	1190	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	11374.16	dpm	568.71	dpm

44-9 PROBE
CPM Acceptance Range

2502	**74**	
2002	**1928**	**Low**
3003	**3077**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

5190	**260**	
4671	**4412**	**Low**
5709	**5969**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2139

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 03-Jun-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	20700	dpm	1040	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.41	years	30.41	years
dilution =	1.00		1.00	
A =	9907.77	dpm	497.78	dpm

44-9 PROBE
CPM Acceptance Range

2180	**65**	
1744	**1679**	**Low**
2616	**2680**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

4521	**227**	
4069	**3842**	**Low**
4973	**5200**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2138

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	25000	dpm	1250	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	11947.65	dpm	597.38	dpm

44-9 PROBE

CPM	**Acceptance Range**	
2628	**78**	
2103	**2025**	**Low**
3154	**3232**	**High**

Gamma Products G5020-400
Efficienc 0.4563

CPM	**Acceptance Range**	
5452	**273**	
4907	**4634**	**Low**
5997	**6269**	**High**

Approval: _____ Date:_____

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904/9320 Radiochemistry

Radiochemistry Raw Data

RADIUM-228
METHOD: **EPA 904/9320**
SDG# WG2238285

Lab ID	Result	Error	TPU	SDWA DL	Lc	MDA	UNITS	PREP DATE	ANALYSIS DATE	ANALYST
BLANK WG2238285	0.497	0.145	0.776	0.248	0.132	0.251	pCi/l	3/4/2024	3/13/2024	DDD3903
LCS WG2238285	5.666	0.254	0.295	0.321	0.170	0.325	pCi/l	3/4/2024	3/13/2024	DDD3903
MS L1710452-01 WG2238285	17.447	0.753	0.521	0.876	0.467	0.886	pCi/l	3/4/2024	3/13/2024	DDD3903
MSD L1710452-01 WG2238285	18.336	0.797	0.521	0.972	0.516	0.984	pCi/l	3/4/2024	3/13/2024	DDD3903
DUP L1707769-02 WG2238285	1.338	0.390	1.097	0.664	0.352	0.676	pCi/l	3/4/2024	3/13/2024	DDD3903
L1705226-05 WG2238285	0.309	0.254	1.559	0.448	0.238	0.455	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706897-01 WG2238285	0.662	0.262	1.080	0.452	0.240	0.461	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706899-01 WG2238285	0.478	0.294	1.361	0.513	0.272	0.523	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706901-01 WG2238285	0.250	0.272	1.813	0.481	0.255	0.490	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706901-02 WG2238285	0.000	0.263	#DIV/0!	0.472	0.251	0.480	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706901-03 WG2238285	0.121	0.257	2.549	0.458	0.244	0.466	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706901-04 WG2238285	0.318	0.246	1.533	0.433	0.231	0.441	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706901-05 WG2238285	0.392	0.200	1.238	0.351	0.188	0.356	pCi/l	3/4/2024	3/13/2024	DDD3903
L1706901-07 WG2238285	0.492	0.285	1.311	0.498	0.264	0.507	pCi/l	3/4/2024	3/13/2024	DDD3903
L1707006-01 WG2238285	0.208	0.222	1.802	0.396	0.212	0.402	pCi/l	3/4/2024	3/13/2024	DDD3903
L1707769-01 WG2238285	0.795	0.352	1.380	0.611	0.325	0.621	pCi/l	3/4/2024	3/13/2024	DDD3903
L1707769-02 WG2238285	1.924	0.374	0.923	0.615	0.328	0.625	pCi/l	3/4/2024	3/13/2024	DDD3903
L1707769-03 WG2238285	2.077	0.270	0.617	0.425	0.227	0.432	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710290-03 WG2238285	1.856	0.484	1.362	0.817	0.437	0.825	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710452-01 WG2238285	-0.188	0.334	2.796	0.613	0.325	0.620	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710452-07 WG2238285	0.311	0.188	1.360	0.333	0.178	0.336	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710811-01 WG2238285	0.301	0.202	1.437	0.359	0.192	0.362	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710811-02 WG2238285	0.572	0.207	1.054	0.357	0.191	0.361	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710811-04 WG2238285	2.331	0.301	0.623	0.479	0.253	0.485	pCi/l	3/4/2024	3/13/2024	DDD3903
L1710811-05 WG2238285	2.763	0.243	0.503	0.347	0.186	0.351	pCi/l	3/4/2024	3/13/2024	DDD3903
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	pCi/l	3/4/2024	1/0/1900	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	pCi/l	3/4/2024	1/0/1900	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	pCi/l	3/4/2024	1/0/1900	

RADIUM-228
METHOD: EPA 904/9320
SDG# WG2238285
ANALYST: DDD3903
PREP DATE: 3/4/24 19:18

Matrix: NPW/DW

LAB ID	sample date	sample size (L)	ingrowth start	decay start	t3 min	count date/end time	counts	UNIT/DET no.	UNIT	DET no.	back CPM	COUNTER EFF	SAMPLE DECAY DAYS	SAMPLE DECAY FACTOR	t1 min	Count Time t2 min	λt_2 $(1-e^{-\lambda t}2)$	1 $(1-e^{-\lambda t}3)$	1 $e^{-\lambda t}1$	Ba % rec	Y %rec	Ra228 pCi/l
BLANK WG2238285	**3/4/24 19:18**	1.000	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	276	4A-1	4	1	1.05	45.43	0.03	1.00	123	200	1.200	1.000	1.261	100.0%	100.0%	0.497
LCS WG2238285	**3/4/24 19:18**	1.000	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	1095	4A-2	4	2	1.76	44.83	0.03	1.00	123	200	1.200	1.000	1.261	100.0%	100.0%	5.666
MS L1710452-01 WG2238285	2/28/2024 8:02	0.300	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	929	4A-3	4	3	1.18	45.34	0.04	1.00	123	200	1.200	1.000	1.261	100.0%	100.0%	17.447
MSD L1710452-01 WG2238285	2/28/2024 8:02	0.300	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	1048	4A-4	4	4	1.53	46.19	0.04	1.00	123	200	1.200	1.000	1.261	100.0%	100.0%	18.336
DUP L1707769-02 WG2238285	2/16/2024 8:20	0.500	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	483	4B-1	4	5	1.97	45.75	0.07	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	1.338
L1705226-05 WG2238285	2/18/2024 12:39	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	383	4B-2	4	6	1.77	46.03	0.07	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.309
L1706897-01 WG2238285	2/12/2024 12:40	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	424	4B-3	4	7	1.81	46.09	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.662
L1706899-01 WG2238285	2/12/2024 13:20	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	498	4B-4	4	8	2.27	45.24	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.478
L1706901-01 WG2238285	2/12/2024 16:40	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	419	4C-1	4	9	1.98	45.25	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.250
L1706901-02 WG2238285	2/12/2024 15:20	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	368	4C-2	4	10	1.84	44.55	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.000
L1706901-03 WG2238285	2/12/2024 16:00	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	357	4C-3	4	11	1.73	44.55	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.121
L1706901-04 WG2238285	2/12/2024 14:40	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	341	4C-4	4	12	1.56	44.85	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.318
L1706901-05 WG2238285	2/12/2024 15:20	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	238	4D-1	4	13	1.01	45.14	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.392
L1706901-07 WG2238285	2/13/2024 12:00	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	486	4D-2	4	14	2.20	45.99	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.492
L1707006-01 WG2238285	2/14/2024 12:00	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	277	4D-3	4	15	1.29	44.86	0.08	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.208
L1707769-01 WG2238285	2/16/2024 10:25	0.500	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	357	4D-4	4	16	1.53	44.09	0.07	1.01	123	200	1.200	1.000	1.261	100.0%	100.0%	0.795
L1707769-02 WG2238285	2/16/2024 8:20	0.500	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	407	3A-1	3	1	1.44	42.57	0.07	1.01	123	200	1.200	1.000	1.262	100.0%	100.0%	1.924
L1707769-03 WG2238285	2/15/2024 14:40	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	492	3A-2	3	2	1.51	44.98	0.07	1.01	123	200	1.200	1.000	1.262	100.0%	100.0%	2.077
L1710290-03 WG2238285	2/28/2024 10:00	0.300	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	259	3A-3	3	3	0.94	43.70	0.04	1.00	123	200	1.200	1.000	1.262	100.0%	100.0%	1.856
L1710452-01 WG2238285	2/28/2024 8:02	0.500	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	290	3A-4	3	4	1.51	44.04	0.04	1.00	123	200	1.200	1.000	1.262	100.0%	99.2%	-0.188
L1710452-07 WG2238285	2/28/2024 10:20	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	200	3B-1	3	5	0.86	44.12	0.04	1.00	123	200	1.200	1.000	1.262	100.0%	100.0%	0.311
L1710811-01 WG2238285	2/29/2024 10:25	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	227	3B-2	3	6	1.00	43.94	0.04	1.00	123	200	1.200	1.000	1.262	100.0%	100.0%	0.301
L1710811-02 WG2238285	2/29/2024 12:10	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	247	3B-3	3	7	0.98	43.68	0.04	1.00	123	200	1.200	1.000	1.262	100.0%	100.0%	0.572
L1710811-04 WG2238285	2/29/2024 9:40	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	572	3B-4	3	8	1.82	43.67	0.04	1.00	123	200	1.200	1.000	1.262	100.0%	100.0%	2.331
L1710811-05 WG2238285	2/29/2024 9:45	0.700	3/5/2024 18:28	3/13/2024 17:03	11435	3/13/24 22:26	440	3C-1	3	9	0.95	44.29	0.04	1.00	124	200	1.200	1.000	1.262	100.0%	100.0%	2.763
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!

=Average Monthly backgrounds used

bkg CPM matched raw data

RADIUM 228 QC REPORT

METHOD: EPA 904/9320
SDG# WG2238285
ANALYST: DDD3903

QC SPIKE INFORMATION
VOLUME USED: **0.5**
QC ID: TH232-86778-WS1
ACTIVITY: 10.0 pCi/ml

Analyte **Ra228** units pCi/L
Matrix
Sample 707769-02 WG2238285

	RESULT	ERROR	TPU	SDWA DL	Lc	MDA	known	%REC	LIMITS LOW	LIMITS HIGH	RPD		LIMITS	RER	LIMITS
BLANK WG2238285	0.497	0.145	0.776	0.248	0.132	0.251									
LCS WG2238285	5.666	0.254	0.295	0.321	0.170	0.325	5.0	**113.3%**	80%	120%					
L1707769-02 WG2238285	1.924	0.374	0.923	0.615	0.328	0.625									
DUP L1707769-02 WG2238285	1.338	0.390	1.097	0.664	0.352	0.676					**35.9%**	*	20%	**1.085**	2
L1710452-01 WG2238285	-0.188	0.334	2.796	0.613	0.325	0.620									
MS L1710452-01 WG2238285	17.45	0.75	0.52	0.88	0.47	0.89	16.7	**105.8%**	70%	130%					
MSD L1710452-01 WG2238285	18.34	0.80	0.52	0.97	0.52	0.98	16.7	**111.1%**	70%	130%	**5.0%**		20%	**0.81**	2

*** - Outside Control Limits**

SAMPLES:

BLANK WG2238285	L1706901-04 WG22	L1710811-02 WG2238285
LCS WG2238285	L1706901-05 WG22	L1710811-04 WG2238285
MS L1710452-01 WG2238285	L1706901-07 WG22	L1710811-05 WG2238285
MSD L1710452-01 WG2238285	L1707006-01 WG2238285	
DUP L1707769-02 WG2238285	L1707769-01 WG2238285	
L1705226-05 WG2238285	L1707769-02 WG2238285	
L1706897-01 WG2238285	L1707769-03 WG2238285	
L1706899-01 WG2238285	L1710290-03 WG2238285	
L1706901-01 WG2238285	L1710452-01 WG2238285	
L1706901-02 WG2238285	L1710452-07 WG2238285	
L1706901-03 WG2238285	L1710811-01 WG2238285	

3/19/2024

DECAY CALCUALTION

Th-232 Source
ORL# 867-78

ACTIVITY FORMULA A = Ao(e^^-NT)

TH232-86778-WS1 ✔

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	15-Feb-02
DATE OF CALIBRATION	04-Mar-24

Ao =	100.40	nCi
N =	0.00	
T(1/2) =	1.41E+10	years
T =	22.07	years
dilution =	1000.00	
A =	100.40	nCi
A =	222.89	dpm/ml
A =	100.40	pCi/ml
Stock =	100	pCi/ml
Stock	100	ml
DI	1000	pCi/ml
WS1 =	10.0	pCi/ml

View as PDF (CreatePDF?batchnum=WG2238285)

RA-228 Aqueous Radiochemistry Prep Benchsheet

Batch: WG2238285

Analyst: ALG3788 Prep Start Date/Time: 03/04/24 19:18-19:25 Prep End Date/Time: 03/18/24 16:57-20:14 Method: 904 SOP: ENV-SOP-MTJL-0300/0322 Pipet ID: E-12, E-21, E-24 Balance ID: RADBAL3
Stirrer ID: ST26, ST6, ST27 Hotplate ID: G72 Centrifuge ID: C5, C6

LCS/MS Spike: 22F12858 Amt. Used: 0.50 mL Exp. Date:06/03/24 16 mg/mL Barium Carrier: 23L29554 Amt. Used: 2 mL Exp. Date:10/31/24 1M Citric Acid: 24B01189 Amt. Used: 5 mL Exp. Date:11/30/24
Methyl Orange: 24B01187 Amt. Used: 0.20 mL Exp. Date:02/01/25 15 mg/mL Lead Carrier: 24B28179 Amt. Used: 10 mL Exp. Date:02/28/25 10 mg/mL Strontium Carrier: 24A20225 Amt. Used: 2 mL Exp. Date:01/20/25
18 mg/mL Yttrium Carrier: 24B24518 Amt. Used: 1 mL Exp. Date:02/24/25 Ammonium Hydroxide: 23L28219 Amt. Used: 10 mL Exp. Date:10/04/25 1:1 H2SO4: 24B16451 Amt. Used: 10 mL Exp. Date:02/16/25
200 mg/mL Ammonium Sulfate: 24A25035 Amt. Used: 16 mL Exp. Date:01/25/25 Nitric Acid: 24B19654 Amt. Used: 34 mL Exp. Date:08/19/24 0.25N Basic EDTA: 24B01191 Amt. Used: 85 mL Exp. Date:02/01/25
0.9mg/mL each Sr/Y Carrier: 24A11243 Amt. Used: 2 mL Exp. Date:12/15/24 Acetic Acid: 22L30146 Amt. Used: 20 mL Exp. Date:10/26/24 1.5mg/mL Lead Carrier: 24A19163 Amt. Used: 2 mL Exp. Date:01/17/25
2% NH4 Sulfide: 24B28205 Amt. Used: 0.50 mL Exp. Date:02/28/25 9 mg/mL Yttrium Carrier: 24B26726 Amt. Used: 1 mL Exp. Date:02/24/25 18N NaOH: 24B02370 Amt. Used: 5 mL Exp. Date:02/02/25
6N Nitric Acid: 24B02354 Amt. Used: 2 mL Exp. Date:02/02/25 10N NaOH: 24B02371 Amt. Used: 4 mL Exp. Date:02/02/25 1N Nitric Acid: 24B02356 Amt. Used: 3.50 mL Exp. Date:02/02/25
5% Ammonium Oxalate: 24B20973 Amt. Used: 3.50 mL Exp. Date:02/20/25

Sample Number	Collect Date	Sample Vol. (L or filt)	Ac-228 Ingrowth Time	Ac-228 Decay Time	Y Planchet Tare (g)	Y Planchet Gross (g)	Y Planchet Net (g)	Ba Planchet Tare (g)	Ba Planchet Gross (g)	Ba Planchet Net (g)	Review Analyst	Review Date
BLANK		1.000	03/05/24 18:28:00	03/13/24 17:03:00	7.68268	7.71651	0.03383	7.55176	7.62090	0.06914	DDD3903	03/18/24 20:14:17
LCS		1.000	03/05/24 18:28:00	03/13/24 17:03:00	7.64327	7.67669	0.03342	7.56807	7.64046	0.07239	DDD3903	03/18/24 20:14:17
MS(L1710452-01)		0.300	03/05/24 18:28:00	03/13/24 17:03:00	7.63921	7.67539	0.03618	7.54683	7.61574	0.06891	DDD3903	03/18/24 20:14:17
MSD(L1710452-01)		0.300	03/05/24 18:28:00	03/13/24 17:03:00	7.62479	7.65771	0.03292	7.56767	7.63186	0.06419	DDD3903	03/18/24 20:14:17
DUP(L1707769-02)		0.500	03/05/24 18:28:00	03/13/24 17:03:00	7.67368	7.70595	0.03227	7.54302	7.60335	0.06033	DDD3903	03/18/24 20:14:17
1. L1705226-05	02/18/24 12:39	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.67859	7.71017	0.03158	7.51791	7.58032	0.06241	DDD3903	03/18/24 20:14:17
2. L1706897-01	02/12/24 12:40	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.60748	7.63878	0.0313	7.56065	7.62949	0.06884	DDD3903	03/18/24 20:14:17
3. L1706899-01	02/12/24 13:20	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.67915	7.71131	0.03216	7.54026	7.60606	0.0658	DDD3903	03/18/24 20:14:17
4. L1706901-01	02/12/24 16:40	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.61070	7.64287	0.03217	7.50744	7.57008	0.06264	DDD3903	03/18/24 20:14:17
5. L1706901-02	02/12/24 15:20	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.69407	7.72497	0.0309	7.55242	7.62202	0.0696	DDD3903	03/18/24 20:14:17
6. L1706901-03	02/12/24 16:00	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.65722	7.69251	0.03529	7.57611	7.64350	0.06739	DDD3903	03/18/24 20:14:17
7. L1706901-04	02/12/24 14:40	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.67311	7.70429	0.03118	7.56985	7.64355	0.0737	DDD3903	03/18/24 20:14:17
8. L1706901-05	02/12/24 15:20	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.62174	7.65549	0.03375	7.53201	7.60551	0.0735	DDD3903	03/18/24 20:14:17
9. L1706901-07	02/13/24 12:00	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.68058	7.71568	0.0351	7.53824	7.61003	0.07179	DDD3903	03/18/24 20:14:17
10. L1707006-01	02/14/24 12:00	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.65907	7.69317	0.0341	7.52225	7.59058	0.06833	DDD3903	03/18/24 20:14:17
11. L1707769-01	02/16/24 10:25	0.500	03/05/24 18:28:00	03/13/24 17:03:00	7.66032	7.69832	0.038	7.56813	7.63327	0.06514	DDD3903	03/18/24 20:14:17
12. L1707769-02	02/16/24 08:20	0.500	03/05/24 18:28:00	03/13/24 17:03:00	7.63475	7.66526	0.03051	7.56463	7.63929	0.07466	DDD3903	03/18/24 20:14:17
13. L1707769-03	02/15/24 14:40	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.66702	7.69820	0.03118	7.53287	7.60076	0.06789	DDD3903	03/18/24 20:14:17
14. L1710290-03	02/28/24 10:00	0.300	03/05/24 18:28:00	03/13/24 17:03:00	7.66902	7.70230	0.03328	7.52100	7.58794	0.06694	DDD3903	03/18/24 20:14:17
15. L1710452-01	02/28/24 08:02	0.500	03/05/24 18:28:00	03/13/24 17:03:00	7.66372	7.69393	0.03021	7.55156	7.62182	0.07026	DDD3903	03/18/24 20:14:17
16. L1710452-07	02/28/24 10:20	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.69290	7.72438	0.03148	7.53131	7.59564	0.06433	DDD3903	03/18/24 20:14:17
17. L1710811-01	02/29/24 10:25	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.62426	7.65815	0.03389	7.52744	7.60062	0.07318	DDD3903	03/18/24 20:14:17
18. L1710811-02	02/29/24 12:10	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.69439	7.72781	0.03342	7.51691	7.58072	0.06381	DDD3903	03/18/24 20:14:17
19. L1710811-04	02/29/24 09:40	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.62718	7.66405	0.03687	7.57791	7.64422	0.06631	DDD3903	03/18/24 20:14:17
20. L1710811-05	02/29/24 09:45	0.700	03/05/24 18:28:00	03/13/24 17:03:00	7.67805	7.71014	0.03209	7.54294	7.61523	0.07229	DDD3903	03/18/24 20:14:17

Comments:
50mL tubes (920128), 2) 1mL tips (2243), 3) 2mL tips (2215), 4) 10mL electric tips (2332), 5) 10mL manual tips (p7565750) 6) transfer pipettes (23140187).

Reviewed By:DDD3903 on 03/18/24 20:14:17

Yttrium Recovery

9 mg/ml(Y)

Known $Y_2(C_2O_4)_3 \cdot 9H_2O$

Standardized Value	8.96	mg/ml	Y_2	177.8 g/mol
Volume Added	1.00	mL	$Y_2(C_2O_4)_3.9H_2O$	603.8 g/mol
Mass Added	30.44	mg		

LAB ID	TARE(g)	GROSS(g)	NET(g)	Y %rec
BLANK WG2238285	7.68268	7.71651	0.0338	**111%**
LCS WG2238285	7.64327	7.67669	0.0334	**109.8%**
MS L1710452-01 WG2238285	7.63921	7.67539	0.0362	**118.9%**
MSD L1710452-01 WG2238285	7.62479	7.65771	0.0329	**108.1%**
DUP L1707769-02 WG2238285	7.67368	7.70595	0.0323	**106%**
L1705226-05 WG2238285	7.67859	7.71017	0.0316	**103.7%**
L1706897-01 WG2238285	7.60748	7.63878	0.0313	**102.8%**
L1706899-01 WG2238285	7.67915	7.71131	0.0322	**105.7%**
L1706901-01 WG2238285	7.6107	7.64287	0.0322	**105.7%**
L1706901-02 WG2238285	7.69407	7.72497	0.0309	**101.5%**
L1706901-03 WG2238285	7.65722	7.69251	0.0353	**115.9%**
L1706901-04 WG2238285	7.67311	7.70429	0.0312	**102%**
L1706901-05 WG2238285	7.62174	7.65549	0.0338	**110.9%**
L1706901-07 WG2238285	7.68058	7.71568	0.0351	**115.3%**
L1707006-01 WG2238285	7.65907	7.69317	0.0341	**112.0%**
L1707769-01 WG2238285	7.66032	7.69832	0.0380	**124.8%**
L1707769-02 WG2238285	7.63475	7.66526	0.0305	**100.2%**
L1707769-03 WG2238285	7.66702	7.6982	0.0312	**102.4%**
L1710290-03 WG2238285	7.66902	7.7023	0.0333	**109.3%**
L1710452-01 WG2238285	7.66372	7.69393	0.0302	**99.2%**
L1710452-07 WG2238285	7.6929	7.72438	0.0315	**103.4%**
L1710811-01 WG2238285	7.62426	7.65815	0.0339	**111.3%**
L1710811-02 WG2238285	7.69439	7.72781	0.0334	**109.8%**
L1710811-04 WG2238285	7.62718	7.66405	0.0369	**121.1%**
L1710811-05 WG2238285	7.67805	7.71014	0.0321	**105.4%**
0			0.0000	**0.0%**
0			0.0000	**0.0%**
0			0.0000	**0.0%**

24B26726 Standardization Date: 02/28/24

		Y2(C2O4)3.9H2O	Y g/mL	Y mg/mL
Tare (g)	Gross (g)	Net (g)		
7.68529	7.71598	0.03069	0.00904	9.0372
7.62870	7.65938	0.03068	0.00903	9.0343
7.64839	7.67834	0.02995	0.00882	8.8193

Avg. Y mg/mL

8.9636 ± 1.39%

Barium Recovery

16 mg/ml(Ba)

Known $BaSO_4$

Standardized Value	16.33	mg/ml	Ba	137	g/mol
volume added	2.00	ml			
	55.55	mg	$BaSO_4$	233	g/mol

23L29554 Standardization Date: 01/08/24				
T	G	N		
7.67979	7.73560	0.05581	0.02791	0.0164
7.66909	7.72697	0.05788	0.02894	0.0170
7.68192	7.73489	0.05297	0.02649	0.0156

16.33 +/- 4.4%

LAB ID	TARE(g)	GROSS(g)	NET(g)	%rec
BLANK WG2238285	7.55176	7.6209	0.0691	**124%**
LCS WG2238285	7.56807	7.64046	0.0724	**130%**
MS L1710452-01 WG2238285	7.54683	7.61574	0.0689	**124%**
MSD L1710452-01 WG2238285	7.56767	7.63186	0.0642	**116%**
DUP L1707769-02 WG2238285	7.54302	7.60335	0.0603	**109%**
L1705226-05 WG2238285	7.51791	7.58032	0.0624	**112%**
L1706897-01 WG2238285	7.56065	7.62949	0.0688	**124%**
L1706899-01 WG2238285	7.54026	7.60606	0.0658	**118%**
L1706901-01 WG2238285	7.50744	7.57008	0.0626	**113%**
L1706901-02 WG2238285	7.55242	7.62202	0.0696	**125%**
L1706901-03 WG2238285	7.57611	7.6435	0.0674	**121%**
L1706901-04 WG2238285	7.56985	7.64355	0.0737	**133%**
L1706901-05 WG2238285	7.53201	7.60551	0.0735	**132%**
L1706901-07 WG2238285	7.53824	7.61003	0.0718	**129%**
L1707006-01 WG2238285	7.52225	7.59058	0.0683	**123%**
L1707769-01 WG2238285	7.56813	7.63327	0.0651	**117%**
L1707769-02 WG2238285	7.56463	7.63929	0.0747	**134%**
L1707769-03 WG2238285	7.53287	7.60076	0.0679	**122%**
L1710290-03 WG2238285	7.521	7.58794	0.0669	**120%**
L1710452-01 WG2238285	7.55156	7.62182	0.0703	**126%**
L1710452-07 WG2238285	7.53131	7.59564	0.0643	**116%**
L1710811-01 WG2238285	7.52744	7.60062	0.0732	**132%**
L1710811-02 WG2238285	7.51691	7.58072	0.0638	**115%**
L1710811-04 WG2238285	7.57791	7.64422	0.0663	**119%**
L1710811-05 WG2238285	7.54294	7.61523	0.0723	**130%**
0			0.0000	**0%**
0			0.0000	**0%**
0			0.0000	**0%**

G542 Runlog RA-228 Waters WG2238285
Sample order verified by DDD3903

Sample ID	Beta	LT	Det	Analyst	Start	End
BLANK WG2238285	276	200	4A-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26
LCS WG2238285	1095	200	4A-2	ALG3788	3/13/2024 19:06	3/13/2024 22:26
MS L1710452-01 WG2238285	929	200	4A-3	ALG3788	3/13/2024 19:06	3/13/2024 22:26
MSD L1710452-01 WG2238285	1048	200	4A-4	ALG3788	3/13/2024 19:06	3/13/2024 22:26
DUP L1707769-02 WG2238285	483	200	4B-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1705226-05 WG2238285	383	200	4B-2	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706897-01 WG2238285	424	200	4B-3	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706899-01 WG2238285	498	200	4B-4	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706901-01 WG2238285	419	200	4C-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706901-02 WG2238285	368	200	4C-2	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706901-03 WG2238285	357	200	4C-3	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706901-04 WG2238285	341	200	4C-4	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706901-05 WG2238285	238	200	4D-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1706901-07 WG2238285	486	200	4D-2	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1707006-01 WG2238285	277	200	4D-3	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1707769-01 WG2238285	357	200	4D-4	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1707769-02 WG2238285	407	200	3A-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1707769-03 WG2238285	492	200	3A-2	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710290-03 WG2238285	259	200	3A-3	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710452-01 WG2238285	290	200	3A-4	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710452-07 WG2238285	200	200	3B-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710811-01 WG2238285	227	200	3B-2	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710811-02 WG2238285	247	200	3B-3	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710811-04 WG2238285	572	200	3B-4	ALG3788	3/13/2024 19:06	3/13/2024 22:26
L1710811-05 WG2238285	440	200	3C-1	ALG3788	3/13/2024 19:06	3/13/2024 22:26

	DET1	DET2	DET3	DET 4	DET 5	DET 6	DET 7	DET 8
	y = 0.0004x2 - 0.1002x + 45.345	y = 0.0004x2 - 0.1104x + 48.035	y = 0.0004x2 - 0.1043x + 46.728	y = 0.0003x2 - 0.0939x + 46.602	y = 0.0003x2 - 0.1026x + 46.925	y = 0.0003x2 - 0.0959x + 46.841	y = 0.0002x2 - 0.0851x + 46.298	y = 0.0003x2 - 0.0959x + 46.796
A	0.0003	0.0004	0.0004	0.0003	0.0004	0.0003	0.0002	0.0003
B	-0.1002	-0.1104	-0.1043	-0.0939	-0.1026	-0.0959	-0.0851	-0.0959
C	45.345	48.035	46.728	46.602	46.952	46.841	46.298	46.796

SAMPLE ID	NET WT. mg	3A-1 BETA EFF	3A-2 BETA EFF	3A-3 BETA EFF	3A-4 BETA EFF	3B-1 BETA EFF	3B-2 BETA EFF	3B-3 BETA EFF	3B-4 BETA EFF
BLANK WG2238285	33.83	42.3	44.8	43.7	43.8	43.9	43.9	43.6	43.9
LCS WG2238285	33.42	42.3	44.8	43.7	43.8	44.0	44.0	43.7	43.9
MS L1710452-01 WG2238285	36.18	42.1	44.6	43.5	43.6	43.8	43.8	43.5	43.7
MSD L1710452-01 WG2238285	32.92	42.4	44.8	43.7	43.8	44.0	44.0	43.7	44.0
DUP L1707769-02 WG2238285	32.27	42.4	44.9	43.8	43.9	44.1	44.1	43.8	44.0
L1705226-05 WG2238285	31.58	42.5	44.9	43.8	43.9	44.1	44.1	43.8	44.1
L1706897-01 WG2238285	31.3	42.5	45.0	43.9	44.0	44.1	44.1	43.8	44.1
L1706899-01 WG2238285	32.16	42.4	44.9	43.8	43.9	44.1	44.1	43.8	44.0
L1706901-01 WG2238285	32.17	42.4	44.9	43.8	43.9	44.1	44.1	43.8	44.0
L1706901-02 WG2238285	30.9	42.5	45.0	43.9	44.0	44.2	44.2	43.9	44.1
L1706901-03 WG2238285	35.29	42.2	44.6	43.5	43.7	43.8	43.8	43.5	43.8
L1706901-04 WG2238285	31.18	42.5	45.0	43.9	44.0	44.1	44.1	43.8	44.1
L1706901-05 WG2238285	33.75	42.3	44.8	43.7	43.8	43.9	43.9	43.7	43.9
L1706901-07 WG2238285	35.1	42.2	44.7	43.6	43.7	43.8	43.8	43.6	43.8
L1707006-01 WG2238285	34.1	42.3	44.7	43.6	43.7	43.9	43.9	43.6	43.9
L1707769-01 WG2238285	38	42.0	44.4	43.3	43.5	43.6	43.6	43.4	43.6
L1707769-02 WG2238285	30.51	42.6	45.0	43.9	44.0	44.2	44.2	43.9	44.1
L1707769-03 WG2238285	31.18	42.5	45.0	43.9	44.0	44.1	44.1	43.8	44.1
L1710290-03 WG2238285	33.28	42.3	44.8	43.7	43.8	44.0	44.0	43.7	43.9
L1710452-01 WG2238285	30.21	42.6	45.1	43.9	44.0	44.2	44.2	43.9	44.2
L1710452-07 WG2238285	31.48	42.5	45.0	43.8	43.9	44.1	44.1	43.8	44.1
L1710811-01 WG2238285	33.89	42.3	44.8	43.7	43.8	43.9	43.9	43.6	43.9
L1710811-02 WG2238285	33.42	42.3	44.8	43.7	43.8	44.0	44.0	43.7	43.9
L1710811-04 WG2238285	36.87	42.1	44.5	43.4	43.5	43.7	43.7	43.4	43.7
L1710811-05 WG2238285	32.09	42.4	44.9	43.8	43.9	44.1	44.1	43.8	44.0
0									
0									
0									

		DET9	DET10	DET11	DET 12	DET 13	DET 14	DET 15	DET 16
		y = 0.0004x2 - 0.1136x +47.523	y = 0.0003x2 - 0.0994x + 47.177	y = 0.0004x2 - 0.1072x + 47.795	y = 0.0003x2 - 0.1004x + 46.850	y = 0.0004x2 - 0.0988x + 47.134	y = 0.0003x2 - 0.0859x + 46.345	y = 0.0004x2 - 0.0998x + 46.522	y = 0.0004x2 - 0.1024x + 46.856
	A	0.0004	0.0003	0.0004	0.0003	0.0004	0.0003	0.0004	0.0004
	B	-0.1136	-0.0994	-0.1072	-0.1004	-0.0988	-0.0859	-0.0998	-0.1024
	C	47.523	47.177	47.795	46.85	47.134	46.345	46.522	46.856
SAMPLE ID	NET WT. mg	**3C-1** BETA EFF	**3C-2** BETA EFF	**3C-3** BETA EFF	**3C-4** BETA EFF	**3D-1** BETA EFF	**3D-2** BETA EFF	**3D-3** BETA EFF	**3D-4** BETA EFF
BLANK WG2238285	33.83	44.1	44.2	44.6	43.8	44.2	43.8	43.6	43.8
LCS WG2238285	33.42	44.2	44.2	44.7	43.8	44.3	43.8	43.6	43.9
MS L1710452-01 WG2238285	36.18	43.9	44.0	44.4	43.6	44.1	43.6	43.4	43.7
MSD L1710452-01 WG2238285	32.92	44.2	44.2	44.7	43.9	44.3	43.8	43.7	43.9
DUP L1707769-02 WG2238285	32.27	44.3	44.3	44.8	43.9	44.4	43.9	43.7	44.0
L1705226-05 WG2238285	31.58	44.3	44.3	44.8	44.0	44.4	43.9	43.8	44.0
L1706897-01 WG2238285	31.3	44.4	44.4	44.8	44.0	44.4	44.0	43.8	44.0
L1706899-01 WG2238285	32.16	44.3	44.3	44.8	43.9	44.4	43.9	43.7	44.0
L1706901-01 WG2238285	32.17	44.3	44.3	44.8	43.9	44.4	43.9	43.7	44.0
L1706901-02 WG2238285	30.9	44.4	44.4	44.9	44.0	44.5	44.0	43.8	44.1
L1706901-03 WG2238285	35.29	44.0	44.0	44.5	43.7	44.1	43.7	43.5	43.7
L1706901-04 WG2238285	31.18	44.4	44.4	44.8	44.0	44.4	44.0	43.8	44.1
L1706901-05 WG2238285	33.75	44.1	44.2	44.6	43.8	44.3	43.8	43.6	43.9
L1706901-07 WG2238285	35.1	44.0	44.1	44.5	43.7	44.2	43.7	43.5	43.8
L1707006-01 WG2238285	34.1	44.1	44.1	44.6	43.8	44.2	43.8	43.6	43.8
L1707769-01 WG2238285	38	43.8	43.8	44.3	43.5	44.0	43.5	43.3	43.5
L1707769-02 WG2238285	30.51	44.4	44.4	44.9	44.1	44.5	44.0	43.8	44.1
L1707769-03 WG2238285	31.18	44.4	44.4	44.8	44.0	44.4	44.0	43.8	44.1
L1710290-03 WG2238285	33.28	44.2	44.2	44.7	43.8	44.3	43.8	43.6	43.9
L1710452-01 WG2238285	30.21	44.5	44.4	44.9	44.1	44.5	44.0	43.9	44.1
L1710452-07 WG2238285	31.48	44.3	44.3	44.8	44.0	44.4	43.9	43.8	44.0
L1710811-01 WG2238285	33.89	44.1	44.2	44.6	43.8	44.2	43.8	43.6	43.8
L1710811-02 WG2238285	33.42	44.2	44.2	44.7	43.8	44.3	43.8	43.6	43.9
L1710811-04 WG2238285	36.87	43.9	43.9	44.4	43.6	44.0	43.6	43.4	43.6
L1710811-05 WG2238285	32.09	44.3	44.3	44.8	43.9	44.4	43.9	43.7	44.0
0	0	47.5	47.2	47.8	46.9	47.1	46.3	46.5	46.9

		DET1	DET2	DET3	DET 4	DET 5	DET 6	DET 7	DET 8
	R=	-1	-1	-1	-1	-1	-1	-1	-1
0-9.33	B=	-0.30128	-0.202656887	-0.197764281	-0.221025618	-0.157250071	-0.193215016	-0.061715503	-0.184631497
	A=	98.27777	96.76738121	95.74790892	99.32366995	98.15203761	99.22516634	97.86934027	96.92915136
	R=	-1	-1	-1	-1	-1	-1	-1	-1
9.33-20	B=	-0.06567	-0.103426499	-0.074229904	-0.162420133	-0.171126572	-0.170976461	-0.116411103	-0.098698001
	A=	96.07955	95.84156169	94.59533317	98.77688077	98.28150537	99.01768063	98.37965021	96.12739185
	R=	-1	-1	-1	-1	-1	-1	-1	-1
20-29.94	B=	-0.79271	-0.871983562	-0.830732931	-0.943849897	-0.852244491	-0.843784888	-0.886566305	-0.922660607
	A=	110.6202	111.212703	109.7253937	114.4054761	111.9038637	112.4738492	113.7827543	112.606644
	R=	-1	-1	-1	1	-1	-1	-1	1
29.94-40.62	B=	-0.08796	-0.0695863	-0.071760872	0.005848849	-0.053014563	-0.083008658	-0.087432787	0.027444597
	A=	89.52004	87.18892894	87.00177029	85.97149562	87.9749197	89.69620883	89.85669673	84.16049415
	R=	1	1	1	1	1	1	1	1
40.62-54.51	B=	0.219439	0.299061857	0.28332176	0.288164867	0.289433299	0.299811386	0.295948432	0.25801076
	A=	77.03359	72.21444077	72.57831378	74.50381896	74.06468753	74.14605865	74.28375164	74.79489661
	R=	-1	-1	-1	-1	-1	-1	-1	-1
54.51-65.39	B=	-0.36126	-0.479106872	-0.45430137	-0.486025914	-0.41897009	-0.491914461	-0.500379247	-0.449148891
	A=	108.6876	114.6324182	112.7861506	116.7049584	112.6797563	117.3030346	117.6915734	113.3421692
	R=	1	1	1	1	1	1	1	1
65.39-76.46	B=	0.356509	0.204732052	0.114809105	0.221588083	0.179918238	0.219924183	0.240252701	0.191059134
	A=	61.75257	69.91619099	75.57201664	70.43407916	73.51844854	70.75590565	69.26165032	71.47896644
	R=	-1	1	1	1	1	1	1	1
76.46-86.61	B=	-0.3818	0.040633872	0.263922918	0.153540807	0.197172906	0.168531944	0.078348418	0.225892769
	A=	118.2037	82.46313779	64.17077449	75.6369739	72.19915658	74.68535623	81.64085181	68.81558666
	R=	-1	-1	-1	-1	-1	-1	-1	-1
86.61-97.4	B=	-0.24515	-0.410960521	-0.010762015	-0.496388651	-0.641044973	-0.546413464	-0.445547409	-0.61825919
	A=	106.3685	121.5757282	87.96123649	131.9273642	144.7972071	136.6067781	127.0154694	141.9275879
	R=	1	1	1	-1	1	1	1	1
97.4-109.7	B=	0.574849	0.536303929	0.049092286	-0.025457671	0.615411526	0.563194001	0.531160307	0.520612628
	A=	26.50052	29.31217077	82.13142757	86.05868677	22.41834414	28.53101092	31.88413778	31.0014728

y = 0.0011x2 - 0.168x + | y = 0.0012x2 - 0.1750x + | y = 0.0012x2 - 0.1708x + | y = 0.0008x2 - 0.1447x + | y = 0.0012x2 - 0.1706x + | y = 0.0012x2 - 0.1813x + | y = 0.0011x2 - 0.1701x + | y = 0.0011x2 - 0.1627x + 48.566

