PHASE 2 INITIAL BOREHOLE DRILLING AND TESTING, SOUTH BRUCE

WP04C Data Report: Porewater Extraction and Analyses, and Petrographic Analysis for SB_BH02

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Geofirma Engineering



NUCLEAR WASTE SOCIÉTÉ DE GESTION MANAGEMENT DES DÉCHETS ORGANIZATION NUCLÉAIRES



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Phase 2 Initial Borehole Drilling and Testing, South Bruce

WP04C Data Report: Porewater Extraction and Analyses, and Petrographic Analysis for SB_BH02

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TABLE OF CONTENTS

| INTRODUCTION | 1 |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1.1 Background | 1 |
| 1.2 Geologic Setting | 1 |
| 1.3 Technical Objectives | 3 |
| | - |
| DESCRIPTION OF ACTIVITIES | 4 |
| 2.1 Sample Collection and Preservation | 4 |
| 2.1.1 Sample Selection and Collection | 4 |
| 2.1.2 Sample Preservation for Paper Absorption, Vacuum Distillation, and Petrography | y 4 |
| 2.1.3 In-Field Encapsulation for Noble Gases | 4 |
| 2.1.4 In-Field Encapsulation for CO ₂ and CH ₄ | 6 |
| 2.2 Sample Processing and Analyses | 6 |
| 2.2.1 Vacuum Distillation | 6 |
| 2.2.2 Paper Absorption | 6 |
| 2.2.3 Analysis for CO_2 and CH_4 | 7 |
| 2.2.4 Analysis for Noble Gases | |
| 2.2.5 Analysis for Radiohalides, $\delta^{3'}$ Cl and Strontium Isotopes | |
| 2.3 Mineralogy and Petrography | ð |
| RESULTS | 9 |
| 3.1 Porewater Geochemistry | 9 |
| 3.1.1 Major/Minor Ions and Total Dissolved Solids | 9 |
| 3.1.2 Environmental Isotopes | 14 |
| 3.1.3 Radiohalides, δ^{37} Cl and Strontium Isotopes | 17 |
| 3.1.4 Noble Gas Concentrations and Isotopes | 19 |
| 3.1.5 Methane (CH ₄) and Carbon Dioxide (CO ₂) Concentrations and Isotopes | 21 |
| 3.1 Mineralogy and Petrography | 21 |
| CONCLUSIONS | 24 |
| REFERENCES | 26 |
| | INTRODUCTION. 1.1 Background. 1.2 Geologic Setting. 1.3 Technical Objectives |



LIST OF FIGURES

| Figure 1 | Location of SB_BH02 Drill Site |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Figure 2 | Schematic for noble gas core sample encapsulation (Source: University of Ottawa, Noble Gas Isotope Laboratory) |
| Figure 3 | Profile of Chloride, Sodium, and TDS Concentrations of Porewater from Vacuum Distillation and Paper Absorption, SB_BH02 Core Samples. TDS calculated assuming freshwater density (1000 kg/m ³) |
| Figure 4 | Profile of Calcium, Magnesium, and Strontium Concentrations in Porewater from Vacuum Distillation, SB_BH02 Core Samples |
| Figure 5 | Profile of Potassium, Bromine, and Boron Concentrations in Porewater from Vacuum Distillation, SB_BH02 Core Samples |
| Figure 6 | ¹⁸ O- ² H Cross Plot, SB_BH02 Porewater Samples. Samples SB_BH02_PW055 and SB_BH02_PW057 were noted to have low water content (~0.1%) |
| Figure 7 | Profile of δ^{18} O and δ^{2} H (Deuterium) of Porewater, SB_BH02 Core Samples. Samples SB_BH02_PW055 and SB_BH02_PW057 were noted to have low water content (~0.1%) |
| Figure 8 | Profile of ³⁶ Cl, ¹²⁹ l, ⁸⁷ Sr/ ⁸⁶ Sr, and ³⁷ Cl Isotopic Results for Porewater from SB_BH02 Core Samples. Sample SB_BH02_PW007 is flagged as anomalous |
| Figure 9 | Profile of Noble Gas (He, Ne, Ar) Concentrations and Isotopes for Porewater from SB_BH02 Core Samples, xRa = Air-normalized ³ He/ ⁴ He ratio20 |
| Figure 10 | Profile of Methane and Carbon Dioxide Concentrations and Isotopes from SB_BH02 Core Samples |
| Figure 11 | Mineralogical Components, by X-Ray Diffraction, SB_BH02 Core Samples23 |

APPENDICES

- Appendix A SB_BH02 Porewater (PW), Dissolved Gas (GD), and Noble Gas (NG) Sample Summary
- Appendix B Results Tables for Porewater Characterization Activities at SB_BH02
- Appendix C Mineralogical Results for Porewater Samples at SB_BH02



1 INTRODUCTION

Geofirma Engineering Ltd. (Geofirma) completed a drilling and testing program at borehole SB_BH02 northwest of Teeswater, Ontario (Figure 1). This report provides a detailed summary of one component of the Geofirma geoscientific investigation as part of the NWMO Phase 2 Initial Borehole Drilling and Testing Program at the South Bruce site. Specifically, this report describes the activities associated with Geofirma's Work Package 4C (WP04C), which included porewater extraction and analyses, and petrographic analyses for core obtained from borehole SB_BH02.

1.1 Background

Geofirma was retained by the Nuclear Waste Management Organization (NWMO) to complete a drilling and testing program for two deep bedrock boreholes (SB_BH01 and SB_BH02) as part of the NWMO's Phase 2 Geoscientific Preliminary Field Investigations. The full scope of the drilling and testing program for SB_BH02 is described in the Initial Borehole Characterization Plan.

NWMO's process is called the Adaptive Phased Management (APM) plan and comprises multiple phases.

Phase 1 of NWMO's APM plan included preliminary desktop studies using available geoscientific information and a set of key geoscientific characteristics and factors that can be realistically assessed at the desktop phase of the Preliminary Assessment. The Phase 1 Preliminary Assessment of the South Bruce site identified the Cobourg Formation as the preferred host formation for a deep geological repository for used nuclear fuel. The Initial Borehole Drilling and Testing study is a key component of the Phase 2 Geoscientific Preliminary Field Investigations for the NWMO's APM plan.

Borehole SB_BH02 was the second borehole drilled in the South Bruce study site as part of the Phase 2 Initial Borehole Drilling and Testing program. SB_BH02 is located approximately 5.5 km northwest of the community of Teeswater, Ontario, and was drilled to 900.57 m below ground surface (m BGS). SB_BH02 was drilled through the entire sedimentary bedrock sequence to approximately 14 m into the Precambrian basement.

1.2 Geologic Setting

The sequence of rocks encountered in the SB_BH02 borehole consist of Paleozoic-aged strata that were deposited within the Michigan Basin northwest of the Algonquin Arch in Southwestern Ontario. The Michigan Basin is a circular-shaped cratonic basin that is composed primarily of shallow marine carbonates, evaporites, and shales that were deposited while eastern North America was in tropical latitudes during the Paleozoic Era (Armstrong and Carter 2010). West of the Algonquin Arch, strata from the Michigan Basin gradually dip westward into the Michigan Basin. Borehole SB_BH02 was drilled through the entire Paleozoic sequence to approximately 14 m into the Precambrian basement, which is composed of high-grade metamorphic rocks of the Grenville Province.





| _ | | Scale | 1:60,000 | | | | | | | | |
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1.3 Technical Objectives

The primary technical objective of the WP04C porewater program was to characterize the fluid chemistry of the sedimentary bedrock at the South Bruce site based on core obtained from boreholes SB_BH01 and SB_BH02. This report has been prepared to provide a detailed summary of the sampling methods, laboratory procedures, and results from the WP04C porewater characterization program that was completed for core obtained from borehole SB_BH02.