A	0.0011	0.0012	0.0013	0.0008	0.0012	0.0012	0.0012	0.0011
B	-0.1718	-0.1781	-0.1738	-0.1473	-0.1736	-0.1844	-0.1731	-0.1655
C	49.988	49.44	49.928	50.176	50.102	50.653	50.33	49.422

4A-1

4A-2

SAMPLE ID	NET WT. mg	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF
=======	=====	=====	=====	=====	=====	=====	=====	=====	=====
BLANK WG2238285	33.83	45.4	44.8	45.5	46.1	45.6	45.8	45.8	45.1
LCS WG2238285	33.42	45.5	44.8	45.6	46.1	45.6	45.8	45.9	45.1
MS L1710452-01 WG2238285	36.18	45.2	44.6	45.3	45.9	45.4	45.6	45.6	44.9
MSD L1710452-01 WG2238285	32.92	45.5	44.9	45.6	46.2	45.7	45.9	45.9	45.2
DUP L1707769-02 WG2238285	32.27	45.6	44.9	45.7	46.3	45.7	46.0	46.0	45.2
L1705226-05 WG2238285	31.58	45.7	45.0	45.7	46.3	45.8	46.0	46.1	45.3
L1706897-01 WG2238285	31.3	45.7	45.0	45.8	46.3	45.8	46.1	46.1	45.3
L1706899-01 WG2238285	32.16	45.6	45.0	45.7	46.3	45.8	46.0	46.0	45.2
L1706901-01 WG2238285	32.17	45.6	45.0	45.7	46.3	45.8	46.0	46.0	45.2
L1706901-02 WG2238285	30.9	45.7	45.1	45.8	46.4	45.9	46.1	46.1	45.4
L1706901-03 WG2238285	35.29	45.3	44.6	45.4	46.0	45.5	45.6	45.7	45.0
L1706901-04 WG2238285	31.18	45.7	45.1	45.8	46.4	45.9	46.1	46.1	45.3
L1706901-05 WG2238285	33.75	45.4	44.8	45.5	46.1	45.6	45.8	45.9	45.1
L1706901-07 WG2238285	35.1	45.3	44.7	45.4	46.0	45.5	45.7	45.7	45.0
L1707006-01 WG2238285	34.1	45.4	44.8	45.5	46.1	45.6	45.8	45.8	45.1
L1707769-01 WG2238285	38	45.0	44.4	45.2	45.7	45.2	45.4	45.5	44.7
L1707769-02 WG2238285	30.51	45.8	45.1	45.8	46.4	45.9	46.1	46.2	45.4
L1707769-03 WG2238285	31.18	45.7	45.1	45.8	46.4	45.9	46.1	46.1	45.3
L1710290-03 WG2238285	33.28	45.5	44.8	45.6	46.2	45.7	45.8	45.9	45.1
L1710452-01 WG2238285	30.21	45.8	45.2	45.9	46.5	46.0	46.2	46.2	45.4
L1710452-07 WG2238285	31.48	45.7	45.0	45.7	46.3	45.8	46.0	46.1	45.3
L1710811-01 WG2238285	33.89	45.4	44.8	45.5	46.1	45.6	45.8	45.8	45.1
L1710811-02 WG2238285	33.42	45.5	44.8	45.6	46.1	45.6	45.8	45.9	45.1
L1710811-04 WG2238285	36.87	45.1	44.5	45.3	45.8	45.3	45.5	45.6	44.8
L1710811-05 WG2238285	32.09	45.6	45.0	45.7	46.3	45.8	46.0	46.0	45.2
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4

		DET9	DET10	DET11	DET 12	DET 13	DET 14	DET 15	DET 16
	R=	-1	-1	-1	1	-1	-1	-1	-1
0-9.33	B=	-0.56325	-0.090813633	-0.059655458	0.02017127	-0.039140847	-0.018282896	-0.046179333	-0.000515011
	A=	46.72034	47.82390181	47.04548306	46.65066779	47.95924417	48.77690419	48.52063465	47.63089881
	R=	1	1	-1	-1	-1	-1	-1	-1
9.33-20	B=	0.046685	0.024993486	-0.001951443	-0.023267209	-0.098247668	-0.067549963	-0.119863656	-0.068075351
	A=	41.02965	46.74342139	46.5071046	47.0559488	48.51071081	49.23656593	49.20810938	48.26123678
	R=	1	-1	-1	-1	-1	-1	-1	-1
20-29.94	B=	0.062279	-0.43482355	-0.385838426	-0.369886033	-0.358928834	-0.469387068	-0.343620982	-0.416292993
	A=	40.71776	55.93976213	54.18484425	53.98832527	53.72433412	57.27330803	53.68325591	55.22558962
	R=	1	-1	-1	-1	-1	1	-1	-1
29.94-40.62	B=	0.119077	-0.084583348	-0.027369612	-0.074685297	-0.03321846	0.006973627	-0.011472741	-0.005248967
	A=	39.01724	45.45357046	43.45228796	45.15001523	43.97256553	43.01106882	43.73873757	42.91893146
	R=	1	1	1	1	1	1	1	1
40.62-54.51	B=	0.038572	0.17146905	0.0974387	0.104242113	0.116292224	0.154287552	0.113870671	0.133127787
	A=	42.28734	35.05272205	38.38257432	37.88198386	37.89944154	37.02717721	38.64728817	37.29806775
	R=	-1	-1	1	1	1	-1	1	-1
54.51-65.39	B=	-0.1799	-0.05019986	0.001987384	0.026572066	0.039085228	-0.04158786	0.026645673	-0.000588855
	A=	54.19597	47.13589433	43.58562556	42.11577808	42.10799489	47.70434592	43.40192278	44.58696186
	R=	1	-1	-1	-1	-1	-1	-1	-1
65.39-76.46	B=	0.063662	-0.139622919	-0.195689117	-0.216379352	-0.27743725	-0.173913729	-0.187876021	-0.22817134
	A=	38.26976	52.98326816	56.51169196	58.00237135	62.80539975	56.35713445	57.42949634	59.46858055
	R=	1	1	1	1	1	1	1	1
76.46-86.61	B=	0.069117	0.123242929	0.158511552	0.117483176	0.142573606	0.068012423	0.071010651	0.092392746
	A=	37.85268	32.88454544	29.42950883	32.47524242	30.69136967	37.85946088	37.63502147	34.95825054
	R=	-1	1	1	1	1	1	1	1
86.61-97.4	B=	-0.06531	0.022043575	0.011504223	0.055591373	0.062790789	0.061454815	0.044829358	0.083349948
	A=	49.49578	41.6494215	42.16181364	37.83569154	37.60135943	38.42741531	39.90258323	35.74144727
	R=	1	-1	-1	-1	-1	-1	-1	-1
97.4-109.7	B=	0.250996	-0.230291004	-0.213232411	-0.183933301	-0.219092233	-0.256985748	-0.212841756	-0.236020607
	A=	18.68719	66.22680945	64.05116173	61.16539473	65.05676578	69.44352617	64.99974971	66.8481394

y = 0.0011x2 - 0.171x + | y = 0.0011x2 - 0.1655x + | y = 0.0012x2 - 0.1704x + | y = 0.0011x2 - 0.1600x + | y = 0.0011x2 - 0.1617x + | y = 0.0009x2 - 0.1458x + | y = 0.0010x2 - 0.1544x + | y = 0.0011x2 - 0.1663x + 48.087

A	0.0012	0.0011	0.0012	0.001	0.0011	0.001	0.001	0.0011
B	-0.1741	-0.1684	-0.1734	-0.1628	-0.1645	-0.1484	-0.1572	-0.1693
C	49.608	48.701	49.179	48.958	49.436	49.967	49.054	48.936

SAMPLE ID	WT. mg	BETA EFF	4C-1	BETA EFF	4C-2	BETA EFF	4C-3	BETA EFF	4C-4	BETA EFF	4D-1	BETA EFF	4D-2	BETA EFF	BETA EFF
=======	=====	=====		=====		=====		=====		=====		=====		=====	=====
BLANK WG2238285	33.83	45.1		44.3		44.7		44.6		45.1		46.1		44.9	44.5
LCS WG2238285	33.42	45.1		44.3		44.7		44.6		45.2		46.1		44.9	44.5
MS L1710452-01 WG2238285	36.18	44.9		44.0		44.5		44.4		44.9		45.9		44.7	44.3
MSD L1710452-01 WG2238285	32.92	45.2		44.3		44.8		44.7		45.2		46.2		45.0	44.6
DUP L1707769-02 WG2238285	32.27	45.2		44.4		44.8		44.7		45.3		46.2		45.0	44.6
L1705226-05 WG2238285	31.58	45.3		44.5		44.9		44.8		45.3		46.3		45.1	44.7
L1706897-01 WG2238285	31.3	45.3		44.5		44.9		44.8		45.4		46.3		45.1	44.7
L1706899-01 WG2238285	32.16	45.3		44.4		44.8		44.8		45.3		46.2		45.0	44.6
L1706901-01 WG2238285	32.17	45.2		44.4		44.8		44.8		45.3		46.2		45.0	44.6
L1706901-02 WG2238285	30.9	45.4		44.5		45.0		44.9		45.4		46.3		45.2	44.8
L1706901-03 WG2238285	35.29	45.0		44.1		44.6		44.5		45.0		46.0		44.8	44.3
L1706901-04 WG2238285	31.18	45.3		44.5		44.9		44.9		45.4		46.3		45.1	44.7
L1706901-05 WG2238285	33.75	45.1		44.3		44.7		44.6		45.1		46.1		44.9	44.5
L1706901-07 WG2238285	35.1	45.0		44.1		44.6		44.5		45.0		46.0		44.8	44.3
L1707006-01 WG2238285	34.1	45.1		44.2		44.7		44.6		45.1		46.1		44.9	44.4
L1707769-01 WG2238285	38	44.7		43.9		44.3		44.2		44.8		45.8		44.5	44.1
L1707769-02 WG2238285	30.51	45.4		44.6		45.0		44.9		45.4		46.4		45.2	44.8
L1707769-03 WG2238285	31.18	45.3		44.5		44.9		44.9		45.4		46.3		45.1	44.7
L1710290-03 WG2238285	33.28	45.1		44.3		44.7		44.6		45.2		46.1		44.9	44.5
L1710452-01 WG2238285	30.21	45.4		44.6		45.0		45.0		45.5		46.4		45.2	44.8
L1710452-07 WG2238285	31.48	45.3		44.5		44.9		44.8		45.3		46.3		45.1	44.7
L1710811-01 WG2238285	33.89	45.1		44.3		44.7		44.6		45.1		46.1		44.9	44.5
L1710811-02 WG2238285	33.42	45.1		44.3		44.7		44.6		45.2		46.1		44.9	44.5
L1710811-04 WG2238285	36.87	44.8		44.0		44.4		44.3		44.9		45.9		44.6	44.2
L1710811-05 WG2238285	32.09	45.3		44.4		44.9		44.8		45.3		46.2		45.0	44.6
0	0	49.6		48.7		49.2		49.0		49.4		50.0		49.1	48.9
0	0	49.6		48.7		49.2		49.0		49.4		50.0		49.1	48.9
0	0	49.6		48.7		49.2		49.0		49.4		50.0		49.1	48.9
0	0	49.6		48.7		49.2		49.0		49.4		50.0		49.1	48.9
0	0	49.6		48.7		49.2		49.0		49.4		50.0		49.1	48.9

GAS COUNTER G542 Unit: 3 MONTH: Mar-24 BETA BACKGROUND
Beta Background

1 Count Time: 100 min

DATE	3A-1		3A-2		3A-3		3A-4		3B-1		3B-2		3B-3		3B-4		3C-1		3C-2		3C-3		3C-4		3D-1		3D-2		3D-3		3D-4	
	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM
1	159	**1.59**	149	**1.49**	106	**1.06**	158	**1.58**	152	**1.52**	108	**1.08**	129	**1.29**	170	**1.70**	107	**1.07**	142	**1.42**	134	**1.34**	98	**0.98**	100	**1.00**	88	**0.88**	93	**0.93**	92	**0.92**
2																																
3																																
4	149.9	**1.50**	161.8	**1.62**	111	**1.11**	139.4	**1.39**	146.9	**1.47**	119.5	**1.20**	126.9	**1.27**	171.8	**1.72**	100.6	**1.01**	142.2	**1.42**	134.1	**1.34**	94.9	**0.95**	99.6	**1.00**	85.1	**0.85**	98	**0.98**	99.5	**1.00**
5	157	**1.57**	169	**1.69**	84	**0.84**	148	**1.48**	89	**0.89**	91	**0.91**	73	**0.73**	174	**1.74**	105	**1.05**	144	**1.44**	125	**1.25**	91	**0.91**	97	**0.97**	89	**0.89**	85	**0.85**	106	**1.06**
6	152	**1.52**	161	**1.61**	95	**0.95**	135	**1.35**	86	**0.86**	78	**0.78**	97	**0.97**	183	**1.83**	92	**0.92**	135	**1.35**	123	**1.23**	97	**0.97**	109	**1.09**	75	**0.75**	96	**0.96**	93	**0.93**
7	142	**1.42**	163	**1.63**	103	**1.03**	139	**1.39**	99	**0.99**	90	**0.90**	89	**0.89**	166	**1.66**	90	**0.90**	149	**1.49**	151	**1.51**	99	**0.99**	91	**0.91**	84	**0.84**	103	**1.03**	101	**1.01**
8	152	**1.52**	164	**1.64**	91	**0.91**	153	**1.53**	85	**0.85**	95	**0.95**	86	**0.86**	155	**1.55**	89	**0.89**	128	**1.28**	134	**1.34**	87	**0.87**	104	**1.04**	75	**0.75**	86	**0.86**	95	**0.95**
9																																
10																																
11	162	**1.62**	155	**1.55**	81	**0.81**	124	**1.24**	87	**0.87**	82	**0.82**	86	**0.86**	174	**1.74**	108	**1.08**	156	**1.56**	115	**1.15**	94	**0.94**	105	**1.05**	108	**1.08**	93	**0.93**	107	**1.07**
12	136	**1.36**	171	**1.71**	98	**0.98**	134	**1.34**	88	**0.88**	80	**0.80**	85	**0.85**	176	**1.76**	114	**1.14**	124	**1.24**	158	**1.58**	99	**0.99**	110	**1.10**	93	**0.93**	94	**0.94**	99	**0.99**
13	144	**1.44**	151	**1.51**	94	**0.94**	151	**1.51**	86	**0.86**	100	**1.00**	98	**0.98**	182	**1.82**	95	**0.95**	142	**1.42**	146	**1.46**	83	**0.83**	105	**1.05**	92	**0.92**	104	**1.04**	110	**1.10**
14	136	**1.36**	211	**2.11**	97	**0.97**	138	**1.38**	103	**1.03**	79	**0.79**	76	**0.76**	170	**1.70**	94	**0.94**	160	**1.60**	139	**1.39**	91	**0.91**	93	**0.93**	96	**0.96**	93	**0.93**	104	**1.04**
15	143	**1.43**	162	**1.62**	79	**0.79**	141	**1.41**	79	**0.79**	90	**0.90**	87	**0.87**	187	**1.87**	95	**0.95**	131	**1.31**	154	**1.54**	100	**1.00**	97	**0.97**	83	**0.83**	110	**1.10**	85	**0.85**
16																																
17																																
18	136	**1.36**	205	**2.05**	90	**0.90**	137	**1.37**	103	**1.03**	82	**0.82**	117	**1.17**	169	**1.69**	95	**0.95**	157	**1.57**	133	**1.33**	82	**0.82**	89	**0.89**	87	**0.87**	111	**1.11**	127	**1.27**
19																																
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30																																
31																																
average	**147**	**1.47**	**169**	**1.69**	**94**	**0.94**	**141**	**1.41**	**100**	**1.00**	**91**	**0.91**	**96**	**0.96**	**173**	**1.73**	**99**	**0.99**	**143**	**1.43**	**137**	**1.37**	**93**	**0.93**	**100**	**1.00**	**88**	**0.88**	**97**	**0.97**	**102**	**1.02**
std dev	9	0.09	20	0.20	10	0.10	9	0.09	24	0.24	13	0.13	19	0.19	9	0.09	8	0.08	12	0.12	13	0.13	6	0.06	7	0.07	9	0.09	8	0.08	11	0.11
UCL	**175**	**1.75**	**227**	**2.27**	**124**	**1.24**	**170**	**1.70**	**173**	**1.73**	**130**	**1.30**	**152**	**1.52**	**199**	**1.99**	**123**	**1.23**	**177**	**1.77**	**176**	**1.76**	**112**	**1.12**	**121**	**1.21**	**115**	**1.15**	**122**	**1.22**	**134**	**1.34**
UWL	**166**	**1.66**	**208**	**2.08**	**114**	**1.14**	**160**	**1.60**	**149**	**1.49**	**117**	**1.17**	**133**	**1.33**	**190**	**1.90**	**115**	**1.15**	**166**	**1.66**	**163**	**1.63**	**106**	**1.06**	**114**	**1.14**	**106**	**1.06**	**114**	**1.14**	**123**	**1.23**
LWL	**129**	**1.29**	**129**	**1.29**	**74**	**0.74**	**123**	**1.23**	**52**	**0.52**	**66**	**0.66**	**58**	**0.58**	**156**	**1.56**	**83**	**0.83**	**119**	**1.19**	**111**	**1.11**	**80**	**0.80**	**86**	**0.86**	**70**	**0.70**	**80**	**0.80**	**80**	**0.80**
LCL	**120**	**1.20**	**110**	**1.10**	**65**	**0.65**	**113**	**1.13**	**28**	**0.28**	**53**	**0.53**	**40**	**0.40**	**148**	**1.48**	**75**	**0.75**	**108**	**1.08**	**98**	**0.98**	**74**	**0.74**	**79**	**0.79**	**61**	**0.61**	**72**	**0.72**	**69**	**0.69**

GAS COUNTER G542 Unit: 3 MONTH: March-24
Beta Source Check
23F05880

BETA Activity: **8053.86** **dpm** Count Time: **5** **min**

	3A-1		3A-2		3A-3		3A-4		3B-1		3B-2		3B-3		3B-4		3C-1		3C-2		3C-3		3C-4		3D-1		3D-2		3D-3		3D-4		AVG
DATE	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	
1	17973	**44.6%**	16877	**41.9%**			18036	**44.8%**							17889	**44.4%**	18575	**46.1%**	16631	**41.3%**	18860	**46.8%**	18526	**46.0%**	18540	**46.0%**	18010	**44.7%**	16695	**41.5%**	18282	**45.4%**	1	43.0%
2																																	2	43.0%
3																																	3	43.0%
4	16794	**41.7%**	17080	**42.4%**	17994	**44.7%**	17933	**44.5%**	18503	**45.9%**	16473	**40.9%**	18442	**45.8%**	18546	**46.1%**	18555	**46.1%**	18211	**45.2%**	16898	**42.0%**	17898	**44.4%**	17368	**43.1%**	17048	**42.3%**	17737	**44.0%**	18135	**45.0%**	4	43.0%
5	16779	**41.7%**	18531	**46.0%**	16800	**41.7%**	18107	**45.0%**	18163	**45.1%**	16610	**41.2%**	18229	**45.3%**	18035	**44.8%**	18526	**46.0%**	17983	**44.7%**	18577	**46.1%**	16787	**41.7%**	17688	**43.9%**	18196	**45.2%**	16399	**40.7%**	18143	**45.1%**	5	43.0%
6	17767	**44.1%**	18458	**45.8%**	18172	**45.1%**	16956	**42.1%**	17282	**42.9%**	18248	**45.3%**	16378	**40.7%**	17755	**44.1%**	18623	**46.2%**	16909	**42.0%**	18568	**46.1%**	18229	**45.3%**	18626	**46.3%**	18038	**44.8%**	18021	**44.8%**	16577	**41.2%**	6	43.0%
7																																	7	43.0%
8	17611	**43.7%**	17213	**42.7%**	18170	**45.1%**	18162	**45.1%**	18190	**45.2%**	17841	**44.3%**	18103	**45.0%**	16601	**41.2%**	17535	**43.5%**	18063	**44.9%**	16915	**42.0%**	17882	**44.4%**	18691	**46.4%**	16885	**41.9%**	18440	**45.8%**	18400	**45.7%**	8	43.0%
9																																	9	43.0%
10																																	10	43.0%
11	17358	**43.1%**	18640	**46.3%**	18064	**44.9%**	18153	**45.1%**	13600	**33.8%**	15506	**38.5%**	14714	**36.5%**	13921	**34.6%**	16931	**42.0%**	18174	**45.1%**	18587	**46.2%**	17174	**42.6%**	16903	**42.0%**	18172	**45.1%**	18067	**44.9%**	17098	**42.5%**	11	43.0%
12	16144	**40.1%**	18614	**46.2%**	16561	**41.1%**	17862	**44.4%**	16370	**40.7%**	17305	**43.0%**	18463	**45.8%**	18380	**45.6%**	18510	**46.0%**	18384	**45.7%**	17450	**43.3%**	16251	**40.4%**	18257	**45.3%**	16458	**40.9%**	17730	**44.0%**	16893	**42.0%**	12	43.0%
13	17635	**43.8%**	18741	**46.5%**	18320	**45.5%**	18739	**46.5%**	17759	**44.1%**	18652	**46.3%**	17797	**44.2%**	18056	**44.8%**	17627	**43.8%**	18468	**45.9%**	18526	**46.0%**	18336	**45.5%**	18256	**45.3%**	17405	**43.2%**	16669	**41.4%**	16741	**41.6%**	13	43.0%
14	17453	**43.3%**	18461	**45.8%**	18250	**45.3%**	18264	**45.4%**	16528	**41.0%**	18427	**45.8%**	16675	**41.4%**	17229	**42.8%**	16956	**42.1%**	18471	**45.9%**	17008	**42.2%**	18161	**45.1%**	18199	**45.2%**	17868	**44.4%**	17217	**42.8%**	18185	**45.2%**	14	43.0%
15	17539	**43.6%**	18781	**46.6%**	16818	**41.8%**	18258	**45.3%**	16684	**41.4%**	16779	**41.7%**	18466	**45.9%**	17799	**44.2%**	18466	**45.9%**	18808	**46.7%**	18531	**46.0%**	17286	**42.9%**	18444	**45.8%**	18313	**45.5%**	18095	**44.9%**	17216	**42.8%**	15	43.0%
16																																	16	43.0%
17																																	17	43.0%
18	17302	**43.0%**	16961	**42.1%**	16632	**41.3%**	17823	**44.3%**	18373	**45.6%**	17014	**42.3%**	18368	**45.6%**	18044	**44.8%**	17199	**42.7%**	18094	**44.9%**	18475	**45.9%**	18084	**44.9%**	18342	**45.5%**	18038	**44.8%**	18245	**45.3%**	16823	**41.8%**	18	43.0%
19																																	19	43.0%
20																																	20	43.0%
21																																	21	43.0%
22																																	22	43.0%
23																																	23	43.0%
24																																	24	43.0%
25																																	25	43.0%
26																																	26	43.0%
27																																	27	43.0%
28																																	28	43.0%
29																																	29	43.0%
30																																	30	43.0%
31																																	31	43.0%
average	**17305**	**43.0%**	**18032**	**44.8%**	**17578**	**43.7%**	**18026.6**	**44.8%**	**17145.2**	**42.6%**	**17285.5**	**42.9%**	**17563.5**	**43.6%**	**17478**	**43.4%**	**17955**	**44.6%**	**18018**	**44.7%**	**18036**	**44.8%**	**17692**	**43.9%**	**18119**	**45.0%**	**17676**	**43.9%**	**17574**	**43.6%**	**17499**	**43.5%**		
std dev	532	1.32%	803	0.02	762	0.02	434	0.01	1477	0.04	1001	0.02	1254	0.03	1294	0.03	706	1.75%	663	0.02	787	0.02	720	0.02	565	1.40%	625	0.02	712	0.018	721	0.018		
UCL	**18900**	**46.9%**	**20441**	**50.8%**	**19864**	**49.3%**	**19328**	**48.0%**	**21577**	**53.6%**	**20289**	**50.4%**	**21325**	**53.0%**	**21360**	**53.0%**	**20074**	**49.8%**	**20006**	**49.7%**	**20396**	**50.6%**	**19851**	**49.3%**	**19814**	**49.2%**	**19551**	**48.6%**	**19709**	**48.9%**	**19664**	**48.8%**		
UWL	**18368**	**45.6%**	**19638**	**48.8%**	**19102**	**47.4%**	**18894**	**46.9%**	**20099**	**49.9%**	**19288**	**47.9%**	**20071**	**49.8%**	**20066**	**49.8%**	**19367**	**48.1%**	**19343**	**48.0%**	**19609**	**48.7%**	**19132**	**47.5%**	**19249**	**47.8%**	**18926**	**47.0%**	**18997**	**47.2%**	**18942**	**47.0%**		
LWL	**16242**	**40.3%**	**16427**	**40.8%**	**16054**	**39.9%**	**17159**	**42.6%**	**14191**	**35.2%**	**15283**	**38.0%**	**15056**	**37.4%**	**14889**	**37.0%**	**16542**	**41.1%**	**16693**	**41.5%**	**16463**	**40.9%**	**16253**	**40.4%**	**16990**	**42.2%**	**16425**	**40.8%**	**16151**	**40.1%**	**16057**	**39.9%**		
LCL	**15710**	**39.0%**	**15624**	**38.8%**	**15292**	**38.0%**	**16725**	**41.5%**	**12714**	**31.6%**	**14282**	**35.5%**	**13802**	**34.3%**	**13595**	**33.8%**	**15836**	**39.3%**	**16030**	**39.8%**	**15676**	**38.9%**	**15533**	**38.6%**	**16425**	**40.8%**	**15800**	**39.2%**	**15439**	**38.3%**	**15335**	**38.1%**		

#VALUE!

#VALUE!

03_24_Unit3.xls

GAS COUNTER G542 Unit: 4 MONTH: Mar-24 BETA BACKGROUND
Beta Background

analyzed on 3/13/24

1 Count Time: 100 min

	4A-1		4A-2		4A-3		4A-4		4B-1		4B-2		4B-3		4B-4		4C-1		4C-2		4C-3		4C-4		4D-1		4D-2		4D-3		4D-4	
DATE	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM
1	121	**1.21**	164	**1.64**	130	**1.30**	180	**1.80**	174	**1.74**	171	**1.71**	175	**1.75**	206	**2.06**	214	**2.14**	163	**1.63**	150	**1.50**	143	**1.43**	106	**1.06**	188	**1.88**	122	**1.22**	152	**1.52**
2																																
3																																
4	118.2	**1.18**	179.5	**1.80**	131.9	**1.32**	170.7	**1.71**	194.3	**1.94**	175.6	**1.76**	183	**1.83**	218.3	**2.18**	187.7	**1.88**	168.4	**1.68**	148.4	**1.48**	149.1	**1.49**	101.3	**1.01**	204.9	**2.05**	117.1	**1.17**	158.5	**1.59**
5	117	**1.17**	170	**1.70**	135	**1.35**	179	**1.79**	203	**2.03**	153	**1.53**	163	**1.63**	223	**2.23**	182	**1.82**	156	**1.56**	134	**1.34**	139	**1.39**	108	**1.08**	204	**2.04**	114	**1.14**	155	**1.55**
6	100	**1.00**	153	**1.53**	123	**1.23**	163	**1.63**	175	**1.75**	168	**1.68**	183	**1.83**	228	**2.28**	187	**1.87**	186	**1.86**	151	**1.51**	153	**1.53**	72	**0.72**	237	**2.37**	120	**1.20**	144	**1.44**
7	118	**1.18**	173	**1.73**	162	**1.62**	188	**1.88**	228	**2.28**	170	**1.70**	180	**1.80**	214	**2.14**	180	**1.80**	154	**1.54**	152	**1.52**	113	**1.13**	92	**0.92**	220	**2.20**	123	**1.23**	141	**1.41**
8	126	**1.26**	160	**1.60**	123	**1.23**	172	**1.72**	178	**1.78**	202	**2.02**	200	**2.00**	203	**2.03**	198	**1.98**	150	**1.50**	133	**1.33**	152	**1.52**	99	**0.99**	218	**2.18**	124	**1.24**	149	**1.49**
9																																
10																																
11	110	**1.10**	178	**1.78**	129	**1.29**	174	**1.74**	183	**1.83**	186	**1.86**	178	**1.78**	186	**1.86**	186	**1.86**	166	**1.66**	184	**1.84**	131	**1.31**	91	**0.91**	188	**1.88**	109	**1.09**	160	**1.60**
12	119	**1.19**	191	**1.91**	139	**1.39**	183	**1.83**	204	**2.04**	168	**1.68**	178	**1.78**	198	**1.98**	218	**2.18**	168	**1.68**	172	**1.72**	118	**1.18**	103	**1.03**	211	**2.11**	95	**0.95**	145	**1.45**
13	105	**1.05**	176	**1.76**	118	**1.18**	153	**1.53**	197	**1.97**	177	**1.77**	181	**1.81**	227	**2.27**	198	**1.98**	184	**1.84**	173	**1.73**	156	**1.56**	101	**1.01**	220	**2.20**	129	**1.29**	153	**1.53**
14	115	**1.15**	186	**1.86**	127	**1.27**	179	**1.79**	215	**2.15**	166	**1.66**	192	**1.92**	208	**2.08**	200	**2.00**	171	**1.71**	140	**1.40**	150	**1.50**	97	**0.97**	194	**1.94**	113	**1.13**	156	**1.56**
15	124	**1.24**	178	**1.78**	149	**1.49**	158	**1.58**	186	**1.86**	234	**2.34**	178	**1.78**	184	**1.84**	191	**1.91**	205	**2.05**	162	**1.62**	147	**1.47**	99	**0.99**	213	**2.13**	93	**0.93**	175	**1.75**
16																																
17																																
18	114	**1.14**	166	**1.66**	126	**1.26**	180	**1.80**	206	**2.06**	156	**1.56**	188	**1.88**	208	**2.08**	192	**1.92**	173	**1.73**	152	**1.52**	138	**1.38**	100	**1.00**	212	**2.12**	119	**1.19**	124	**1.24**
19																																
20																																
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31																																
average	**116**	1.16	**173**	1.73	**133**	1.33	**173**	1.73	**195**	1.95	**177**	1.77	**182**	1.82	**209**	2.09	**194**	1.94	**170**	1.70	**154**	1.54	**141**	1.41	**97**	0.97	**209**	2.09	**115**	1.15	**151**	1.51
std dev	8	0.08	11	0.11	12	0.12	11	0.11	17	0.17	22	0.22	9	0.09	14	0.14	12	0.12	15	0.15	16	0.16	14	0.14	9	0.09	14	0.14	11	0.11	12	0.12
UCL	**138**	1.38	**206**	2.06	**170**	1.70	**205**	2.05	**246**	2.46	**243**	2.43	**209**	2.09	**252**	2.52	**230**	2.30	**217**	2.17	**202**	2.02	**182**	1.82	**126**	1.26	**252**	2.52	**148**	1.48	**188**	1.88
UWL	**131**	1.31	**195**	1.95	**157**	1.57	**194**	1.94	**229**	2.29	**221**	2.21	**200**	2.00	**238**	2.38	**218**	2.18	**201**	2.01	**186**	1.86	**168**	1.68	**116**	1.16	**238**	2.38	**137**	1.37	**176**	1.76
LWL	**101**	1.01	**151**	1.51	**108**	1.08	**152**	1.52	**162**	1.62	**133**	1.33	**163**	1.63	**180**	1.80	**171**	1.71	**140**	1.40	**123**	1.23	**113**	1.13	**79**	0.79	**180**	1.80	**93**	0.93	**126**	1.26
LCL	**93**	0.93	**140**	1.40	**96**	0.96	**142**	1.42	**145**	1.45	**111**	1.11	**154**	1.54	**165**	1.65	**159**	1.59	**124**	1.24	**107**	1.07	**99**	0.99	**69**	0.69	**166**	1.66	**81**	0.81	**114**	1.14

Data From Previous Month

average		**1.208**		**1.822**		**1.301**		**1.753**		**1.908**		**1.755**		**1.820**		**2.164**		**2.046**		**1.709**		**1.588**		**1.413**		**0.981**		**2.033**		**1.135**		**1.522**
std dev		**0.268**		**0.144**		**0.075**		**0.152**		**0.143**		**0.122**		**0.118**		**0.157**		**0.137**		**0.134**		**0.127**		**0.148**		**0.105**		**0.166**		**0.069**		**0.147**
UCL		**2.013**		**2.255**		**1.527**		**2.209**		**2.337**		**2.122**		**2.174**		**2.634**		**2.457**		**2.112**		**1.969**		**1.857**		**1.297**		**2.530**		**1.342**		**1.962**
UWL		**1.745**		**2.111**		**1.451**		**2.057**		**2.194**		**2.000**		**2.056**		**2.477**		**2.320**		**1.978**		**1.842**		**1.709**		**1.192**		**2.364**		**1.273**		**1.815**
LWL		**0.671**		**1.533**		**1.150**		**1.450**		**1.623**		**1.511**		**1.584**		**1.851**		**1.771**		**1.440**		**1.335**		**1.117**		**0.770**		**1.702**		**0.998**		**1.229**
LCL		**0.403**		**1.389**		**1.074**		**1.298**		**1.480**		**1.389**		**1.466**		**1.694**		**1.634**		**1.306**		**1.208**		**0.969**		**0.664**		**1.537**		**0.929**		**1.083**

03_24_Unit4.xls

GAS COUNTER G542 Unit: 4 MONTH: March-24
Beta Source Check
23F05880

BETA Activity: **8053.86** **dpm** Count Time: **5** **min**

	4A-1		4A-2		4A-3		4A-4		4B-1		4B-2		4B-3		4B-4		4C-1		4C-2		4C-3		4C-4		4D-1		4D-2		4D-3		4D-4	
DATE	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF
1	18965	**47.1%**	18158	**45.1%**	16003	**39.7%**	18896	**46.9%**	18488	**45.9%**	18572	**46.1%**	17132	**42.5%**	17745	**44.1%**	17962	**44.6%**	16265	**40.4%**	18055	**44.8%**	18580	**46.1%**	18343	**45.6%**	18611	**46.2%**	16731	**41.5%**	18267	**45.4%**
2																																
3																																
4	18983	**47.1%**	16674	**41.4%**	17708	**44.0%**	18697	**46.4%**	18690	**46.4%**	18846	**46.8%**	17248	**42.8%**	18389	**45.7%**	16592	**41.2%**	16200	**40.2%**	18010	**44.7%**	18059	**44.8%**	18986	**47.1%**	17278	**42.9%**	17695	**43.9%**	18415	**45.7%**
5	18710	**46.5%**	18113	**45.0%**	16731	**41.5%**	18990	**47.2%**	17728	**44.0%**	17120	**42.5%**	18598	**46.2%**	18111	**45.0%**	18487	**45.9%**	16683	**41.4%**	18386	**45.7%**	18605	**46.2%**	18350	**45.6%**	18604	**46.2%**	16894	**42.0%**	18713	**46.5%**
6	18876	**46.9%**	16984	**42.2%**	18356	**45.6%**	18938	**47.0%**	19039	**47.3%**	18576	**46.1%**	18949	**47.1%**	17181	**42.7%**	17409	**43.2%**	18531	**46.0%**	16483	**40.9%**	18238	**45.3%**	18619	**46.2%**	17187	**42.7%**	18821	**46.7%**	18901	**46.9%**
7																																
8	17762	**44.1%**	18242	**45.3%**	16611	**41.2%**	18727	**46.5%**	18949	**47.1%**	17214	**42.7%**	19121	**47.5%**	18752	**46.6%**	18656	**46.3%**	18239	**45.3%**	17873	**44.4%**	17102	**42.5%**	17773	**44.1%**	19016	**47.2%**	16812	**41.7%**	18239	**45.3%**
9																																
10																																
11	19032	**47.3%**	16511	**41.0%**	15690	**39.0%**	18744	**46.5%**	18668	**46.4%**	17076	**42.4%**	17771	**44.1%**	18040	**44.8%**	18195	**45.2%**	18024	**44.8%**	18667	**46.4%**	18309	**45.5%**	18034	**44.8%**	18084	**44.9%**	18234	**45.3%**	16448	**40.8%**
12	18199	**45.2%**	18247	**45.3%**	17736	**44.0%**	19029	**47.3%**	17162	**42.6%**	18068	**44.9%**	17320	**43.0%**	18720	**46.5%**	16609	**41.2%**	17843	**44.3%**	18298	**45.4%**	18243	**45.3%**	18643	**46.3%**	18710	**46.5%**	18439	**45.8%**	17941	**44.6%**
13	16950	**42.1%**	18011	**44.7%**	17195	**42.7%**	18696	**46.4%**	19031	**47.3%**	18731	**46.5%**	18988	**47.2%**	18368	**45.6%**	16956	**42.1%**	16234	**40.3%**	18284	**45.4%**	17043	**42.3%**	17005	**42.2%**	18836	**46.8%**	16089	**40.0%**	17396	**43.2%**
14	17743	**44.1%**	16645	**41.3%**	17539	**43.6%**	16937	**42.1%**	18732	**46.5%**	19172	**47.6%**	19269	**47.9%**	18262	**45.3%**	18140	**45.0%**	17869	**44.4%**	18385	**45.7%**	16594	**41.2%**	16921	**42.0%**	18799	**46.7%**	18277	**45.4%**	18146	**45.1%**
15	16518	**41.0%**	16843	**41.8%**	16997	**42.2%**	18808	**46.7%**	18707	**46.5%**	19422	**48.2%**	18515	**46.0%**	16718	**41.5%**	18090	**44.9%**	17730	**44.0%**	17649	**43.8%**	18304	**45.5%**	18806	**46.7%**	18701	**46.4%**	16145	**40.1%**	16400	**40.7%**
16																																
17																																
18	18100	**44.9%**	17155	**42.6%**	17731	**44.0%**	18614	**46.2%**	18838	**46.8%**	17421	**43.3%**	17494	**43.4%**	18479	**45.9%**	16753	**41.6%**	18317	**45.5%**	18382	**45.6%**	18578	**46.1%**	18494	**45.9%**	17998	**44.7%**	17875	**44.4%**	18279	**45.4%**
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average	**18167**	**45.1%**	**17417**	**43.3%**	**17118**	**42.5%**	**18643.3**	**46.3%**	**18548.4**	**46.1%**	**18201.6**	**45.2%**	**18218.6**	**45.2%**	**18070**	**44.9%**	**17623**	**43.8%**	**17449**	**43.3%**	**18043**	**44.8%**	**17969**	**44.6%**	**18179**	**45.1%**	**18348**	**45.6%**	**17456**	**43.3%**	**17922**	**44.5%**
std dev	860	2.14%	729	0.02	808	0.02	582	0.01	584	0.01	863	0.02	832	0.02	633	0.02	780	1.94%	912	0.02	590	0.01	709	0.02	690	1.71%	630	0.02	958	0.024	836	0.021
UCL	**20747**	**51.5%**	**19603**	**48.7%**	**19541**	**48.5%**	**20388**	**50.6%**	**20300**	**50.4%**	**20790**	**51.6%**	**20716**	**51.4%**	**19969**	**49.6%**	**19962**	**49.6%**	**20184**	**50.1%**	**19813**	**49.2%**	**20097**	**49.9%**	**20248**	**50.3%**	**20236**	**50.3%**	**20331**	**50.5%**	**20431**	**50.7%**
UWL	**19887**	**49.4%**	**18874**	**46.9%**	**18734**	**46.5%**	**19806**	**49.2%**	**19716**	**49.0%**	**19927**	**49.5%**	**19884**	**49.4%**	**19336**	**48.0%**	**19182**	**47.6%**	**19272**	**47.9%**	**19223**	**47.7%**	**19387**	**48.1%**	**19559**	**48.6%**	**19607**	**48.7%**	**19372**	**48.1%**	**19594**	**48.7%**
LWL	**16447**	**40.8%**	**15959**	**39.6%**	**15502**	**38.5%**	**17480**	**43.4%**	**17380**	**43.2%**	**16476**	**40.9%**	**16554**	**41.1%**	**16803**	**41.7%**	**16063**	**39.9%**	**15625**	**38.8%**	**16863**	**41.9%**	**16550**	**41.1%**	**16800**	**41.7%**	**17089**	**42.4%**	**15539**	**38.6%**	**16250**	**40.4%**
LCL	**15587**	**38.7%**	**15230**	**37.8%**	**14694**	**36.5%**	**16899**	**42.0%**	**16797**	**41.7%**	**15613**	**38.8%**	**15721**	**39.0%**	**16170**	**40.2%**	**15283**	**38.0%**	**14713**	**36.5%**	**16273**	**40.4%**	**15841**	**39.3%**	**16111**	**40.0%**	**16459**	**40.9%**	**14580**	**36.2%**	**15414**	**38.3%**

Data From Previous Month

average		**44.81%**		**44.69%**		**41.83%**		**45.58%**		**45.21%**		**46.51%**		**45.43%**		**44.65%**		**43.15%**		**43.42%**		**43.99%**		**44.68%**		**45.10%**		**45.09%**		**43.90%**		**43.80%**
std dev		**2.15%**		**1.13%**		**1.87%**		**1.69%**		**1.75%**		**1.66%**		**2.14%**		**1.87%**		**1.59%**		**1.64%**		**1.97%**		**1.88%**		**1.81%**		**2.06%**		**1.69%**		**1.72%**
UCL		**51.27%**		**48.08%**		**47.43%**		**50.66%**		**50.46%**		**51.49%**		**51.85%**		**50.25%**		**47.92%**		**48.35%**		**49.89%**		**50.31%**		**50.54%**		**51.27%**		**48.98%**		**48.97%**
UWL		**49.11%**		**46.95%**		**45.56%**		**48.97%**		**48.71%**		**49.83%**		**49.71%**		**48.38%**		**46.33%**		**46.71%**		**47.92%**		**48.44%**		**48.73%**		**49.21%**		**47.29%**		**47.25%**
LWL		**40.50%**		**42.43%**		**38.09%**		**42.20%**		**41.70%**		**43.19%**		**41.15%**		**40.91%**		**39.97%**		**40.14%**		**40.06%**		**40.93%**		**41.47%**		**40.97%**		**40.51%**		**40.35%**
LCL		**38.34%**		**41.30%**		**36.22%**		**40.51%**		**39.95%**		**41.52%**		**39.01%**		**39.04%**		**38.37%**		**38.50%**		**38.10%**		**39.05%**		**39.66%**		**38.91%**		**38.82%**		**38.63%**

Detector Names Unit 3:

Numerical:	Instrument:	PACE:
1	1A	3A-1
2	1B	3A-2
3	1C	3A-3
4	1D	3A-4
5	2A	3B-1
6	2B	3B-2
7	2C	3B-3
8	2D	3B-4
9	3A	3C-1
10	3B	3C-2
11	3C	3C-3
12	3D	3C-4
13	4A	3D-1
14	4B	3D-2
15	4C	3D-3
16	4D	3D-4

Standards Used:

23F04840	23F04832	23F04838	23F04831
23F04828	23F04839	23F04841	23F04834
23F04836	23F04835	23F04833	23F04827

DECAY CALCUALTION

Sr-90
124007
ESC51613
22J11029

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	25-Aug-22
DATE OF CALIBRATION	12-Feb-24
PREP:	13-Sep-22

Ao	=	940.91	nCi		
N	=	0.02			
T(1/2)	=	28.60	years		
T	=	1.47	years		
dilution	=	1000.00			
A	=	908.05	nCi	SR90/Y90	
A	=	2015.87	dpm/ml	4031.7433	403.1743
A	=	908.05	pCi/ml	1816.1006	
A	=	908.05	+/-	16.35852 pCi/ml	4031.743319

12095.22996

Uncertainty	0.0173
Weight	0.05%
Volume (1000 ml)	0.50%

CSU 1.80%

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 13:32
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1080	697	0
1520	1296	855	0
1540	1620	1127	0
1560	1852	1341	0
1580	2244	1663	0
1600	2465	1846	0
1620	2664	2133	1
1640	2897	2413	0
1660	3153	2714	3
1680	3247	2907	2
1700	3413	3152	0
1720	3621	3395	1
1740	3482	3320	1
1760	3615	3526	5
1780	3691	3590	19
1800	3564	3452	40
1820	3673	3569	53
1840	3790	3681	39
1860	3780	3677	37
1880	3682	3580	42
1900	3769	3669	31
1920	3633	3543	43
1940	3630	3540	42
1960	3749	3618	58
1980	3773	3668	48
2000	3732	3643	52

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 13:32
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2470	1646	0
1520	2736	1687	1
1540	2961	2188	0
1560	3229	2489	2
1580	3449	2840	1
1600	3547	3007	0
1620	3666	3312	1
1640	3653	3414	2
1660	3647	3450	0
1680	3644	3518	0
1700	3884	3790	4
1720	3901	3812	3
1740	3827	3727	21
1760	3742	3631	44
1780	3834	3681	109
1800	3839	3619	175
1820	3903	3670	191
1840	3916	3657	223
1860	3865	3623	198
1880	3849	3622	194
1900	3869	3664	169
1920	3777	3538	196
1940	3837	3640	165
1960	3816	3596	179
1980	3855	3629	192
2000	3903	3689	175

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR661 **Date:** 2/13/24

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 03/11/2024 10:39
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1554	1113	3
1520	1796	1306	2
1540	2162	1659	2
1560	2446	1931	0
1580	2694	2150	3
1600	2948	2437	0
1620	3137	2707	1
1640	3301	2957	4
1660	3468	3217	2
1680	3609	3421	2
1700	3471	3339	4
1720	3756	3648	0
1740	3650	3577	9
1760	3757	3673	28
1780	3840	3729	64
1800	3804	3641	120
1820	3907	3703	161
1840	3761	3588	145
1860	3837	3614	175
1880	3829	3627	168
1900	3819	3629	143
1920	3888	3676	177
1940	3801	3608	162
1960	3804	3604	160
1980	3801	3608	156
2000	3897	3713	149

Special Notes:

put back into service after maintenance 3/14/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One) **New Voltage:** _____

Approved By: [signature] **Date:** 3/14/2024

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 03/11/2024 10:09
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: 23A16260
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1801	1273	4
1520	2012	1486	1
1540	2248	1695	1
1560	2495	1952	0
1580	2814	2336	1
1600	2887	2456	0
1620	3048	2673	2
1640	3130	2858	1
1660	3388	3179	1
1680	3365	3234	0
1700	3307	3196	3
1720	3510	3413	5
1740	3511	3420	14
1760	3409	3333	31
1780	3503	3374	73
1800	3550	3335	175
1820	3482	3260	182
1840	3510	3271	194
1860	3460	3234	184
1880	3470	3240	190
1900	3498	3262	206
1920	3442	3229	166
1940	3508	3288	177
1960	3511	3281	199
1980	3560	3342	168
2000	3582	3322	210

Special Notes:
verification after maintenance 3/14/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24
Changes Needed: Yes (No) (Circle One) **New Voltage:** _____
Approved By: [signature] **Date:** 3/14/2024

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier
Run Date: 03/11/2024 10:09
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000
Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2352	1598	1
1520	2612	1916	0
1540	2935	2207	1
1560	3148	2491	2
1580	3300	2784	0
1600	3519	3027	2
1620	3562	3213	0
1640	3635	3387	1
1660	3697	3521	2
1680	3744	3615	1
1700	3801	3688	2
1720	3788	3696	3
1740	3903	3818	8
1760	3860	3791	25
1780	3838	3722	73
1800	3793	3610	146
1820	3830	3615	173
1840	3698	3497	171
1860	3828	3615	170
1880	3867	3654	160
1900	3820	3626	150
1920	3698	3463	190
1940	3763	3565	165
1960	3754	3548	158
1980	3826	3615	168
2000	3950	3753	152

Special Notes:

re verification after maintenance 3/14/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: L N Reta **Date:** 3/11/24
Changes Needed: Yes No (Circle One) **New Voltage:** _____
Approved By: _____ **Date:** 3/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 03/11/2024 10:09
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2467	1870	0
1520	2646	1849	0
1540	2972	2193	1
1560	3219	2562	0
1580	3399	2838	0
1600	3404	2934	1
1620	3454	3120	0
1640	3483	3232	2
1660	3644	3448	1
1680	3559	3408	0
1700	3622	3509	4
1720	3846	3734	4
1740	3626	3521	13
1760	3761	3633	42
1780	3678	3516	103
1800	3756	3513	179
1820	3777	3525	203
1840	3852	3605	190
1860	3795	3532	211
1880	3780	3529	206
1900	3816	3550	210
1920	3835	3564	210
1940	3810	3557	205
1960	3854	3588	214
1980	3865	3595	218
2000	3769	3478	231

Special Notes:

verification after maintenance 3/4/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One) **New Voltage:** _____

Approved By: [signature] **Date:** 3/4/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 13:32
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1636	941	0
1520	1935	1217	0
1540	2181	1390	0
1560	2582	1801	0
1580	2837	2000	3
1600	3129	2315	1
1620	3172	2506	2
1640	3420	2830	0
1660	3641	3170	1
1680	3660	3327	1
1700	3790	3526	1
1720	3775	3599	1
1740	3781	3643	4
1760	3841	3735	4
1780	3838	3737	12
1800	3821	3739	25
1820	3923	3804	43
1840	3933	3841	33
1860	3872	3785	30
1880	3907	3826	28
1900	3837	3754	29
1920	3998	3910	27
1940	3896	3817	34
1960	3874	3781	40
1980	3928	3855	24
2000	4017	3923	36

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 14:47
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1927	1249	0
1520	2337	1627	2
1540	2623	1875	2
1560	2910	2232	1
1580	3100	2486	0
1600	3242	2710	1
1620	3463	3054	0
1640	3503	3158	1
1660	3481	3261	1
1680	3643	3503	1
1700	3682	3558	0
1720	3611	3507	2
1740	3770	3679	17
1760	3592	3489	35
1780	3779	3653	75
1800	3780	3579	151
1820	3687	3495	160
1840	3751	3561	150
1860	3744	3536	158
1880	3751	3571	133
1900	3671	3477	157
1920	3681	3464	176
1940	3818	3634	137
1960	3761	3562	152
1980	3680	3482	144
2000	3636	3425	168

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SVK661 **Date:** 2/12/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 19:28
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2119	1379	0
1520	2349	1564	1
1540	2624	1878	0
1560	2918	2170	2
1580	3245	2538	1
1600	3319	2690	1
1620	3338	2879	1
1640	3490	3143	1
1660	3623	3387	1
1680	3701	3507	2
1700	3675	3535	0
1720	3744	3644	2
1740	3712	3617	10
1760	3755	3673	20
1780	3842	3740	50
1800	3892	3734	111
1820	3838	3647	153
1840	3826	3633	134
1860	3831	3637	144
1880	3870	3665	166
1900	3822	3652	129
1920	3897	3733	133
1940	3754	3580	130
1960	3877	3700	126
1980	3766	3593	124
2000	3721	3536	136

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** SWR961 2/13/24 2/13/24

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:24
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1879	1284	1
1520	2080	1483	0
1540	2567	1884	2
1560	2906	2234	0
1580	3163	2587	0
1600	3246	2706	1
1620	3344	2910	1
1640	3460	3116	1
1660	3674	3439	1
1680	3561	3405	1
1700	3709	3584	0
1720	3760	3660	0
1740	3737	3648	4
1760	3812	3721	29
1780	3741	3632	54
1800	3825	3667	107
1820	3851	3642	153
1840	3830	3651	137
1860	3840	3648	148
1880	3704	3531	132
1900	3797	3599	159
1920	3731	3543	152
1940	3837	3643	155
1960	3830	3611	159
1980	3794	3588	164
2000	3880	3679	154

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:24
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2213	1416	2
1520	2550	1793	1
1540	2829	2030	0
1560	3073	2335	1
1580	3340	2696	0
1600	3261	2704	1
1620	3448	3025	0
1640	3438	3125	3
1660	3639	3419	2
1680	3669	3511	1
1700	3697	3565	3
1720	3719	3594	3
1740	3737	3642	8
1760	3850	3741	25
1780	3778	3642	70
1800	3841	3668	126
1820	3890	3695	155
1840	3942	3730	157
1860	3807	3579	169
1880	3817	3593	167
1900	3814	3593	175
1920	3839	3627	159
1940	3875	3646	176
1960	3764	3563	155
1980	3899	3687	155
2000	3865	3667	145

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:24
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1694	1214	1
1520	2050	1503	1
1540	2243	1715	0
1560	2508	1971	0
1580	2768	2307	1
1600	2844	2404	2
1620	3055	2685	0
1640	3095	2826	2
1660	3396	3191	1
1680	3216	3058	0
1700	3220	3098	0
1720	3375	3287	5
1740	3427	3333	16
1760	3446	3355	34
1780	3376	3238	75
1800	3524	3344	133
1820	3503	3299	164
1840	3561	3330	185
1860	3506	3277	200
1880	3427	3228	162
1900	3582	3352	183
1920	3521	3297	180
1940	3516	3295	176
1960	3515	3303	176
1980	3533	3336	152
2000	3535	3341	155

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24

Changes Needed: Yes No (Circle One) **New Voltage:** 1780

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 16:29
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1994	1411	0
1520	2341	1704	2
1540	2624	1988	0
1560	2926	2276	1
1580	3172	2626	0
1600	3155	2665	1
1620	3383	3030	1
1640	3443	3174	2
1660	3627	3451	0
1680	3680	3548	0
1700	3601	3506	3
1720	3650	3562	5
1740	3726	3649	18
1760	3626	3525	44
1780	3637	3511	89
1800	3770	3545	193
1820	3675	3437	204
1840	3687	3447	215
1860	3814	3579	204
1880	3908	3663	209
1900	3721	3486	200
1920	3731	3482	212
1940	3756	3516	210
1960	3784	3544	199
1980	3832	3611	190
2000	3616	3388	188

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24
Changes Needed: Yes No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:54
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1780	1277	0
1520	2010	1483	0
1540	2291	1748	0
1560	2621	2059	2
1580	2842	2368	0
1600	3010	2558	2
1620	3294	2898	2
1640	3324	3029	0
1660	3451	3236	1
1680	3633	3497	2
1700	3577	3461	1
1720	3662	3560	6
1740	3698	3613	15
1760	3824	3719	44
1780	3791	3661	83
1800	3836	3628	153
1820	3691	3487	159
1840	3663	3461	167
1860	3790	3576	170
1880	3749	3538	165
1900	3739	3516	182
1920	3710	3517	153
1940	3824	3602	177
1960	3784	3561	179
1980	3701	3479	186
2000	3820	3586	198

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNK461 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:54
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1862	1343	2
1520	2142	1587	1
1540	2501	1938	3
1560	2836	2308	2
1580	3127	2603	1
1600	3043	2614	0
1620	3299	2971	0
1640	3378	3077	3
1660	3554	3341	0
1680	3587	3442	3
1700	3706	3587	3
1720	3630	3514	15
1740	3645	3526	37
1760	3683	3554	69
1780	3780	3609	116
1800	3753	3493	212
1820	3823	3533	259
1840	3805	3491	267
1860	3821	3500	266
1880	3827	3504	299
1900	3871	3568	269
1920	3836	3550	241
1940	3792	3469	285
1960	3829	3536	249
1980	3801	3510	257
2000	3839	3516	283

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWRGG **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:54
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1466	1035	0
1520	1697	1244	1
1540	1970	1492	0
1560	2199	1731	0
1580	2508	2012	0
1600	2739	2271	0
1620	2944	2525	2
1640	3058	2717	1
1660	3149	2921	0
1680	3300	3140	1
1700	3313	3164	1
1720	3394	3283	2
1740	3348	3257	13
1760	3545	3453	39
1780	3438	3325	66
1800	3567	3407	122
1820	3557	3362	165
1840	3532	3333	164
1860	3498	3303	156
1880	3498	3323	142
1900	3377	3164	171
1920	3530	3355	155
1940	3445	3247	156
1960	3464	3274	151
1980	3461	3266	150
2000	3467	3307	134

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 11:56
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	A	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3273	2
2	3241	0
3	3184	2
4	3080	1
5	3266	2
6	3233	2
7	3130	2
8	3198	2
9	3186	2
10	3130	1
11	3191	4
12	3118	4
13	3243	3
14	3158	2
15	3162	1
16	3041	3
17	3164	1
18	3282	2
19	3263	3
20	3244	2

(Xbar) Mean:	3189.35	2.05
Calculated Chi-Sqr Value:	26.94	9.24

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/14/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR661 **Date:** 2/13/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 12:18
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	B	**Source Certificate:**	23A16260
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10 - 879	Chn 880 - 1023
1	3383	18
2	3570	27
3	3389	18
4	3375	25
5	3447	24
6	3412	25
7	3405	17
8	3476	26
9	3371	31
10	3342	34
11	3339	25
12	3455	27
13	3370	28
14	3407	32
15	3526	22
16	3429	38
17	3442	28
18	3398	19
19	3455	29
20	3341	23

(Xbar) Mean:	3416.60	25.80
Calculated Chi-Sqr Value:	20.33	22.37

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 G542CHISQR.RPT ver 2.0

Collected By: SdIR961 **Date:** 2/13/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 11:03
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	C	**Source Certificate:**	23A16260
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3637	25
2	3742	38
3	3605	36
4	3542	29
5	3593	35
6	3611	28
7	3605	28
8	3686	32
9	3640	34
10	3540	22
11	3591	37
12	3759	30
13	3726	29
14	3644	24
15	3634	28
16	3618	32
17	3629	24
18	3611	30
19	3633	32
20	3680	31

(Xbar) Mean:	3636.30	30.20
Calculated Chi-Sqr Value:	17.73	12.49

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: put back into service after maintenance 3/4/24

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: _____ **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 3/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 12:18
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3616	1
2	3602	1
3	3604	1
4	3645	1
5	3618	2
6	3821	1
7	3689	0
8	3608	3
9	3582	1
10	3592	3
11	3613	3
12	3652	0
13	3710	2
14	3648	1
15	3632	2
16	3742	1
17	3632	0
18	3656	2
19	3730	2
20	3533	3

(Xbar) Mean:	3646.25	1.50
Calculated Chi-Sqr Value:	22.23	12.67

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 12:52
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	A	**Source Certificate:**	23A16260
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Gamma

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10- 879	Chn 880 - 1023
1	3499	82
2	3537	90
3	3361	96
4	3593	84
5	3542	94
6	3490	90
7	3408	95
8	3480	92
9	3522	85
10	3438	80
11	3532	111
12	3501	98
13	3551	113
14	3393	81
15	3607	98
16	3561	74
17	3493	83
18	3436	100
19	3477	85
20	3467	100

(Xbar) Mean:	3494.40	91.55
Calculated Chi-Sqr Value:	22.83	21.48

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: return to service after maintenance

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 3/11/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 12:52
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	B	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10- 879	Chn 880 - 1023
1	3383	59
2	3355	64
3	3394	57
4	3434	62
5	3323	66
6	3365	74
7	3278	63
8	3338	54
9	3368	67
10	3367	51
11	3444	70
12	3237	57
13	3346	76
14	3305	62
15	3383	80
16	3325	67
17	3288	77
18	3344	75
19	3336	67
20	3277	61

(Xbar) Mean:	3344.50	65.45
Calculated Chi-Sqr Value:	15.30	18.72

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: return to service after maintenance

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: _____ **Date:** 3/11/24

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 3/11/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 12:52
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	C	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10 - 879	Chn 880 - 1023
1	3597	94
2	3582	94
3	3665	108
4	3501	83
5	3605	107
6	3633	91
7	3659	100
8	3578	109
9	3453	101
10	3663	110
11	3650	99
12	3593	107
13	3696	118
14	3532	102
15	3707	109
16	3679	103
17	3604	95
18	3624	94
19	3563	98
20	3625	89

(Xbar) Mean:	3610.45	100.55
Calculated Chi-Sqr Value:	22.02	13.77

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: return to service after maintenance

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes No (Circle One)

Approved By: [signature] **Date:** 3/11/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 12:54
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3672	43
2	3651	52
3	3628	43
4	3636	38
5	3731	39
6	3664	45
7	3614	45
8	3545	53
9	3721	37
10	3625	38
11	3539	53
12	3614	46
13	3709	48
14	3717	44
15	3628	50
16	3756	44
17	3599	48
18	3710	50
19	3686	36
20	3686	47

(Xbar) Mean:	3656.55	44.95
Calculated Chi-Sqr Value:	18.36	11.99

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 G542CHISQR.RPT ver 2.0

Collected By: SWR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	A	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3468	28
2	3508	30
3	3500	27
4	3336	27
5	3338	34
6	3426	24
7	3458	38
8	3442	26
9	3388	49
10	3410	26
11	3341	27
12	3438	31
13	3440	34
14	3398	27
15	3359	36
16	3411	32
17	3352	31
18	3425	31
19	3391	28
20	3525	36

(Xbar) Mean:	3417.70	31.10
Calculated Chi-Sqr Value:	17.84	20.06

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	B	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3673	40
2	3678	33
3	3656	21
4	3546	35
5	3629	15
6	3725	33
7	3691	37
8	3615	35
9	3549	23
10	3711	40
11	3649	26
12	3664	27
13	3710	39
14	3637	36
15	3695	34
16	3621	37
17	3589	34
18	3635	34
19	3698	31
20	3625	29

(Xbar) Mean:	3649.80	31.95
Calculated Chi-Sqr Value:	13.36	26.20

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	C	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3859	32
2	3804	25
3	3776	45
4	3810	58
5	3747	34
6	3829	46
7	3801	49
8	3807	48
9	3675	37
10	3762	24
11	3780	35
12	3937	37
13	3787	40
14	3823	40
15	3868	40
16	3732	35
17	3753	36
18	3846	44
19	3709	44
20	3815	34

(Xbar) Mean:	3796.00	39.15
Calculated Chi-Sqr Value:	17.54	31.89

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 G542CHISQR.RPT ver 2.0

Collected By: SM RGG **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10- 879	Alpha ROI Counts Chn 880 - 1023
1	3634	40
2	3639	38
3	3662	49
4	3645	44
5	3705	54
6	3611	38
7	3630	44
8	3631	49
9	3735	45
10	3641	51
11	3648	50
12	3617	55
13	3705	57
14	3645	62
15	3679	46
16	3748	50
17	3720	65
18	3615	53
19	3624	48
20	3588	57

(Xbar) Mean:	3656.10	49.75
Calculated Chi-Sqr Value:	10.30	20.58

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	A	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3296	27
2	3394	36
3	3419	36
4	3302	26
5	3328	28
6	3393	35
7	3418	31
8	3379	29
9	3343	24
10	3433	38
11	3426	27
12	3431	30
13	3515	31
14	3336	34
15	3415	26
16	3316	39
17	3354	20
18	3417	24
19	3384	28
20	3345	29

(Xbar) Mean:	3382.20	29.90
Calculated Chi-Sqr Value:	16.78	16.45

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	B	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10- 879	Chn 880 - 1023
1	3680	24
2	3647	18
3	3582	22
4	3637	16
5	3601	25
6	3599	22
7	3594	21
8	3630	16
9	3645	16
10	3602	25
11	3664	19
12	3623	27
13	3552	19
14	3579	26
15	3598	27
16	3561	18
17	3617	26
18	3594	18
19	3514	15
20	3616	18

(Xbar) Mean:	3606.75	20.90
Calculated Chi-Sqr Value:	8.10	15.30

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR 961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	C	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10- 879	Alpha ROI Counts Chn 880 - 1023
1	3702	54
2	3723	63
3	3747	44
4	3683	50
5	3703	41
6	3673	47
7	3633	34
8	3813	41
9	3742	39
10	3704	49
11	3823	55
12	3695	43
13	3749	60
14	3586	56
15	3713	55
16	3704	62
17	3690	55
18	3742	49
19	3777	56
20	3721	50

(Xbar) Mean:	3716.15	50.15
Calculated Chi-Sqr Value:	15.22	24.14

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SQIR961 **Date:** 2/14/24

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10- 879	Alpha ROI Counts Chn 880 - 1023
1	3719	11
2	3612	19
3	3590	21
4	3564	19
5	3481	16
6	3655	21
7	3552	14
8	3561	24
9	3737	26
10	3665	20
11	3600	18
12	3580	24
13	3741	21
14	3706	13
15	3616	14
16	3609	17
17	3632	13
18	3591	21
19	3571	23
20	3616	17

(Xbar) Mean:	3619.90	18.60
Calculated Chi-Sqr Value:	23.71	17.89

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SAIR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 11:03
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800

Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2138
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2570	2567	3
1520	3092	3088	4
1540	3543	3540	3
1560	4138	4135	3
1580	4479	4476	3
1600	4707	4704	3
1620	5160	5153	7
1640	5503	5496	7
1660	5585	5579	6
1680	5660	5653	7
1700	5732	5726	6
1720	5848	5842	6
1740	5971	5957	14
1760	5928	5900	28
1780	6072	5981	91
1800	6064	5899	165

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR661 **Date:** 7/5/23

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1720

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 11:40
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** B **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2137
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2380	2375	5
1520	2900	2898	2
1540	3417	3410	7
1560	3835	3834	1
1580	4344	4342	2
1600	4574	4567	7
1620	4901	4898	3
1640	5109	5099	10
1660	5317	5311	6
1680	5601	5596	5
1700	5630	5621	9
1720	5555	5550	5
1740	5628	5610	18
1760	5727	5695	32
1780	5535	5474	61
1800	5742	5575	167

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/5/23
Changes Needed: (Yes) No (CIrcle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 12:17
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2139
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1966	1964	2
1520	2595	2594	1
1540	3063	3059	4
1560	3467	3463	4
1580	3907	3904	3
1600	4132	4130	2
1620	4401	4397	4
1640	4566	4561	5
1660	4747	4742	5
1680	4725	4721	4
1700	4871	4863	8
1720	4902	4896	6
1740	4941	4933	8
1760	4972	4941	31
1780	5070	4999	71
1800	5033	4913	120

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SVR961 **Date:** 7/5/23
Changes Needed: (Yes) No (CIrcle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 12:42
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2136
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2468	2467	1
1520	2875	2874	1
1540	3240	3240	0
1560	3408	3407	1
1580	3768	3766	2
1600	3893	3890	3
1620	3869	3868	1
1640	4051	4051	0
1660	3935	3934	1
1680	3966	3963	3
1700	4142	4140	2
1720	4231	4226	5
1740	4087	4078	9
1760	4110	4090	20
1780	4122	4063	59
1800	4173	4039	134

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 13:05
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** A **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2138
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2327	2327	0
1520	2766	2763	3
1540	3167	3165	2
1560	3615	3612	3
1580	4057	4053	4
1600	4110	4105	5
1620	4285	4285	0
1640	4794	4789	5
1660	4641	4638	3
1680	4807	4800	7
1700	4961	4955	6
1720	4831	4827	4
1740	5084	5069	15
1760	5029	4995	33
1780	4908	4826	82
1800	4979	4823	155

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/5/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 13:24
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** B **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2137
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	3793	3791	2
1520	4451	4445	6
1540	4940	4935	5
1560	5309	5307	2
1580	5566	5562	4
1600	5515	5510	5
1620	5944	5936	8
1640	6120	6112	8
1660	6128	6122	6
1680	6100	6097	3
1700	6199	6195	4
1720	6176	6162	14
1740	6319	6296	23
1760	6301	6243	58
1780	6268	6147	121
1800	6227	6020	207

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/6/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 14:04
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** C **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2139
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	3144	3141	3
1520	3666	3662	4
1540	4055	4050	5
1560	4519	4515	4
1580	4731	4722	9
1600	4884	4883	1
1620	4978	4970	8
1640	5260	5254	6
1660	5321	5315	6
1680	5333	5324	9
1700	5305	5298	7
1720	5351	5339	12
1740	5397	5369	28
1760	5398	5342	55
1780	5439	5338	101
1800	5455	5258	197

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/6/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 14:27
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** D **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2136
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2060	2060	0
1520	2359	2359	0
1540	2784	2783	1
1560	3039	3038	1
1580	3296	3295	1
1600	3523	3522	1
1620	3576	3573	3
1640	3805	3804	1
1660	3929	3924	5
1680	3999	3996	3
1700	3935	3934	1
1720	4089	4086	3
1740	4035	4029	6
1760	4116	4095	21
1780	4013	3943	69
1800	4031	3907	124

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR 961 **Date:** 715123
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 15:39
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** A **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2138
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2004	2001	3
1520	2409	2408	1
1540	2788	2785	3
1560	3232	3231	1
1580	3451	3449	2
1600	3743	3741	2
1620	4050	4045	5
1640	4315	4313	2
1660	4381	4374	7
1680	4500	4492	8
1700	4730	4723	7
1720	4800	4793	7
1740	4815	4812	3
1760	4879	4867	12
1780	4953	4918	35
1800	4846	4783	63

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 16:00
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** B **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2137
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1221	1219	2
1520	1882	1879	3
1540	2557	2556	1
1560	3222	3220	2
1580	3897	3893	4
1600	4250	4249	1
1620	4620	4617	3
1640	5151	5148	3
1660	5505	5499	6
1680	5778	5776	2
1700	5659	5655	4
1720	5967	5962	5
1740	5948	5943	5
1760	5965	5959	6
1780	6101	6082	19
1800	5979	5918	61

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/11/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 16:18
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** C **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2139
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2183	2181	2
1520	2677	2676	1
1540	3085	3080	5
1560	3555	3552	3
1580	3947	3943	4
1600	4199	4195	4
1620	4528	4523	5
1640	4715	4711	4
1660	4988	4982	6
1680	5256	5243	13
1700	5328	5322	6
1720	5316	5307	9
1740	5270	5264	6
1760	5343	5321	22
1780	5432	5376	56
1800	5405	5283	122

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 715123
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 16:40
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2136
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1503	1503	0
1520	1776	1776	0
1540	2098	2097	1
1560	2484	2484	0
1580	2790	2790	0
1600	3152	3152	0
1620	3355	3354	1
1640	3439	3436	3
1660	3709	3705	4
1680	3731	3729	2
1700	3946	3945	1
1720	3819	3819	0
1740	4000	3996	4
1760	3956	3945	11
1780	4117	4083	34
1800	4110	4021	89

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNK961 **Date:** 7/5/23

Changes Needed: Yes No (Circle One) **New Voltage:** 1740

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/06/2023 10:08
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2138
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2299	2296	3
1520	2729	2728	1
1540	3114	3112	2
1560	3595	3594	1
1580	3880	3880	0
1600	4055	4053	2
1620	4394	4390	4
1640	4647	4646	1
1660	4862	4861	1
1680	4793	4789	4
1700	4885	4882	3
1720	4990	4981	9
1740	4920	4910	10
1760	5029	4989	40
1780	4970	4893	77
1800	5172	5044	128

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/6/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1740
Approved By: **Date:** 7/12/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/06/2023 10:28
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2137
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	3319	3318	1
1520	3872	3868	4
1540	4425	4421	4
1560	4759	4755	4
1580	5125	5120	5
1600	5482	5477	5
1620	5755	5751	4
1640	5641	5636	5
1660	5943	5938	5
1680	6001	5997	4
1700	6153	6140	13
1720	6059	6051	8
1740	6227	6218	9
1760	6184	6172	12
1780	6312	6285	27
1800	6267	6201	66

Special Notes:

Report Generated: 07/06/2023 G542HV.RPT ver 2.0

Collected By: SWR 661 **Date:** 7/6/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/06/2023 10:45
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** C **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2139
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2164	2164	0
1520	2616	2615	1
1540	3174	3171	3
1560	3445	3443	2
1580	4012	4012	0
1600	4422	4415	7
1620	4652	4646	6
1640	4799	4798	1
1660	4929	4923	6
1680	5251	5248	3
1700	5147	5141	6
1720	5188	5183	5
1740	5244	5240	4
1760	5235	5228	7
1780	5387	5370	17
1800	5426	5374	52

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SWR 961 **Date:** 7/6/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 7/11/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/06/2023 11:37
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2136
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1075	1075	0
1520	1388	1388	0
1540	1709	1708	1
1560	2025	2023	2
1580	2402	2402	0
1600	2465	2463	2
1620	2869	2867	2
1640	3177	3173	4
1660	3334	3333	1
1680	3628	3624	4
1700	3690	3689	1
1720	3789	3787	2
1740	3794	3789	5
1760	3929	3925	4
1780	3949	3940	9
1800	3943	3914	29

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/6/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 11:14
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3909	4
2	3913	4
3	3845	4
4	3765	2
5	3934	2
6	3831	2
7	3736	4
8	3855	2
9	3842	1
10	3773	5
11	3711	1
12	3880	2
13	3734	2
14	3840	6
15	3786	4
16	3833	6
17	3894	8
18	3809	4
19	3813	6
20	3811	1

(Xbar) Mean:	3825.70	3.50
Calculated Chi-Sqr Value:	19.34	21.43

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR661 **Date:** 7/7/23

Changes Needed: **Yes** **No** **(Circle One)**

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 11:35
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3333	2
2	3371	2
3	3361	3
4	3399	5
5	3425	1
6	3439	5
7	3412	2
8	3279	2
9	3298	1
10	3432	1
11	3423	1
12	3520	0
13	3366	2
14	3339	3
15	3372	4
16	3334	7
17	3342	1
18	3456	4
19	3441	2
20	3390	1

(Xbar) Mean:	3386.60	2.45
Calculated Chi-Sqr Value:	19.15	24.06

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREC1 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 1
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: C
Voltage: 1740
Conf Level: 95.0 %

Test Date: 07/07/2023 11:57
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3387	6
2	3412	4
3	3269	2
4	3357	12
5	3431	12
6	3472	7
7	3386	6
8	3354	6
9	3455	10
10	3463	10
11	3500	4
12	3436	6
13	3386	16
14	3426	9
15	3415	5
16	3292	11
17	3493	9
18	3367	5
19	3362	3
20	3438	5

(Xbar) Mean:	3405.05	7.40
Calculated Chi-Sqr Value:	20.84	33.08

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNREGI **Date:** 7/7/23
Changes Needed: Yes No (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 12:22
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	D	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3494	8
2	3512	8
3	3492	4
4	3554	7
5	3544	15
6	3528	10
7	3544	4
8	3608	6
9	3644	4
10	3697	11
11	3468	8
12	3530	2
13	3536	10
14	3451	10
15	3501	8
16	3587	6
17	3573	6
18	3534	4
19	3553	8
20	3555	10

(Xbar) Mean:	3545.25	7.45
Calculated Chi-Sqr Value:	17.93	24.29

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SW REG 1 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 12:45
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3865	2
2	3693	5
3	3808	6
4	3875	4
5	3755	2
6	3823	5
7	3856	3
8	3839	6
9	3754	1
10	3768	5
11	3889	4
12	3766	3
13	3711	6
14	3857	4
15	3776	6
16	3742	7
17	3757	3
18	3817	6
19	3794	4
20	3895	5

(Xbar) Mean:	3802.00	4.35
Calculated Chi-Sqr Value:	17.63	11.62

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREGI **Date:** 7/7/23

Changes Needed: **Yes** ~~No~~ **(Circle One)**

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 13:12
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3457	0
2	3620	2
3	3579	1
4	3541	1
5	3583	1
6	3614	2
7	3518	3
8	3498	1
9	3595	3
10	3548	2
11	3595	2
12	3586	3
13	3577	6
14	3453	0
15	3622	3
16	3538	4
17	3511	5
18	3514	2
19	3577	1
20	3554	2