Results of the porewater and dissolved gas extraction and analysis work will be used as part of data integration activities (Work Package 10) to assess the age of porewater in the Upper Ordovician shale and limestone formations, as well as obtain evidence of whether the porewater has been in contact with modern surface waters.



2 DESCRIPTION OF ACTIVITIES

2.1 Sample Collection and Preservation

2.1.1 Sample Selection and Collection

Selection and collection of porewater, noble gas, and dissolved gas (CO₂ & CH₄) samples were completed by Geofirma staff during drilling of borehole SB_BH02. Intact sections of core were collected as samples according to NMWO-specified geologic/depth interval targets. Samples were collected such that they were representative of the unit being sampled and did not cross a lithological contact. In addition, samples were generally not taken from the immediate top or bottom of a core run to preserve the ability to re-align adjacent core runs by re-fitting the reference line. All samples were extracted using a hammer and chisel, or at pre-existing mechanical/natural breaks.

As much as possible, the porewater, noble gas, and dissolved gas core samples were preserved within 15 minutes of core retrieval, immediately after core run photography, but prior to core logging. All core samples were weighed and photographed prior to preservation.

Core sample locations and procedures for sample collection are described in detail in the Work Package 3 (WP03) Data Report (Geofirma 2022).

2.1.2 Sample Preservation for Paper Absorption, Vacuum Distillation, and Petrography

Samples for paper absorption, vacuum distillation and petrography were collected as porewater samples and were assigned "PW" sample designation using NWMO's acQuire data management system (e.g., SB_BH02_PW002). A set of two PW samples was collected at each sample location: a 20-30 cm sample for paper absorption and petrography/mineralogy testing, and a second 15 cm sample for vacuum distillation, vacuum distillation leaching, and crush and leach testing. Each set of PW samples was paired with samples for noble gases and dissolved gases (CO₂, CH₄).

The porewater samples were preserved following the standard procedure outline below:

- 1. Wrap in plastic film.
- 2. Wrap in Polyethylene (PE) bag.
- 3. Flush with nitrogen, evacuate, and heat seal using vacuum sealer.
- 4. Wrap in second PE bag.
- 5. Flush with nitrogen, evacuate, and heat seal using vacuum sealer.
- 6. Wrap in aluminum foil pouch.
- 7. Flush with nitrogen, evacuate, and heat seal using vacuum sealer.
- 8. Refrigerate sample.

2.1.3 In-Field Encapsulation for Noble Gases

Core samples collected for noble gas analysis were assigned a "NG" sample designation in acQuire. Noble gas samples were preserved using purpose-built stainless-steel containers following a specialized procedure that was provided to Geofirma by the Noble Gas Laboratory at the University of



Ottawa. Each noble gas core sample was encapsulated in a stainless-steel chamber with a flange fitted to a copper-seated high-vacuum valve. The encapsulation and preservation process for noble gas samples is summarized below:

- 1. Insert core into stainless steel chamber and assemble the chamber.
- 2. Interface chamber with flushing/evacuating manifold.
- 3. Flushing-evacuating follows the **1-2 1-2** method.
 - Fill the chamber with high purity nitrogen until 5 PSI on the gauge, **1 minute**.
 - Evacuate the chamber for **2 minutes**.
 - Fill the chamber with high purity nitrogen until 10 PSI above background/atmospheric pressure, 1 minute.
 - Evacuate the chamber for **2 minutes**.
- 4. Close the valve on the stainless-steel chamber. Ensure the vacuum pump is isolated and remove the chamber from the line.
- 5. Place a plug and gasket into the valve at the top of the chamber and tighten.
- 6. Label and store the chambers as required.

Figure 2 provides a schematic of the system that was used to complete encapsulation and preservation of core samples for noble gases at SB_BH02.



Figure 2 Schematic for noble gas core sample encapsulation (Source: University of Ottawa, Noble Gas Isotope Laboratory)





2.1.4 In-Field Encapsulation for CO₂ and CH₄

Samples for CH_4 and CO_2 analyses were collected as dissolved gas samples and were assigned a "DG" sample designation using acQuire. Full diameter core samples for CH_4 and CO_2 analysis were broken into large chunks (< 5 cm) and placed into two IsoJar (Isotech, USA) containers, capped with a septum-fitted cap. While filling the IsoJar containers, high-purity nitrogen gas was flushed into the containers by a needle through the septum to displace air in the containers. The nitrogen gas was added as the lid was tightened, allowing for air to be flushed out from the rim. The IsoJars were refrigerated after preservation.

2.2 Sample Processing and Analyses

2.2.1 Vacuum Distillation

Porewater isotopes were sampled from core by vacuum distillation. Vacuum distillation was undertaken on core samples, with the outer perimeter removed and a subsample mechanically crushed and sieved to retrieve a 2 to 4 mm size fraction. Of this fraction, approximately 30 g per sample was encapsulated in pre-weighed vessels and attached to an extraction line. Evacuation was carried out with a –180°C cold trap in place to collect evaporated porewater during evacuation of the line.

The samples were then heated with temperature-controlled ovens to 150° C. This temperature has proven to yield reliable results for the Ordovician shales and carbonates at the Bruce Site (Clark et al., 2013) and for the Tournemire argillite (Altinier et al., 2006). Samples were monitored during a 6-hour distillation period after which the recovered porewater was transferred to 12 mL Exetainers[®] and weighed for gravimetric water content. The measured water content was compared with the weight loss in the core material to assess water recovery. Isotopes (δ^{18} O and δ^{2} H) were measured by off-axis integrated cavity output laser spectroscopy using a Los Gatos Research Inc. (LGR) instrument in the Ján Veizer Stable Isotope Laboratory at the University of Ottawa. Porewater extractions and isotope analysis are run in quadruplicate, using 30 g splits from a single core sample.

2.2.1.1 Vacuum Distillation Leaching

The primary method for determination of major/minor ion chemistry of the porewaters was the vacuum distillation leaching (VDL) method. The extraction vessel and dry core material following vacuum distillation were rinsed with distilled water into a pre-weighed falcon tube for out-diffusion of porewater salts. The mass of leach water was recorded and then monitored over time until a stable electrical conductivity was attained. The leach water was then filtered and analyzed for major and trace solutes.

Solute masses, determined from concentration and leach water mass, were normalized to the water mass recovered from distillation to determine total porewater concentrations. Leach water was analyzed (ICP-MS, ICP-OES, IC) for major, minor and trace metals (Na, K, Mg, Ca, Sr, plus AI, Fe, Mn Li, Rb, and Si) as well as major and minor anionic species (B, CI, Br, I, S) in the Geochemistry Laboratory at the University of Ottawa.

2.2.2 Paper Absorption

A second method, paper absorption (PA), was used to complement and allow comparison with the VDL results for porewater samples. The PA method (Celejewski et al., 2014, 2018) was developed for



extraction of mobile porewater for analysis of major anions and cations. The mobile porewater is that which is free to flow among the largest pores, and it is a fraction of the total porewater which also includes water in clay interlayers and in the electric double layer adjacent to mineral surfaces.

For the PA method, preserved, saturated core sections of minimum 20 cm length were broken in two, and then reassembled with a cellulosic paper placed between the two pieces, and tightly bound. Reassembled cores were left for a period of approximately two months to allow capillary uptake of porewater into the filter paper. When reopened, the recovered filter paper was leached to remove solutes and the leached solution was analyzed (ICP-MS, ICP-OES, IC) to determine the extracted masses of major, and some minor elements (Na, K, Mg, Ca, Li, Sr, and Ba) as well as major and minor anionic species (CI, Br, S) at the University of Ottawa. The mass of absorbed water was determined by near-infrared spectrometry, before and after insertion in the core. The mass of extracted water, after 2 months, represents porewater uptake and was used to convert the solute masses to concentrations.