(Xbar) Mean:	3554.00	2.20
Calculated Chi-Sqr Value:	13.35	20.55

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWRGLI **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: [signature] **Date:** 7/10/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 13:33
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	C	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3392	5
2	3358	3
3	3430	3
4	3488	2
5	3425	5
6	3518	2
7	3557	11
8	3415	3
9	3492	4
10	3487	9
11	3518	3
12	3400	4
13	3468	7
14	3496	2
15	3517	3
16	3451	5
17	3405	7
18	3411	5
19	3477	6
20	3463	3

(Xbar) Mean:	3458.40	4.60
Calculated Chi-Sqr Value:	14.98	24.09

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREGI **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 2
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: D
Voltage: 1740
Conf Level: 95.0 %

Test Date: 07/07/2023 14:01
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3593	14
2	3523	11
3	3398	9
4	3426	11
5	3424	10
6	3573	11
7	3436	5
8	3505	3
9	3459	6
10	3612	13
11	3481	6
12	3554	9
13	3526	6
14	3397	10
15	3541	12
16	3585	10
17	3512	8
18	3485	11
19	3596	5
20	3577	8

(Xbar) Mean:	3510.15	8.90
Calculated Chi-Sqr Value:	26.05	18.63

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 7/11/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3758	2
2	3685	6
3	3742	5
4	3586	3
5	3662	4
6	3737	6
7	3756	3
8	3765	3
9	3479	3
10	3770	6
11	3701	4
12	3697	2
13	3797	3
14	3705	6
15	3652	6
16	3630	9
17	3718	8
18	3656	4
19	3659	5
20	3674	2

(Xbar) Mean:	3691.45	4.50
Calculated Chi-Sqr Value:	27.65	16.67

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3179	0
2	3177	1
3	3298	0
4	3254	0
5	3262	2
6	3321	0
7	3368	1
8	3382	0
9	3397	0
10	3463	0
11	3369	0
12	3378	1
13	3390	1
14	3340	1
15	3287	0
16	3384	1
17	3390	1
18	3371	4
19	3341	2
20	3343	1

(Xbar) Mean:	3334.70	0.00
Calculated Chi-Sqr Value:	30.43	0.00

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/7/23

Changes Needed: Yes (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	C	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3437	2
2	3384	2
3	3352	1
4	3332	1
5	3354	4
6	3353	3
7	3367	3
8	3358	1
9	3316	6
10	3355	5
11	3396	2
12	3393	2
13	3404	6
14	3415	0
15	3347	4
16	3413	3
17	3377	5
18	3392	3
19	3481	6
20	3391	5

(Xbar) Mean:	3380.85	3.20
Calculated Chi-Sqr Value:	8.28	20.38

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: rerun to verify 7/7/23

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	D	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3421	6
2	3439	3
3	3529	1
4	3451	8
5	3363	3
6	3408	6
7	3478	6
8	3514	5
9	3489	4
10	3538	0
11	3556	2
12	3579	7
13	3514	2
14	3509	3
15	3531	2
16	3403	2
17	3462	2
18	3510	6
19	3487	5
20	3436	4

(Xbar) Mean:	3480.85	3.85
Calculated Chi-Sqr Value:	17.58	23.52

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR661 **Date:** 7/7/23

Changes Needed: Yes (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 3
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: C
Voltage: 1740
Conf Level: 95.0 %

Test Date: 07/07/2023 15:13
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3427	4
2	3425	5
3	3312	4
4	3360	1
5	3385	1
6	3294	4
7	3296	6
8	3340	5
9	3450	5
10	3358	1
11	3313	2
12	3458	6
13	3321	2
14	3402	5
15	3485	4
16	3360	2
17	3431	5
18	3442	2
19	3357	6
20	3366	3

(Xbar) Mean:	3379.10	3.65
Calculated Chi-Sqr Value:	18.89	16.04

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREG1 (Circle One) **Date:** 7/12/23

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 16:06
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3836	11
2	3838	10
3	3687	20
4	3756	9
5	3715	16
6	3719	6
7	3789	11
8	3796	10
9	3809	10
10	3740	15
11	3876	15
12	3857	7
13	3642	11
14	3697	11
15	3762	11
16	3778	16
17	3800	17
18	3812	9
19	3840	7
20	3826	11

(Xbar) Mean:	3778.75	11.65
Calculated Chi-Sqr Value:	19.84	22.19

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 4
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: B
Voltage: 1760
Conf Level: 95.0 %
Test Date: 07/07/2023 16:28
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3491	6
2	3599	6
3	3661	6
4	3634	4
5	3546	8
6	3536	10
7	3527	1
8	3621	5
9	3646	6
10	3556	7
11	3604	3
12	3522	7
13	3668	2
14	3573	2
15	3540	2
16	3592	5
17	3567	4
18	3510	7
19	3467	1
20	3638	2

(Xbar) Mean:	3574.90	4.70
Calculated Chi-Sqr Value:	18.02	26.00

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR661 **Date:** 7/7/23

Changes Needed: Yes (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 4
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: C
Voltage: 1760
Conf Level: 95.0 %

Test Date: 07/07/2023 16:55
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3430	4
2	3358	6
3	3453	7
4	3514	5
5	3361	1
6	3389	4
7	3367	3
8	3260	2
9	3393	1
10	3461	3
11	3459	3
12	3382	5
13	3387	6
14	3361	4
15	3496	4
16	3376	4
17	3350	1
18	3362	2
19	3327	7
20	3419	6

(Xbar) Mean:	3395.25	3.90
Calculated Chi-Sqr Value:	20.33	17.90

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR&G **Date:** 7/7/23
Changes Needed: Yes (No) (Circle One)
Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 4
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: D
Voltage: 1760
Conf Level: 95.0 %

Test Date: 07/07/2023 17:23
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3467	3
2	3487	1
3	3525	2
4	3423	10
5	3394	2
6	3464	4
7	3541	4
8	3513	7
9	3546	3
10	3530	6
11	3469	3
12	3472	9
13	3397	3
14	3446	2
15	3560	4
16	3463	6
17	3474	4
18	3457	6
19	3417	4
20	3338	5

(Xbar) Mean:	3469.15	4.40
Calculated Chi-Sqr Value:	17.89	23.82

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SAREC1 **Date:** 7/7/23
Changes Needed: Yes (Circle One)
Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2136

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	16100	dpm	805	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	7694.29	dpm	384.71	dpm

44-9 PROBE
CPM Acceptance Range

1693	**50**	
1354	**1304**	**Low**
2031	**2081**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

3511	**176**	
3160	**2984**	**Low**
3862	**4038**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2137

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	23800	dpm	1190	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	11374.16	dpm	568.71	dpm

44-9 PROBE
CPM Acceptance Range

2502	**74**	
2002	**1928**	**Low**
3003	**3077**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

5190	**260**	
4671	**4412**	**Low**
5709	**5969**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2139

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 03-Jun-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	20700	dpm	1040	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.41	years	30.41	years
dilution =	1.00		1.00	
A =	9907.77	dpm	497.78	dpm

44-9 PROBE
CPM Acceptance Range

2180	**65**	
1744	**1679**	**Low**
2616	**2680**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

4521	**227**	
4069	**3842**	**Low**
4973	**5200**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2138

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	25000	dpm	1250	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	11947.65	dpm	597.38	dpm

44-9 PROBE
CPM Acceptance Range

2628	**78**	
2103	**2025**	**Low**
3154	**3232**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

5452	**273**	
4907	**4634**	**Low**
5997	**6269**	**High**

Approval: _____ Date:_____

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DECAY CALCUALTION — Sr-90
124007
ACTIVITY FORMULA — A = Ao(e^^-NT) — **ESC51613**
22J11029

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	25-Aug-22
DATE OF CALIBRATION	01-Jan-23
PREP:	13-Sep-22

Ao	=	940.91	nCi		
N	=	0.02			
T(1/2)	=	28.60	years		
T	=	0.35	years		
dilution	=	1000.00			
A	=	932.92	nCi	SR90/Y90	
A	=	2071.08	dpm/ml	4142.1618	41421.62
A	=	932.92	pCi/ml	1865.8387	8284.324
A	=	932.92	+/-	16.806536	pCi/ml

Uncertainty	0.0173
Weight	0.05%
Volume (1000 ml)	0.50%
CSU	1.80%

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DECAY CALCUALTION

Th230 Source
124007
ESC51614
22I13361

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 25-Aug-22
DATE OF CALIBRATION 01-Jan-23

Ao	=	1011.73	nCi	
N	=	0.00		
T(1/2)	=	77000.00	years	28105000
T	=	0.35	years	
dilution	=	1000.00		
A	=	1011.73	nCi	
A	=	2246.04	dpm/ml	22460.399
A	**=**	1011.73	pCi/ml	

Uncertainty	3.16%
Weight	0.05%
Volume	0.03%
CSU	3.16%

					pCi/l
Activity	**1011.7**	**+/-**	**32.0**	**pCi/ml**	1011730

PDF created with pdfFactory trial version www.pdffactory.com

RADIUM-228
METHOD: **EPA 904/9320**
SDG# WG2240337

Lab ID	Result	Error	TPU	SDWA DL	Lc	MDA	UNITS	PREP DATE	ANALYSIS DATE	ANALYST
BLANK WG2240337	0.070	0.165	2.258	0.297	0.163	0.310	pCi/l	3/6/2024	3/15/2024	DDD3903
LCS WG2240337	4.830	0.234	0.302	0.299	0.163	0.312	pCi/l	3/6/2024	3/15/2024	DDD3903
MS L1706901-06 WG2240337	18.038	0.769	0.547	0.816	0.455	0.856	pCi/l	3/6/2024	3/15/2024	DDD3903
MSD L1706901-06 WG2240337	16.611	0.774	0.546	0.950	0.524	0.999	pCi/l	3/6/2024	3/15/2024	DDD3903
DUP L1708671-01 WG2240337	2.554	0.298	0.689	0.445	0.248	0.466	pCi/l	3/6/2024	3/15/2024	DDD3903
L1706901-06 WG2240337	-0.135	0.247	2.776	0.459	0.255	0.481	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708270-01 WG2240337	0.462	0.195	1.142	0.339	0.188	0.355	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708270-02 WG2240337	-0.421	0.381	2.030	0.698	0.382	0.733	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708270-03 WG2240337	0.710	0.274	1.264	0.473	0.263	0.496	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708310-01 WG2240337	0.741	0.229	0.954	0.391	0.216	0.410	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708418-01 WG2240337	-0.737	0.540	2.290	1.000	0.549	1.048	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708557-01 WG2240337	0.198	0.271	2.406	0.487	0.270	0.511	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708557-02 WG2240337	0.739	0.201	0.890	0.338	0.188	0.355	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708557-03 WG2240337	0.988	0.449	1.827	0.785	0.437	0.822	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-01 WG2240337	1.778	0.314	0.851	0.510	0.282	0.534	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-02 WG2240337	1.964	0.287	0.767	0.449	0.250	0.470	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-03 WG2240337	0.095	0.207	2.531	0.373	0.206	0.391	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-04 WG2240337	0.911	0.274	0.959	0.468	0.257	0.491	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-05 WG2240337	-0.198	0.219	1.801	0.403	0.222	0.423	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-06 WG2240337	2.019	0.260	0.596	0.410	0.225	0.430	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-07 WG2240337	0.968	0.264	0.882	0.448	0.245	0.470	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-08 WG2240337	1.482	0.266	0.710	0.437	0.239	0.458	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708671-09 WG2240337	3.510	0.642	1.108	1.058	0.580	1.110	pCi/l	3/6/2024	3/15/2024	DDD3903
L1708695-01 WG2240337	0.358	0.261	1.459	0.459	0.251	0.481	pCi/l	3/6/2024	3/15/2024	DDD3903
L1709472-01 WG2240337	0.205	0.646	4.746	1.155	0.631	1.212	pCi/l	3/6/2024	3/15/2024	DDD3903
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	pCi/l	3/6/2024	1/0/1900	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	pCi/l	3/6/2024	1/0/1900	
0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	pCi/l	3/6/2024	1/0/1900	

RADIUM-228
METHOD: EPA 904/9320
SDG# WG2240337
ANALYST: DDD3903
PREP DATE: 3/6/24 18:07

Matrix: NPW/DW

bkg CPM matched raw data

LAB ID	sample date	sample size (L)	ingrowth start	decay start	t3 min	count date/end time	counts	UNIT/DET no.	UNIT	DET no.	back CPM	COUNTER EFF	SAMPLE DECAY DAYS	SAMPLE DECAY FACTOR	t1 min	Count Time t2 min	λt_2 $(1-e^{-\lambda t}2)$	1 $(1-e^{-\lambda t}3)$	1 $e^{-\lambda t}1$	Ba % rec	Y %rec	Ra228 pCi/l
BLANK WG2240337	**3/6/24 18:07**	1.000	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	295	3A-1	3	1	1.43	42.48	0.03	1.00	106	200	1.200	1.000	1.220	100.0%	100.0%	0.070
LCS WG2240337	**3/6/24 18:07**	1.000	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	978	3A-2	3	2	1.62	44.81	0.03	1.00	106	200	1.200	1.000	1.220	100.0%	100.0%	4.830
MS L1706901-06 WG2240337	2/13/2024 13:10	0.300	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	792	3A-3	3	3	0.79	39.06	0.09	1.01	106	200	1.200	1.000	1.220	100.0%	100.0%	18.038
MSD L1706901-06 WG2240337	2/13/2024 13:10	0.300	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	940	3A-4	3	4	1.41	44.02	0.09	1.01	106	200	1.200	1.000	1.220	100.0%	100.0%	16.611
DUP L1708671-01 WG2240337	2/21/2024 7:00	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	323	3B-1	3	5	0.79	44.27	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	97.1%	2.554
L1706901-06 WG2240337	2/13/2024 13:10	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	171	3B-2	3	6	0.90	44.30	0.09	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	-0.135
L1708270-01 WG2240337	2/19/2024 13:13	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	215	3B-3	3	7	0.87	44.48	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	94.8%	0.462
L1708270-02 WG2240337	2/19/2024 12:46	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	348	3B-4	3	8	1.87	44.33	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	92.8%	-0.421
L1708270-03 WG2240337	2/19/2024 12:09	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	237	3C-1	3	9	0.95	44.04	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.710
L1708310-01 WG2240337	2/21/2024 12:45	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	331	3C-2	3	10	1.31	44.23	0.06	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.741
L1708418-01 WG2240337	2/22/2024 10:40	0.300	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	279	3C-3	3	11	1.54	44.58	0.06	1.01	106	200	1.200	1.000	1.221	97.9%	100.0%	-0.737
L1708557-01 WG2240337	2/19/2024 16:50	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	213	3C-4	3	12	1.00	43.80	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.198
L1708557-02 WG2240337	2/19/2024 16:25	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	263	3D-1	3	13	0.97	44.42	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.739
L1708557-03 WG2240337	2/19/2024 14:50	0.300	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	203	3D-2	3	14	0.83	44.13	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	94.2%	0.988
L1708671-01 WG2240337	2/21/2024 7:00	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	337	3D-3	3	15	1.10	43.78	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	1.778
L1708671-02 WG2240337	2/21/2024 7:30	0.500	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:32	300	3D-4	3	16	0.85	44.04	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	1.964
L1708671-03 WG2240337	2/21/2024 11:00	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	257	4A-1	4	1	1.24	45.25	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.095
L1708671-04 WG2240337	2/21/2024 11:35	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	438	4A-2	4	2	1.78	45.31	0.06	1.01	106	200	1.200	1.000	1.221	100.0%	94.4%	0.911
L1708671-05 WG2240337	2/21/2024 7:50	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	279	4A-3	4	3	1.49	45.65	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	-0.198
L1708671-06 WG2240337	2/21/2024 12:45	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	512	4A-4	4	4	1.58	46.14	0.06	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	2.019
L1708671-07 WG2240337	2/21/2024 8:55	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	465	4B-1	4	5	1.86	45.66	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.968
L1708671-08 WG2240337	2/21/2024 10:10	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	499	4B-3	4	7	1.78	45.87	0.07	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	1.482
L1708671-09 WG2240337	2/21/2024 7:00	0.300	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	510	4B-4	4	8	1.84	45.28	0.07	1.01	106	200	1.200	1.000	1.221	99.1%	100.0%	3.510
L1708695-01 WG2240337	2/22/2024 11:30	0.700	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	416	4C-1	4	9	1.91	45.13	0.06	1.01	106	200	1.200	1.000	1.221	100.0%	100.0%	0.358
L1709472-01 WG2240337	2/22/2024 12:30	0.300	3/7/2024 23:03	3/15/2024 23:27	11544	3/16/24 4:33	418	4C-2	4	10	2.05	44.69	0.06	1.01	106	200	1.200	1.000	1.221	100.0%	96.8%	0.205
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!
					0							FALSE	0.00	1.00	-200	200	1.200	#DIV/0!	0.686	0.0%	0.0%	#DIV/0!

=Average Monthly backgrounds used

RADIUM 228 QC REPORT

METHOD: EPA 904/9320
SDG# WG2240337
ANALYST: DDD3903

QC SPIKE INFORMATION
VOLUME USED: **0.5**
QC ID: TH232-86778-WS1
ACTIVITY: 10.0 pCi/ml

Analyte **Ra228** units pCi/L
Matrix
Sample 708671-01 WG2240337

	RESULT	ERROR	TPU	SDWA DL	Lc	MDA	known	%REC	LIMITS LOW	LIMITS HIGH	RPD		LIMITS	RER	LIMITS
BLANK WG2240337	0.070	0.165	2.258	0.297	0.163	0.310									
LCS WG2240337	4.830	0.234	0.302	0.299	0.163	0.312	5.0	**96.6%**	80%	120%					
L1708671-01 WG2240337	1.778	0.314	0.851	0.510	0.282	0.534		✔							
DUP L1708671-01 WG2240337	2.554	0.298	0.689	0.445	0.248	0.466					**35.8%**	*	20%	**1.792**	2
L1706901-06 WG2240337	-0.135	0.247	2.776	0.459	0.255	0.481									
MS L1706901-06 WG2240337	18.04	0.77	0.55	0.82	0.46	0.86	16.7	**109.0%**	70%	130%					
MSD L1706901-06 WG2240337	16.61	0.77	0.55	0.95	0.52	1.00	16.7	**100.5%**	70%	130%	**8.2%**		20%	**1.31**	2

✔ ✔

*** - Outside Control Limits**

SAMPLES:

BLANK WG2240337	L1708557-01 WG22	L1708671-09 WG2240337
LCS WG2240337	L1708557-02 WG22	L1708695-01 WG2240337
MS L1706901-06 WG2240337	L1708557-03 WG22	L1709472-01 WG2240337
MSD L1706901-06 WG2240337	L1708671-01 WG2240337	
DUP L1708671-01 WG2240337	L1708671-02 WG2240337	
L1706901-06 WG2240337	L1708671-03 WG2240337	
L1708270-01 WG2240337	L1708671-04 WG2240337	
L1708270-02 WG2240337	L1708671-05 WG2240337	
L1708270-03 WG2240337	L1708671-06 WG2240337	
L1708310-01 WG2240337	L1708671-07 WG2240337	
L1708418-01 WG2240337	L1708671-08 WG2240337	

3/18/2024

DECAY CALCUALTION

Th-232 Source
ORL# 867-78
TH232-86778-WS1

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	15-Feb-02
DATE OF CALIBRATION	06-Mar-24

Ao =	100.40	nCi
N =	0.00	
T(1/2) =	1.41E+10	years
T =	22.07	years
dilution =	1000.00	
A =	100.40	nCi
A =	222.89	dpm/ml
A =	100.40	pCi/ml
Stock =	100	pCi/ml
Stock	100	ml
DI	1000	pCi/ml
WS1 =	10.0	pCi/ml

View as PDF (CreatePDF?batchnum=WG2240337)

RA-228 Aqueous Radiochemistry Prep Benchsheet

Batch: WG2240337

Analyst: ALG3788 Prep Start Date/Time: 03/06/24 18:07-18:38 Prep End Date/Time: 03/18/24 16:05-22:07 Method: 904 SOP: ENV-SOP-MTJL-0300/0322 Pipet ID: E-12, E-21, E-24 Balance ID: RADBAL3
Stirrer ID: ST6, ST26, ST27 Hotplate ID: G72 Centrifuge ID: C6, C5

LCS/MS Spike: 22F12858 Amt. Used: 0.50 mL Exp. Date:06/03/24 16 mg/mL Barium Carrier: 23L29554 Amt. Used: 2 mL Exp. Date:10/31/24 1M Citric Acid: 24B01189 Amt. Used: 5 mL Exp. Date:11/30/24
Methyl Orange: 24B01187 Amt. Used: 0.20 mL Exp. Date:02/01/25 15 mg/mL Lead Carrier: 24B28179 Amt. Used: 10 mL Exp. Date:02/28/25 10 mg/mL Strontium Carrier: 24A20225 Amt. Used: 2 mL Exp. Date:01/20/25
18 mg/mL Yttrium Carrier: 24B24518 Amt. Used: 1 mL Exp. Date:02/24/25 Ammonium Hydroxide: 23L28219 Amt. Used: 10 mL Exp. Date:10/04/25 1:1 H2SO4: 24B16451 Amt. Used: 10 mL Exp. Date:02/16/25
200 mg/mL Ammonium Sulfate: 24A25035 Amt. Used: 16 mL Exp. Date:01/25/25 Nitric Acid: 24C02617 Amt. Used: 34 mL Exp. Date:12/31/28 0.25N Basic EDTA: 24C05987 Amt. Used: 85 mL Exp. Date:03/05/25
0.9mg/mL each Sr/Y Carrier: 24A11243 Amt. Used: 2 mL Exp. Date:12/15/24 Acetic Acid: 22L30146 Amt. Used: 20 mL Exp. Date:10/26/24 1.5mg/mL Lead Carrier: 24A19163 Amt. Used: 2 mL Exp. Date:01/17/25
2% NH4 Sulfide: 24B28205 Amt. Used: 0.50 mL Exp. Date:02/28/25 9 mg/mL Yttrium Carrier: 24B26726 Amt. Used: 1 mL Exp. Date:02/24/25 18N NaOH: 24B02370 Amt. Used: 5 mL Exp. Date:02/02/25
6N Nitric Acid: 24B02354 Amt. Used: 2 mL Exp. Date:02/02/25 10N NaOH: 24B02371 Amt. Used: 4 mL Exp. Date:02/02/25 1N Nitric Acid: 24C02634 Amt. Used: 3.50 mL Exp. Date:08/19/24
5% Ammonium Oxalate: 24B20973 Amt. Used: 3.50 mL Exp. Date:02/20/25

Sample Number	Collect Date	Sample Vol. (L or filt)	Ac-228 Ingrowth Time	Ac-228 Decay Time	Y Planchet Tare (g)	Y Planchet Gross (g)	Y Planchet Net (g)	Ba Planchet Tare (g)	Ba Planchet Gross (g)	Ba Planchet Net (g)	Review Analyst	Review Date
BLANK		1.000	03/07/24 23:03:00	03/15/24 23:27:00	7.55178	7.58335	0.03157	7.58463	7.64233	0.0577	DDD3903	03/18/24 22:26:36
LCS		1.000	03/07/24 23:03:00	03/15/24 23:27:00	7.51858	7.55175	0.03317	7.52271	7.59871	0.076	DDD3903	03/18/24 22:26:36
MS(L1706901-06)		0.300	03/07/24 23:03:00	03/15/24 23:27:00	7.53867	7.57409	0.03542	7.56591	7.62855	0.06264	DDD3903	03/18/24 22:26:36
MSD(L1706901-06)		0.300	03/07/24 23:03:00	03/15/24 23:27:00	7.51711	7.54759	0.03048	7.55314	7.62236	0.06922	DDD3903	03/18/24 22:26:36
DUP(L1708671-01)		0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.54697	7.57652	0.02955	7.52132	7.58626	0.06494	DDD3903	03/18/24 22:26:36
1. L1706901-06	02/13/24 13:10	0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.58344	7.61565	0.03221	7.51198	7.58450	0.07252	DDD3903	03/18/24 22:26:36
2. L1708270-01	02/19/24 13:13	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.53825	7.56712	0.02887	7.51287	7.58962	0.07675	DDD3903	03/18/24 22:26:36
3. L1708270-02	02/19/24 12:46	0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.53764	7.56589	0.02825	7.55089	7.61844	0.06755	DDD3903	03/18/24 22:26:36
4. L1708270-03	02/19/24 12:09	0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.53696	7.57195	0.03499	7.57509	7.65033	0.07524	DDD3903	03/18/24 22:26:36
5. L1708310-01	02/21/24 12:45	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.53415	7.56707	0.03292	7.59090	7.65629	0.06539	DDD3903	03/18/24 22:26:36
6. L1708418-01	02/22/24 10:40	0.300	03/07/24 23:03:00	03/15/24 23:27:00	7.55100	7.58545	0.03445	7.51639	7.57075	0.05436	DDD3903	03/18/24 22:26:36
7. L1708557-01	02/19/24 16:50	0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.55860	7.59235	0.03375	7.51298	7.58889	0.07591	DDD3903	03/18/24 22:26:36
8. L1708557-02	02/19/24 16:25	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.54030	7.57176	0.03146	7.57847	7.63534	0.05687	DDD3903	03/18/24 22:26:36
9. L1708557-03	02/19/24 14:50	0.300	03/07/24 23:03:00	03/15/24 23:27:00	7.53252	7.56119	0.02867	7.58404	7.65474	0.0707	DDD3903	03/18/24 22:26:36
10. L1708671-01	02/21/24 07:00	0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.58539	7.61681	0.03142	7.55593	7.62088	0.06495	DDD3903	03/18/24 22:26:36
11. L1708671-02	02/21/24 07:30	0.500	03/07/24 23:03:00	03/15/24 23:27:00	7.54520	7.57659	0.03139	7.55814	7.61754	0.0594	DDD3903	03/18/24 22:26:36
12. L1708671-03	02/21/24 11:00	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.57250	7.60828	0.03578	7.56964	7.63556	0.06592	DDD3903	03/18/24 22:26:36
13. L1708671-04	02/21/24 11:35	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.56356	7.59229	0.02873	7.55777	7.62903	0.07126	DDD3903	03/18/24 22:26:36
14. L1708671-05	02/21/24 07:50	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.54303	7.57561	0.03258	7.52389	7.59416	0.07027	DDD3903	03/18/24 22:26:36
15. L1708671-06	02/21/24 12:45	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.55149	7.58503	0.03354	7.53090	7.60399	0.07309	DDD3903	03/18/24 22:26:36
16. L1708671-07	02/21/24 08:55	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.56067	7.59391	0.03324	7.58022	7.65153	0.07131	DDD3903	03/18/24 22:26:36
17. L1708671-08	02/21/24 10:10	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.58552	7.61912	0.0336	7.54229	7.60432	0.06203	DDD3903	03/18/24 22:26:36
18. L1708671-09	02/21/24 07:00	0.300	03/07/24 23:03:00	03/15/24 23:27:00	7.55943	7.59115	0.03172	7.55386	7.60891	0.05505	DDD3903	03/18/24 22:26:36
19. L1708695-01	02/22/24 11:30	0.700	03/07/24 23:03:00	03/15/24 23:27:00	7.58185	7.61531	0.03346	7.61903	7.83782	0.21879	DDD3903	03/18/24 22:26:36
20. L1709472-01	02/22/24 12:30	0.300	03/07/24 23:03:00	03/15/24 23:27:00	7.56047	7.58995	0.02948	7.56558	7.63239	0.06681	DDD3903	03/18/24 22:26:36

Comments:
Tubes: 920104 1mL tips: 2243 2mL tips: 2215 10 mL tips: 2312 10mL manual: P7565750 Transfer Pips: 23090149 Q5: 18099271

Reviewed By:DDD3903 on 03/18/24 22:26:36

Yttrium Recovery

9 mg/ml(Y)

Known $Y_2(C_2O_4)_3 \cdot 9H_2O$

Standardized Value	8.96	mg/ml	Y_2	177.8 g/mol
Volume Added	1.00	mL	$Y_2(C_2O_4)_3.9H_2O$	603.8 g/mol
Mass Added	30.44	mg		

LAB ID	TARE(g)	GROSS(g)	NET(g)	Y %rec
BLANK WG2240337	7.55178	7.58335	0.0316	**104%**
LCS WG2240337	7.51858	7.55175	0.0332	**109.0%**
MS L1706901-06 WG2240337	7.53867	7.57409	0.0354	**116.4%**
MSD L1706901-06 WG2240337	7.51711	7.54759	0.0305	**100.1%**
DUP L1708671-01 WG2240337	7.54697	7.57652	0.0296	**97%**
L1706901-06 WG2240337	7.58344	7.61565	0.0322	**105.8%**
L1708270-01 WG2240337	7.53825	7.56712	0.0289	**94.8%**
L1708270-02 WG2240337	7.53764	7.56589	0.0282	**92.8%**
L1708270-03 WG2240337	7.53696	7.57195	0.0350	**114.9%**
L1708310-01 WG2240337	7.53415	7.56707	0.0329	**108.1%**
L1708418-01 WG2240337	7.551	7.58545	0.0344	**113.2%**
L1708557-01 WG2240337	7.5586	7.59235	0.0337	**111%**
L1708557-02 WG2240337	7.5403	7.57176	0.0315	**103.4%**
L1708557-03 WG2240337	7.53252	7.56119	0.0287	**94.2%**
L1708671-01 WG2240337	7.58539	7.61681	0.0314	**103.2%**
L1708671-02 WG2240337	7.5452	7.57659	0.0314	**103.1%**
L1708671-03 WG2240337	7.5725	7.60828	0.0358	**117.5%**
L1708671-04 WG2240337	7.56356	7.59229	0.0287	**94.4%**
L1708671-05 WG2240337	7.54303	7.57561	0.0326	**107.0%**
L1708671-06 WG2240337	7.55149	7.58503	0.0335	**110.2%**
L1708671-07 WG2240337	7.56067	7.59391	0.0332	**109.2%**
L1708671-08 WG2240337	7.58552	7.61912	0.0336	**110.4%**
L1708671-09 WG2240337	7.55943	7.59115	0.0317	**104.2%**
L1708695-01 WG2240337	7.58185	7.61531	0.0335	**109.9%**
L1709472-01 WG2240337	7.56047	7.58995	0.0295	**96.8%**
0			0.0000	**0.0%**
0			0.0000	**0.0%**
0			0.0000	**0.0%**

24B26726 Standardization Date: 02/28/24

		Y2(C2O4)3.9H2O	Y g/mL	Y mg/mL
Tare (g)	Gross (g)	Net (g)		
7.68529	7.71598	0.03069	0.00904	9.0372
7.62870	7.65938	0.03068	0.00903	9.0343
7.64839	7.67834	0.02995	0.00882	8.8193

Avg. Y mg/mL

8.9636 ± 1.39%

Barium Recovery

16 mg/ml(Ba)

Known $BaSO_4$

Standardized Value	16.33	mg/ml	Ba	137	g/mol
volume added	2.00	ml			
	55.55	mg	$BaSO_4$	233	g/mol

23L29554 Standardization Date: 01/08/24				
T	G	N		
7.67979	7.73560	0.05581	0.02791	0.0164
7.66909	7.72697	0.05788	0.02894	0.0170
7.68192	7.73489	0.05297	0.02649	0.0156

16.33 +/- 4.4%

LAB ID	TARE(g)	GROSS(g)	NET(g)	%rec
BLANK WG2240337	7.58463	7.64233	0.0577	**104%**
LCS WG2240337	7.52271	7.59871	0.0760	**137%**
MS L1706901-06 WG2240337	7.56591	7.62855	0.0626	**113%**
MSD L1706901-06 WG2240337	7.55314	7.62236	0.0692	**125%**
DUP L1708671-01 WG2240337	7.52132	7.58626	0.0649	**117%**
L1706901-06 WG2240337	7.51198	7.5845	0.0725	**131%**
L1708270-01 WG2240337	7.51287	7.58962	0.0767	**138%**
L1708270-02 WG2240337	7.55089	7.61844	0.0675	**122%**
L1708270-03 WG2240337	7.57509	7.65033	0.0752	**135%**
L1708310-01 WG2240337	7.5909	7.65629	0.0654	**118%**
L1708418-01 WG2240337	7.51639	7.57075	0.0544	**98%**
L1708557-01 WG2240337	7.51298	7.58889	0.0759	**137%**
L1708557-02 WG2240337	7.57847	7.63534	0.0569	**102%**
L1708557-03 WG2240337	7.58404	7.65474	0.0707	**127%**
L1708671-01 WG2240337	7.55593	7.62088	0.0649	**117%**
L1708671-02 WG2240337	7.55814	7.61754	0.0594	**107%**
L1708671-03 WG2240337	7.56964	7.63556	0.0659	**119%**
L1708671-04 WG2240337	7.55777	7.62903	0.0713	**128%**
L1708671-05 WG2240337	7.52389	7.59416	0.0703	**126%**
L1708671-06 WG2240337	7.5309	7.60399	0.0731	**132%**
L1708671-07 WG2240337	7.58022	7.65153	0.0713	**128%**
L1708671-08 WG2240337	7.54229	7.60432	0.0620	**112%**
L1708671-09 WG2240337	7.55386	7.60891	0.0550	**99%**
L1708695-01 WG2240337	7.61903	7.83782	0.2188	**394%**
L1709472-01 WG2240337	7.56558	7.63239	0.0668	**120%**
0			0.0000	**0%**
0			0.0000	**0%**
0			0.0000	**0%**

G542 Runlog RA-228 Waters WG2240337
Sample order verified by DDD3903

Sample ID	Beta	LT	Det	Analyst	Start	End
BLANK WG2240337	295	200	3A-1	ALG3788	3/16/2024 1:12	3/16/2024 4:32
LCS WG2240337	978	200	3A-2	ALG3788	3/16/2024 1:12	3/16/2024 4:32
MS L1706901-06 WG2240337	792	200	3A-3	ALG3788	3/16/2024 1:12	3/16/2024 4:32
MSD L1706901-06 WG2240337	940	200	3A-4	ALG3788	3/16/2024 1:12	3/16/2024 4:32
DUP L1708671-01 WG2240337	323	200	3B-1	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1706901-06 WG2240337	171	200	3B-2	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708270-01 WG2240337	215	200	3B-3	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708270-02 WG2240337	348	200	3B-4	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708270-03 WG2240337	237	200	3C-1	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708310-01 WG2240337	331	200	3C-2	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708418-01 WG2240337	279	200	3C-3	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708557-01 WG2240337	213	200	3C-4	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708557-02 WG2240337	263	200	3D-1	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708557-03 WG2240337	203	200	3D-2	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708671-01 WG2240337	337	200	3D-3	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708671-02 WG2240337	300	200	3D-4	ALG3788	3/16/2024 1:12	3/16/2024 4:32
L1708671-03 WG2240337	257	200	4A-1	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708671-04 WG2240337	438	200	4A-2	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708671-05 WG2240337	279	200	4A-3	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708671-06 WG2240337	512	200	4A-4	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708671-07 WG2240337	465	200	4B-1	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708671-08 WG2240337	499	200	4B-3	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708671-09 WG2240337	510	200	4B-4	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1708695-01 WG2240337	416	200	4C-1	ALG3788	3/16/2024 1:13	3/16/2024 4:33
L1709472-01 WG2240337	418	200	4C-2	ALG3788	3/16/2024 1:13	3/16/2024 4:33

	DET1	DET2	DET3	DET 4	DET 5	DET 6	DET 7	DET 8
	y = 0.0004x2 - 0.1002x + 45.345	y = 0.0004x2 - 0.1104x + 48.035	y = 0.0003x2 - 0.0849x + 41.689	y = 0.0003x2 - 0.0939x + 46.602	y = 0.0003x2 - 0.0966x + 46.862	y = 0.0003x2 - 0.0989x + 47.176	y = 0.0004x2 - 0.1043x + 47.156	y = 0.0003x2 - 0.0959x + 46.796
A	0.0003	0.0004	0.0003	0.0003	0.0003	0.0003	0.0004	0.0003
B	-0.1002	-0.1104	-0.0849	-0.0939	-0.0966	-0.0989	-0.1043	-0.0959
C	45.345	48.035	41.689	46.602	46.862	47.176	47.156	46.796

SAMPLE ID	NET WT. mg	3A-1 BETA EFF	3A-2 BETA EFF	3A-3 BETA EFF	3A-4 BETA EFF	3B-1 BETA EFF	3B-2 BETA EFF	3B-3 BETA EFF	3B-4 BETA EFF
BLANK WG2240337	31.57	42.5	44.9	39.3	43.9	44.1	44.4	44.3	44.1
LCS WG2240337	33.17	42.4	44.8	39.2	43.8	44.0	44.2	44.1	43.9
MS L1706901-06 WG2240337	35.42	42.2	44.6	39.1	43.7	43.8	44.0	44.0	43.8
MSD L1706901-06 WG2240337	30.48	42.6	45.0	39.4	44.0	44.2	44.4	44.3	44.2
DUP L1708671-01 WG2240337	29.55	42.6	45.1	39.4	44.1	44.3	44.5	44.4	44.2
L1706901-06 WG2240337	32.21	42.4	44.9	39.3	43.9	44.1	44.3	44.2	44.0
L1708270-01 WG2240337	28.87	42.7	45.2	39.5	44.1	44.3	44.6	44.5	44.3
L1708270-02 WG2240337	28.25	42.8	45.2	39.5	44.2	44.4	44.6	44.5	44.3
L1708270-03 WG2240337	34.99	42.2	44.7	39.1	43.7	43.8	44.1	44.0	43.8
L1708310-01 WG2240337	32.92	42.4	44.8	39.2	43.8	44.0	44.2	44.2	44.0
L1708418-01 WG2240337	34.45	42.2	44.7	39.1	43.7	43.9	44.1	44.0	43.8
L1708557-01 WG2240337	33.75	42.3	44.8	39.2	43.8	43.9	44.2	44.1	43.9
L1708557-02 WG2240337	31.46	42.5	45.0	39.3	43.9	44.1	44.4	44.3	44.1
L1708557-03 WG2240337	28.67	42.7	45.2	39.5	44.2	44.3	44.6	44.5	44.3
L1708671-01 WG2240337	31.42	42.5	45.0	39.3	43.9	44.1	44.4	44.3	44.1
L1708671-02 WG2240337	31.39	42.5	45.0	39.3	44.0	44.1	44.4	44.3	44.1
L1708671-03 WG2240337	35.78	42.1	44.6	39.0	43.6	43.8	44.0	43.9	43.7
L1708671-04 WG2240337	28.73	42.7	45.2	39.5	44.2	44.3	44.6	44.5	44.3
L1708671-05 WG2240337	32.58	42.4	44.9	39.2	43.9	44.0	44.3	44.2	44.0
L1708671-06 WG2240337	33.54	42.3	44.8	39.2	43.8	44.0	44.2	44.1	43.9
L1708671-07 WG2240337	33.24	42.3	44.8	39.2	43.8	44.0	44.2	44.1	43.9
L1708671-08 WG2240337	33.6	42.3	44.8	39.2	43.8	44.0	44.2	44.1	43.9
L1708671-09 WG2240337	31.72	42.5	44.9	39.3	43.9	44.1	44.3	44.3	44.1
L1708695-01 WG2240337	33.46	42.3	44.8	39.2	43.8	44.0	44.2	44.1	43.9
L1709472-01 WG2240337	29.48	42.7	45.1	39.4	44.1	44.3	44.5	44.4	44.2