2.2.3 Analysis for CO₂ and CH₄

Headspace gas in the IsoJars was periodically analyzed for concentrations of CH₄ and CO₂ by gas chromatography. When stable concentrations were attained (three successive measurements within analytical uncertainty), the headspace was sampled and analyzed for δ^{13} C and δ^{2} H of CH₄, and for δ^{13} C of CO₂ by routine isotope ratio mass spectrometry at Jan Veizer Stable Isotope Laboratory, University of Ottawa.

2.2.4 Analysis for Noble Gases

All noble gas concentrations were measured on a Thermo-Finnigan Helix SFT noble gas mass spectrometer at the University of Ottawa Lalonde noble gas laboratory using aliquots from the stainless-steel encapsulation chamber, following an outgassing period of at least six months. The out-diffused gases were treated with a Ti getter pump maintained at 450°C to remove non-inert gases (principally CH_4 and CO_2). The noble gases were then cryogenically separated by freezing Ar, Kr, and Xe on charcoal traps before sorbing Ne and He on a 5 K cold-head. He and Ne were successively released to the mass spectrometer by ramping the cold-head temperature accordingly. The isotopes of Ar, Kr and Xe were then analyzed.

2.2.5 Analysis for Radiohalides, δ^{37} Cl and Strontium Isotopes

Pieces of the core samples were crushed in an aerobic glove box, followed by leaching with an equal mass of deionized and distilled water. These crushed and leached samples were used to extract porewater for radiohalide analyses (¹²⁹I, ³⁶Cl, and δ^{37} Cl). Sampled water for ¹²⁹I was treated to precipitate AgI target material and analyzed by the Dresden AMS laboratory in Germany. Sampled water for ³⁶Cl was treated to precipitate AgCl target material which was subsequently analyzed on a high energy AMS system at the Lawrence Livermore National Laboratories facility in California. Water for δ^{37} Cl analysis and ⁸⁷Sr/⁸⁶Sr isotope ratios for porewater samples were analyzed at Isotope Tracer Technologies Inc., Waterloo. Part of the leached solution extracted using the PA technique was also used for Sr isotope analyses at the Carleton University Isotope Geochemistry and Geochronology Research Centre.





2.3 Mineralogy and Petrography

Mineralogical and petrological analyses were completed on a subset of porewater samples by the University of Ottawa to obtain mineralogical data required for interpretation and geochemical modelling of the porewater results. Rock core samples that were used for PA analyses were also used for the mineralogical and petrophysical analyses. Thin sections were cut for petrographic analyses and a subsample of core was crushed and milled into a powder for x-ray diffraction (XRD). Following the review of the petrological results from the SB_BH01 samples, it was decided to forgo the petrological analyses on SB_BH02 samples as the petrography was deemed not essential for data interpretation and could be completed later, as required.



3 RESULTS

3.1 **Porewater Geochemistry**

Results from the SB_BH02 porewater characterization program are summarized in the following section, with select mineralogical, geochemical, and isotopic results presented as profiles with depth. A summary of the porewater sample information, including sample type, depth, and logged primary lithology is included as a table in Appendix A. Complete results from the porewater characterization program are provided in Appendix B.

The results presented in this data report have not been corrected for potential mineral dissolution during analysis, apparent halite undersaturation, or anion exclusion. These processes were shown to impact geochemical results for porewater samples that were collected as part of the Ontario Power Generation (OPG) Deep Geological Repository site characterization program (Intera 2011) from similar strata to what was encountered in SB_BH01 and SB_BH02. The Intera (2011) report showed that the relative magnitude of impact from these processes, and the corrections that were required to obtain representative porewater concentrations, depended on the porewater chemistry and the sampled lithology/mineralogy.

Detailed interpretation of the porewater results, including geochemical modelling and correction for mineral dissolution, halite under-saturation, and anion exclusion will be completed separately as part of Work Package 10 (Data Integration) activities.

3.1.1 Major/Minor Ions and Total Dissolved Solids

Figure 3 presents depth profiles of chloride (CI), sodium (Na), and calculated total dissolved solids (TDS) measured using both the VDL and PA methods. The TDS values shown in Figure 3 were calculated assuming a fresh-water density and overestimate the true TDS for brackish water, saline water, and brines that were encountered in many of the samples.

Concentrations of CI and Na are generally low through the top of the Salina Group. Na and CI concentrations in the Guelph Formation were slightly higher in comparison to other samples from the overlying/underlying units. Below the Guelph Formation, porewater concentrations of Na and CI generally increase with depth through the lower Silurian units and the Ordovician-aged shales (Queenston, Georgian Bay, and Blue Mountain formations) to the top of the Cobourg Formation. VDL-derived Na and CI concentrations remain high and relatively consistent from the Cobourg Formation to the Shadow Lake Formation. The PA-derived concentrations of Na and CI are high and relatively stable from the Cobourg to the Kirkfield, but then decrease with depth to the Shadow Lake Formation.

Since Na and CI generally dominate the ionic composition of porewaters, particularly below the Salina Group, the TDS depth profiles show similar trends to the Na and CI depth profiles. VDL-derived TDS values increased with depth from 25 to 240 g/L across the Salina Group to the Guelph Formation. Below the Guelph Formation, the VDL TDS values remained high with most sample concentrations between 200 and 300 g/L.





Figure 3 Profile of Chloride, Sodium, and TDS Concentrations of Porewater from Vacuum Distillation and Paper Absorption, SB_BH02 Core Samples. TDS calculated assuming freshwater density (1000 kg/m³).



Comparison of CI and Na concentrations measured using the VDL and PA methods show considerable variation, with PA-derived concentrations that were 1-3 orders of magnitude higher than corresponding concentrations obtained using the VDL method. Many of the PA-derived concentrations were supersaturated relative to halite solubility. The significant variation in porewater concentrations that is observed between these two methods may reflect differences in the proportional uptake of clay-bound, capillary-bound, and mobile porewaters.

VDL-measured concentrations of Na, Cl, and other major ions were high and outside of the anticipated range for a porewater sample that was collected at the bottom of the Georgian Bay Formation (SB_BH02_PW033). This positive anomaly is likely due to halite dissolution.

Figure 4 shows depth profiles for porewater concentrations of calcium (Ca), magnesium (Mg), and strontium (Sr) measured by VDL. These three elements show similar depth profiles, with low concentrations in the Salina Group through to the bottom of the Silurian strata, except for one porewater sample (SB_BH02_PW011) that has an anomalously high concentration of Sr. Concentrations of Ca, Mg, and Sr are stable, or increase gradually, from the top of the Queenston Formation to the base of the Kirkfield Formation. Concentrations of Ca, Mg, and Sr are higher in the Coboconk and Gull River relative to porewater in the overlying strata, and then decrease in the basal Shadow Lake Formation.

Figure 5 shows depth profiles for porewater concentrations of potassium (K), bromine (Br) and boron (B) measured by VDL. K and Br show similar trends at shallow to intermediate depths, with relatively low concentrations through the Silurian-aged strata. Similar trends of increasing concentrations of K and Br are observed across the Ordovician shales. Concentrations of Br remain high, from the Cobourg through to the Gull River formation, with a slight increase in the Shadow Lake. Concentrations of K are more scattered, but remain high, from the Cobourg through the Kirkfield formations, and then decrease in the Coboconk and Shadow Lake formations relative to the overlaying strata.