0
0
0

eff matched working sheet

	DET9	DET10	DET11	DET 12	DET 13	DET 14	DET 15	DET 16
	y = 0.0004x2 - 0.1136x +47.523	y = 0.0003x2 - 0.0994x + 47.177	y = 0.0004x2 - 0.1072x + 47.795	y = 0.0003x2 - 0.1004x + 46.850	y = 0.0004x2 - 0.0988x + 47.134	y = 0.0003x2 - 0.0859x + 46.345	y = 0.0004x2 - 0.0998x + 46.522	y = 0.0004x2 - 0.1024x + 46.856
A	0.0004	0.0003	0.0004	0.0003	0.0004	0.0003	0.0004	0.0004
B	-0.1136	-0.0994	-0.1072	-0.1004	-0.0988	-0.0859	-0.0998	-0.1024
C	47.523	47.177	47.795	46.85	47.134	46.345	46.522	46.856

SAMPLE ID	NET WT. mg	3C-1 BETA EFF	3C-2 BETA EFF	3C-3 BETA EFF	3C-4 BETA EFF	3D-1 BETA EFF	3D-2 BETA EFF	3D-3 BETA EFF	3D-4 BETA EFF
BLANK WG2240337	31.57	44.3	44.3	44.8	44.0	44.4	43.9	43.8	44.0
LCS WG2240337	33.17	44.2	44.2	44.7	43.8	44.3	43.8	43.7	43.9
MS L1706901-06 WG2240337	35.42	44.0	44.0	44.5	43.7	44.1	43.7	43.5	43.7
MSD L1706901-06 WG2240337	30.48	44.4	44.4	44.9	44.1	44.5	44.0	43.9	44.1
DUP L1708671-01 WG2240337	29.55	44.5	44.5	45.0	44.1	44.6	44.1	43.9	44.2
L1706901-06 WG2240337	32.21	44.3	44.3	44.8	43.9	44.4	43.9	43.7	44.0
L1708270-01 WG2240337	28.87	44.6	44.6	45.0	44.2	44.6	44.1	44.0	44.2
L1708270-02 WG2240337	28.25	44.6	44.6	45.1	44.3	44.7	44.2	44.0	44.3
L1708270-03 WG2240337	34.99	44.0	44.1	44.5	43.7	44.2	43.7	43.5	43.8
L1708310-01 WG2240337	32.92	44.2	44.2	44.7	43.9	44.3	43.8	43.7	43.9
L1708418-01 WG2240337	34.45	44.1	44.1	44.6	43.7	44.2	43.7	43.6	43.8
L1708557-01 WG2240337	33.75	44.1	44.2	44.6	43.8	44.3	43.8	43.6	43.9
L1708557-02 WG2240337	31.46	44.3	44.3	44.8	44.0	44.4	43.9	43.8	44.0
L1708557-03 WG2240337	28.67	44.6	44.6	45.1	44.2	44.6	44.1	44.0	44.2
L1708671-01 WG2240337	31.42	44.3	44.4	44.8	44.0	44.4	43.9	43.8	44.0
L1708671-02 WG2240337	31.39	44.4	44.4	44.8	44.0	44.4	43.9	43.8	44.0
L1708671-03 WG2240337	35.78	44.0	44.0	44.5	43.6	44.1	43.7	43.5	43.7
L1708671-04 WG2240337	28.73	44.6	44.6	45.0	44.2	44.6	44.1	44.0	44.2
L1708671-05 WG2240337	32.58	44.2	44.3	44.7	43.9	44.3	43.9	43.7	43.9
L1708671-06 WG2240337	33.54	44.2	44.2	44.6	43.8	44.3	43.8	43.6	43.9
L1708671-07 WG2240337	33.24	44.2	44.2	44.7	43.8	44.3	43.8	43.6	43.9
L1708671-08 WG2240337	33.6	44.2	44.2	44.6	43.8	44.3	43.8	43.6	43.9
L1708671-09 WG2240337	31.72	44.3	44.3	44.8	44.0	44.4	43.9	43.8	44.0
L1708695-01 WG2240337	33.46	44.2	44.2	44.7	43.8	44.3	43.8	43.6	43.9
L1709472-01 WG2240337	29.48	44.5	44.5	45.0	44.2	44.6	44.1	43.9	44.2
0	0	47.5	47.2	47.8	46.9	47.1	46.3	46.5	46.9

		DET1	DET2	DET3	DET 4	DET 5	DET 6	DET 7	DET 8
	R=	-1	-1	-1	-1	-1	-1	-1	-1
0-9.33	B=	-0.30128	-0.202656887	-0.197764281	-0.221025618	-0.157250071	-0.193215016	-0.061715503	-0.184631497
	A=	98.27777	96.76738121	95.74790892	99.32366995	98.15203761	99.22516634	97.86934027	96.92915136
	R=	-1	-1	-1	-1	-1	-1	-1	-1
9.33-20	B=	-0.06567	-0.103426499	-0.074229904	-0.162420133	-0.171126572	-0.170976461	-0.116411103	-0.098698001
	A=	96.07955	95.84156169	94.59533317	98.77688077	98.28150537	99.01768063	98.37965021	96.12739185
	R=	-1	-1	-1	-1	-1	-1	-1	-1
20-29.94	B=	-0.79271	-0.871983562	-0.830732931	-0.943849897	-0.852244491	-0.843784888	-0.886566305	-0.922660607
	A=	110.6202	111.212703	109.7253937	114.4054761	111.9038637	112.4738492	113.7827543	112.606644
	R=	-1	-1	-1	1	-1	-1	-1	1
29.94-40.62	B=	-0.08796	-0.0695863	-0.071760872	0.005848849	-0.053014563	-0.083008658	-0.087432787	0.027444597
	A=	89.52004	87.18892894	87.00177029	85.97149562	87.9749197	89.69620883	89.85669673	84.16049415
	R=	1	1	1	1	1	1	1	1
40.62-54.51	B=	0.219439	0.299061857	0.28332176	0.288164867	0.289433299	0.299811386	0.295948432	0.25801076
	A=	77.03359	72.21444077	72.57831378	74.50381896	74.06468753	74.14605865	74.28375164	74.79489661
	R=	-1	-1	-1	-1	-1	-1	-1	-1
54.51-65.39	B=	-0.36126	-0.479106872	-0.45430137	-0.486025914	-0.41897009	-0.491914461	-0.500379247	-0.449148891
	A=	108.6876	114.6324182	112.7861506	116.7049584	112.6797563	117.3030346	117.6915734	113.3421692
	R=	1	1	1	1	1	1	1	1
65.39-76.46	B=	0.356509	0.204732052	0.114809105	0.221588083	0.179918238	0.219924183	0.240252701	0.191059134
	A=	61.75257	69.91619099	75.57201664	70.43407916	73.51844854	70.75590565	69.26165032	71.47896644
	R=	-1	1	1	1	1	1	1	1
76.46-86.61	B=	-0.3818	0.040633872	0.263922918	0.153540807	0.197172906	0.168531944	0.078348418	0.225892769
	A=	118.2037	82.46313779	64.17077449	75.6369739	72.19915658	74.68535623	81.64085181	68.81558666
	R=	-1	-1	-1	-1	-1	-1	-1	-1
86.61-97.4	B=	-0.24515	-0.410960521	-0.010762015	-0.496388651	-0.641044973	-0.546413464	-0.445547409	-0.61825919
	A=	106.3685	121.5757282	87.96123649	131.9273642	144.7972071	136.6067781	127.0154694	141.9275879
	R=	1	1	1	-1	1	1	1	1
97.4-109.7	B=	0.574849	0.536303929	0.049092286	-0.025457671	0.615411526	0.563194001	0.531160307	0.520612628
	A=	26.50052	29.31217077	82.13142757	86.05868677	22.41834414	28.53101092	31.88413778	31.0014728

	y = 0.0011x2 - 0.168x +	y = 0.0012x2 - 0.1750x +	y = 0.0012x2 - 0.1708x +	y = 0.0008x2 - 0.1447x +	y = 0.0012x2 - 0.1706x +	y = 0.0012x2 - 0.1813x +	y = 0.0011x2 - 0.1701x +	y = 0.0011x2 - 0.1627x + 48.566	
	A	0.0011	0.0012	0.0013	0.0008	0.0012	0.0012	0.0012	0.0011
	B	-0.1718	-0.1781	-0.1738	-0.1473	-0.1736	-0.1844	-0.1731	-0.1655
	C	49.988	49.44	49.928	50.176	50.102	50.653	50.33	49.422

SAMPLE ID	NET WT. mg	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF
=======	=====	=====	=====	=====	=====	=====	=====	=====	=====
BLANK WG2240337	31.57	45.7	45.0	45.7	46.3	45.8	46.0	46.1	45.3
LCS WG2240337	33.17	45.5	44.9	45.6	46.2	45.7	45.9	45.9	45.1
MS L1706901-06 WG2240337	35.42	45.3	44.6	45.4	46.0	45.5	45.6	45.7	44.9
MSD L1706901-06 WG2240337	30.48	45.8	45.1	45.8	46.4	45.9	46.1	46.2	45.4
DUP L1708671-01 WG2240337	29.55	45.9	45.2	45.9	46.5	46.0	46.3	46.3	45.5
L1706901-06 WG2240337	32.21	45.6	44.9	45.7	46.3	45.8	46.0	46.0	45.2
L1708270-01 WG2240337	28.87	45.9	45.3	46.0	46.6	46.1	46.3	46.3	45.6
L1708270-02 WG2240337	28.25	46.0	45.4	46.1	46.7	46.2	46.4	46.4	45.6
L1708270-03 WG2240337	34.99	45.3	44.7	45.4	46.0	45.5	45.7	45.7	45.0
L1708310-01 WG2240337	32.92	45.5	44.9	45.6	46.2	45.7	45.9	45.9	45.2
L1708418-01 WG2240337	34.45	45.4	44.7	45.5	46.1	45.5	45.7	45.8	45.0
L1708557-01 WG2240337	33.75	45.4	44.8	45.5	46.1	45.6	45.8	45.9	45.1
L1708557-02 WG2240337	31.46	45.7	45.0	45.7	46.3	45.8	46.0	46.1	45.3
L1708557-03 WG2240337	28.67	46.0	45.3	46.0	46.6	46.1	46.4	46.4	45.6
L1708671-01 WG2240337	31.42	45.7	45.0	45.8	46.3	45.8	46.0	46.1	45.3
L1708671-02 WG2240337	31.39	45.7	45.0	45.8	46.3	45.8	46.0	46.1	45.3
L1708671-03 WG2240337	35.78	45.2	44.6	45.4	45.9	45.4	45.6	45.7	44.9
L1708671-04 WG2240337	28.73	46.0	45.3	46.0	46.6	46.1	46.3	46.3	45.6
L1708671-05 WG2240337	32.58	45.6	44.9	45.6	46.2	45.7	45.9	46.0	45.2
L1708671-06 WG2240337	33.54	45.5	44.8	45.6	46.1	45.6	45.8	45.9	45.1
L1708671-07 WG2240337	33.24	45.5	44.8	45.6	46.2	45.7	45.8	45.9	45.1
L1708671-08 WG2240337	33.6	45.5	44.8	45.6	46.1	45.6	45.8	45.9	45.1
L1708671-09 WG2240337	31.72	45.6	45.0	45.7	46.3	45.8	46.0	46.0	45.3
L1708695-01 WG2240337	33.46	45.5	44.8	45.6	46.1	45.6	45.8	45.9	45.1
L1709472-01 WG2240337	29.48	45.9	45.2	45.9	46.5	46.0	46.3	46.3	45.5
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4
0	0	50.0	49.4	49.9	50.2	50.1	50.7	50.3	49.4

		DET9	DET10	DET11	DET 12	DET 13	DET 14	DET 15	DET 16
	R=	-1	-1	-1	1	-1	-1	-1	-1
0-9.33	B=	-0.56325	-0.090813633	-0.059655458	0.02017127	-0.039140847	-0.018282896	-0.046179333	-0.000515011
	A=	46.72034	47.82390181	47.04548306	46.65066779	47.95924417	48.77690419	48.52063465	47.63089881
	R=	1	1	-1	-1	-1	-1	-1	-1
9.33-20	B=	0.046685	0.024993486	-0.001951443	-0.023267209	-0.098247668	-0.067549963	-0.119863656	-0.068075351
	A=	41.02965	46.74342139	46.5071046	47.0559488	48.51071081	49.23656593	49.20810938	48.26123678
	R=	1	-1	-1	-1	-1	-1	-1	-1
20-29.94	B=	0.062279	-0.43482355	-0.385838426	-0.369886033	-0.358928834	-0.469387068	-0.343620982	-0.416292993
	A=	40.71776	55.93976213	54.18484425	53.98832527	53.72433412	57.27330803	53.68325591	55.22558962
	R=	1	-1	-1	-1	-1	1	-1	-1
29.94-40.62	B=	0.119077	-0.084583348	-0.027369612	-0.074685297	-0.03321846	0.006973627	-0.011472741	-0.005248967
	A=	39.01724	45.45357046	43.45228796	45.15001523	43.97256553	43.01106882	43.73873757	42.91893146
	R=	1	1	1	1	1	1	1	1
40.62-54.51	B=	0.038572	0.17146905	0.0974387	0.104242113	0.116292224	0.154287552	0.113870671	0.133127787
	A=	42.28734	35.05272205	38.38257432	37.88198386	37.89944154	37.02717721	38.64728817	37.29806775
	R=	-1	-1	1	1	1	-1	1	-1
54.51-65.39	B=	-0.1799	-0.05019986	0.001987384	0.026572066	0.039085228	-0.04158786	0.026645673	-0.000588855
	A=	54.19597	47.13589433	43.58562556	42.11577808	42.10799489	47.70434592	43.40192278	44.58696186
	R=	1	-1	-1	-1	-1	-1	-1	-1
65.39-76.46	B=	0.063662	-0.139622919	-0.195689117	-0.216379352	-0.27743725	-0.173913729	-0.187876021	-0.22817134
	A=	38.26976	52.98326816	56.51169196	58.00237135	62.80539975	56.35713445	57.42949634	59.46858055
	R=	1	1	1	1	1	1	1	1
76.46-86.61	B=	0.069117	0.123242929	0.158511552	0.117483176	0.142573606	0.068012423	0.071010651	0.092392746
	A=	37.85268	32.88454544	29.42950883	32.47524242	30.69136967	37.85946088	37.63502147	34.95825054
	R=	-1	1	1	1	1	1	1	1
86.61-97.4	B=	-0.06531	0.022043575	0.011504223	0.055591373	0.062790789	0.061454815	0.044829358	0.083349948
	A=	49.49578	41.6494215	42.16181364	37.83569154	37.60135943	38.42741531	39.90258323	35.74144727
	R=	1	-1	-1	-1	-1	-1	-1	-1
97.4-109.7	B=	0.250996	-0.230291004	-0.213232411	-0.183933301	-0.219092233	-0.256985748	-0.212841756	-0.236020607
	A=	18.68719	66.22680945	64.05116173	61.16539473	65.05676578	69.44352617	64.99974971	66.8481394

y = 0.0011x2 - 0.171x + y = 0.0011x2 - 0.1655x + y = 0.0012x2 - 0.1704x + y = 0.0011x2 - 0.1600x + y = 0.0011x2 - 0.1617x + y = 0.0009x2 - 0.1458x + y = 0.0010x2 - 0.1544x + y = 0.0011x2 - 0.1663x + 48.087

A	0.0012	0.0011	0.0012	0.001	0.0011	0.001	0.001	0.0011
B	-0.1741	-0.1684	-0.1734	-0.1628	-0.1645	-0.1484	-0.1572	-0.1693
C	49.608	48.701	49.179	48.958	49.436	49.967	49.054	48.936

SAMPLE ID	WT. mg	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF	BETA EFF
BLANK WG2240337	31.57	45.3	44.5	44.9	44.8	45.3	46.3	45.1	44.7
LCS WG2240337	33.17	45.2	44.3	44.7	44.7	45.2	46.1	44.9	44.5
MS L1706901-06 WG2240337	35.42	44.9	44.1	44.5	44.4	45.0	46.0	44.7	44.3
MSD L1706901-06 WG2240337	30.48	45.4	44.6	45.0	44.9	45.4	46.4	45.2	44.8
DUP L1708671-01 WG2240337	29.55	45.5	44.7	45.1	45.0	45.5	46.5	45.3	44.9
L1706901-06 WG2240337	32.21	45.2	44.4	44.8	44.8	45.3	46.2	45.0	44.6
L1708270-01 WG2240337	28.87	45.6	44.8	45.2	45.1	45.6	46.5	45.3	45.0
L1708270-02 WG2240337	28.25	45.6	44.8	45.2	45.2	45.7	46.6	45.4	45.0
L1708270-03 WG2240337	34.99	45.0	44.2	44.6	44.5	45.0	46.0	44.8	44.4
L1708310-01 WG2240337	32.92	45.2	44.3	44.8	44.7	45.2	46.2	45.0	44.6
L1708418-01 WG2240337	34.45	45.0	44.2	44.6	44.5	45.1	46.0	44.8	44.4
L1708557-01 WG2240337	33.75	45.1	44.3	44.7	44.6	45.1	46.1	44.9	44.5
L1708557-02 WG2240337	31.46	45.3	44.5	44.9	44.8	45.3	46.3	45.1	44.7
L1708557-03 WG2240337	28.67	45.6	44.8	45.2	45.1	45.6	46.5	45.4	45.0
L1708671-01 WG2240337	31.42	45.3	44.5	44.9	44.8	45.4	46.3	45.1	44.7
L1708671-02 WG2240337	31.39	45.3	44.5	44.9	44.8	45.4	46.3	45.1	44.7
L1708671-03 WG2240337	35.78	44.9	44.1	44.5	44.4	45.0	45.9	44.7	44.3
L1708671-04 WG2240337	28.73	45.6	44.8	45.2	45.1	45.6	46.5	45.4	45.0
L1708671-05 WG2240337	32.58	45.2	44.4	44.8	44.7	45.2	46.2	45.0	44.6
L1708671-06 WG2240337	33.54	45.1	44.3	44.7	44.6	45.2	46.1	44.9	44.5
L1708671-07 WG2240337	33.24	45.1	44.3	44.7	44.7	45.2	46.1	44.9	44.5
L1708671-08 WG2240337	33.6	45.1	44.3	44.7	44.6	45.2	46.1	44.9	44.5
L1708671-09 WG2240337	31.72	45.3	44.5	44.9	44.8	45.3	46.3	45.1	44.7
L1708695-01 WG2240337	33.46	45.1	44.3	44.7	44.6	45.2	46.1	44.9	44.5
L1709472-01 WG2240337	29.48	45.5	44.7	45.1	45.0	45.5	46.5	45.3	44.9
0	0	49.6	48.7	49.2	49.0	49.4	50.0	49.1	48.9
0	0	49.6	48.7	49.2	49.0	49.4	50.0	49.1	48.9
0	0	49.6	48.7	49.2	49.0	49.4	50.0	49.1	48.9
0	0	49.6	48.7	49.2	49.0	49.4	50.0	49.1	48.9
0	0	49.6	48.7	49.2	49.0	49.4	50.0	49.1	48.9

GAS COUNTER G542 Unit: 3 MONTH: Mar-24 BETA BACKGROUND
Beta Background

1 Count Time: 100 min

	3A-1		3A-2		3A-3		3A-4		3B-1		3B-2		3B-3		3B-4		3C-1		3C-2		3C-3		3C-4		3D-1		3D-2		3D-3		3D-4	
DATE	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM
1	159	**1.59**	149	**1.49**	106	**1.06**	158	**1.58**	152	**1.52**	108	**1.08**	129	**1.29**	170	**1.70**	107	**1.07**	142	**1.42**	134	**1.34**	98	**0.98**	100	**1.00**	88	**0.88**	93	**0.93**	92	**0.92**
2																																
3																																
4	149.9	**1.50**	161.8	**1.62**	111	**1.11**	139.4	**1.39**	146.9	**1.47**	119.5	**1.20**	126.9	**1.27**	171.8	**1.72**	100.6	**1.01**	142.2	**1.42**	134.1	**1.34**	94.9	**0.95**	99.6	**1.00**	85.1	**0.85**	98	**0.98**	99.5	**1.00**
5	157	**1.57**	169	**1.69**	84	**0.84**	148	**1.48**	89	**0.89**	91	**0.91**	73	**0.73**	174	**1.74**	105	**1.05**	144	**1.44**	125	**1.25**	91	**0.91**	97	**0.97**	89	**0.89**	85	**0.85**	106	**1.06**
6	152	**1.52**	161	**1.61**	95	**0.95**	135	**1.35**	86	**0.86**	78	**0.78**	97	**0.97**	183	**1.83**	92	**0.92**	135	**1.35**	123	**1.23**	97	**0.97**	109	**1.09**	75	**0.75**	96	**0.96**	93	**0.93**
7	142	**1.42**	163	**1.63**	103	**1.03**	139	**1.39**	99	**0.99**	90	**0.90**	89	**0.89**	166	**1.66**	90	**0.90**	149	**1.49**	151	**1.51**	99	**0.99**	91	**0.91**	84	**0.84**	103	**1.03**	101	**1.01**
8	152	**1.52**	164	**1.64**	91	**0.91**	153	**1.53**	85	**0.85**	95	**0.95**	86	**0.86**	155	**1.55**	89	**0.89**	128	**1.28**	134	**1.34**	87	**0.87**	104	**1.04**	75	**0.75**	86	**0.86**	95	**0.95**
9																																
10																																
11	162	**1.62**	155	**1.55**	81	**0.81**	124	**1.24**	87	**0.87**	82	**0.82**	86	**0.86**	174	**1.74**	108	**1.08**	156	**1.56**	115	**1.15**	94	**0.94**	105	**1.05**	108	**1.08**	93	**0.93**	107	**1.07**
12	136	**1.36**	171	**1.71**	98	**0.98**	134	**1.34**	88	**0.88**	80	**0.80**	85	**0.85**	176	**1.76**	114	**1.14**	124	**1.24**	158	**1.58**	99	**0.99**	110	**1.10**	93	**0.93**	94	**0.94**	99	**0.99**
13	144	**1.44**	151	**1.51**	94	**0.94**	151	**1.51**	86	**0.86**	100	**1.00**	98	**0.98**	182	**1.82**	95	**0.95**	142	**1.42**	146	**1.46**	83	**0.83**	105	**1.05**	92	**0.92**	104	**1.04**	110	**1.10**
14	136	**1.36**	211	**2.11**	97	**0.97**	138	**1.38**	103	**1.03**	9	**0.79**	76	**0.76**	170	**1.70**	94	**0.94**	160	**1.60**	139	**1.39**	91	**0.91**	93	**0.93**	96	**0.96**	93	**0.93**	104	**1.04**
15	143	**1.43**	162	**1.62**	79	**0.79**	141	**1.41**	79	**0.79**	0	**0.90**	87	**0.87**	187	**1.87**	95	**0.95**	131	**1.31**	154	**1.54**	100	**1.00**	97	**0.97**	83	**0.83**	110	**1.10**	85	**0.85**
16																																
17																																
18	136	**1.36**	205	**2.05**	90	**0.90**	137	**1.37**	103	**1.03**	82	**0.82**	117	**1.17**	169	**1.69**	95	**0.95**	157	**1.57**	133	**1.33**	82	**0.82**	89	**0.89**	87	**0.87**	111	**1.11**	127	**1.27**
19																																
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31																																
average	**147**	**1.47**	**169**	**1.69**	**94**	**0.94**	**141**	**1.41**	**100**	**1.00**	**91**	**0.91**	**96**	**0.96**	**173**	**1.73**	**99**	**0.99**	**143**	**1.43**	**137**	**1.37**	**93**	**0.93**	**100**	**1.00**	**88**	**0.88**	**97**	**0.97**	**102**	**1.02**
std dev	9	0.09	20	0.20	10	0.10	9	0.09	24	0.24	13	0.13	19	0.19	9	0.09	8	0.08	12	0.12	13	0.13	6	0.06	7	0.07	9	0.09	8	0.08	11	0.11
UCL	**175**	**1.75**	**227**	**2.27**	**124**	**1.24**	**170**	**1.70**	**173**	**1.73**	**130**	**1.30**	**152**	**1.52**	**199**	**1.99**	**123**	**1.23**	**177**	**1.77**	**176**	**1.76**	**112**	**1.12**	**121**	**1.21**	**115**	**1.15**	**122**	**1.22**	**134**	**1.34**
UWL	**166**	**1.66**	**208**	**2.08**	**114**	**1.14**	**160**	**1.60**	**149**	**1.49**	**117**	**1.17**	**133**	**1.33**	**190**	**1.90**	**115**	**1.15**	**166**	**1.66**	**163**	**1.63**	**106**	**1.06**	**114**	**1.14**	**106**	**1.06**	**114**	**1.14**	**123**	**1.23**
LWL	**129**	**1.29**	**129**	**1.29**	**74**	**0.74**	**123**	**1.23**	**52**	**0.52**	**66**	**0.66**	**58**	**0.58**	**156**	**1.56**	**83**	**0.83**	**119**	**1.19**	**111**	**1.11**	**80**	**0.80**	**86**	**0.86**	**70**	**0.70**	**80**	**0.80**	**80**	**0.80**
LCL	**120**	**1.20**	**110**	**1.10**	**65**	**0.65**	**113**	**1.13**	**28**	**0.28**	**53**	**0.53**	**40**	**0.40**	**148**	**1.48**	**75**	**0.75**	**108**	**1.08**	**98**	**0.98**	**74**	**0.74**	**79**	**0.79**	**61**	**0.61**	**72**	**0.72**	**69**	**0.69**

bkg cpm match working sheet

03_24_Unit3.xls

GAS COUNTER G542 Unit: 3 MONTH: March-24
Beta Source Check
23F05880

BETA Activity: **8053.86** **dpm** Count Time: **5** **min**

	3A-1		3A-2		3A-3		3A-4		3B-1		3B-2		3B-3		3B-4		3C-1		3C-2		3C-3		3C-4		3D-1		3D-2		3D-3		3D-4		AVG
DATE	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	
1	17973	**44.6%**	16877	**41.9%**			18036	**44.8%**							17889	**44.4%**	18575	**46.1%**	16631	**41.3%**	18860	**46.8%**	18526	**46.0%**	18540	**46.0%**	18010	**44.7%**	16695	**41.5%**	18282	**45.4%**	1	43.0%
2																																	2	43.0%
3																																	3	43.0%
4	16794	**41.7%**	17080	**42.4%**	17994	**44.7%**	17933	**44.5%**	18503	**45.9%**	16473	**40.9%**	18442	**45.8%**	18546	**46.1%**	18555	**46.1%**	18211	**45.2%**	16898	**42.0%**	17898	**44.4%**	17368	**43.1%**	17048	**42.3%**	17737	**44.0%**	18135	**45.0%**	4	43.0%
5	16779	**41.7%**	18531	**46.0%**	16800	**41.7%**	18107	**45.0%**	18163	**45.1%**	16610	**41.2%**	18229	**45.3%**	18035	**44.8%**	18526	**46.0%**	17983	**44.7%**	18577	**46.1%**	16787	**41.7%**	17688	**43.9%**	18196	**45.2%**	16399	**40.7%**	18143	**45.1%**	5	43.0%
6	17767	**44.1%**	18458	**45.8%**	18172	**45.1%**	16956	**42.1%**	17282	**42.9%**	18248	**45.3%**	16378	**40.7%**	17755	**44.1%**	18623	**46.2%**	16909	**42.0%**	18568	**46.1%**	18229	**45.3%**	18626	**46.3%**	18038	**44.8%**	18021	**44.8%**	16577	**41.2%**	6	43.0%
7																																	7	43.0%
8	17611	**43.7%**	17213	**42.7%**	18170	**45.1%**	18162	**45.1%**	18190	**45.2%**	17841	**44.3%**	18103	**45.0%**	16601	**41.2%**	17535	**43.5%**	18063	**44.9%**	16915	**42.0%**	17882	**44.4%**	18691	**46.4%**	16885	**41.9%**	18440	**45.8%**	18400	**45.7%**	8	43.0%
9																																	9	43.0%
10																																	10	43.0%
11	17358	**43.1%**	18640	**46.3%**	18064	**44.9%**	18153	**45.1%**	13600	**33.8%**	15506	**38.5%**	14714	**36.5%**	13921	**34.6%**	16931	**42.0%**	18174	**45.1%**	18587	**46.2%**	17174	**42.6%**	16903	**42.0%**	18172	**45.1%**	18067	**44.9%**	17098	**42.5%**	11	43.0%
12	16144	**40.1%**	18614	**46.2%**	16561	**41.1%**	17862	**44.4%**	16370	**40.7%**	17305	**43.0%**	18463	**45.8%**	18380	**45.6%**	18510	**46.0%**	18384	**45.7%**	17450	**43.3%**	16251	**40.4%**	18257	**45.3%**	16458	**40.9%**	17730	**44.0%**	16893	**42.0%**	12	43.0%
13	17635	**43.8%**	18741	**46.5%**	18320	**45.5%**	18739	**46.5%**	17759	**44.1%**	18652	**46.3%**	17797	**44.2%**	18056	**44.8%**	17627	**43.8%**	18468	**45.9%**	18526	**46.0%**	18336	**45.5%**	18256	**45.3%**	17405	**43.2%**	16669	**41.4%**	16741	**41.6%**	13	43.0%
14	17453	**43.3%**	18461	**45.8%**	18250	**45.3%**	18264	**45.4%**	16528	**41.0%**	18427	**45.8%**	16675	**41.4%**	17229	**42.8%**	16956	**42.1%**	18471	**45.9%**	17008	**42.2%**	18161	**45.1%**	18199	**45.2%**	17868	**44.4%**	17217	**42.8%**	18185	**45.2%**	14	43.0%
15	17539	**43.6%**	18781	**46.6%**	16818	**41.8%**	18258	**45.3%**	16684	**41.4%**	16779	**41.7%**	18466	**45.9%**	17799	**44.2%**	18466	**45.9%**	18808	**46.7%**	18531	**46.0%**	17286	**42.9%**	18444	**45.8%**	18313	**45.5%**	18095	**44.9%**	17216	**42.8%**	15	43.0%
16																																	16	43.0%
17																																	17	43.0%
18	17302	**43.0%**	16961	**42.1%**	16632	**41.3%**	17823	**44.3%**	18373	**45.6%**	17014	**42.3%**	18368	**45.6%**	18044	**44.8%**	17199	**42.7%**	18094	**44.9%**	18475	**45.9%**	18084	**44.9%**	18342	**45.5%**	18038	**44.8%**	18245	**45.3%**	16823	**41.8%**	18	43.0%
19																																	19	43.0%
20																																	20	43.0%
21																																	21	43.0%
22																																	22	43.0%
23																																	23	43.0%
24																																	24	43.0%
25																																	25	43.0%
26																																	26	43.0%
27																																	27	43.0%
28																																	28	43.0%
29																																	29	43.0%
30																																	30	43.0%
31																																	31	43.0%
average	**17305**	**43.0%**	**18032**	**44.8%**	**17578**	**43.7%**	**18026.6**	**44.8%**	**17145.2**	**42.6%**	**17285.5**	**42.9%**	**17563.5**	**43.6%**	**17478**	**43.4%**	**17955**	**44.6%**	**18018**	**44.7%**	**18036**	**44.8%**	**17692**	**43.9%**	**18119**	**45.0%**	**17676**	**43.9%**	**17574**	**43.6%**	**17499**	**43.5%**		
std dev	532	1.32%	803	0.02	762	0.02	434	0.01	1477	0.04	1001	0.02	1254	0.03	1294	0.03	706	1.75%	663	0.02	787	0.02	720	0.02	565	1.40%	625	0.02	712	0.018	721	0.018		
UCL	**18900**	**46.9%**	**20441**	**50.8%**	**19864**	**49.3%**	**19328**	**48.0%**	**21577**	**53.6%**	**20289**	**50.4%**	**21325**	**53.0%**	**21360**	**53.0%**	**20074**	**49.8%**	**20006**	**49.7%**	**20396**	**50.6%**	**19851**	**49.3%**	**19814**	**49.2%**	**19551**	**48.6%**	**19709**	**48.9%**	**19664**	**48.8%**		
UWL	**18368**	**45.6%**	**19638**	**48.8%**	**19102**	**47.4%**	**18894**	**46.9%**	**20099**	**49.9%**	**19288**	**47.9%**	**20071**	**49.8%**	**20066**	**49.8%**	**19367**	**48.1%**	**19343**	**48.0%**	**19609**	**48.7%**	**19132**	**47.5%**	**19249**	**47.8%**	**18926**	**47.0%**	**18997**	**47.2%**	**18942**	**47.0%**		
LWL	**16242**	**40.3%**	**16427**	**40.8%**	**16054**	**39.9%**	**17159**	**42.6%**	**14191**	**35.2%**	**15283**	**38.0%**	**15056**	**37.4%**	**14889**	**37.0%**	**16542**	**41.1%**	**16693**	**41.5%**	**16463**	**40.9%**	**16253**	**40.4%**	**16990**	**42.2%**	**16425**	**40.8%**	**16151**	**40.1%**	**16057**	**39.9%**		
LCL	**15710**	**39.0%**	**15624**	**38.8%**	**15292**	**38.0%**	**16725**	**41.5%**	**12714**	**31.6%**	**14282**	**35.5%**	**13802**	**34.3%**	**13595**	**33.8%**	**15836**	**39.3%**	**16030**	**39.8%**	**15676**	**38.9%**	**15533**	**38.6%**	**16425**	**40.8%**	**15800**	**39.2%**	**15439**	**38.3%**	**15335**	**38.1%**		

#VALUE!

#VALUE!