Except for one anomalously high sample from the bottom of the Salina Group (SB_BH02_PW011), boron (B) concentrations in porewater are low through the shallow bedrock to the Guelph Formation. From the Goat Island/Gasport Formation through to the base of the Blue Mountain, B concentrations remain relatively low and stable. Boron concentrations are slightly more elevated in in the Ordovician-aged limestones, with a sharp increase in the Coboconk and Gull River formations, and then decreasing in the Shadow Lake Formation.



| Depth | po | WP10 | | Calciu | m (Ca) | | | Magnes | ium (Mg) | | Strontium (Sr) | | | | |
|----------------------------------|----------|------------------------------------------------------|--------------|--------|--------|------|---|----------|----------|------|----------------|-----|---------|---------|--|
| 1:4000 (m along core axis) | Peri | Units & Members | 0 | mmc | l/kgw | 2000 | 0 | mmo | ol/kgw | 1000 | 0 mmol/kgw | | l/kgw | 30 | |
| | | Bois Blanc | | | | | | | | | | | | | |
| | | Bass Island | | | | | | | | | | | | | |
| - 200 - | | | , I | | | | J | | | | Ţ | | | | |
| - 300 - | Silurian | Salina | + | | | | | | | | \ | | SB_BH02 | 2_PW011 | |
| - 400 - | | Guelph Goat Island, Gasport Lions Head & | \checkmark | > | | | | | | | | | | | |
| - 500 - | | Cabot Head Manitoulin Queenston | | T | * | | | | | | | | | | |
| - 600 - | | Georgian Bay | | ×, | | | | > | | | | | * | | |
| _ | ovician | Blue Mountain Cobourg | • | 4 | | | | | | | | 1 m | | | |
| - 700 - | Ord | (Collingwood) Cobourg (Lower) | • | \sum | | | | 7 | | | | 7 | | | |
| | | Sherman Fall | | • | | | | <u> </u> | | | | | * | | |
| - 800 - | | Kirkfield Coboconk | | < | ۲ | | | A | | | | < | × | | |
| | | Gull River | | | ł | | | | | | | | | 1 | |
| - 900 - | | Shadow Lake Precambrian | | | • | | | | | | | | - | | |

Figure 4 Profile of Calcium, Magnesium, and Strontium Concentrations in Porewater from Vacuum Distillation, SB_BH02 Core Samples



| Depth | po | WP10 Formations | | Potass | ium (K) | | | Bromi | ne (Br) | | Boron (B) | | |
|----------------------------------|----------|------------------------------------------------------|----------|------------|--------------|-----|------------|----------|---------|------|-----------|----------|----|
| 1:4000 (m along core axis) | Peri | Units & Members | 0 | 0 mmol/kgw | | 400 | 0 mmol/kgw | | ol/kgw | 40 0 | | mmol/kgw | 80 |
| - 150 - | | Bois Blanc | | | | | | | | | | | |
| | | Bass Island | | | | | | | | | | | |
| - 200 - | | | † | | | | | | | | 1 | | |
| - 250 - | | | ł | | | | | | | | | | |
| - 300 - | Silurian | Salina | | | | | | | | | A. | | |
| - 350 - | | | | | | | | | | | | > | |
| - 400 - | | Guelph Goat Island, Gasport Lions Head & | | > | | | | | | | | | |
| - 450 - | | Fossil Hill Cabot Head | | - | - | | | | | | | | |
| - 500 - | | \ <u>Manitoulin</u> Queenston | | | * | | | Ł | | | + | | |
| - 550 - - 600 - | | Georgian Bay | | | • | 7 | | ł | 7 | | | | |
| - 650 - | ician | Blue Mountain | | | \mathbf{i} | | | Ł | | | > | | |
| - 700 - | Ordov | (Cobourg (Collingwood) Cobourg (Lower) | | • | 4 | | | 5 | | | | 7 | |
| - 750 | | Sherman Fall | | | $\langle $ | | | ŧ | | | X | | |
| - 800 - | | Kirkfield | | | 1 | | | ł | | | ~ | | |
| | | Coboconk | | | | | | <u> </u> | | | | | |
| 850 - | | Gull River | | 1 | | | | 1 | | | | | |
| - 900 - | | Lake Precambrian | | • | | | | | • | | | | |

Figure 5 Profile of Potassium, Bromine, and Boron Concentrations in Porewater from Vacuum Distillation, SB_BH02 Core Samples.



3.1.2 Environmental Isotopes

Figure 6 shows a cross plot of isotopic ratios for deuterium (²H) and ¹⁸O for porewater extracted by vacuum distillation. The accompanying laboratory report for the environmental isotopes had some results that were flagged due to interpreted trace hydrocarbon contamination, but comparison of the results to trends in a depth profile for δ^2 H and δ^{18} O (Figure 7) suggests that the magnitude of contamination for the impacted samples is not significant.

Shown as green squares in Figure 7, Salina group porewaters tended to plot above the global meteoric water line (GWML). All other samples tended to plot adjacent to, or below, the GWML, except for SB_BH02_PW055 and SB_BH02_PW057. Both SB_BH02_PW055 and SB_BH02_PW057 were more depleted in δ ¹⁸O and δ ²H than other samples from below 650 m and had very low lab-reported water content (~0.1%).

Figure 7 shows depth profiles for δ^{18} O and δ^{2} H. Samples from the Salina group are slightly depleted in both δ^{18} O and δ^{2} H. Samples from the Guelph and Goat Island formations were the most depleted in δ^{18} O and δ^{2} H. After a sharp increase at the top of the Queenston Formation, δ^{18} O and δ^{2} H values remain relatively stable, and become slightly less depleted, with depth to the Cobourg Formation. Below the Cobourg Formation δ^{18} O values show a generally decreasing trend while δ^{2} H values are generally consistent. Samples SB_BH02_PW055 and SB_BH02_PW057, with the slightly depleted ratios discussed above, are observed in the Coboconk and Gull River Formations, respectively.







Figure 6 ¹⁸O-²H Cross Plot, SB_BH02 Porewater Samples. Samples SB_BH02_PW055 and SB_BH02_PW057 were noted to have low water content (~0.1%).

Figure 7 Profile of δ^{18} O and δ^{2} H (Deuterium) of Porewater, SB_BH02 Core Samples. Samples SB_BH02_PW055 and SB_BH02_PW057 were noted to have low water content (~0.1%).

3.1.3 Radiohalides, δ^{37} Cl and Strontium Isotopes

Figure 8 shows depth profiles for radiohalides (¹²⁹I, ³⁶CI), ³⁷CI and strontium isotopes (⁸⁷Sr/⁸⁶Sr) measured from porewater samples at SB_BH02. The porewater that was analyzed was extracted by crushing and leaching fresh core; for Sr, both crush and leach and PA were used.

The depth profile of the ³⁶Cl/Cl (Figure 8) shows decreasing proportions of ³⁶Cl from the top of the Salina Group and into the Guelph Formation, where the lowest ratio is observed (~9.0x10⁻¹⁶). From the top of the Guelph Formation, proportions of ³⁶Cl increase rapidly to 3.9x10⁻¹⁵ near the top of the Cabot Head Formation, and then continue to increase gradually with depth to approximately 8x10⁻¹⁵ in the Blue Mountain Formation. Below the Ordovician shales, proportions of ³⁶Cl remain stable at ~3x10⁻¹⁵ to the bottom of the Gull River Formation, and then increase in the Shadow Lake Formation to 4.4x10⁻¹⁵.