03_24_Unit3.xls

GAS COUNTER G542 Unit: 4 MONTH: Mar-24 BETA BACKGROUND
Beta Background

1 Count Time: 100 min

	4A-1		4A-2		4A-3		4A-4		4B-1		4B-2		4B-3		4B-4		4C-1		4C-2		4C-3		4C-4		4D-1		4D-2		4D-3		4D-4	
DATE	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM	COUNTS	CPM
1	121	**1.21**	164	**1.64**	130	**1.30**	180	**1.80**	174	**1.74**	171	**1.71**	175	**1.75**	206	**2.06**	214	**2.14**	163	**1.63**	150	**1.50**	143	**1.43**	106	**1.06**	188	**1.88**	122	**1.22**	152	**1.52**
2																																
3																																
4	118.2	**1.18**	179.5	**1.80**	131.9	**1.32**	170.7	**1.71**	194.3	**1.94**	175.6	**1.76**	183	**1.83**	218.3	**2.18**	187.7	**1.88**	168.4	**1.68**	148.4	**1.48**	149.1	**1.49**	101.3	**1.01**	204.9	**2.05**	117.1	**1.17**	158.5	**1.59**
5	117	**1.17**	170	**1.70**	135	**1.35**	179	**1.79**	203	**2.03**	153	**1.53**	163	**1.63**	223	**2.23**	182	**1.82**	156	**1.56**	134	**1.34**	139	**1.39**	108	**1.08**	204	**2.04**	114	**1.14**	155	**1.55**
6	100	**1.00**	153	**1.53**	123	**1.23**	163	**1.63**	175	**1.75**	168	**1.68**	183	**1.83**	228	**2.28**	187	**1.87**	186	**1.86**	151	**1.51**	153	**1.53**	72	**0.72**	237	**2.37**	120	**1.20**	144	**1.44**
7	118	**1.18**	173	**1.73**	162	**1.62**	188	**1.88**	228	**2.28**	170	**1.70**	180	**1.80**	214	**2.14**	180	**1.80**	154	**1.54**	152	**1.52**	113	**1.13**	92	**0.92**	220	**2.20**	123	**1.23**	141	**1.41**
8	126	**1.26**	160	**1.60**	123	**1.23**	172	**1.72**	178	**1.78**	202	**2.02**	200	**2.00**	203	**2.03**	198	**1.98**	150	**1.50**	133	**1.33**	152	**1.52**	99	**0.99**	218	**2.18**	124	**1.24**	149	**1.49**
9																																
10																																
11	110	**1.10**	178	**1.78**	129	**1.29**	174	**1.74**	183	**1.83**	186	**1.86**	178	**1.78**	186	**1.86**	186	**1.86**	166	**1.66**	184	**1.84**	131	**1.31**	91	**0.91**	188	**1.88**	109	**1.09**	160	**1.60**
12	119	**1.19**	191	**1.91**	139	**1.39**	183	**1.83**	204	**2.04**	168	**1.68**	178	**1.78**	198	**1.98**	218	**2.18**	168	**1.68**	172	**1.72**	118	**1.18**	103	**1.03**	211	**2.11**	95	**0.95**	145	**1.45**
13	105	**1.05**	176	**1.76**	118	**1.18**	153	**1.53**	197	**1.97**	177	**1.77**	181	**1.81**	227	**2.27**	198	**1.98**	184	**1.84**	173	**1.73**	156	**1.56**	101	**1.01**	220	**2.20**	129	**1.29**	153	**1.53**
14	115	**1.15**	186	**1.86**	127	**1.27**	179	**1.79**	215	**2.15**	166	**1.66**	192	**1.92**	208	**2.08**	200	**2.00**	171	**1.71**	140	**1.40**	150	**1.50**	97	**0.97**	194	**1.94**	113	**1.13**	156	**1.56**
15	124	**1.24**	178	**1.78**	149	**1.49**	158	**1.58**	186	**1.86**	234	**2.34**	178	**1.78**	184	**1.84**	191	**1.91**	205	**2.05**	162	**1.62**	147	**1.47**	99	**0.99**	213	**2.13**	93	**0.93**	175	**1.75**
16																																
17																																
18	114	**1.14**	166	**1.66**	126	**1.26**	180	**1.80**	206	**2.06**	156	**1.56**	188	**1.88**	208	**2.08**	192	**1.92**	173	**1.73**	152	**1.52**	138	**1.38**	100	**1.00**	212	**2.12**	119	**1.19**	124	**1.24**
19																																
20																																
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31																																
average	**116**	**1.16**	**173**	**1.73**	**133**	**1.33**	**173**	**1.73**	**195**	**1.95**	**177**	**1.77**	**182**	**1.82**	**209**	**2.09**	**194**	**1.94**	**170**	**1.70**	**154**	**1.54**	**141**	**1.41**	**97**	**0.97**	**209**	**2.09**	**115**	**1.15**	**151**	**1.51**
std dev	8	0.08	11	0.11	12	0.12	11	0.11	17	0.17	22	0.22	9	0.09	14	0.14	12	0.12	15	0.15	16	0.16	14	0.14	9	0.09	14	0.14	11	0.11	12	0.12
UCL	**138**	**1.38**	**206**	**2.06**	**170**	**1.70**	**205**	**2.05**	**246**	**2.46**	**243**	**2.43**	**209**	**2.09**	**252**	**2.52**	**230**	**2.30**	**217**	**2.17**	**202**	**2.02**	**182**	**1.82**	**126**	**1.26**	**252**	**2.52**	**148**	**1.48**	**188**	**1.88**
UWL	**131**	**1.31**	**195**	**1.95**	**157**	**1.57**	**194**	**1.94**	**229**	**2.29**	**221**	**2.21**	**200**	**2.00**	**238**	**2.38**	**218**	**2.18**	**201**	**2.01**	**186**	**1.86**	**168**	**1.68**	**116**	**1.16**	**238**	**2.38**	**137**	**1.37**	**176**	**1.76**
LWL	**101**	**1.01**	**151**	**1.51**	**108**	**1.08**	**152**	**1.52**	**162**	**1.62**	**133**	**1.33**	**163**	**1.63**	**180**	**1.80**	**171**	**1.71**	**140**	**1.40**	**123**	**1.23**	**113**	**1.13**	**79**	**0.79**	**180**	**1.80**	**93**	**0.93**	**126**	**1.26**
LCL	**93**	**0.93**	**140**	**1.40**	**96**	**0.96**	**142**	**1.42**	**145**	**1.45**	**111**	**1.11**	**154**	**1.54**	**165**	**1.65**	**159**	**1.59**	**124**	**1.24**	**107**	**1.07**	**99**	**0.99**	**69**	**0.69**	**166**	**1.66**	**81**	**0.81**	**114**	**1.14**

Data From Previous Month

average		**1.208**		**1.822**		**1.301**		**1.753**		**1.908**		**1.755**		**1.820**		**2.164**		**2.046**		**1.709**		**1.588**		**1.413**		**0.981**		**2.033**		**1.135**		**1.522**
std dev		**0.268**		**0.144**		**0.075**		**0.152**		**0.143**		**0.122**		**0.118**		**0.157**		**0.137**		**0.134**		**0.127**		**0.148**		**0.105**		**0.166**		**0.069**		**0.147**
UCL		**2.013**		**2.255**		**1.527**		**2.209**		**2.337**		**2.122**		**2.174**		**2.634**		**2.457**		**2.112**		**1.969**		**1.857**		**1.297**		**2.530**		**1.342**		**1.962**
UWL		**1.745**		**2.111**		**1.451**		**2.057**		**2.194**		**2.000**		**2.056**		**2.477**		**2.320**		**1.978**		**1.842**		**1.709**		**1.192**		**2.364**		**1.273**		**1.815**
LWL		**0.671**		**1.533**		**1.150**		**1.450**		**1.623**		**1.511**		**1.584**		**1.851**		**1.771**		**1.440**		**1.335**		**1.117**		**0.770**		**1.702**		**0.998**		**1.229**
LCL		**0.403**		**1.389**		**1.074**		**1.298**		**1.480**		**1.389**		**1.466**		**1.694**		**1.634**		**1.306**		**1.208**		**0.969**		**0.664**		**1.537**		**0.929**		**1.083**

GAS COUNTER G542 Unit: 4 MONTH: March-24
Beta Source Check
23F05880

BETA Activity: **8053.86** **dpm** Count Time: **5** **min**

	4A-1		4A-2		4A-3		4A-4		4B-1		4B-2		4B-3		4B-4		4C-1		4C-2		4C-3		4C-4		4D-1		4D-2		4D-3		4D-4	
DATE	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF	COUNTS	EFF
1	18965	**47.1%**	18158	**45.1%**	16003	**39.7%**	18896	**46.9%**	18488	**45.9%**	18572	**46.1%**	17132	**42.5%**	17745	**44.1%**	17962	**44.6%**	16265	**40.4%**	18055	**44.8%**	18580	**46.1%**	18343	**45.6%**	18611	**46.2%**	16731	**41.5%**	18267	**45.4%**
2																																
3																																
4	18983	**47.1%**	16674	**41.4%**	17708	**44.0%**	18697	**46.4%**	18690	**46.4%**	18846	**46.8%**	17248	**42.8%**	18389	**45.7%**	16592	**41.2%**	16200	**40.2%**	18010	**44.7%**	18059	**44.8%**	18986	**47.1%**	17278	**42.9%**	17695	**43.9%**	18415	**45.7%**
5	18710	**46.5%**	18113	**45.0%**	16731	**41.5%**	18990	**47.2%**	17728	**44.0%**	17120	**42.5%**	18598	**46.2%**	18111	**45.0%**	18487	**45.9%**	16683	**41.4%**	18386	**45.7%**	18605	**46.2%**	18350	**45.6%**	18604	**46.2%**	16894	**42.0%**	18713	**46.5%**
6	18876	**46.9%**	16984	**42.2%**	18356	**45.6%**	18938	**47.0%**	19039	**47.3%**	18576	**46.1%**	18949	**47.1%**	17181	**42.7%**	17409	**43.2%**	18531	**46.0%**	16483	**40.9%**	18238	**45.3%**	18619	**46.2%**	17187	**42.7%**	18821	**46.7%**	18901	**46.9%**
7																																
8	17762	**44.1%**	18242	**45.3%**	16611	**41.2%**	18727	**46.5%**	18949	**47.1%**	17214	**42.7%**	19121	**47.5%**	18752	**46.6%**	18656	**46.3%**	18239	**45.3%**	17873	**44.4%**	17102	**42.5%**	17773	**44.1%**	19016	**47.2%**	16812	**41.7%**	18239	**45.3%**
9																																
10																																
11	19032	**47.3%**	16511	**41.0%**	15690	**39.0%**	18744	**46.5%**	18668	**46.4%**	17076	**42.4%**	17771	**44.1%**	18040	**44.8%**	18195	**45.2%**	18024	**44.8%**	18667	**46.4%**	18309	**45.5%**	18034	**44.8%**	18084	**44.9%**	18234	**45.3%**	16448	**40.8%**
12	18199	**45.2%**	18247	**45.3%**	17736	**44.0%**	19029	**47.3%**	17162	**42.6%**	18068	**44.9%**	17320	**43.0%**	18720	**46.5%**	16609	**41.2%**	17843	**44.3%**	18298	**45.4%**	18243	**45.3%**	18643	**46.3%**	18710	**46.5%**	18439	**45.8%**	17941	**44.6%**
13	16950	**42.1%**	18011	**44.7%**	17195	**42.7%**	18696	**46.4%**	19031	**47.3%**	18731	**46.5%**	18988	**47.2%**	18368	**45.6%**	16956	**42.1%**	16234	**40.3%**	18284	**45.4%**	17043	**42.3%**	17005	**42.2%**	18836	**46.8%**	16089	**40.0%**	17396	**43.2%**
14	17743	**44.1%**	16645	**41.3%**	17539	**43.6%**	16937	**42.1%**	18732	**46.5%**	19172	**47.6%**	19269	**47.9%**	18262	**45.3%**	18140	**45.0%**	17869	**44.4%**	18385	**45.7%**	16594	**41.2%**	16921	**42.0%**	18799	**46.7%**	18277	**45.4%**	18146	**45.1%**
15	16518	**41.0%**	16843	**41.8%**	16997	**42.2%**	18808	**46.7%**	18707	**46.5%**	19422	**48.2%**	18515	**46.0%**	16718	**41.5%**	18090	**44.9%**	17730	**44.0%**	17649	**43.8%**	18304	**45.5%**	18806	**46.7%**	18701	**46.4%**	16145	**40.1%**	16400	**40.7%**
16																																
17																																
18	18100	**44.9%**	17155	**42.6%**	17731	**44.0%**	18614	**46.2%**	18838	**46.8%**	17421	**43.3%**	17494	**43.4%**	18479	**45.9%**	16753	**41.6%**	18317	**45.5%**	18382	**45.6%**	18578	**46.1%**	18494	**45.9%**	17998	**44.7%**	17875	**44.4%**	18279	**45.4%**
19																																
20																																
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average	**18167**	**45.1%**	**17417**	**43.3%**	**17118**	**42.5%**	**18643.3**	**46.3%**	**18548.4**	**46.1%**	**18201.6**	**45.2%**	**18218.6**	**45.2%**	**18070**	**44.9%**	**17623**	**43.8%**	**17449**	**43.3%**	**18043**	**44.8%**	**17969**	**44.6%**	**18179**	**45.1%**	**18348**	**45.6%**	**17456**	**43.3%**	**17922**	**44.5%**
std dev	860	2.14%	729	0.02	808	0.02	582	0.01	584	0.01	863	0.02	832	0.02	633	0.02	780	1.94%	912	0.02	590	0.01	709	0.02	690	1.71%	630	0.02	958	0.024	836	0.021
UCL	**20747**	**51.5%**	**19603**	**48.7%**	**19541**	**48.5%**	**20388**	**50.6%**	**20300**	**50.4%**	**20790**	**51.6%**	**20716**	**51.4%**	**19969**	**49.6%**	**19962**	**49.6%**	**20184**	**50.1%**	**19813**	**49.2%**	**20097**	**49.9%**	**20248**	**50.3%**	**20236**	**50.3%**	**20331**	**50.5%**	**20431**	**50.7%**
UWL	**19887**	**49.4%**	**18874**	**46.9%**	**18734**	**46.5%**	**19806**	**49.2%**	**19716**	**49.0%**	**19927**	**49.5%**	**19884**	**49.4%**	**19336**	**48.0%**	**19182**	**47.6%**	**19272**	**47.9%**	**19223**	**47.7%**	**19387**	**48.1%**	**19559**	**48.6%**	**19607**	**48.7%**	**19372**	**48.1%**	**19594**	**48.7%**
LWL	**16447**	**40.8%**	**15959**	**39.6%**	**15502**	**38.5%**	**17480**	**43.4%**	**17380**	**43.2%**	**16476**	**40.9%**	**16554**	**41.1%**	**16803**	**41.7%**	**16063**	**39.9%**	**15625**	**38.8%**	**16863**	**41.9%**	**16550**	**41.1%**	**16800**	**41.7%**	**17089**	**42.4%**	**15539**	**38.6%**	**16250**	**40.4%**
LCL	**15587**	**38.7%**	**15230**	**37.8%**	**14694**	**36.5%**	**16899**	**42.0%**	**16797**	**41.7%**	**15613**	**38.8%**	**15721**	**39.0%**	**16170**	**40.2%**	**15283**	**38.0%**	**14713**	**36.5%**	**16273**	**40.4%**	**15841**	**39.3%**	**16111**	**40.0%**	**16459**	**40.9%**	**14580**	**36.2%**	**15414**	**38.3%**

Data From Previous Month

average		**44.81%**		**44.69%**		**41.83%**		**45.58%**		**45.21%**		**46.51%**		**45.43%**		**44.65%**		**43.15%**		**43.42%**		**43.99%**		**44.68%**		**45.10%**		**45.09%**		**43.90%**		**43.80%**
std dev		**2.15%**		**1.13%**		**1.87%**		**1.69%**		**1.75%**		**1.66%**		**2.14%**		**1.87%**		**1.59%**		**1.64%**		**1.97%**		**1.88%**		**1.81%**		**2.06%**		**1.69%**		**1.72%**
UCL		**51.27%**		**48.08%**		**47.43%**		**50.66%**		**50.46%**		**51.49%**		**51.85%**		**50.25%**		**47.92%**		**48.35%**		**49.89%**		**50.31%**		**50.54%**		**51.27%**		**48.98%**		**48.97%**
UWL		**49.11%**		**46.95%**		**45.56%**		**48.97%**		**48.71%**		**49.83%**		**49.71%**		**48.38%**		**46.33%**		**46.71%**		**47.92%**		**48.44%**		**48.73%**		**49.21%**		**47.29%**		**47.25%**
LWL		**40.50%**		**42.43%**		**38.09%**		**42.20%**		**41.70%**		**43.19%**		**41.15%**		**40.91%**		**39.97%**		**40.14%**		**40.06%**		**40.93%**		**41.47%**		**40.97%**		**40.51%**		**40.35%**
LCL		**38.34%**		**41.30%**		**36.22%**		**40.51%**		**39.95%**		**41.52%**		**39.01%**		**39.04%**		**38.37%**		**38.50%**		**38.10%**		**39.05%**		**39.66%**		**38.91%**		**38.82%**		**38.63%**

Detector Names Unit 3:

Numerical:	Instrument:	PACE:
1	1A	3A-1
2	1B	3A-2
3	1C	3A-3
4	1D	3A-4
5	2A	3B-1
6	2B	3B-2
7	2C	3B-3
8	2D	3B-4
9	3A	3C-1
10	3B	3C-2
11	3C	3C-3
12	3D	3C-4
13	4A	3D-1
14	4B	3D-2
15	4C	3D-3
16	4D	3D-4

Standards Used:

23F04840	23F04832	23F04838	23F04831
23F04828	23F04839	23F04841	23F04834
23F04836	23F04835	23F04833	23F04827

DECAY CALCUALTION

Sr-90
124007
ESC51613
22J11029

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	25-Aug-22
DATE OF CALIBRATION	12-Feb-24
PREP:	13-Sep-22

Ao	=	940.91	nCi		
N	=	0.02			
T(1/2)	=	28.60	years		
T	=	1.47	years		
dilution	=	1000.00			
A	=	908.05	nCi	SR90/Y90	
A	=	2015.87	dpm/ml	4031.7433	403.1743
A	=	908.05	pCi/ml	1816.1006	
A	=	908.05	+/-	16.35852 pCi/ml	4031.743319

12095.22996

Uncertainty	0.0173
Weight	0.05%
Volume (1000 ml)	0.50%

CSU 1.80%

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 13:32
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1080	697	0
1520	1296	855	0
1540	1620	1127	0
1560	1852	1341	0
1580	2244	1663	0
1600	2465	1846	0
1620	2664	2133	1
1640	2897	2413	0
1660	3153	2714	3
1680	3247	2907	2
1700	3413	3152	0
1720	3621	3395	1
1740	3482	3320	1
1760	3615	3526	5
1780	3691	3590	19
1800	3564	3452	40
1820	3673	3569	53
1840	3790	3681	39
1860	3780	3677	37
1880	3682	3580	42
1900	3769	3669	31
1920	3633	3543	43
1940	3630	3540	42
1960	3749	3618	58
1980	3773	3668	48
2000	3732	3643	52

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/13/24

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 13:32
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2470	1646	0
1520	2736	1687	1
1540	2961	2188	0
1560	3229	2489	2
1580	3449	2840	1
1600	3547	3007	0
1620	3666	3312	1
1640	3653	3414	2
1660	3647	3450	0
1680	3644	3518	0
1700	3884	3790	4
1720	3901	3812	3
1740	3827	3727	21
1760	3742	3631	44
1780	3834	3681	109
1800	3839	3619	175
1820	3903	3670	191
1840	3916	3657	223
1860	3865	3623	198
1880	3849	3622	194
1900	3869	3664	169
1920	3777	3538	196
1940	3837	3640	165
1960	3816	3596	179
1980	3855	3629	192
2000	3903	3689	175

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR661 **Date:** 2/13/24

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 03/11/2024 10:39
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1554	1113	3
1520	1796	1306	2
1540	2162	1559	2
1560	2446	1931	0
1580	2694	2150	3
1600	2948	2437	0
1620	3137	2707	1
1640	3301	2957	4
1660	3468	3217	2
1680	3609	3421	2
1700	3471	3339	4
1720	3756	3648	0
1740	3650	3577	9
1760	3757	3673	28
1780	3840	3729	64
1800	3804	3641	120
1820	3907	3703	161
1840	3761	3588	145
1860	3837	3614	175
1880	3829	3627	168
1900	3819	3629	143
1920	3888	3676	177
1940	3801	3608	162
1960	3804	3604	160
1980	3801	3608	156
2000	3897	3713	149

Special Notes:

put back into service after maintenance 3/14/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One) **New Voltage:** _____

Approved By: [signature] **Date:** 3/14/2024

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 03/11/2024 10:09
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: 23A16260
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1801	1273	4
1520	2012	1486	1
1540	2248	1695	1
1560	2495	1952	0
1580	2814	2336	1
1600	2887	2456	0
1620	3048	2673	2
1640	3130	2858	1
1660	3388	3179	1
1680	3365	3234	0
1700	3307	3196	3
1720	3510	3413	5
1740	3511	3420	14
1760	3409	3333	31
1780	3503	3374	73
1800	3550	3335	175
1820	3482	3260	182
1840	3510	3271	194
1860	3460	3234	184
1880	3470	3240	190
1900	3498	3262	206
1920	3442	3229	166
1940	3508	3288	177
1960	3511	3281	199
1980	3560	3342	168
2000	3582	3322	210

Special Notes:
verification after maintenance 3/14/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24
Changes Needed: Yes (No) (Circle One) **New Voltage:** _____
Approved By: [signature] **Date:** 3/14/2024

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier
Run Date: 03/11/2024 10:09
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000
Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2352	1598	1
1520	2612	1916	0
1540	2935	2207	1
1560	3148	2491	2
1580	3300	2784	0
1600	3519	3027	2
1620	3562	3213	0
1640	3635	3387	1
1660	3697	3521	2
1680	3744	3615	1
1700	3801	3688	2
1720	3788	3696	3
1740	3903	3818	8
1760	3860	3791	25
1780	3838	3722	73
1800	3793	3610	146
1820	3830	3615	173
1840	3698	3497	171
1860	3828	3615	170
1880	3867	3654	160
1900	3820	3626	150
1920	3698	3463	190
1940	3763	3565	165
1960	3754	3548	158
1980	3826	3615	168
2000	3950	3753	152

Special Notes:

re verification after maintenance 3/14/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: L N Reta **Date:** 3/11/24
Changes Needed: Yes No (Circle One) **New Voltage:** _____
Approved By: _____ **Date:** 3/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 03/11/2024 10:09
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2467	1670	0
1520	2646	1849	0
1540	2972	2193	1
1560	3219	2562	0
1580	3399	2838	0
1600	3404	2934	1
1620	3454	3120	0
1640	3483	3232	2
1660	3644	3448	1
1680	3559	3408	0
1700	3622	3509	4
1720	3846	3734	4
1740	3626	3521	13
1760	3761	3633	42
1780	3678	3516	103
1800	3756	3513	179
1820	3777	3525	203
1840	3852	3605	190
1860	3795	3532	211
1880	3780	3529	206
1900	3816	3550	210
1920	3835	3564	210
1940	3810	3557	205
1960	3854	3588	214
1980	3865	3595	218
2000	3769	3478	231

Special Notes:

verification after maintenance 3/4/24

Report Generated: 03/11/2024 **G542HV.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One) **New Voltage:** _____

Approved By: [signature] **Date:** 3/4/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 13:32
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1636	941	0
1520	1935	1217	0
1540	2181	1390	0
1560	2582	1801	0
1580	2837	2000	3
1600	3129	2315	1
1620	3172	2506	2
1640	3420	2830	0
1660	3641	3170	1
1680	3660	3327	1
1700	3790	3526	1
1720	3775	3599	1
1740	3781	3643	4
1760	3841	3735	4
1780	3838	3737	12
1800	3821	3739	25
1820	3923	3804	43
1840	3933	3841	33
1860	3872	3785	30
1880	3907	3826	28
1900	3837	3754	29
1920	3998	3910	27
1940	3896	3817	34
1960	3874	3781	40
1980	3928	3855	24
2000	4017	3923	36

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 14:47
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1927	1249	0
1520	2337	1627	2
1540	2623	1875	2
1560	2910	2232	1
1580	3100	2486	0
1600	3242	2710	1
1620	3463	3054	0
1640	3503	3158	1
1660	3481	3261	1
1680	3643	3503	1
1700	3682	3558	0
1720	3611	3507	2
1740	3770	3679	17
1760	3592	3489	35
1780	3779	3653	75
1800	3780	3579	151
1820	3687	3495	160
1840	3751	3561	150
1860	3744	3536	158
1880	3751	3571	133
1900	3671	3477	157
1920	3681	3464	176
1940	3818	3634	137
1960	3761	3562	152
1980	3680	3482	144
2000	3636	3425	168

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SVK661 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 19:28
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2119	1379	0
1520	2349	1564	1
1540	2624	1878	0
1560	2918	2170	2
1580	3245	2538	1
1600	3319	2690	1
1620	3338	2879	1
1640	3490	3143	1
1660	3623	3387	1
1680	3701	3507	2
1700	3675	3535	0
1720	3744	3644	2
1740	3712	3617	10
1760	3755	3673	20
1780	3842	3740	50
1800	3892	3734	111
1820	3838	3647	153
1840	3826	3633	134
1860	3831	3637	144
1880	3870	3665	166
1900	3822	3652	129
1920	3897	3733	133
1940	3754	3580	130
1960	3877	3700	126
1980	3766	3593	124
2000	3721	3536	136

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** SNR961 2/13/24 2/13/24

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:24
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1879	1284	1
1520	2080	1483	0
1540	2567	1884	2
1560	2906	2234	0
1580	3163	2587	0
1600	3246	2706	1
1620	3344	2910	1
1640	3460	3116	1
1660	3674	3439	1
1680	3561	3405	1
1700	3709	3584	0
1720	3760	3660	0
1740	3737	3648	4
1760	3812	3721	29
1780	3741	3632	54
1800	3825	3667	107
1820	3851	3642	153
1840	3830	3651	137
1860	3840	3648	148
1880	3704	3531	132
1900	3797	3599	159
1920	3731	3543	152
1940	3837	3643	155
1960	3830	3611	159
1980	3794	3588	164
2000	3880	3679	154

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:24
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	2213	1416	2
1520	2550	1793	1
1540	2829	2030	0
1560	3073	2335	1
1580	3340	2696	0
1600	3261	2704	1
1620	3448	3025	0
1640	3438	3125	3
1660	3639	3419	2
1680	3669	3511	1
1700	3697	3565	3
1720	3719	3594	3
1740	3737	3642	8
1760	3850	3741	25
1780	3778	3642	70
1800	3841	3668	126
1820	3890	3695	155
1840	3942	3730	157
1860	3807	3579	169
1880	3817	3593	167
1900	3814	3593	175
1920	3839	3627	159
1940	3875	3646	176
1960	3764	3563	155
1980	3899	3687	155
2000	3865	3667	145

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1780
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:24
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1694	1214	1
1520	2050	1503	1
1540	2243	1715	0
1560	2508	1971	0
1580	2768	2307	1
1600	2844	2404	2
1620	3055	2685	0
1640	3095	2826	2
1660	3396	3191	1
1680	3216	3058	0
1700	3220	3098	0
1720	3375	3287	5
1740	3427	3333	16
1760	3446	3355	34
1780	3376	3238	75
1800	3524	3344	133
1820	3503	3299	164
1840	3561	3330	185
1860	3506	3277	200
1880	3427	3228	162
1900	3582	3352	183
1920	3521	3297	180
1940	3516	3295	176
1960	3515	3303	176
1980	3533	3336	152
2000	3535	3341	155

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24

Changes Needed: Yes No (Circle One) **New Voltage:** 1780

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 16:29
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1994	1411	0
1520	2341	1704	2
1540	2624	1988	0
1560	2926	2276	1
1580	3172	2626	0
1600	3155	2665	1
1620	3383	3030	1
1640	3443	3174	2
1660	3627	3451	0
1680	3680	3548	0
1700	3601	3506	3
1720	3650	3562	5
1740	3726	3649	18
1760	3626	3525	44
1780	3637	3511	89
1800	3770	3545	193
1820	3675	3437	204
1840	3687	3447	215
1860	3814	3579	204
1880	3908	3663	209
1900	3721	3486	200
1920	3731	3482	212
1940	3756	3516	210
1960	3784	3544	199
1980	3832	3611	190
2000	3616	3388	188

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24
Changes Needed: Yes No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:54
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1780	1277	0
1520	2010	1483	0
1540	2291	1748	0
1560	2621	2059	2
1580	2842	2368	0
1600	3010	2558	2
1620	3294	2898	2
1640	3324	3029	0
1660	3451	3236	1
1680	3633	3497	2
1700	3577	3461	1
1720	3662	3560	6
1740	3698	3613	15
1760	3824	3719	44
1780	3791	3661	83
1800	3836	3628	153
1820	3691	3487	159
1840	3663	3461	167
1860	3790	3576	170
1880	3749	3538	165
1900	3739	3516	182
1920	3710	3517	153
1940	3824	3602	177
1960	3784	3561	179
1980	3701	3479	186
2000	3820	3586	198

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SNK461 **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:54
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1862	1343	2
1520	2142	1587	1
1540	2501	1938	3
1560	2836	2308	2
1580	3127	2603	1
1600	3043	2614	0
1620	3299	2971	0
1640	3378	3077	3
1660	3554	3341	0
1680	3587	3442	3
1700	3706	3587	3
1720	3630	3514	15
1740	3645	3526	37
1760	3683	3554	69
1780	3780	3609	116
1800	3753	3493	212
1820	3823	3533	259
1840	3805	3491	267
1860	3821	3500	266
1880	3827	3504	299
1900	3871	3568	269
1920	3836	3550	241
1940	3792	3469	285
1960	3829	3536	249
1980	3801	3510	257
2000	3839	3516	283

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWREG **Date:** 2/13/24
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL
User ID: Meier

Run Date: 02/12/2024 15:54
System Serial #: 072001

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 2000

Plot Mode: Gross/Alpha/Beta
Source Certificate: None
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1500	1466	1035	0
1520	1697	1244	1
1540	1970	1492	0
1560	2199	1731	0
1580	2508	2012	0
1600	2739	2271	0
1620	2944	2525	2
1640	3058	2717	1
1660	3149	2921	0
1680	3300	3140	1
1700	3313	3164	1
1720	3394	3283	2
1740	3348	3257	13
1760	3545	3453	39
1780	3438	3325	66
1800	3567	3407	122
1820	3557	3362	165
1840	3532	3333	164
1860	3498	3303	156
1880	3498	3323	142
1900	3377	3164	171
1920	3530	3355	155
1940	3445	3247	156
1960	3464	3274	151
1980	3461	3266	150
2000	3467	3307	134

Special Notes:

Report Generated: 02/12/2024 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/13/24
Changes Needed: Yes No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 11:56
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	A	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3273	2
2	3241	0
3	3184	2
4	3080	1
5	3266	2
6	3233	2
7	3130	2
8	3198	2
9	3186	2
10	3130	1
11	3191	4
12	3118	4
13	3243	3
14	3158	2
15	3162	1
16	3041	3
17	3164	1
18	3282	2
19	3263	3
20	3244	2

(Xbar) Mean:	3189.35	2.05
Calculated Chi-Sqr Value:	26.94	9.24

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/14/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR661 **Date:** 2/13/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 12:18
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	B	**Source Certificate:**	23A16260
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10 - 879	Chn 880 - 1023
1	3383	18
2	3570	27
3	3389	18
4	3375	25
5	3447	24
6	3412	25
7	3405	17
8	3476	26
9	3371	31
10	3342	34
11	3339	25
12	3455	27
13	3370	28
14	3407	32
15	3526	22
16	3429	38
17	3442	28
18	3398	19
19	3455	29
20	3341	23

(Xbar) Mean:	3416.60	25.80
Calculated Chi-Sqr Value:	20.33	22.37

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 G542CHISQR.RPT ver 2.0

Collected By: SdIR961 **Date:** 2/13/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 11:03
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	C	**Source Certificate:**	23A16260
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3637	25
2	3742	38
3	3605	36
4	3542	29
5	3593	35
6	3611	28
7	3605	28
8	3686	32
9	3640	34
10	3540	22
11	3591	37
12	3759	30
13	3726	29
14	3644	24
15	3634	28
16	3618	32
17	3629	24
18	3611	30
19	3633	32
20	3680	31

(Xbar) Mean:	3636.30	30.20
Calculated Chi-Sqr Value:	17.73	12.49

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: put back into service after maintenance 3/4/24

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: _____ **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 3/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 12:18
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3616	1
2	3602	1
3	3604	1
4	3645	1
5	3618	2
6	3821	1
7	3689	0
8	3608	3
9	3582	1
10	3592	3
11	3613	3
12	3652	0
13	3710	2
14	3648	1
15	3632	2
16	3742	1
17	3632	0
18	3656	2
19	3730	2
20	3533	3

(Xbar) Mean:	3646.25	1.50
Calculated Chi-Sqr Value:	22.23	12.67

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 12:52
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	A	**Source Certificate:**	23A16260
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Gamma

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10- 879	Chn 880 - 1023
1	3499	82
2	3537	90
3	3361	96
4	3593	84
5	3542	94
6	3490	90
7	3408	95
8	3480	92
9	3522	85
10	3438	80
11	3532	111
12	3501	98
13	3551	113
14	3393	81
15	3607	98
16	3561	74
17	3493	83
18	3436	100
19	3477	85
20	3467	100

(Xbar) Mean:	3494.40	91.55
Calculated Chi-Sqr Value:	22.83	21.48

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: return to service after maintenance

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: [signature] **Date:** 3/11/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 3/11/24

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 12:52
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	B	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3383	59
2	3355	64
3	3394	57
4	3434	62
5	3323	66
6	3365	74
7	3278	63
8	3338	54
9	3368	67
10	3367	51
11	3444	70
12	3237	57
13	3346	76
14	3305	62
15	3383	80
16	3325	67
17	3288	77
18	3344	75
19	3336	67
20	3277	61

(Xbar) Mean:	3344.50	65.45
Calculated Chi-Sqr Value:	15.30	18.72

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: return to service after maintenance

Report Generated: 03/11/2024 G542CHISQR.RPT ver 2.0

Collected By: _____ **Date:** 3/11/24

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 3/11/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	03/11/2024 12:52
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	C	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10 - 879	Chn 880 - 1023
1	3597	94
2	3582	94
3	3665	108
4	3501	83
5	3605	107
6	3633	91
7	3659	100
8	3578	109
9	3453	101
10	3663	110
11	3650	99
12	3593	107
13	3696	118
14	3532	102
15	3707	109
16	3679	103
17	3604	95
18	3624	94
19	3563	98
20	3625	89

(Xbar) Mean:	3610.45	100.55
Calculated Chi-Sqr Value:	22.02	13.77

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: return to service after maintenance

Report Generated: 03/11/2024 **G542CHISQR.RPT ver 2.0**

Collected By: _____ **Date:** 3/11/24

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 3/11/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 12:54
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3672	43
2	3651	52
3	3628	43
4	3636	38
5	3731	39
6	3664	45
7	3614	45
8	3545	53
9	3721	37
10	3625	38
11	3539	53
12	3614	46
13	3709	48
14	3717	44
15	3628	50
16	3756	44
17	3599	48
18	3710	50
19	3686	36
20	3686	47

(Xbar) Mean:	3656.55	44.95
Calculated Chi-Sqr Value:	18.36	11.99

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 G542CHISQR.RPT ver 2.0

Collected By: SWR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	A	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3468	28
2	3508	30
3	3500	27
4	3336	27
5	3338	34
6	3426	24
7	3458	38
8	3442	26
9	3388	49
10	3410	26
11	3341	27
12	3438	31
13	3440	34
14	3398	27
15	3359	36
16	3411	32
17	3352	31
18	3425	31
19	3391	28
20	3525	36

(Xbar) Mean:	3417.70	31.10
Calculated Chi-Sqr Value:	17.84	20.06

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	B	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3673	40
2	3678	33
3	3656	21
4	3546	35
5	3629	15
6	3725	33
7	3691	37
8	3615	35
9	3549	23
10	3711	40
11	3649	26
12	3664	27
13	3710	39
14	3637	36
15	3695	34
16	3621	37
17	3589	34
18	3635	34
19	3698	31
20	3625	29

(Xbar) Mean:	3649.80	31.95
Calculated Chi-Sqr Value:	13.36	26.20

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	C	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3859	32
2	3804	25
3	3776	45
4	3810	58
5	3747	34
6	3829	46
7	3801	49
8	3807	48
9	3675	37
10	3762	24
11	3780	35
12	3937	37
13	3787	40
14	3823	40
15	3868	40
16	3732	35
17	3753	36
18	3846	44
19	3709	44
20	3815	34

(Xbar) Mean:	3796.00	39.15
Calculated Chi-Sqr Value:	17.54	31.89

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 G542CHISQR.RPT ver 2.0

Collected By: SM RGG **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:21
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1780	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10- 879	Alpha ROI Counts Chn 880 - 1023
1	3634	40
2	3639	38
3	3662	49
4	3645	44
5	3705	54
6	3611	38
7	3630	44
8	3631	49
9	3735	45
10	3641	51
11	3648	50
12	3617	55
13	3705	57
14	3645	62
15	3679	46
16	3748	50
17	3720	65
18	3615	53
19	3624	48
20	3588	57

(Xbar) Mean:	3656.10	49.75
Calculated Chi-Sqr Value:	10.30	20.58

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	A	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10 - 879	Alpha ROI Counts Chn 880 - 1023
1	3296	27
2	3394	36
3	3419	36
4	3302	26
5	3328	28
6	3393	35
7	3418	31
8	3379	29
9	3343	24
10	3433	38
11	3426	27
12	3431	30
13	3515	31
14	3336	34
15	3415	26
16	3316	39
17	3354	20
18	3417	24
19	3384	28
20	3345	29

(Xbar) Mean:	3382.20	29.90
Calculated Chi-Sqr Value:	16.78	16.45

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	B	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 10- 879	Chn 880 - 1023
1	3680	24
2	3647	18
3	3582	22
4	3637	16
5	3601	25
6	3599	22
7	3594	21
8	3630	16
9	3645	16
10	3602	25
11	3664	19
12	3623	27
13	3552	19
14	3579	26
15	3598	27
16	3561	18
17	3617	26
18	3594	18
19	3514	15
20	3616	18

(Xbar) Mean:	3606.75	20.90
Calculated Chi-Sqr Value:	8.10	15.30

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SWR 961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	C	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10- 879	Alpha ROI Counts Chn 880 - 1023
1	3702	54
2	3723	63
3	3747	44
4	3683	50
5	3703	41
6	3673	47
7	3633	34
8	3813	41
9	3742	39
10	3704	49
11	3823	55
12	3695	43
13	3749	60
14	3586	56
15	3713	55
16	3704	62
17	3690	55
18	3742	49
19	3777	56
20	3721	50

(Xbar) Mean:	3716.15	50.15
Calculated Chi-Sqr Value:	15.22	24.14

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SQIR961 **Date:** 2/14/24

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL			**Test Date:**	02/13/2024 13:43
USER ID:	Meier			**System Serial #:**	072001
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	D	**Source Certificate:**	None
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 10- 879	Alpha ROI Counts Chn 880 - 1023
1	3719	11
2	3612	19
3	3590	21
4	3564	19
5	3481	16
6	3655	21
7	3552	14
8	3561	24
9	3737	26
10	3665	20
11	3600	18
12	3580	24
13	3741	21
14	3706	13
15	3616	14
16	3609	17
17	3632	13
18	3591	21
19	3571	23
20	3616	17

(Xbar) Mean:	3619.90	18.60
Calculated Chi-Sqr Value:	23.71	17.89

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 02/13/2024 **G542CHISQR.RPT ver 2.0**

Collected By: SAIR961 **Date:** 2/14/24

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 2/14/24

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 11:03
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** A
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800

Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2138
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2570	2567	3
1520	3092	3088	4
1540	3543	3540	3
1560	4138	4135	3
1580	4479	4476	3
1600	4707	4704	3
1620	5160	5153	7
1640	5503	5496	7
1660	5585	5579	6
1680	5660	5653	7
1700	5732	5726	6
1720	5848	5842	6
1740	5971	5957	14
1760	5928	5900	28
1780	6072	5981	91
1800	6064	5899	165

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR661 **Date:** 7/5/23

Changes Needed: (Yes) No (Circle One) **New Voltage:** 1720

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 11:40
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** B **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2137
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2380	2375	5
1520	2900	2898	2
1540	3417	3410	7
1560	3835	3834	1
1580	4344	4342	2
1600	4574	4567	7
1620	4901	4898	3
1640	5109	5099	10
1660	5317	5311	6
1680	5601	5596	5
1700	5630	5621	9
1720	5555	5550	5
1740	5628	5610	18
1760	5727	5695	32
1780	5535	5474	61
1800	5742	5575	167

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/5/23
Changes Needed: (Yes) No (CIrcle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 12:17
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** C
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2139
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1966	1964	2
1520	2595	2594	1
1540	3063	3059	4
1560	3467	3463	4
1580	3907	3904	3
1600	4132	4130	2
1620	4401	4397	4
1640	4566	4561	5
1660	4747	4742	5
1680	4725	4721	4
1700	4871	4863	8
1720	4902	4896	6
1740	4941	4933	8
1760	4972	4941	31
1780	5070	4999	71
1800	5033	4913	120

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SVR961 **Date:** 7/5/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 12:42
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 1 **Detector:** D **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2136
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2468	2467	1
1520	2875	2874	1
1540	3240	3240	0
1560	3408	3407	1
1580	3768	3766	2
1600	3893	3890	3
1620	3869	3868	1
1640	4051	4051	0
1660	3935	3934	1
1680	3966	3963	3
1700	4142	4140	2
1720	4231	4226	5
1740	4087	4078	9
1760	4110	4090	20
1780	4122	4063	59
1800	4173	4039	134

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 13:05
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** A **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2138
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2327	2327	0
1520	2766	2763	3
1540	3167	3165	2
1560	3615	3612	3
1580	4057	4053	4
1600	4110	4105	5
1620	4285	4285	0
1640	4794	4789	5
1660	4641	4638	3
1680	4807	4800	7
1700	4961	4955	6
1720	4831	4827	4
1740	5084	5069	15
1760	5029	4995	33
1780	4908	4826	82
1800	4979	4823	155

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/5/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/12/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 13:24
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2137
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	3793	3791	2
1520	4451	4445	6
1540	4940	4935	5
1560	5309	5307	2
1580	5566	5562	4
1600	5515	5510	5
1620	5944	5936	8
1640	6120	6112	8
1660	6128	6122	6
1680	6100	6097	3
1700	6199	6195	4
1720	6176	6162	14
1740	6319	6296	23
1760	6301	6243	58
1780	6268	6147	121
1800	6227	6020	207