The depth profile for ¹²⁹I (Figure 8) shows significant scatter in ¹²⁹I concentrations for porewaters from the shallow bedrock units to the top of the Queenston Formation. In these shallow to intermediate samples, ¹²⁹I concentrations vary from $5.9x10^4$ atoms/kgw in the bottom of the Salina Group to $6.5x10^6$ atoms/kgw at the top of the Queenston Formation. Through the remaining Ordovician shales, ¹²⁹I concentrations are relatively stable between $9.7x10^4$ to $7.5x10^5$ atoms/kgw. ¹²⁹I concentrations are an order of magnitude lower than in the overlying shale units and vary from below detection limit (at ~724 m and ~810 m depth) to $2.2x10^5$ atoms/kgw.

Strontium isotope ratios of ⁸⁷Sr/⁸⁶Sr were recorded for porewater extracted by both the VDL and PA methods. In general, both ⁸⁷Sr/⁸⁶Sr results show similar profiles (Figure 8), with changes in the proportion of Sr isotopes noted at the Guelph Formation, near the top of the Cabot Head Formation, and at the base of the Ordovician shales. In the Silurian units, the PA-derived values are more stable near 0.7085, whereas the VD-derived values show more scatter and are slightly higher near 0.7090; for both techniques, the ratios gradual increasing through the Guelph and the Cabot Head Formation. The PA and VDL-derived ratios are similar in the Ordovician shales. In the Ordovician shales, the PA-derived values remain stable near 0.7100, while the VDL-derived values show more scatter and are generally lower (~0.7090).

Figure 8 also provides a depth profile of isotopic ratios of δ^{37} Cl for porewater extracted from core samples. Except for sample SB_BH02_PW007, in the middle of the Salina, the δ^{37} Cl ratios for all samples are within the range of -0.38 to +0.37. The Ordovician strata had positive δ^{37} Cl ratios between 0-0.27 throughout the shales up to the top of the Blue Mountain Formation. From the Blue Mountain to the top of the Kirkfield formation, porewater samples are slightly more depleted, with δ^{37} Cl ratios between -0.23 and -0.05. The four deepest samples from the Kirkfield, Coboconk, Gull River and Shadow Lake units show slightly enriched ³⁷Cl compared to samples from the Cobourg and Sherman Fall formations. δ^{37} Cl for sample SB_BH02_PW007 was flagged as anomalous; the sample was re-extracted and run again, confirming the original result. Further investigation would be required to determine the cause of this anomaly.

Figure 8Profile of ³⁶Cl, ¹²⁹l, ⁸⁷Sr/⁸⁶Sr, and ³⁷Cl Isotopic Results for Porewater from SB_BH02
Core Samples. Sample SB_BH02_PW007 is flagged as anomalous.

3.1.4 Noble Gas Concentrations and Isotopes

Figure 9 provides depth profiles of concentrations and isotopic ratios for select noble gases in porewater samples from SB_BH02. Concentrations of He, Ar, and Ne are reported in cubic centimeters of gas per cubic centimeter of water (cc/ccw). Concentrations of Kr were also measured but are not shown in Figure 9. With a few exceptions, concentrations of He, Ar, and Ne in porewaters generally increase with depth, with the highest concentrations observed in the Ordovician strata spanning from the Georgian Bay Formation to the Shadow Lake Formation.

Results from sample SB_BH02_NG022, collected from the top of the Cobourg Formation, show some evidence of atmospheric contamination, with an air-normalized ³He/⁴He ratio of 0.23. Small amounts of air/drill water contamination are expected due to the sampling method, so further assessment of contamination for each NG sample should be completed as part of subsequent data integration activities (WP10).

A depth profile of air-normalized 3 He/ 4 He ratios (xRa) shows two distinct intervals with similar isotopic ratios of He. The Ordovician shales have xRa ratios averaging 0.026 (0.019-0.032), below which the profile shifts to a higher xRa range averaging 0.042, with a slight increasing trend to 0.055 at the base of the profile.

Most of the porewater samples from SB_BH02 had ²²Ne/²⁰Ne ratios of approximately 0.10. Two samples had ²²Ne/²⁰Ne ratios of 0.11, including one sample from the Georgian Bay formation and one from the Blue Mountain formation.

⁴⁰Ar/³⁶Ar ratios were relatively low (300-390) through the Silurian-aged strata to the Georgian Bay Formation, except for four samples from the Queenston and Georgian Bay, that were somewhat enriched in ⁴⁰Ar with ⁴⁰Ar/³⁶Ar ratios from 425 to 600. Samples from the Blue Mountain through to the top of the top of the Sherman Fall Formation had more scattered ⁴⁰Ar/³⁶Ar ratios between 310 and 695. The highest ⁴⁰Ar/³⁶Ar ratios were from the five deepest samples, with ratios between 635 and 1400.

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|--------------------|----------|-------------------------------------------------|-----|--------|-------|------|------|---|---|-----|---|------|------|------|-------|-------|----|----|-------|-----|---|-------|-------|------|------|---|------|--------|-------|
| 1:4000 (m along | Peri | Units & | He | in | Po | rewa | ater | | | xRa | | | Ne | in P | ore | water | | 22 | Ne/20 | Ne | | Ar i | n po | rewa | ater | | 40Aı | /36/ | ٩r |
| core axis) | | Members | 1e- | 05 | cc/cd | cw | 1 | 0 | | NV | (| 0.25 | 1e-0 | 7 ci | c/ccw | 0.001 | 0. | 08 | NV | 0.1 | 2 | 0.002 | cc/c | cw | 200 | 2 | 50 I | JV. | 1500 |
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| - 350 - | | | | | | | | | | | | | | | Þ | | | | | | | | | | | • | | | |
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| - 450 - | | A Fossil Hill Cabot Head | | | | 1 | | 1 | | | - | | - | 2 | • | | | | ť | | | | 7 | | | | | | |
| 2 V2 | | Manitoulin | | | Į | | | I | | | | | | Į | | | | | Į | | | 1 | | | | 4 | | | |
| - 500 - | | Queenston | | | Ì | | | ł | | | | | |) | | | | | | | | | | | | • | | | |
| — 550 — — 600 — | | Georgian Bay | | | + | | | ł | | | | | | Ł | | | | | ł | | | | | | | | ł | | |
| - 650 - | vician | Blue Mountain | | | | • | | ł | | | | | | - | * | | | | Ś | | | | | | | • | | | |
| - 700 - | Ordo | (Collingwood) Cobourg (Lower) | | | j | P | * | 1 | | | | * | | | | 7 | • | | | | | | | | | ł | SB_I | 3H02_N | 1G022 |
| - 750 - | | Sherman Fall | | | • | | | ł | | | | | | | | | | | | | | | Ĭ | | | | | | |
| - 800 - | | Kirkfield | | | | | | | | | | | | | | | | | Ì | | | | K | | | | | | X |
| | | Coboconk | | | | I | | | | | | | | | | | | | 1 | | | | | T | | | | | 1 |
| - 850 - | | Gull River | | | | 1 | | | ł | | | | | | / | | | | | | | | | * | | | | - | |
| - 900 - | | Shadow Lake Precambrian | | | | 4 | | | | | | | | | | | | | | | | | | | | | | | |
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Figure 9 Profile of Noble Gas (He, Ne, Ar) Concentrations and Isotopes for Porewater from SB_BH02 Core Samples, xRa = Air-normalized ³He/⁴He ratio.

3.1.5 Methane (CH₄) and Carbon Dioxide (CO₂) Concentrations and Isotopes

Figure 10 shows depths profiles of methane (CH_4) and carbon dioxide (CO_2) concentrations (in mmol/kgw) measured from degassing of core samples into the headspace of IsoJars. Concentrations of CH_4 increased with depth from less-than-detection in the top of the Salina Group to approximately 47 mmol/kgw in the Coboconk Formation. Below the Coboconk, concentrations decrease with depth to 26 mmol/kgw in the Gull River Formation and 1.21 mmol/kgw in the Shadow Lake Formation.