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/11/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 14:04
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** C **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2139
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	3144	3141	3
1520	3666	3662	4
1540	4055	4050	5
1560	4519	4515	4
1580	4731	4722	9
1600	4884	4883	1
1620	4978	4970	8
1640	5260	5254	6
1660	5321	5315	6
1680	5333	5324	9
1700	5305	5298	7
1720	5351	5339	12
1740	5397	5369	28
1760	5398	5342	55
1780	5439	5338	101
1800	5455	5258	197

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1720
Approved By: [signature] **Date:** 7/6/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 14:27
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 2 **Detector:** D **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2136
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2060	2060	0
1520	2359	2359	0
1540	2784	2783	1
1560	3039	3038	1
1580	3296	3295	1
1600	3523	3522	1
1620	3576	3573	3
1640	3805	3804	1
1660	3929	3924	5
1680	3999	3996	3
1700	3935	3934	1
1720	4089	4086	3
1740	4035	4029	6
1760	4116	4095	21
1780	4013	3943	69
1800	4031	3907	124

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR 961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 15:39
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** A **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2138
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2004	2001	3
1520	2409	2408	1
1540	2788	2785	3
1560	3232	3231	1
1580	3451	3449	2
1600	3743	3741	2
1620	4050	4045	5
1640	4315	4313	2
1660	4381	4374	7
1680	4500	4492	8
1700	4730	4723	7
1720	4800	4793	7
1740	4815	4812	3
1760	4879	4867	12
1780	4953	4918	35
1800	4846	4783	63

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 16:00
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** B **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2137
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1221	1219	2
1520	1882	1879	3
1540	2557	2556	1
1560	3222	3220	2
1580	3897	3893	4
1600	4250	4249	1
1620	4620	4617	3
1640	5151	5148	3
1660	5505	5499	6
1680	5778	5776	2
1700	5659	5655	4
1720	5967	5962	5
1740	5948	5943	5
1760	5965	5959	6
1780	6101	6082	19
1800	5979	5918	61

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/5/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/11/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/05/2023 16:18
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** C **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2139
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2183	2181	2
1520	2677	2676	1
1540	3085	3080	5
1560	3555	3552	3
1580	3947	3943	4
1600	4199	4195	4
1620	4528	4523	5
1640	4715	4711	4
1660	4988	4982	6
1680	5256	5243	13
1700	5328	5322	6
1720	5316	5307	9
1740	5270	5264	6
1760	5343	5321	22
1780	5432	5376	56
1800	5405	5283	122

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SWR461 **Date:** 715123
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1740
Approved By: [signature] **Date:** 7/12/23

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Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/05/2023 16:40
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 3 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2136
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1503	1503	0
1520	1776	1776	0
1540	2098	2097	1
1560	2484	2484	0
1580	2790	2790	0
1600	3152	3152	0
1620	3355	3354	1
1640	3439	3436	3
1660	3709	3705	4
1680	3731	3729	2
1700	3946	3945	1
1720	3819	3819	0
1740	4000	3996	4
1760	3956	3945	11
1780	4117	4083	34
1800	4110	4021	89

Special Notes:

Report Generated: 07/05/2023 **G542HV.RPT ver 2.0**

Collected By: SNK961 **Date:** 7/5/23

Changes Needed: Yes No (Circle One) **New Voltage:** 1740

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/06/2023 10:08
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** A **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2138
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2299	2296	3
1520	2729	2728	1
1540	3114	3112	2
1560	3595	3594	1
1580	3880	3880	0
1600	4055	4053	2
1620	4394	4390	4
1640	4647	4646	1
1660	4862	4861	1
1680	4793	4789	4
1700	4885	4882	3
1720	4990	4981	9
1740	4920	4910	10
1760	5029	4989	40
1780	4970	4893	77
1800	5172	5044	128

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/6/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1740
Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/06/2023 10:28
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** B
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2137
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	3319	3318	1
1520	3872	3868	4
1540	4425	4421	4
1560	4759	4755	4
1580	5125	5120	5
1600	5482	5477	5
1620	5755	5751	4
1640	5641	5636	5
1660	5943	5938	5
1680	6001	5997	4
1700	6153	6140	13
1720	6059	6051	8
1740	6227	6218	9
1760	6184	6172	12
1780	6312	6285	27
1800	6267	6201	66

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SWR 661 **Date:** 7/6/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2 **Run Date:** 07/06/2023 10:45
User ID: Meier **System Serial #:** 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** C **Plot Mode:** Gross/Alpha/Beta
Starting Voltage: 1500 **Source Certificate:** 92SR470-2139
Voltage Step: 20 **Isotope:** Sr-90
Ending Voltage: 1800 **Emission Type:** Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	2164	2164	0
1520	2616	2615	1
1540	3174	3171	3
1560	3445	3443	2
1580	4012	4012	0
1600	4422	4415	7
1620	4652	4646	6
1640	4799	4798	1
1660	4929	4923	6
1680	5251	5248	3
1700	5147	5141	6
1720	5188	5183	5
1740	5244	5240	4
1760	5235	5228	7
1780	5387	5370	17
1800	5426	5374	52

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SWR 961 **Date:** 7/6/23
Changes Needed: Yes No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 7/11/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W High Voltage Plateau

Machine Name: PEPPER MILL 2
User ID: Meier
Run Date: 07/06/2023 11:37
System Serial #: 062201

Counting Time: 1 min 0 sec
Drawer Number: 4 **Detector:** D
Starting Voltage: 1500
Voltage Step: 20
Ending Voltage: 1800
Plot Mode: Gross/Alpha/Beta
Source Certificate: 92SR470-2136
Isotope: Sr-90
Emission Type: Beta

Voltage	Gross ROI Counts Chn 1 - 1024	Beta ROI Counts Chn 1 - 899	Alpha ROI Counts Chn 900 - 1023
1500	1075	1075	0
1520	1388	1388	0
1540	1709	1708	1
1560	2025	2023	2
1580	2402	2402	0
1600	2465	2463	2
1620	2869	2867	2
1640	3177	3173	4
1660	3334	3333	1
1680	3628	3624	4
1700	3690	3689	1
1720	3789	3787	2
1740	3794	3789	5
1760	3929	3925	4
1780	3949	3940	9
1800	3943	3914	29

Special Notes:

Report Generated: 07/06/2023 **G542HV.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/6/23
Changes Needed: (Yes) No (Circle One) **New Voltage:** 1760
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 11:14
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3909	4
2	3913	4
3	3845	4
4	3765	2
5	3934	2
6	3831	2
7	3736	4
8	3855	2
9	3842	1
10	3773	5
11	3711	1
12	3880	2
13	3734	2
14	3840	6
15	3786	4
16	3833	6
17	3894	8
18	3809	4
19	3813	6
20	3811	1

(Xbar) Mean:	3825.70	3.50
Calculated Chi-Sqr Value:	19.34	21.43

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR661 **Date:** 7/7/23

Changes Needed: **Yes** **No** **(Circle One)**

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 11:35
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3333	2
2	3371	2
3	3361	3
4	3399	5
5	3425	1
6	3439	5
7	3412	2
8	3279	2
9	3298	1
10	3432	1
11	3423	1
12	3520	0
13	3366	2
14	3339	3
15	3372	4
16	3334	7
17	3342	1
18	3456	4
19	3441	2
20	3390	1

(Xbar) Mean:	3386.60	2.45
Calculated Chi-Sqr Value:	19.15	24.06

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREC1 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 1
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: C
Voltage: 1740
Conf Level: 95.0 %

Test Date: 07/07/2023 11:57
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3387	6
2	3412	4
3	3269	2
4	3357	12
5	3431	12
6	3472	7
7	3386	6
8	3354	6
9	3455	10
10	3463	10
11	3500	4
12	3436	6
13	3386	16
14	3426	9
15	3415	5
16	3292	11
17	3493	9
18	3367	5
19	3362	3
20	3438	5

(Xbar) Mean:	3405.05	7.40
Calculated Chi-Sqr Value:	20.84	33.08

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNREGI **Date:** 7/7/23
Changes Needed: Yes No (Circle One)
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 12:22
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	1	**Detector:**	D	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3494	8
2	3512	8
3	3492	4
4	3554	7
5	3544	15
6	3528	10
7	3544	4
8	3608	6
9	3644	4
10	3697	11
11	3468	8
12	3530	2
13	3536	10
14	3451	10
15	3501	8
16	3587	6
17	3573	6
18	3534	4
19	3553	8
20	3555	10

(Xbar) Mean:	3545.25	7.45
Calculated Chi-Sqr Value:	17.93	24.29

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SW REG 1 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 12:45
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3865	2
2	3693	5
3	3808	6
4	3875	4
5	3755	2
6	3823	5
7	3856	3
8	3839	6
9	3754	1
10	3768	5
11	3889	4
12	3766	3
13	3711	6
14	3857	4
15	3776	6
16	3742	7
17	3757	3
18	3817	6
19	3794	4
20	3895	5

(Xbar) Mean:	3802.00	4.35
Calculated Chi-Sqr Value:	17.63	11.62

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREGI **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 13:12
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3457	0
2	3620	2
3	3579	1
4	3541	1
5	3583	1
6	3614	2
7	3518	3
8	3498	1
9	3595	3
10	3548	2
11	3595	2
12	3586	3
13	3577	6
14	3453	0
15	3622	3
16	3538	4
17	3511	5
18	3514	2
19	3577	1
20	3554	2

(Xbar) Mean:	3554.00	2.20
Calculated Chi-Sqr Value:	13.35	20.55

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWRGLI **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: [signature] **Date:** 7/10/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 13:33
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	C	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1720	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3392	5
2	3358	3
3	3430	3
4	3488	2
5	3425	5
6	3518	2
7	3557	11
8	3415	3
9	3492	4
10	3487	9
11	3518	3
12	3400	4
13	3468	7
14	3496	2
15	3517	3
16	3451	5
17	3405	7
18	3411	5
19	3477	6
20	3463	3

(Xbar) Mean:	3458.40	4.60
Calculated Chi-Sqr Value:	14.98	24.09

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREGI **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:01
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	2	**Detector:**	D	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3593	14
2	3523	11
3	3398	9
4	3426	11
5	3424	10
6	3573	11
7	3436	5
8	3505	3
9	3459	6
10	3612	13
11	3481	6
12	3554	9
13	3526	6
14	3397	10
15	3541	12
16	3585	10
17	3512	8
18	3485	11
19	3596	5
20	3577	8

(Xbar) Mean:	3510.15	8.90
Calculated Chi-Sqr Value:	26.05	18.63

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 7/11/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3758	2
2	3685	6
3	3742	5
4	3586	3
5	3662	4
6	3737	6
7	3756	3
8	3765	3
9	3479	3
10	3770	6
11	3701	4
12	3697	2
13	3797	3
14	3705	6
15	3652	6
16	3630	9
17	3718	8
18	3656	4
19	3659	5
20	3674	2

(Xbar) Mean:	3691.45	4.50
Calculated Chi-Sqr Value:	27.65	16.67

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/7/23

Chemical Needed: Yes No (Circle One)

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3179	0
2	3177	1
3	3298	0
4	3254	0
5	3262	2
6	3321	0
7	3368	1
8	3382	0
9	3397	0
10	3463	0
11	3369	0
12	3378	1
13	3390	1
14	3340	1
15	3287	0
16	3384	1
17	3390	1
18	3371	4
19	3341	2
20	3343	1

(Xbar) Mean:	3334.70	0.00
Calculated Chi-Sqr Value:	30.43	0.00

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR961 **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: _____ **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 14:23
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	3	**Detector:**	C	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3437	2
2	3384	2
3	3352	1
4	3332	1
5	3354	4
6	3353	3
7	3367	3
8	3358	1
9	3316	6
10	3355	5
11	3396	2
12	3393	2
13	3404	6
14	3415	0
15	3347	4
16	3413	3
17	3377	5
18	3392	3
19	3481	6
20	3391	5

(Xbar) Mean:	3380.85	3.20
Calculated Chi-Sqr Value:	8.28	20.38

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes: rerun to verify 7/7/23

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR461 **Date:** 7/7/23

Changes Needed: Yes No (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 3 **Detector:** D
Counting Time: 1 min 0 sec **Voltage:** 1740
Degrees of Freedom: N - 1 **Conf Level:** 95.0 %

Test Date: 07/07/2023 14:23
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3421	6
2	3439	3
3	3529	1
4	3451	8
5	3363	3
6	3408	6
7	3478	6
8	3514	5
9	3489	4
10	3538	0
11	3556	2
12	3579	7
13	3514	2
14	3509	3
15	3531	2
16	3403	2
17	3462	2
18	3510	6
19	3487	5
20	3436	4

(Xbar) Mean:	3480.85	3.85
Calculated Chi-Sqr Value:	17.58	23.52

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR661 **Date:** 7/7/23
Changes Needed: Yes (Circle One)
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 3
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: C
Voltage: 1740
Conf Level: 95.0 %

Test Date: 07/07/2023 15:13
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3427	4
2	3425	5
3	3312	4
4	3360	1
5	3385	1
6	3294	4
7	3296	6
8	3340	5
9	3450	5
10	3358	1
11	3313	2
12	3458	6
13	3321	2
14	3402	5
15	3485	4
16	3360	2
17	3431	5
18	3442	2
19	3357	6
20	3366	3

(Xbar) Mean:	3379.10	3.65
Calculated Chi-Sqr Value:	18.89	16.04

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWREG (Circle One) **Date:** 7/12/23

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 16:06
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	A	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1740	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3836	11
2	3838	10
3	3687	20
4	3756	9
5	3715	16
6	3719	6
7	3789	11
8	3796	10
9	3809	10
10	3740	15
11	3876	15
12	3857	7
13	3642	11
14	3697	11
15	3762	11
16	3778	16
17	3800	17
18	3812	9
19	3840	7
20	3826	11

(Xbar) Mean:	3778.75	11.65
Calculated Chi-Sqr Value:	19.84	22.19

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR961 **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 16:28
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	B	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3491	6
2	3599	6
3	3661	6
4	3634	4
5	3546	8
6	3536	10
7	3527	1
8	3621	5
9	3646	6
10	3556	7
11	3604	3
12	3522	7
13	3668	2
14	3573	2
15	3540	2
16	3592	5
17	3567	4
18	3510	7
19	3467	1
20	3638	2

(Xbar) Mean:	3574.90	4.70
Calculated Chi-Sqr Value:	18.02	26.00

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SNR661 **Date:** 7/7/23

Changes Needed: Yes (Circle One)

Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name:	PEPPER MILL 2			**Test Date:**	07/07/2023 16:55
USER ID:	Meier			**System Serial #:**	062201
Acq. Mode:	Alpha/Beta			**Number of Counts Performed:**	20
Drawer Number:	4	**Detector:**	C	**Source Certificate:**	23F04839
Counting Time:	1 min 0 sec	**Voltage:**	1760	**Isotope:**	Sr-90
Degrees of Freedom:	N - 1	**Conf Level:**	95.0 %	**Emission Type:**	Beta

Count	Beta ROI Counts	Alpha ROI Counts
#	Chn 1- 899	Chn 900 - 1023
1	3430	4
2	3358	6
3	3453	7
4	3514	5
5	3361	1
6	3389	4
7	3367	3
8	3260	2
9	3393	1
10	3461	3
11	3459	3
12	3382	5
13	3387	6
14	3361	4
15	3496	4
16	3376	4
17	3350	1
18	3362	2
19	3327	7
20	3419	6

(Xbar) Mean:	3395.25	3.90
Calculated Chi-Sqr Value:	20.33	17.90

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SWR&G **Date:** 7/7/23

Changes Needed: Yes (No) (Circle One)

Approved By: **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

Pace Analytical
G-542W Chi-Square Calculation Report

Machine Name: PEPPER MILL 2
USER ID: Meier
Acq. Mode: Alpha/Beta
Drawer Number: 4
Counting Time: 1 min 0 sec
Degrees of Freedom: N - 1
Detector: D
Voltage: 1760
Conf Level: 95.0 %

Test Date: 07/07/2023 17:23
System Serial #: 062201
Number of Counts Performed: 20
Source Certificate: 23F04839
Isotope: Sr-90
Emission Type: Beta

Count #	Beta ROI Counts Chn 1- 899	Alpha ROI Counts Chn 900 - 1023
1	3467	3
2	3487	1
3	3525	2
4	3423	10
5	3394	2
6	3464	4
7	3541	4
8	3513	7
9	3546	3
10	3530	6
11	3469	3
12	3472	9
13	3397	3
14	3446	2
15	3560	4
16	3463	6
17	3474	4
18	3457	6
19	3417	4
20	3338	5

(Xbar) Mean:	3469.15	4.40
Calculated Chi-Sqr Value:	17.89	23.82

Chi-Sqr Table Limits: **Max:** 32.90 **Min:** 8.91

Special Notes:

Report Generated: 07/07/2023 **G542CHISQR.RPT ver 2.0**

Collected By: SAMPLE 1 **Date:** 7/7/23
Changes Needed: Yes (Circle One)
Approved By: [signature] **Date:** 7/12/23

Gamma Products Inc 7730 w 114 Pl Palos Hills IL 60465 Phone 708-974-4100 Website www.gammaproducts.com

DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2136

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	16100	dpm	805	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	7694.29	dpm	384.71	dpm

44-9 PROBE
CPM Acceptance Range

1693	**50**	
1354	**1304**	**Low**
2031	**2081**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

3511	**176**	
3160	**2984**	**Low**
3862	**4038**	**High**

Approval: _____ Date:_____

PDF created with pdfFactory trial version www.pdffactory.com

DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2137

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	23800	dpm	1190	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	11374.16	dpm	568.71	dpm

44-9 PROBE
CPM Acceptance Range

2502	**74**	
2002	**1928**	**Low**
3003	**3077**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

5190	**260**	
4671	**4412**	**Low**
5709	**5969**	**High**

Approval: _____ Date:_____

PDF created with pdfFactory trial version www.pdffactory.com

DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2139

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 03-Jun-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	20700	dpm	1040	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.41	years	30.41	years
dilution =	1.00		1.00	
A =	9907.77	dpm	497.78	dpm

44-9 PROBE
CPM Acceptance Range

2180	**65**	
1744	**1679**	**Low**
2616	**2680**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

4521	**227**	
4069	**3842**	**Low**
4973	**5200**	**High**

Approval: _____ Date:_____

PDF created with pdfFactory trial version www.pdffactory.com

DECAY CALCUALTION

Sr-90/Y90
No. 92SR470-2138

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 11-May-92
DATE OF CALIBRATION 23-Oct-22

			uncert	
Ao =	25000	dpm	1250	dpm
N =	0.02		0.02	
T(1/2) =	28.60	years	28.60	years
T =	30.47	years	30.47	years
dilution =	1.00		1.00	
A =	11947.65	dpm	597.38	dpm

44-9 PROBE
CPM Acceptance Range

2628	**78**	
2103	**2025**	**Low**
3154	**3232**	**High**

Gamma Products G5020-400
Efficienc 0.4563
CPM Acceptance Range

5452	**273**	
4907	**4634**	**Low**
5997	**6269**	**High**

Approval: _____ Date:_____

PDF created with pdfFactory trial version www.pdffactory.com

DECAY CALCUALTION — Sr-90
124007
ACTIVITY FORMULA — A = Ao(e^^-NT) — **ESC51613**
22J11029

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION	25-Aug-22
DATE OF CALIBRATION	01-Jan-23
PREP:	13-Sep-22

Ao	=	940.91	nCi		
N	=	0.02			
T(1/2)	=	28.60	years		
T	=	0.35	years		
dilution	=	1000.00			
A	=	932.92	nCi	SR90/Y90	
A	=	2071.08	dpm/ml	4142.1618	41421.62
A	=	932.92	pCi/ml	1865.8387	8284.324
A	=	932.92	+/-	16.806536	pCi/ml

Uncertainty	0.0173
Weight	0.05%
Volume (1000 ml)	0.50%
CSU	1.80%

PDF created with pdfFactory trial version www.pdffactory.com

DECAY CALCUALTION

Th230 Source
124007
ESC51614
22I13361

ACTIVITY FORMULA A = Ao(e^^-NT)

A= ACTIVITY OF SOURCE
Ao= INITIAL ACTIVITY
N= DECAY CONSTANT
T(1/2)= SOURCES HALF LIFE
T = NUMBER OF YEARS SINCE ORIGINATION

DATE OF ORIGINATION 25-Aug-22
DATE OF CALIBRATION 01-Jan-23

Ao	=	1011.73	nCi	
N	=	0.00		
T(1/2)	=	77000.00	years	28105000
T	=	0.35	years	
dilution	=	1000.00		
A	=	1011.73	nCi	
A	=	2246.04	dpm/ml	22460.399
A	**=**	1011.73	pCi/ml	

Uncertainty	3.16%
Weight	0.05%
Volume	0.03%
CSU	3.16%

					pCi/l
Activity	**1011.7**	**+/-**	**32.0**	**pCi/ml**	1011730

PDF created with pdfFactory trial version www.pdffactory.com

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: VA
Cert. Needed: ☒ Yes ☐ No

Workorder: 92712989 Workorder Name: Bremo_1SA2024_CCR&VSWMR_P_F Owner Received Date: 2/13/2024 Results Requested By: 2/27/2024

Report To	Subcontract To
Angela Baioni Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone 612-473-6801	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Requested Analysis: Ra 226 903.0	Requested Analysis: Ra228 904.0/Combined Ra	LAB USE ONLY
1	021224NMW13	PS	2/12/2024 16:40	92712989001	Water	2	X	X	-01
2	021224NMW31	PS	2/12/2024 15:20	92712989002	Water	2	X	X	-02
3	021224NMW32S	PS	2/12/2024 16:00	92712989003	Water	2	X	X	-03
4	021224NMW32D	PS	2/12/2024 14:40	92712989004	Water	2	X	X	-04
5	021224NWPFDDUPLICATE	PS	2/12/2024 15:20	92712989005	Water	2	X	X	-05
6	021324NMW1	RQS	2/13/2024 13:10	92712989006	Water	6	X	X	-06
7	021324NMW12	PS	2/13/2024 12:00	92712989007	Water	2	X	X	-07

L704901
A242

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	2/16/24 1800	[illegible]	2/17/24 0900
2				
3				

Comments: *Level IV Data Package Required*

Cooler Temperature on Receipt _____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable 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		

1.5+0=1.5 TUM

L704901

INTER_LABORATORY WORK ORDER # 92712989

(To be completed by sending lab)

Ship To:
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Sending Project No:	92712989
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	02/16/24
REQUESTED COMPLETION DATE:	**2/27/2024**

Sending Region	IR92-Charlotte	Sending Project Mgr.	Angela Baioni
Receiving Region	IR850-Pace National	External Client	Dominion Energy_VA
State of Sample Origin	VA	QC Deliverable	PACKAGELV4

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Ra 226 903.0	BP1N		HNO3	7	SI-38RAD	SUB PASI RAD
Ra228 904.0/Combined Ra	BP1N		HNO3	7	SI-38RAD02	SUB PASI RAD

Special Requirements: Report D, QC Limits, MDLs (D),Dominion EQEDD (1616),Golder Equis 5 (34)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

2099 of 2099

SECTION 5

PROJECT CORRESPONDENCE

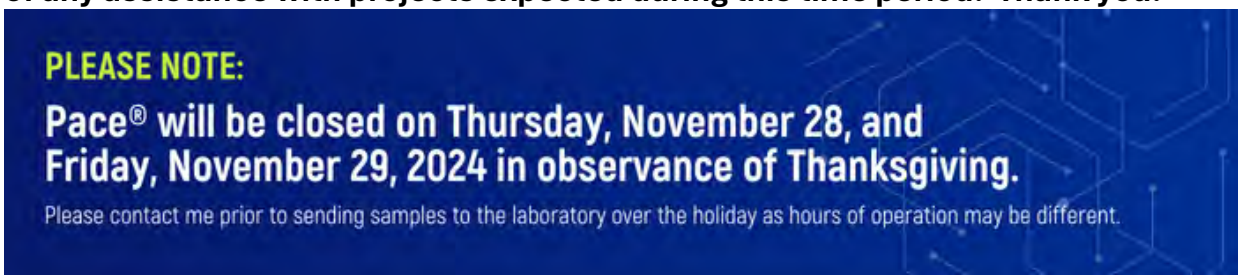
From:	Stephanie Knott
To:	Dominion; Angela Baioni
Cc:	Wendy Zhou; Rashida Marlowe (Services - 6); "crystal.shadle@wsp.com"; "Catherine.Pezzaro@wsp.com"; Dominion_DM; Kelly A Hicks (Services - 6); Wendy Zhou
Subject:	RE: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report
Date:	Wednesday, November 20, 2024 1:26:37 PM
Attachments:	image003.png image005.png

Good afternoon,

QA has let me know that the revised L4 Data Package for WO92712989 is now available on PACEport. Let me know if I can be of any further assistance. Thank you!

Stephanie Knott
Project Manager
1377 South Park Drive, Kernersville, NC 27284 | (704)977-0981

UPCOMING PTO: I will be out of the office November 22nd thru December 2nd, returning on Tuesday, December 3rd. Please let me know, this week, if I can be of any assistance with projects expected during this time period. Thank you!



NEW: PROCESS PAYMENTS ONLINE- click the link below

Online Bill Pay

From: Dominion <Dominion@envstd.com>
Sent: Tuesday, November 5, 2024 10:09 AM
To: Stephanie Knott <Stephanie.Knott@pacelabs.com>; Dominion <Dominion@envstd.com>; Angela Baioni <Angela.Baioni@pacelabs.com>
Cc: Wendy Zhou <wzhou@envstd.com>; Rashida Marlowe (Services - 6) <rashida.marlowe@dominionenergy.com>; 'crystal.shadle@wsp.com' <crystal.shadle@wsp.com>; 'Catherine.Pezzaro@wsp.com' <Catherine.Pezzaro@wsp.com>; Dominion_DM <Dominion_DM@envstd.com>; Kelly A Hicks (Services - 6) <Kelly.A.Hicks@dominionenergy.com>; Wendy Zhou <wzhou@envstd.com>
Subject: RE: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.
Good Morning,

We have follow-up questions on the hexavalent chromium fraction based on the revised L4 data package:

- The ICAL summary on page 1735 reports an ICAL on 9/14/23 from 14:34 through 16:20 on instrument 92WA01. The raw data provided is an ICAL performed on 9/14/23 from 20:28 through 21:56. Please confirm the ICAL used in the calculation of these results and provide the correct summary forms and/or raw data, including ICV and ICB.

Thanks,

Alyssa M. Reed
Senior Quality Assurance Chemist
Environmental Standards
Office: +1-610-935-5577 x110305 | Direct: +1-434-202-6016

From: Stephanie Knott <Stephanie.Knott@pacelabs.com>
Sent: Sunday, October 20, 2024 11:51 AM
To: Dominion <Dominion@envstd.com>; Angela Baioni <Angela.Baioni@pacelabs.com>
Cc: Wendy Zhou <wzhou@envstd.com>; Rashida Marlowe (Services - 6) <rashida.marlowe@dominionenergy.com>; 'crystal.shadle@wsp.com' <crystal.shadle@wsp.com>; 'Catherine.Pezzaro@wsp.com' <Catherine.Pezzaro@wsp.com>; Dominion_DM <Dominion_DM@envstd.com>; Kelly A Hicks (Services - 6) <Kelly.A.Hicks@dominionenergy.com>
Subject: RE: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report

Good morning,

The requested revisions for the L4 Data Package for WO92712989 have been uploaded to PACEport and are dated 10/10/24. Please let me know if I can be of any further assistance. Thank you.

Stephanie Knott
Project Manager
1377 South Park Drive, Kernersville, NC 27284 | (704)977-0981

NEW: PROCESS PAYMENTS ONLINE- click the link below

Online Bill Pay

From: Dominion <Dominion@envstd.com>

Sent: Monday, July 29, 2024 1:29 PM
To: Stephanie Knott <Stephanie.Knott@pacelabs.com>; Angela Baioni <Angela.Baioni@pacelabs.com>
Cc: Wendy Zhou <wzhou@envstd.com>; Rashida Marlowe (Services - 6) <rashida.marlowe@dominionenergy.com>; 'crystal.shadle@wsp.com' <crystal.shadle@wsp.com>; 'Catherine.Pezzaro@wsp.com' <Catherine.Pezzaro@wsp.com>; Dominion_DM <Dominion_DM@envstd.com>; Dominion <Dominion@envstd.com>; Kelly A Hicks (Services - 6) <Kelly.A.Hicks@dominionenergy.com>
Subject: RE: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.
Good Afternoon,

Please see the following requests for the Level 4 data package for 92712989:

- 6010 – Missing closing ICSA/B for runs from instrument 93ICP6 on 2/20/24 and 2/22/24.
- 6020 – There were additional bracketing ICSA/ABs in the analytical runs from instrument 92ICM3 on 2/14/24, instrument 92ICM3 on 2/16/24, and instrument 93ICM2 on 2/15/24, that were not provided in the data package or reported on the run log. Please include all ICSA/ABs that bracket the project samples in the data package.
- Cr6+
  - Missing area counts in raw data from instrument 92WA01.
  - Missing the ICAL summary form.
- Ammonia – Missing area or height counts in raw data from instrument 93WTAE on 3/6/24.
- Anions – Missing ICAL summary from instrument 93WTA1 on 1/12/24.

Thanks,

Alyssa M. Reed
Senior Quality Assurance Chemist
Environmental Standards
Office: +1-610-935-5577 x110305 | Direct: +1-434-202-6016

From: Stephanie Knott <Stephanie.Knott@pacelabs.com>
Sent: Thursday, April 25, 2024 5:57 PM
To: Dominion <Dominion@envstd.com>; Kelly A Hicks (Services - 6) <Kelly.A.Hicks@dominionenergy.com>; Rashida Marlowe (Services - 6) <rashida.marlowe@dominionenergy.com>; crystal.shadle@wsp.com; 'Catherine.Pezzaro@wsp.com' <Catherine.Pezzaro@wsp.com>; Dominion_DM <Dominion_DM@envstd.com>; Angela Baioni <Angela.Baioni@pacelabs.com>
Cc: Wendy Zhou <wzhou@envstd.com>
Subject: RE: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report

Good afternoon,

Please find the revised report and Radiological EDD attached. Let me know if I can be of any further assistance. Thank you!

Stephanie Knott
Project Manager
1377 South Park Drive, Kernersville, NC 27284 | (704)977-0981

NEW: PROCESS PAYMENTS ONLINE- click the link below

Online Bill Pay

From: Dominion <Dominion@envstd.com>
Sent: Monday, April 8, 2024 10:48 AM
To: Stephanie Knott <Stephanie.Knott@pacelabs.com>; Kelly A Hicks (Services - 6) <Kelly.A.Hicks@dominionenergy.com>; Rashida Marlowe (Services - 6) <rashida.marlowe@dominionenergy.com>; crystal.shadle@wsp.com; 'Catherine.Pezzaro@wsp.com' <Catherine.Pezzaro@wsp.com>; Dominion <Dominion@envstd.com>; Dominion_DM <Dominion_DM@envstd.com>; Angela Baioni <Angela.Baioni@pacelabs.com>
Cc: Wendy Zhou <wzhou@envstd.com>
Subject: RE: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Angela,

In radiology batch WG2236782, the same MB was reported twice with different MDA. Can lab determine which one should be reported?

WG2236782
Radiochemistry by Method 903.0/9315

QUALITY CONTROL SUMMARY
L1706901-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R4048646-1 03/14/24 20:12

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE +/- pCi/l	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.142	J	0.117	0.170	
(T) Barium	103		103		

U

Method Blank (MB)

(MB) R4048467-1 03/14/24 20:12

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE +/- pCi/l	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.142		0.117	0.137	0.0248
(T) Barium	103		103		

Laboratory Control Sample (LCS)

(LCS) R4048646-2 03/14/24 20:12

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier

Thank you,

Alyssa M. Reed
Senior Quality Assurance Chemist
Environmental Standards
Office: +1-610-935-5577 x110305 | Direct: +1-434-202-6016

From: Stephanie Knott <Stephanie.Knott@pacelabs.com>
Sent: Monday, April 1, 2024 7:53 PM
To: Kelly A Hicks (Services - 6) <Kelly.A.Hicks@dominionenergy.com>; Rashida Marlowe (Services - 6) <rashida.marlowe@dominionenergy.com>; crystal.shadle@wsp.com; 'Catherine.Pezzaro@wsp.com' <Catherine.Pezzaro@wsp.com>; Dominion <Dominion@envstd.com>; Dominion_DM <Dominion_DM@envstd.com>; Angela Baioni <Angela.Baioni@pacelabs.com>
Subject: PACE KVL: Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F Report

Good evening,

Please find the report and EDD files for Dominion WO92712989 Bremo_1SA2024_CCR&VSWMR_P_F attached. Let me know if I can be of any further assistance. Thank you!

Stephanie Knott
Project Manager
1377 South Park Drive, Kernersville, NC 27284 | (704)977-0981

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Online Bill Pay

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legally protected information and are for the sole use of the addressee(s). Any review or distribution by others is strictly prohibited. If you are not the intended recipient, please contact the sender immediately and delete any copies.

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This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 2/12/2024 and 2/14/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92712990

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
021224NMW37	MW-37	N	SW-846 6010D	Copper	T	1.0	J	RL	0.62	5.0		ug/L
021224NMW37	MW-37	N	SW-846 6010D	Nickel	T	2.4	J	RL	0.88	5.0		ug/L
021224NMW37	MW-37	N	SW-846 6010D	Zinc	T	4.3	J	RL	3.0	10.0		ug/L
021224NMW37	MW-37	N	SW-846 6020B	Iron	T	31.8	J	RL	20.9	50.0		ug/L
021224NMW37	MW-37	N	SW-846 6020B	Lithium	T	1.2	J	RL	0.50	2.5		ug/L
021224NMW37	MW-37	N	SW-846 9056A	Fluoride	N	0.076	J	RL	0.050	0.10		mg/L
021324NMW39S	MW-39S	N	SW-846 6010D	Chromium	T	0.78	J	RL	0.63	5.0		ug/L
021324NMW39S	MW-39S	N	SW-846 6010D	Copper	T	1.2	J	RL	0.62	5.0		ug/L
021324NMW39S	MW-39S	N	SW-846 6010D	Nickel	T	1.4	J	RL	0.88	5.0		ug/L
021324NMW39S	MW-39S	N	SW-846 6010D	Zinc	T	3.2	J	RL	3.0	10.0		ug/L
021324NMW39S	MW-39S	N	SW-846 6020B	Cobalt	T	0.10	J	RL	0.050	1.0		ug/L
021324NMW39S	MW-39S	N	SW-846 6020B	Lead	T	0.17	J	RL	0.077	1.0		ug/L
021324NMW39S	MW-39S	N	SW-846 6020B	Lithium	T	1.1	J	RL	0.50	2.5		ug/L
021324NMW39S	MW-39S	N	SW-846 9056A	Chloride	N	0.87	J	RL	0.60	1.0		mg/L
021324NMW39S	MW-39S	N	SW-846 9056A	Fluoride	N	0.050	J	RL	0.050	0.10		mg/L
021324NMW39D	MW-39D	N	SW-846 6010D	Boron	T		U	BF	39.5	50.0		ug/L
021324NMW39D	MW-39D	N	SW-846 6010D	Copper	T	0.77	J	RL	0.62	5.0		ug/L
021324NMW39D	MW-39D	N	SW-846 6010D	Nickel	T	1.8	J	RL	0.88	5.0		ug/L
021324NMW39D	MW-39D	N	SW-846 6010D	Silver	T	1.4	J	RL	0.49	5.0		ug/L
021324NMW39D	MW-39D	N	SW-846 6010D	Zinc	T	4.6	J	RL	3.0	10.0		ug/L
021324NMW39D	MW-39D	N	SW-846 6020B	Cobalt	T	0.064	J	RL	0.050	1.0		ug/L
021224NMW37	MW-37	N	CALC	Combined Radium	N	0.235	U	S			0.278	pCi/L
021324NMW39S	MW-39S	N	CALC	Combined Radium	N	0.748	J	BL,BF,Y			0.274	pCi/L
021324NMW39S	MW-39S	N	SW-846 9320	RADIUM-228	N	0.481	U	BL,BF,Y	0.481	0.481	0.194	pCi/L
021324NMW39D	MW-39D	N	CALC	Combined Radium	N	2.25	J	BL,BF,Y			0.474	pCi/L
021324NMW39D	MW-39D	N	SW-846 9320	RADIUM-228	N	0.931	U	BL,BF,Y	0.931	0.931	0.230	pCi/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.