The profile of δ^{13} C in CH₄ shows a relative enrichment in ¹³C with depth from approximately -52‰ VPDB in samples from the Salina Group to -41.5‰ VPDB in samples from below the Sherman Fall Formation. The profile of δ^{2} H for CH₄ also shows an enrichment in ²H from approximately -307‰ VSMOW in samples from the Blue Mountain to -186‰ VSMOW in samples from the Gull River and Shadow Lake formations. Several samples were below the detection limit for the δ^{13} C and δ^{2} H in CH₄, including five samples from the Salina Group, plus samples from each of the Guelph, Goat Island, Queenston, Georgian Bay, and Shadow Lake formations.

 CO_2 concentrations are variable in the Silurian down to the top of the Georgian Bay Formation. Through the Ordovician shales, CO_2 concentrations are constrained within the range of 0.7 to 1.5 mmol/kgw. A sharp inflection occurs, with lower concentrations of CO_2 , in the underlying Cobourg Formation. CO_2 concentrations through the Ordovician limestones range from 0.8 to 3.2 mmol/kgw and then decrease to 0.08 mmol/kgw in the Shadow Lake formation.

The profile of δ^{13} C in CO₂ shows a constrained range of approximately -16‰ VPDB from the lower Salina to upper Georgian Bay Formation, followed by a sharp positive excursion to +0.5‰ VPDB through the lower Georgian Bay and Blue Mountain shales. This positive anomaly is reversed at the top of the Cobourg formation through to the Shadow Lake Formation, where the ¹³C is more depleted and ranges from approximately -7.7 to -11.9‰ VPDB.

3.1 Mineralogy and Petrography

Mineralogical analyses were completed to obtain sample-specific mineralogical data required for interpretation of the porewater results and reconstructive geochemical modelling. This advanced analyses of porewater results will be completed as part of data integration (WP10) activities, so results from the mineralogical and petrographic testing are not discussed in detail in this data report. The mineralogical testing completed as part of this work package (WP04C) complements a more substantial mineralogical testing program that was completed by SGS Laboratories and the British Geologic Survey as part of WP04D.

Figure 11 shows the major mineralogical components (by XRD) for core porewater (PW) samples that were also used for the PA method. Shale samples from the Queenston, Georgian Bay, Blue Mountain and top of Cobourg formations show a variable mineralogy, including significant proportions of clay minerals and quartz. Calcite is the most abundant mineral in samples from the Ordovician limestones.

Complete results from the mineralogical analyses are provided in Appendix C.

Figure 10 Profile of Methane and Carbon Dioxide Concentrations and Isotopes from SB_BH02 Core Samples

Figure 11 Mineralogical Components, by X-Ray Diffraction, SB_BH02 Core Samples

4 CONCLUSIONS

Geofirma Engineering Ltd. completed sampling and preservation of core samples as part of porewater characterization activities (Work Package 04C) at SB_BH02, the second of two boreholes at the South Bruce site that were drilled as part of the NWMO's Phase 2 Geoscientific Preliminary Field Investigations. The porewater samples were collected and preserved between December 31, 2021 to March 21, 2022.

A total of 120 preserved samples were sent to the University of Ottawa for analysis, including:

- 30 pairs of porewater (PW) samples for porewater analysis. Each pair included one PW sample that was used for vacuum distillation leaching (VDL), and a second PW sample that was used for paper absorption (PA) and mineralogical analyses.
- 30 dissolved gas (DG) samples collected in IsoJars for measurement of carbon dioxide and methane concentrations and their associated isotopic ratios (δ²H, δ¹³C).
- 30 noble gas (NG) samples that were encapsulated in air-tight stainless-steel vessels for measurement of noble gas concentrations and isotopic compositions.

Porewater extraction and laboratory testing completed as part of porewater characterization activities for SB_BH02, including the accompanying mineralogical testing, was coordinated by the University of Ottawa, with a subset of analyses completed by subcontracted research and commercial laboratories.

Results from the porewater characterization program provide high resolution depth profiles of key porewater parameters, including major/minor ionic composition, environmental isotopes, radiohalides, dissolved gases, and noble gases. Results presented in this report show laboratory-reported values, but were not corrected for mineral dissolution, halite under-saturation, and anion exclusion processes. Detailed interpretation of the porewater results, including geochemical modelling, will be completed separately as part of data integration activities (Work Package 10).

Notable results from the porewater characterization program at SB_BH02 include:

- Comparison of CI and Na concentrations measured using the VDL and PA methods show substantial variation, with PA-derived concentrations that were 1-3 orders of magnitude higher than corresponding concentrations obtained using the VDL method. The variation may reflect differences in the proportional uptake of clay-bound, capillary-bound, and mobile porewaters.
- Na and CI dominate the ionic composition of porewaters.
- TDS concentrations calculated assuming a water density of 1000 kg/m³ were generally between 25-240 g/L in the Salina Group and increased to approximately 250-400 g/L in the lower Silurian units and through the Ordovician strata.
- Profiles for environmental isotopes (δ¹⁸O, δ²H), radiohalides (³⁶Cl, ¹²⁹l), ⁸⁷Sr/⁸⁶Sr and δ³⁷Cl in porewater show similar trends with depth across the Paleozoic bedrock sequence. Inflections were generally observed in the depth profiles for these analytes in the Guelph Formation, near

the top of the Ordovician shales (Queenston Formation), and near the top of the Ordovician carbonates (Cobourg Fm).

- A profile of air-normalized ³He/⁴He ratios (xRa) shows two distinct depth intervals with similar He isotopic ratios. Samples from the Ordovician shales have xRa ratios close to 0.026, with a shift to an average of 0.042 in the underlying Ordovician limestones.
- Methane concentrations generally increased with depth, with the highest concentrations observed from samples near the top of the Coboconk Formation. Profiles of δ^{13} C and δ^{2} H in methane show distinctions between methane in the Ordovician shales and the limestones.
- The profile for δ¹³C of CO₂ shows a strong positive anomaly in the lower Ordovician shales relative to a well-constrained baseline through the upper shales and through the underlying limestones.