J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92712990

Lab Sample ID	92712990001
Sys Sample Code	021224NMW37
Sample Name	021224NMW37
Sample Date	2/12/2024 4:40:00 PM
Location	BPS-WAP-MW-37 / MW-37
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	118000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	192				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	75.1				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	142				4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	35400				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	1.0	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	2.4	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	4.3	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	2.5				0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	31.8	J	RL		20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.2	J	RL		0.50	0.50	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	603				5.1	5.1	10.0	Y	Yes	5	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	8.7				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.076	J	RL		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92712990001
Sys Sample Code	021224NMW37
Sample Name	021224NMW37
Sample Date	2/12/2024 4:40:00 PM
Location	BPS-WAP-MW-37 / MW-37
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.79				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.50	0.50	1.0	N	Yes	1	NA

Lab Sample ID	92712990002
Sys Sample Code	021324NMW39S
Sample Name	021324NMW39S
Sample Date	2/13/2024 1:25:00 PM
Location	BPS-WAP-MW-39S / MW-39S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.33				0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	107000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	171				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	42.7				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	614				4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	33500				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L	0.78	J	RL		0.63	0.63	5.0	Y	Yes	1	NA
	Copper	7440-50-8	T	ug/L	1.2	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	1.4	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	3.2	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.10	J	RL		0.050	0.050	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	318				20.9	20.9	50.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L	0.17	J	RL		0.077	0.077	1.0	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.1	J	RL		0.50	0.50	2.5	Y	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	12.0				1.0	1.0	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.29				0.050	0.050	0.050	Y	Yes	2	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	0.87	J	RL		0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.050	J	RL		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92712990002
Sys Sample Code	021324NMW39S
Sample Name	021324NMW39S
Sample Date	2/13/2024 1:25:00 PM
Location	BPS-WAP-MW-39S / MW-39S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	1.3				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	51.9				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92712990

Lab Sample ID	92712990003
Sys Sample Code	021324NMW39D
Sample Name	021324NMW39D
Sample Date	2/13/2024 12:05:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.14				0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	117000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	209				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	23.4				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U	BF		39.5	39.5	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	32200				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	0.77	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	1.8	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L	1.4	J	RL		0.49	0.49	5.0	Y	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	4.6	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.064	J	RL		0.050	0.050	1.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.6				0.50	0.50	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 6020B	Iron	7439-89-6	T	ug/L	11700				62.8	62.8	150	Y	Yes	3	NA
	Manganese	7439-96-5	T	ug/L	309				3.1	3.1	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	25.9				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.12				0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92712990003
Sys Sample Code	021324NMW39D
Sample Name	021324NMW39D
Sample Date	2/13/2024 12:05:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L		U			0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	47.5				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92712990

Lab Sample ID	L1706893-01
Sys Sample Code	021224NMW37
Sample Name	021224NMW37
Sample Date	2/12/2024 4:40:00 PM
Location	BPS-WAP-MW-37 / MW-37
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.235	U	S	0.278				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.235	U		0.199	0.237	0.237	0.237	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	-0.0908	U		0.194	0.358	0.358	0.358	N	Y	1	NA

Lab Sample ID	L1706893-02
Sys Sample Code	021324NMW39S
Sample Name	021324NMW39S
Sample Date	2/13/2024 1:25:00 PM
Location	BPS-WAP-MW-39S / MW-39S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.748	J	BL,BF,Y	0.274				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.267			0.193	0.188	0.188	0.188	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.481	U	BL,BF,Y	0.194	0.481	0.481	0.481	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92712990

Lab Sample ID	L1706893-03
Sys Sample Code	021324NMW39D
Sample Name	021324NMW39D
Sample Date	2/13/2024 12:05:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	2.25	J	BL,BF,Y	0.474				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	1.32			0.415	0.291	0.291	0.291	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.931	U	BL,BF,Y	0.230	0.931	0.931	0.931	N	Y	1	NA

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 2/12/2024 and 2/14/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92712991

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
021224NFBBLANK	Field Blank	FB	SW-846 6010D	Boron	T	24.0	J	RL	4.0	50.0		ug/L
021224NFBBLANK	Field Blank	FB	CALC	Combined Radium	N	0.841	J	Y,S			0.310	pCi/L
021224NFBBLANK	Field Blank	FB	SW-846 9320	RADIUM-228	N	0.662	J+	Y	0.461	0.461	0.262	pCi/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.

S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92712991

Lab Sample ID	92712991001
Sys Sample Code	021224NFBBLANK
Sample Name	021224NFBBLANK
Sample Date	2/12/2024 12:40:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L		U			36.8	36.8	662	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			10.0	10.0	10.0	N	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L		U			0.79	0.79	5.0	N	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	24.0	J	RL		4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			14.7	14.7	100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.050	0.050	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L		U			20.9	20.9	50.0	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.077	0.077	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			0.50	0.50	2.5	N	Yes	1	NA
	Manganese	7439-96-5	T	ug/L		U			1.0	1.0	2.0	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.050	0.050	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.43	0.43	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.025	0.025	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L		U			0.60	0.60	1.0	N	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.050	0.050	0.10	N	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L		U			0.060	0.060	0.10	N	Yes	1	NA

Facility: Bremo Power Station
SDG: 92712991

Lab Sample ID	92712991001
Sys Sample Code	021224NFBBLANK
Sample Name	021224NFBBLANK
Sample Date	2/12/2024 12:40:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Sulfate	14808-79-8	N	mg/L		U			0.50	0.50	1.0	N	Yes	1	NA

Facility: Bremo Power Station
SDG: 92712991

Lab Sample ID	L1706897-01
Sys Sample Code	021224NFBBLANK
Sample Name	021224NFBBLANK
Sample Date	2/12/2024 12:40:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.841	J	Y,S	0.310				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.179	U		0.165	0.186	0.186	0.186	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.662	J+	Y	0.262	0.461	0.461	0.461	Y	Y	1	NA

APPENDIX G.2
DATA VALIDATION FORMS
SECOND SEMI-ANNUAL GROUNDWATER MONITORING EVENT
(AUGUST 2024)

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 8/26/2024 and 8/29/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92749752

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
082624NMW11	MW-11	N	SW-846 6010D	Barium	T	3.0	J	RL	0.79	5.0		ug/L
082624NMW11	MW-11	N	SW-846 6010D	Copper	T	0.76	J	RL	0.62	5.0		ug/L
082624NMW11	MW-11	N	SW-846 6020B	Cobalt	T	0.39	J	RL	0.14	1.0		ug/L
082624NMW11	MW-11	N	SW-846 6020B	Lithium	T	0.44	J	RL	0.33	2.5		ug/L
082624NMW11	MW-11	N	SW-846 7199	Chromium, Hexavalent	D	1.1	J	H	0.086	0.50		ug/L
082624NMW11	MW-11	N	SW-846 9056A	Nitrate as N	N		UJ	H	0.060	0.10		mg/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits

MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92749752

Lab Sample ID	92749752001
Sys Sample Code	082624NMW11
Sample Name	082624NMW11
Sample Date	8/26/2024 12:05:00 PM
Location	BPS-BKGD-MW-11 / MW-11
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	103000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	152				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	3.0	J	RL		0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	20300				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	0.76	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L	11.2				1.6	1.6	5.0	Y	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.39	J	RL		0.14	0.14	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	393				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	0.44	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	3.7				0.24	0.24	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	1.1	J	H		0.086	0.086	0.50	Y	Yes	20	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	11.2				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.050	0.050	0.10	N	Yes	1	NA

Lab Sample ID	92749752001
Sys Sample Code	082624NMW11
Sample Name	082624NMW11
Sample Date	8/26/2024 12:05:00 PM
Location	BPS-BKGD-MW-11 / MW-11
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L		UJ	H		0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	5.0				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92749752

Lab Sample ID	L1773939-01
Sys Sample Code	082624NMW11
Sample Name	082624NMW11
Sample Date	8/26/2024 12:05:00 PM
Location	BPS-BKGD-MW-11 / MW-11
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.590	U		0.290				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.201	U		0.180	0.275	0.275	0.275	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.389	U		0.227	0.426	0.426	0.426	N	Y	1	NA

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 8/26/2024 and 8/29/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92750325

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
082824NMW1	MW-1	N	SW-846 6010D	Zinc	T	3.7	J	RL	3.0	10.0		ug/L
082824NMW1	MW-1	N	SW-846 7199	Chromium, Hexavalent	D	0.23	J	H	0.0043	0.025		ug/L
082824NMW1	MW-1	N	SW-846 9056A	Fluoride	N	0.26	J+	M	0.050	0.10		mg/L
082824NMW1	MW-1	N	SW-846 9056A	Nitrate as N	N	0.27	J	H	0.060	0.10		mg/L
082824NMW1	MW-1	N	SW-846 9056A	Sulfate	N	2.9	J	M,MP	0.50	1.0		mg/L
082824NMW12	MW-12	N	EPA 350.1	Nitrogen, Ammonia	N	0.048	J	RL	0.031	0.10		mg/L
082824NMW12	MW-12	N	SW-846 6010D	Nickel	T	0.91	J	RL	0.88	5.0		ug/L
082824NMW12	MW-12	N	SW-846 6020B	Lithium	T	0.53	J	RL	0.33	2.5		ug/L
082824NMW12	MW-12	N	SW-846 7199	Chromium, Hexavalent	D		U	BF,H	0.0050	0.025		ug/L
082824NMW12	MW-12	N	SW-846 9056A	Fluoride	N	0.13	J+	M	0.050	0.10		mg/L
082824NMW12	MW-12	N	SW-846 9056A	Nitrate as N	N		UJ	H	0.060	0.10		mg/L
082824NMW12	MW-12	N	SW-846 9056A	Sulfate	N	85.3	J	M,MP	0.50	1.0		mg/L
082824NMW31	MW-31	N	SW-846 6010D	Boron	T	9.2	J	RL	4.0	50.0		ug/L
082824NMW31	MW-31	N	SW-846 6010D	Zinc	T	8.3	J	RL	3.0	10.0		ug/L
082824NMW31	MW-31	N	SW-846 6020B	Lithium	T	1.7	J	RL	0.33	2.5		ug/L
082824NMW31	MW-31	N	SW-846 7199	Chromium, Hexavalent	D	1.6	J	H	0.043	0.25		ug/L
082824NMW31	MW-31	N	SW-846 9056A	Fluoride	N	0.079	J	M,RL	0.050	0.10		mg/L
082824NMW31	MW-31	N	SW-846 9056A	Nitrate as N	N		UJ	H	0.060	0.10		mg/L
082824NMW31	MW-31	N	SW-846 9056A	Sulfate	N	43.9	J	M,MP	0.50	1.0		mg/L
082924NMW13	MW-13	N	SW-846 6010D	Boron	T	7.4	J	RL	4.0	50.0		ug/L
082924NMW13	MW-13	N	SW-846 6010D	Nickel	T	1.3	J	RL	0.88	5.0		ug/L
082924NMW13	MW-13	N	SW-846 6010D	Zinc	T	5.3	J	RL	3.0	10.0		ug/L
082924NMW13	MW-13	N	SW-846 6020B	Cobalt	T	0.78	J	RL	0.14	1.0		ug/L
082924NMW13	MW-13	N	SW-846 6020B	Lithium	T	1.6	J	RL	0.33	2.5		ug/L
082924NMW13	MW-13	N	SW-846 7199	Chromium, Hexavalent	D		U	BF,H,M	0.098	0.098		ug/L
082924NMW13	MW-13	N	SW-846 9056A	Fluoride	N	0.050	J	RL	0.050	0.10		mg/L
082924NMW32S	MW-32S	N	SW-846 6010D	Chromium	T	0.64	J	RL	0.63	5.0		ug/L
082924NMW32S	MW-32S	N	SW-846 6020B	Lithium	T	0.46	J	RL	0.33	2.5		ug/L
082924NMW32S	MW-32S	N	SW-846 7199	Chromium, Hexavalent	D		U	BF,H,M	0.11	0.11		ug/L
082924NMW32S	MW-32S	N	SW-846 9056A	Fluoride	N	0.12	J+	M	0.050	0.10		mg/L

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
082924NMW32S	MW-32S	N	SW-846 9056A	Sulfate	N	2.6	J	M,MP	0.50	1.0		mg/L
082924NMW32D	MW-32D	N	SW-846 6020B	Lithium	T	2.2	J	RL	0.33	2.5		ug/L
082824NMW1	MW-1	N	CALC	Combined Radium	N	0.664	J	S			0.326	pCi/L
082824NMW12	MW-12	N	CALC	Combined Radium	N	0.717	J	S			0.378	pCi/L
082924NMW32D	MW-32D	N	CALC	Combined Radium	N	0.691	J	S			0.660	pCi/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	92750325001
Sys Sample Code	082824NMW1
Sample Name	082824NMW1
Sample Date	8/28/2024 3:05:00 PM
Location	BPS-WAP-MW-01 / MW-1
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	17100				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	63.0				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	12.9				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	3370				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	3.7	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	4.0				0.14	0.14	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	51.9				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			0.33	0.33	2.5	N	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	84.3				0.24	0.24	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.23	J	H		0.0043	0.0043	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	2.1				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.26	J+	M		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325001
Sys Sample Code	082824NMW1
Sample Name	082824NMW1
Sample Date	8/28/2024 3:05:00 PM
Location	BPS-WAP-MW-01 / MW-1
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.27	J	H		0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	2.9	J	M,MP		0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	92750325002
Sys Sample Code	082824NMW12
Sample Name	082824NMW12
Sample Date	8/28/2024 3:35:00 PM
Location	BPS-WAP-MW-12 / MW-12
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.048	J	RL		0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	123000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	209				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	66.9				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	986				4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	36500				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	0.91	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L	5480				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	0.53	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	446				0.71	0.71	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U	BF,H		0.0050	0.0050	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	5.0				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.13	J+	M		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325002
Sys Sample Code	082824NMW12
Sample Name	082824NMW12
Sample Date	8/28/2024 3:35:00 PM
Location	BPS-WAP-MW-12 / MW-12
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L		UJ	H		0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	85.3	J	M,MP		0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	92750325003
Sys Sample Code	082824NMW31
Sample Name	082824NMW31
Sample Date	8/28/2024 3:55:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	45900				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	124				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	56.2				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	9.2	J	RL		4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	11700				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	5.8				0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	7.2				0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	8.3	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	4.8				0.14	0.14	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	178				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.7	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	407				0.71	0.71	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	1.6	J	H		0.043	0.043	0.25	Y	Yes	10	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	2.4				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.079	J	M,RL		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325003
Sys Sample Code	082824NMW31
Sample Name	082824NMW31
Sample Date	8/28/2024 3:55:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L		UJ	H		0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	43.9	J	M,MP		0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92750325004
Sys Sample Code	082924NMW13
Sample Name	082924NMW13
Sample Date	8/29/2024 12:15:00 PM
Location	BPS-WAP-MW-13 / MW-13
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.50				0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	165000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	366				10.0	10.0	10.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	131				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	7.4	J	RL		4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	45100				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	1.3	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	5.3	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.78	J	RL		0.14	0.14	1.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.6	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 6020B	Iron	7439-89-6	T	ug/L	32500				14.9	14.9	100	Y	Yes	5	NA
	Manganese	7439-96-5	T	ug/L	830				1.2	1.2	10.0	Y	Yes	5	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U	BF,H,M		0.098	0.098	0.098	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	70.2				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.050	J	RL		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325004
Sys Sample Code	082924NMW13
Sample Name	082924NMW13
Sample Date	8/29/2024 12:15:00 PM
Location	BPS-WAP-MW-13 / MW-13
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.13				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	58.4				0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92750325005
Sys Sample Code	082924NMW32S
Sample Name	082924NMW32S
Sample Date	8/29/2024 3:25:00 PM
Location	BPS-WAP-MW-32S / MW-32S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	22900				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	58.0				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	11.5				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	4620				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L	0.64	J	RL		0.63	0.63	5.0	Y	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L	210				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	0.46	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	2.7				0.24	0.24	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U	BF,H,M		0.11	0.11	0.11	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	3.6				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.12	J+	M		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325005
Sys Sample Code	082924NMW32S
Sample Name	082924NMW32S
Sample Date	8/29/2024 3:25:00 PM
Location	BPS-WAP-MW-32S / MW-32S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.93				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	2.6	J	M,MP		0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92750325006
Sys Sample Code	082924NMW32D
Sample Name	082924NMW32D
Sample Date	8/29/2024 2:25:00 PM
Location	BPS-WAP-MW-32D / MW-32D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	82800				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	135				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	5.8				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	26200				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L	194				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.2	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	34.8				0.24	0.24	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U			0.0043	0.0043	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	2.9				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.13				0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325006
Sys Sample Code	082924NMW32D
Sample Name	082924NMW32D
Sample Date	8/29/2024 2:25:00 PM
Location	BPS-WAP-MW-32D / MW-32D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.20				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	8.1				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	L1773902-01
Sys Sample Code	082824NMW1
Sample Name	082824NMW1
Sample Date	8/28/2024 3:05:00 PM
Location	BPS-WAP-MW-01 / MW-1
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.664	J	S	0.326				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.262			0.181	0.228	0.228	0.228	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.403	U		0.271	0.494	0.494	0.494	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	L1773902-02
Sys Sample Code	082824NMW12
Sample Name	082824NMW12
Sample Date	8/28/2024 3:35:00 PM
Location	BPS-WAP-MW-12 / MW-12
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.717	J	S	0.378				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.717			0.273	0.229	0.229	0.229	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	-0.160	U		0.262	0.494	0.494	0.494	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	L1773902-03
Sys Sample Code	082824NMW31
Sample Name	082824NMW31
Sample Date	8/28/2024 3:55:00 PM
Location	BPS-WAP-MW-31 / MW-31
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.141	U		0.275				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.119	U		0.124	0.183	0.183	0.183	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.0213	U		0.245	0.459	0.459	0.459	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	L1773902-04
Sys Sample Code	082924NMW13
Sample Name	082924NMW13
Sample Date	8/29/2024 12:15:00 PM
Location	BPS-WAP-MW-13 / MW-13
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.319	U		0.272				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.0714	U		0.155	0.293	0.293	0.293	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.248	U		0.224	0.413	0.413	0.413	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	L1773902-05
Sys Sample Code	082924NMW32S
Sample Name	082924NMW32S
Sample Date	8/29/2024 3:25:00 PM
Location	BPS-WAP-MW-32S / MW-32S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.314	U		0.236				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.143	U		0.147	0.228	0.228	0.228	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.171	U		0.185	0.344	0.344	0.344	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750325

Lab Sample ID	L1773902-06
Sys Sample Code	082924NMW32D
Sample Name	082924NMW32D
Sample Date	8/29/2024 2:25:00 PM
Location	BPS-WAP-MW-32D / MW-32D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.691	J	S	0.660				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.691			0.268	0.228	0.228	0.228	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	-0.444	U		0.603	1.14	1.14	1.14	N	Y	1	NA

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 8/26/2024 and 8/29/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92750652

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
082924NWPFDDUPLICATE	MW-39D	FD	EPA 350.1	Nitrogen, Ammonia	N	0.099	J	RL	0.031	0.10		mg/L
082924NWPFDDUPLICATE	MW-39D	FD	SW-846 6010D	Boron	T	33.1	J	RL	4.0	50.0		ug/L
082924NWPFDDUPLICATE	MW-39D	FD	SW-846 6010D	Copper	T	0.64	J	RL	0.62	5.0		ug/L
082924NWPFDDUPLICATE	MW-39D	FD	SW-846 7199	Chromium, Hexavalent	D		R	H	0.0043	0.025		ug/L
082924NWPFDDUPLICATE	MW-39D	FD	SW-846 9056A	Sulfate	N	47.9	J-	M	0.50	1.0		mg/L
082924NMW37	MW-37	N	SW-846 6010D	Copper	T	0.85	J	RL	0.62	5.0		ug/L
082924NMW37	MW-37	N	SW-846 6010D	Molybdenum	T	2.8	J	RL	2.6	5.0		ug/L
082924NMW37	MW-37	N	SW-846 6010D	Nickel	T	2.8	J	RL	0.88	5.0		ug/L
082924NMW37	MW-37	N	SW-846 6010D	Zinc	T	3.8	J	RL	3.0	10.0		ug/L
082924NMW37	MW-37	N	SW-846 6020B	Lithium	T	1.3	J	RL	0.33	2.5		ug/L
082924NMW39S	MW-39S	N	SW-846 6010D	Chromium	T	0.76	J	RL	0.63	5.0		ug/L
082924NMW39S	MW-39S	N	SW-846 6010D	Copper	T	1.3	J	RL	0.62	5.0		ug/L
082924NMW39S	MW-39S	N	SW-846 6010D	Nickel	T	3.0	J	RL	0.88	5.0		ug/L
082924NMW39S	MW-39S	N	SW-846 6010D	Silver	T	0.94	J	RL	0.49	5.0		ug/L
082924NMW39S	MW-39S	N	SW-846 6010D	Zinc	T	3.1	J	RL	3.0	10.0		ug/L
082924NMW39S	MW-39S	N	SW-846 6020B	Cobalt	T	0.34	J	RL	0.14	1.0		ug/L
082924NMW39S	MW-39S	N	SW-846 6020B	Lithium	T	1.1	J	RL	0.33	2.5		ug/L
082924NMW39S	MW-39S	N	SW-846 7199	Chromium, Hexavalent	D		U	BF,H	0.038	0.038		ug/L
082924NMW39S	MW-39S	N	SW-846 9056A	Fluoride	N	0.090	J	RL	0.050	0.10		mg/L
082924NMW39D	MW-39D	N	SW-846 6010D	Boron	T	32.7	J	RL	4.0	50.0		ug/L
082924NMW39D	MW-39D	N	SW-846 6020B	Lithium	T	2.4	J	RL	0.33	2.5		ug/L
082924NMW39D	MW-39D	N	SW-846 7199	Chromium, Hexavalent	D		R	H	0.0043	0.025		ug/L
082924NMW37	MW-37	N	CALC	Combined Radium	N	0.358	J	S			0.307	pCi/L
082924NMW39D	MW-39D	N	CALC	Combined Radium	N	3.23	J	FD,Y			0.467	pCi/L
082924NMW39D	MW-39D	N	SW-846 9315	Radium-226	N	1.66	J	FD	0.214	0.214	0.388	pCi/L
082924NMW39D	MW-39D	N	SW-846 9320	RADIUM-228	N	1.57	J	FD,Y	0.428	0.428	0.260	pCi/L
082924NWPFDDUPLICATE	MW-39D	FD	CALC	Combined Radium	N	1.95	J	FD,Y			0.403	pCi/L
082924NWPFDDUPLICATE	MW-39D	FD	SW-846 9315	Radium-226	N	1.10	J	FD	0.182	0.182	0.323	pCi/L
082924NWPFDDUPLICATE	MW-39D	FD	SW-846 9320	RADIUM-228	N	0.851	J	FD,Y	0.425	0.425	0.241	pCi/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92750652

Lab Sample ID	92750325007
Sys Sample Code	082924NWPFDDUPLICATE
Sample Name	082924NWPFDDUPLICATE
Sample Date	8/29/2024 1:15:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	FD
Matrix	GW
Parent Sample	082924NMW39D

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.099	J	RL		0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	127000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	238				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	20.5				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	33.1	J	RL		4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	36600				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	0.64	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.5				0.33	0.33	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 6020B	Iron	7439-89-6	T	ug/L	11000				9.0	9.0	60.0	Y	Yes	3	NA
	Manganese	7439-96-5	T	ug/L	318				0.71	0.71	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		R	H		0.0043	0.0043	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	27.8				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.11				0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750325007
Sys Sample Code	082924NWPFDDUPLICATE
Sample Name	082924NWPFDDUPLICATE
Sample Date	8/29/2024 1:15:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	FD
Matrix	GW
Parent Sample	082924NMW39D

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L		U			0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	47.9	J-	M		0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92750652

Lab Sample ID	92750652001
Sys Sample Code	082924NMW37
Sample Name	082924NMW37
Sample Date	8/29/2024 2:10:00 PM
Location	BPS-WAP-MW-37 / MW-37
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	130000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	197				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	76.9				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	93.0				4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	40000				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L	0.85	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	2.8	J	RL		2.6	2.6	5.0	Y	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	2.8	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	3.8	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	3.2				0.14	0.14	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	41.9				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.3	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 6020B	Manganese	7439-96-5	T	ug/L	762				1.2	1.2	10.0	Y	Yes	5	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.20				0.0043	0.0043	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	12.1				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.11				0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750652001
Sys Sample Code	082924NMW37
Sample Name	082924NMW37
Sample Date	8/29/2024 2:10:00 PM
Location	BPS-WAP-MW-37 / MW-37
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.17				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	53.1				0.50	0.50	1.0	Y	Yes	1	NA

Lab Sample ID	92750652002
Sys Sample Code	082924NMW39S
Sample Name	082924NMW39S
Sample Date	8/29/2024 12:05:00 PM
Location	BPS-WAP-MW-39S / MW-39S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	116000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	184				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	45.3				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	776				4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	36700				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L	0.76	J	RL		0.63	0.63	5.0	Y	Yes	1	NA
	Copper	7440-50-8	T	ug/L	1.3	J	RL		0.62	0.62	5.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L	3.0	J	RL		0.88	0.88	5.0	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L	0.94	J	RL		0.49	0.49	5.0	Y	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L	3.1	J	RL		3.0	3.0	10.0	Y	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L	0.34	J	RL		0.14	0.14	1.0	Y	Yes	1	NA
	Iron	7439-89-6	T	ug/L	222				3.0	3.0	20.0	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	1.1	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Manganese	7439-96-5	T	ug/L	73.9				0.24	0.24	2.0	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U	BF,H		0.038	0.038	0.038	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	1.9				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.090	J	RL		0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750652002
Sys Sample Code	082924NMW39S
Sample Name	082924NMW39S
Sample Date	8/29/2024 12:05:00 PM
Location	BPS-WAP-MW-39S / MW-39S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L	0.39				0.060	0.060	0.10	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	69.4				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92750652

Lab Sample ID	92750652003
Sys Sample Code	082924NMW39D
Sample Name	082924NMW39D
Sample Date	8/29/2024 1:05:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L	0.11				0.031	0.031	0.10	Y	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L	120000				36.8	36.8	662	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	242				25.0	25.0	25.0	Y	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	19.1				0.79	0.79	5.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	32.7	J	RL		4.0	4.0	50.0	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	34400				14.7	14.7	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.4	J	RL		0.33	0.33	2.5	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 6020B	Iron	7439-89-6	T	ug/L	12700				9.0	9.0	60.0	Y	Yes	3	NA
	Manganese	7439-96-5	T	ug/L	369				0.71	0.71	6.0	Y	Yes	3	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		R	H		0.0043	0.0043	0.025	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L	27.1				0.60	0.60	1.0	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.20				0.050	0.050	0.10	Y	Yes	1	NA

Lab Sample ID	92750652003
Sys Sample Code	082924NMW39D
Sample Name	082924NMW39D
Sample Date	8/29/2024 1:05:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Nitrate as N	14797-55-8	N	mg/L		U			0.060	0.060	0.10	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	48.5				0.50	0.50	1.0	Y	Yes	1	NA

Facility: Bremo Power Station
SDG: 92750652

Lab Sample ID	L1773943-01
Sys Sample Code	082924NMW37
Sample Name	082924NMW37
Sample Date	8/29/2024 2:10:00 PM
Location	BPS-WAP-MW-37 / MW-37
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.358	J	S	0.307				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.358			0.186	0.171	0.171	0.171	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	-0.333	U		0.244	0.481	0.481	0.481	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750652

Lab Sample ID	L1773943-02
Sys Sample Code	082924NMW39S
Sample Name	082924NMW39S
Sample Date	8/29/2024 12:05:00 PM
Location	BPS-WAP-MW-39S / MW-39S
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.134	U		0.260				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.112	U		0.158	0.274	0.274	0.274	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.0220	U		0.207	0.384	0.384	0.384	N	Y	1	NA

Facility: Bremo Power Station
SDG: 92750652

Lab Sample ID	L1773943-03
Sys Sample Code	082924NMW39D
Sample Name	082924NMW39D
Sample Date	8/29/2024 1:05:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	3.23	J	FD,Y	0.467				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	1.66	J	FD	0.388	0.214	0.214	0.214	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	1.57	J	FD,Y	0.260	0.428	0.428	0.428	Y	Y	1	NA

Lab Sample ID	L1773943-04
Sys Sample Code	082924NWPFDDUPLICATE
Sample Name	082924NWPFDDUPLICATE
Sample Date	8/29/2024 1:15:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	FD
Matrix	GW
Parent Sample	082924NMW39D

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	1.95	J	FD,Y	0.403				Y	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	1.10	J	FD	0.323	0.182	0.182	0.182	Y	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	0.851	J	FD,Y	0.241	0.425	0.425	0.425	Y	Y	1	NA

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected between: 8/26/2024 and 8/29/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92749755

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
082624NFBBLANK	Field Blank	FB	SW-846 9056A	Nitrate as N	N		UJ	H	0.060	0.10		mg/L
082624NFBBLANK	Field Blank	FB	CALC	Combined Radium	N	0.285	U	S			0.331	pCi/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.

S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92749755

Lab Sample ID	92749755001
Sys Sample Code	082624NFBBLANK
Sample Name	082624NFBBLANK
Sample Date	8/26/2024 12:30:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 350.1	Nitrogen, Ammonia	7664-41-7	N	mg/L		U			0.031	0.031	0.10	N	Yes	1	NA
SM 2340B	Hardness, Total(SM 2340B)	HARD	N	ug/L		U			36.8	36.8	662	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			25.0	25.0	25.0	N	Yes	1	NA
SW-846 6010D	Antimony	7440-36-0	T	ug/L		U			3.6	3.6	5.0	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			2.5	2.5	10.0	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L		U			0.79	0.79	5.0	N	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.16	0.16	1.0	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.0	4.0	50.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.29	0.29	1.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			14.7	14.7	100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			0.63	0.63	5.0	N	Yes	1	NA
	Copper	7440-50-8	T	ug/L		U			0.62	0.62	5.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			2.6	2.6	5.0	N	Yes	1	NA
	Nickel	7440-02-0	T	ug/L		U			0.88	0.88	5.0	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			4.1	4.1	10.0	N	Yes	1	NA
	Silver	7440-22-4	T	ug/L		U			0.49	0.49	5.0	N	Yes	1	NA
	Vanadium	7440-62-2	T	ug/L		U			1.6	1.6	5.0	N	Yes	1	NA
	Zinc	7440-66-6	T	ug/L		U			3.0	3.0	10.0	N	Yes	1	NA
SW-846 6020B	Cobalt	7440-48-4	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
	Iron	7439-89-6	T	ug/L		U			3.0	3.0	20.0	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.18	0.18	1.0	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			0.33	0.33	2.5	N	Yes	1	NA
	Manganese	7439-96-5	T	ug/L		U			0.24	0.24	2.0	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.028	0.028	0.20	N	Yes	1	NA
	Tin	7440-31-5	T	ug/L		U			0.14	0.14	1.0	N	Yes	1	NA
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.025				0.0043	0.0043	0.025	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	ug/L		U			0.12	0.12	0.20	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	mg/L		U			0.60	0.60	1.0	N	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.050	0.050	0.10	N	Yes	1	NA
	Nitrate as N	14797-55-8	N	mg/L		UJ	H		0.060	0.060	0.10	N	Yes	1	NA

Facility: Bremo Power Station
SDG: 92749755

Lab Sample ID	92749755001
Sys Sample Code	082624NFBBLANK
Sample Name	082624NFBBLANK
Sample Date	8/26/2024 12:30:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 9056A	Sulfate	14808-79-8	N	mg/L		U			0.50	0.50	1.0	N	Yes	1	NA

Facility: Bremo Power Station
SDG: 92749755

Lab Sample ID	L1773945-01
Sys Sample Code	082624NFBBLANK
Sample Name	082624NFBBLANK
Sample Date	8/26/2024 12:30:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Combined Radium	RA226/228	N	pCi/L	0.285	U	S	0.331				N	Y	1	NA
SW-846 9315	Radium-226	13982-63-3	N	pCi/L	0.285	U		0.242	0.341	0.341	0.341	N	Y	1	NA
SW-846 9320	RADIUM-228	15262-20-1	N	pCi/L	-0.0109	U		0.226	0.418	0.418	0.418	N	Y	1	NA

APPENDIX G.3
DATA VALIDATION FORMS
SECOND SEMI-ANNUAL GROUNDWATER RESAMPLE EVENT (NOVEMBER 2024)

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Bremo Power Station Groundwater Sampling
Samples Collected: 11/14/2024

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

92763893

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
111424NMW39D	MW-39D	N	SW-846 7199	Chromium, Hexavalent	D		U	BF	0.12	0.12		ug/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results

T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Bremo Power Station
SDG: 92763893

Lab Sample ID	92763893001
Sys Sample Code	111424NMW39D
Sample Name	111424NMW39D
Sample Date	11/14/2024 1:30:00 PM
Location	BPS-WAP-MW-39D / MW-39D
Sample Type	N
Matrix	GW
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L		U	BF		0.12	0.12	0.12	N	Yes	1	NA

Facility: Bremo Power Station
SDG: 92763893

Lab Sample ID	92763893002
Sys Sample Code	111424FBBLANK
Sample Name	111424FBBLANK
Sample Date	11/14/2024 1:45:00 PM
Location	BPS-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	
Percent Moisture	0.00

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 7199	Chromium, Hexavalent	18540-29-9	D	ug/L	0.031				0.0043	0.0043	0.025	Y	Yes	1	NA

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 21, 2024

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Dear Kelly Hicks:

Enclosed are the analytical results for sample(s) received by the laboratory on November 15, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephanie Knott

Stephanie Knott
stephanie.knott@pacelabs.com
704-977-0981
Project Manager

Enclosures

cc: ENV STD DM
Michael Knez, WSP
Rashida Marlowe, Dominion Energy Services, Inc.
Catherine Pezzaro, WSP USA, Inc.
Crystal Shadle, Golder Associates Inc.
Environmental Standards, Inc., Environmental Standards, Inc.

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Huntersville, NC 28078
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CERTIFICATIONS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Pace Analytical Services Charlotte

South Carolina Laboratory ID: 99006
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Laboratory ID: 99006
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DoH Drinking Water #: LA029
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92763893001	**111424NMW39D**	Water	11/14/24 13:30	11/15/24 10:30
92763893002	~~**1114FBBLANK**~~ 111424FBLANK	Water	11/14/24 13:45	11/15/24 10:30

✔ ✔ ✔

11/25/24 AMR

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SAMPLE ANALYTE COUNT

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92763893001	**111424NMW39D**	EPA 7199	VJM	1	PASI-C
92763893002	~~**1114FBBLANK**~~ 111424FBLANK	EPA 7199	VJM	1	PASI-C

PASI-C = Pace Analytical Services - Charlotte 11/25/24 AMR

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SUMMARY OF DETECTION

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92763893001	**111424NMW39D**					
EPA 7199	Chromium, Hexavalent	0.12	ug/L	0.025	11/15/24 12:49	M1
92763893002	~~**1114FBBLANK**~~ 111424FBLANK					
EPA 7199	Chromium, Hexavalent 11/25/24 AMR	0.031	ug/L	0.025	11/15/24 13:10	

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PROJECT NARRATIVE

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Method: **EPA 7199**
Description: 7199 Chromium, Hexavalent
Client: Dominion Energy_VA
Date: November 21, 2024

General Information:
2 samples were analyzed for EPA 7199 by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 896257

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92763893001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 4613464)
  - Chromium, Hexavalent

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 896257

- 111424NMW39D (Lab ID: 92763893001)
  - Chromium, Hexavalent

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Sample: 111424NMW39D **Lab ID: 92763893001** Collected: 11/14/24 13:30 Received: 11/15/24 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.12**	ug/L	0.025	0.0043	1		11/15/24 12:49	18540-29-9	M1

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ANALYTICAL RESULTS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893 11/25/24 AMR

Sample: ~~1114FBBLANK~~ 111424FBLANK **Lab ID: 92763893002** Collected: 11/14/24 13:45 Received: 11/15/24 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7199 Chromium, Hexavalent	Analytical Method: EPA 7199 Pace Analytical Services - Charlotte								
Chromium, Hexavalent	**0.031**	ug/L	0.025	0.0043	1		11/15/24 13:10	18540-29-9	

U BF

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QUALITY CONTROL DATA

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

QC Batch: 896257
QC Batch Method: EPA 7199
Analysis Method: EPA 7199
Analysis Description: 7199 Chromium, Hexavalent
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92763893001, 92763893002

METHOD BLANK: 4613461 Matrix: Water
Associated Lab Samples: 92763893001, 92763893002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	0.025	0.0043	11/15/24 08:38	

LABORATORY CONTROL SAMPLE: 4613462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	0.1	0.096	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4613463 4613464

Parameter	Units	92763893001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.12	0.1	0.1	0.22	0.23	100	112	90-110	5	20	H1,M1

SAMPLE DUPLICATE: 4613512

Parameter	Units	92763893001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	ug/L	0.12	0.12	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BremoPS_2SA24_HexCr_HVL_GrpA
Pace Project No.: 92763893

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92763893001	**111424NMW39D**	EPA 7199	896257		
92763893002	**1114FBBLANK**	EPA 7199	896257		

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Pace

Receipt

Effective Date: 5/24/2024

Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Dominion Energy

Project #: WO# : 92763893

92763893

Courier: ☐ Commercial ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Other:____

Carrier Tracking Number: _____

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Date/Initials Person Examining Contents:** ARL 11-15-24

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92TDB2 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 0.6 **Correction Factor:** Add / Subtract (°C) 0.0

Corrected Cooler Temp (°C): 0.6 ✔

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling proce has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☑ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: NT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

Temp Log: Temp must be maintained at <6 C during login, record temp every 20 minutes.
Time opened: 1030 Temp: 0.6
Time: put in cooler
Time: Temp:

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ **Date:** _____

Project Manager SRF Review: _____ **Date:** _____

Qualtrax Document ID: 70677

Page 1 of 2

Pace

Receipt

Effective Date: 5/24/2024

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

Project #

WO# : 92763893

PM: SK **Due Date: 12/03/24**

CLIENT: 92-DomEnergy

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☐ **Raleigh** ☐ **Mechanicsville** ☐ **Atlanta** ☐ **Kernersville** ☐

Client_____ Profile/EZ (Circle one)_____ Notes_____

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4B-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	DG94-40 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unpreserved (N/A)	DG9V-40 mL VOA H3PO4 (N/A)	KP7U-50 mL Plastic Unpreserved (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved (N/A) (Cl-)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
CC																													
1																										X			
2																										X			
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

COCID. BremoPS-2SA24_HexCrResample_HVL-GrpA-1-1

Pace® Location Requested (City/State):
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100, Huntersville, NC 28078

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Dominion Energy_VA	Contact/Report To:	Kelly Hicks
Street Address:	120 Tredegar Street Richmond, VA 23219	Phone #:	(804)273-4903
		E-Mail:	kelly.a.hicks@dominionenergy.com
		Cc E-Mail:	crystal.shadle@wsp.com
Customer Project #:			
Project Name:	BremoPS_2SA24_CCR&VSWMR_HexCr_GrpA	Invoice To:	Kelly Hicks
		Invoice E-Mail:	kelly.a.hicks@dominionenergy.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	50149081
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Virginia

Data Deliverables: [X] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: Standard TAT

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	7199 Chromium, Hexavalent	Sample Comment
1114_24NMW39D	WT	G			11/14/24	1330	1			X	all samples preserved on ice
1114FBBLANK	WT	G			11/14/24	1345	1			X	
✔					✔	✔					

Specify Container Size **: 10

Identify Container Preservative Type***: 11

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Stephanie Knott

AcctNum / Client ID:

Table #:

Profile / Template: 13861

Prelog / Bottle Ord. ID: EZ 3171542

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: (Printed Name) Z. Mondshine

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
WSP	11/14/24 1600	ARL Pacefm	11-15-24 1030	779880033313
			✔	Delivered by: [ ] In-Person [ ] Courier
				[ ] FedEx [ ] UPS [ ] Other
				Page: 1 of 1

sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Hexavalent Chromium pH Adjustment

Project #

7199 WH 9.0-9.5
218.6 WH 9.3-9.7

Client: Dominion Energy

Sample ID	Analyst	Initial pH	Adjusted pH	Adjusted Date/Time	Volume Acid/Base Used (Drops)	Lot#/Solvent
111424 DM W 3IP	APL	9.7	9.7	11-15-24 1030	20 drop	224809 / H2SO4
					1 drop	225312 / NaOH
111424 FB Blank	APL	9.9	9.5	1	10 drop	224809 / H2SO4
			✔	✔		