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Appendix A

SB_BH02 Porewater (PW), Dissolved Gas (DG), and Noble Gas (NG) Sample Summary

Appendix A - Porewater, Dissolved Gas, and Noble Gas Sample Summary

SB_BH02 - WP04C Data Report

| Bit Poly ControlOnePoly ControlPoly Control <t< th=""><th>Sample ID</th><th>Sample Type</th><th>From (m)</th><th>To (m)</th><th>Date Sampled</th><th>Lithology</th><th>Comments</th></t<> | Sample ID | Sample Type | From (m) | To (m) | Date Sampled | Lithology | Comments |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------|------------------|------------------|------------------|--------------------|---------------------------------------------------------------------------------------------------------|
| Subset Constraint Subset Constraint Constraint Co | SB_BH02_DG001 | DG | 211.16 | 211.28 | 2021-12-31 1:20 | Shale | Sampling note: Sample crushed to fit into jars. Didn't all fit into jar hence after weight is less than |
| Signation One Parts < | SB BH02 DG002 | DG | 250.7 | 250.83 | 2022-01-01 14:50 | Dolostone | before. Broken fragments returned to core box. |
| B, BB, C, Color Go 100.3 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 100.2 | SB_BH02_DG003 | DG | 269.53 | 269.63 | 2022-01-02 0:20 | Shale | |
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| B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B | SB_BH02_DG005 | DG | 313.65 | 313.75 | 2022-01-03 0:59 | Shale | |
| Balance Balance Balance Paye Number of Construction State | 3B_BH02_DG000 | DG | 549.01 | 549.11 | 2022-01-04 5:55 | Limestone | Sampling note: Extremely bard core to break. Only 90% of sample could fit in isoiar bence after |
| SR.MCP, COMO40.5.40.5.80.20BoleSR.MCP, COMC41.1.341.1.8202,24.04.6.5.UnrestoneSR.MCP, COMC44.1.3202,24.04.6.5.UnrestoneSR.MCP, COMC44.1.3202,24.04.6.5.UnrestoneSR.MCP, COMC44.1.3202,24.04.6.5.UnrestoneSR.MCP, COMC54.04202,24.04.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.01.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.01.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.01.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.01.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.01.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.01.1.2.5.Sk.MCSR.MCP, COMC54.04202,24.11.2.5.Sk.MCSR.MCP, COMC74.16202,24.11.2.5.Sk.MCSR.MCP, COMC74.16202,24.11.2.5.Sk.MCSR.MCP, COMC74.16202,24.11.2.5.Sk.MCSR.MCP, COMC74.16202,24.11.2.5.Sk.MCSR.MCP, COMC74.16202,24.11.2.5.Sk.MCSR.MCP, COMC74.16202,24.11.2.5.Sk.MCSR.MCP, COMM84.16202,24.11.2.5.Sk.MCSR.MCP, COMM84.16202,24.12.5.Sk.MCSR.MCP, COMM84.16202,44.12.5.Sk.MC | SB_BH02_DG007 | DG | 388.65 | 388.75 | 2022-01-05 0:30 | Dolostone | weight is less than before. Remaining piece returned to box. |
| B, B, C, D, C, DOUB G 43.2 43.8 222-04.2 Sole B, B, C, D, C, DUI G 41.1 222-04.2 Sole B, B, C, D, C, DUI G 41.1 222-04.2 Sole B, B, C, D, C, DUI G 41.2 222-04.2 Sole B, B, C, D, C, H, C, L Sole Sole Sole B, B, C, D, C, H, C, L Sole Sole Sole B, B, C, D, C, H G G, B, S, | SB_BH02_DG008 | DG | 403.51 | 403.6 | 2022-01-05 10:10 | Dolostone | |
| 000000000000000000000000000000000000 | SB_BH02_DG009 | DG | 433.23 | 433.34 | 2022-01-05 0:50 | Shale | |
| 9000000000000000000000000000000000000 | SB_BH02_DG010 | DG | 441.13 | 441.25 | 2022-01-06 4:50 | Shale | |
| Selecty CoolOrdSelecty CoolSelecty CoolSelecty CoolOrdSelecy CoolSelecy CoolSelecy CoolSelecy CoolOrdTotalTotalSelecy CoolSelecy CoolOrdTotalTotalSelecy CoolSelecy CoolOrdTotalTotalSelecy CoolSelecy CoolOrdTotalTotalSelecy CoolSelecy CoolTotalTotalSelecy CoolSelecy CoolTotalTotalSelecy CoolSelecy CoolTotalTotalSelecy CoolSelecy CoolTotalTotalSelecy CoolSelecy CoolTotalTotalSelecy Cool | SB_BH02_DG012 | DG | 481.26 | 481.37 | 2022-01-07 14:25 | Shale | |
| B. BUD. 20011 OD6 54.42 54.81 202-04 21.21 Shake B. BUD. 20011 OD6 6032 6010 202-04 21.25 Shake B. BUD. 20011 OD6 6032 6160 202-04 21.02 Shake B. BUD. 20011 OD6 6478 202-04 11.12 Shake S. BUD. 20011 OD6 6473 64768 202-04 11.12 Shake S. BUD. 20021 OD6 6774 6774 202-04 11.12 Shake S. BUD. 20021 OD6 6774 6774 202-04 11.12 Shake S. BUD. 20020 OD6 6784 7424 202-04 11.12 Shake S. BUD. 20020 OD6 6784 7424 202-04 11.12 Shake S. BUD. 20020 OD6 810.3 810.42 202-04 11.12 Shake S. BUD. 20020 OD6 810.3 810.42 202-04 11.12 Shake S. BUD. 20020 OD6 810.43 834.42 202-04 11.12 Shake S. BUD. 20020 <td>SB_BH02_DG013</td> <td>DG</td> <td>497.13</td> <td>497.21</td> <td>2022-03-01 0:20</td> <td>Shale</td> <td></td> | SB_BH02_DG013 | DG | 497.13 | 497.21 | 2022-03-01 0:20 | Shale | |
| Balling Double Balling Double Balling Double Balling Double Seg More Double Ge 64.40 66.00 202:00.11.106 Shale Seg More Double Ge 64.40 66.00 202:00.11.106 Shale Seg More Double Ge 67.67 87.80 202:00.11.106 Shale Seg More Double Ge 67.67 87.80 202:00.11.106 Shale Seg More Double Ge 67.80 87.80 Shale Seg More Double Ge 67.80 87.80 Shale Seg More Double Ge 77.80 202:00.11.116 Unrestore Seg More Double Ge 77.44 72.43 202:00.21.116 Unrestore Seg More Double Ge 77.44 72.43 202:00.21.116 Unrestore Seg More Double Ge 77.44 72.43 202:00.21.116 Unrestore Seg More Double Ge 78.44 72.42 202:00.21.116 Unrestore Seg More Double Ge | SB_BH02_DG014 | DG | 544.23 | 544.36 | 2022-03-04 23:21 | Shale | |
| No. No. No. No. Sig M402 D0013 GG G420 G4004 G400 G4004 G400 G4004 | SB_BH02_DG015 | DG | 560.4 603.88 | 560.55 604.03 | 2022-03-07 22:55 | Shale | |
| Signator | SB_BH02_DG010 SB_BH02_DG017 | DG | 628.64 | 628.76 | 2022-03-09 10:50 | Shale | |
| SB_BB402_D00001 OG S00.75 S00.80 D22 0-511 12-51 Shale SB_BM20_D00021 OG 67.74 67.81 D22 0-511 12-51 Shale SB_BM20_D00021 OG 67.74 67.81 D22 0-511 12-51 Shale SB_BM20_D00023 OG 67.81 67.81 O22 0-51 13-103 Umentore SB_BM20_D00023 OG 74.81 72.42 D22 0-31 13-103 Umentore SB_BM20_D0003 OG 74.12 72.53 D32 0-41 13-10 Umentore SB_BM20_N0001 OG R1.01 202 0-12 12-20 Umentore Sampling note: Shaly Imestore SB_BM20_N0001 NK 25.03 202 0-10 2-20 Shale SB_BM20_N0001 NK 25.04 202 0-10 12-31 13-25 Shale SB_BM20_N0001 NK 25.04 202 0-10 12-03 Shale SB_BM20_N0001 NK 25.04 202 0-10 12-03 Shale SB_BM20_N0003 NK 25.04 202 0-10 12-03 Shale SB_BM20_N0005 N | SB_BH02_DG018 | DG | 644.92 | 645.08 | 2022-03-11 12:05 | Shale | |
| SB_BH02_D0502 056 67.70 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.74 67.77 67.74 | SB_BH02_DG019 | DG | 650.75 | 650.86 | 2022-03-11 15:21 | Shale | |
| B2 BH2U Do2 BH2A BA2/A BA2/A< | SB_BH02_DG020 | DG | 657.67 | 657.8 | 2022-03-11 20:55 | Shale | |
| 000000000000000000000000000000000000 | SB_BH02_DG021 | DG | 667.34 675.01 | 667.44 | 2022-03-12 11:54 | Shale | |
| Sig Bud2 | SB_BH02_DG022 SB_BH02_DG023 | DG | 693.8 | 693.91 | 2022-03-13 10:39 | Limestone | |
| SP.8.002_00025 OC 742.47 742.55 2022.0317.120 Limeatore SP.8012_00027 OC 784.42 742.54 2022.0312.120 Limeatore SP.8012_00027 OC 784.42 742.54 2022.0312.120 Limeatore SP.8012_00020 OC 84.31 81.32 2022.032.21.224 Limeatore SP.8012_00020 NC 81.31 81.32 2022.03.21.24 Limeatore SP.8012_00001 NC 20.55 202.01.01.144 Dolatore SP.8012_00001 NC 20.55 202.20.10.21.44 Dolatore SP.8012_NC0001 NC 20.55 202.20.10.21.40 Dolatore SP.8012_NC0001 NC 31.37 202.20.10.20.30 Dolatore SP.8012_NC0001 NC 43.34 202.20.10.21.40 Unatore SP.8012_NC001 NC 43.34 202.20.10.21.40 Unatore SP.8012_NC001 NC 43.34 202.20.10.21.40 Unatore SP.8012_NC001 NC 43.34 202.20.4 | SB_BH02_DG024 | DG | 724.16 | 724.26 | 2022-03-14 15:49 | Limestone | |
| SB, BH02_B002 DG 7844 7854.8 2022-0312.5 Muestone SB, BH02_B002 DG 810.3 810.4 2022-0312.5 Muestone SB, BH02_B002 DG 810.3 812.6 2022-0312.5 Humestone SB, BH02_B002 NG 82.16 2022-0312.5 Humestone SB, BH02_B002 NG 82.06 200.4 121.5 SH1.6 SB, BH02_B003 NG 250.3 2021-012.12 Shale SB, BH02_M003 NG 29.33 2022-010.21 Shale SB, BH02_M003 NG 29.33 2022-010.21 Shale SB, BH02_M003 NG 38.43 38.00 2022-010.21 Shale SB, BH02_M003 NG 43.44 34.7 2022-010.51 Delostone SB, BH02_M003 NG 43.44 41.13 2022-010.51 Delostone SB, BH02_M003 NG 43.44 41.13 2022-010.51 Delostone SB, BH02_M014 NG 441.13 2022- | SB_BH02_DG025 | DG | 742.42 | 742.55 | 2022-03-15 1:20 | Limestone | |
| SB, BH02, DG027 DG 784.21 784.54 702-31-312.40 Limestome Sampling note: Shaly limestone. SB, BH02, DG029 DG 843.31 843.24 202-03-21.62.4 Limestome SB, BH02, DG030 DG 843.31 843.24 202-03-21.62.4 Limestome SB, BH02, MG03 NG 211.65 202-04.21.14.44 Dolatome SB, BH02, MG03 NG 25.63 202.40 202-14.02.44 Dolatome SB, BH02, MG04 NG 28.81 302.21.02.02.0 Shale Sampling note: Shaly limestome SB, BH02, MG06 NG 313.75 313.87 2022.01.03.05 Shale SB, BH02, MG06 NG 333.45 302.21.01.04.20 Dolatome SB, BH02, MG06 NG 433.44 32.02.01.05.01 Dolatome SB, BH02, MG01 NG 431.4 432.02 202.01.07.12.5 Shale SB, BH02, MG01 NG 451.6 462.02 202.01.07.12.5 Shale SB, BH02, MG01 NG 450.2 620.21.07.07 | SB_BH02_DG026 | DG | 769.42 | 769.54 | 2022-03-17 17:35 | Limestone | |
| Bay Hol (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) Bay Hol (Color) Bay Hol (Color) SB HOL (Color) B | SB_BH02_DG027 | DG | 784.42 | 784.54 | 2022-03-18 2:40 | Limestone | Sampling note: Shaly limestone. |
| Sig Bird D Dis C 88.21 202.2010.21.33 Smarktone SB Bird D Nico 210.6 201.41.21.2 Shake SB Bird D Nico 203.3 200.41.20.20 Shake SB Bird D Nico 203.4 202.20.10.14.48 Dolostone SB Bird D Nicol 203.8 202.20.10.14.40 Dolostone SB Bird D Nicol 84.91 390.1 202.20.10.14.40 Dolostone SB Bird D Nicol 84.81 38.61 202.20.10.6.03 Shake SB Bird D Nicol 84.81 38.61 202.20.10.6.03 Dolostone SB Bird D Nicol 43.34 43.47 202.20.10.6.03 Shake SB Bird D Nicol 46.10 41.01 41.0 202.0.10.6.045 Shake SB Bird D Nicol 46.10 202.0.10.6.045 Shake Shake SB Bird D Nicol 46.02 202.0.0.1.0.2 Shake SB Bird D Nicol 60.37 603.2 | SB_BH02_DG028 | DG | 843.13 | 843.24 | 2022-03-19 2.40 | Limestone | |
| SB, BHO2, NC000 NG 21.05 21.16 202-10-21.12.15 Shale SB, BHO2, NC003 NG 29.05.3 25.05.4 22.02-01.02.00.20 Shale SB, BHO2, NC004 NG 29.95.1 29.99.1 20.92.01.02.00 Shale SB, BHO2, NC005 NG 31.37 31.387 20.22-01.02.00 Shale SB, BHO2, NC006 NG 33.85 20.22-01.03.05 Shale SB, BHO2, NC007 NG 38.85 20.22-01.06.045 Shale SB, BHO2, NC001 NG 43.34 20.22-01.06.045 Shale SB, BHO2, NC011 NG 44.10 42.02 20.22-01.07.02 Shale SB, BHO2, NC013 NG 44.10 42.02 20.22-01.07.14.25 Shale SB, BHO2, NC013 NG 44.10 42.02 20.22-01.07.14.25 Shale SB, BHO2, NC013 NG 45.06 42.02 20.22-03.17.25 Shale SB, BHO2, NC015 NG 65.07 50.26 50.36 Shale Shale | SB_BH02_DG030 | DG | 882.06 | 882.16 | 2022-03-21 15:33 | Sandstone | |
| SB SB SB SD SD SD SB BMO NGO NG 29.81 29.93 202-01-02 - 02 SD SB BMO NGO 29.81 29.93 202-01-02 - 02 SD SB BMO NGO 313.75 313.75 313.75 313.75 SB BMO NGO 38.81 38.00 202-01-04 -340 Umestone SB BMO NGO 43.34 433.47 2022-01-06 -030 Dolostone SB BMO NGO 43.34 433.17 2022-01-06 -050 Uniestone SB BMO NGO1 NG 44.13 2022-01-06 -252 SD SB BMO NGO1 NG 44.13 2022-01-07 -225 SD SB BMO NGO1 NG 44.14 30.22 SD SB BMO NGO1 NG 42.02 SD SD SB BMO NGO 50.02 | SB_BH02_NG001 | NG | 211.05 | 211.16 | 2021-12-31 1:25 | Shale | |
| SB_BHO2_NO00 NG 299.75 2022-01-20 2:00 Shale SB_BHO2_NO00 NG 313.75 313.87 2022-01-20 1:402 Dolostone SB_BHO2_NO00 NG 313.87 2022-01-30 5:9 Shale SB_BHO2_NO00 NG 388.65 2022-01-05 0:3 Dolostone SB_BHO2_NO00 NG 433.44 433.47 2022-01-05 0:3 Dolostone SB_BHO2_NO001 NG 433.44 2022-01-06 0:45 Shale SB_BHO2_NO011 NG 441.10 441.13 2022-01-06 1:25 Shale SB_BHO2_NO011 NG 441.16 431.26 2022-01-07 1:25 Shale SB_BHO2_NO011 NG 451.16 421.26 2022-01 :07 1:25 Shale SB_BHO2_NO015 NG 505.26 502.47 2022-03 :07 1:25 Shale SB_BHO2_NO018 NG 645.08 657.7 657.76 2022-03 :11 1:25 Shale SB_BHO2_NO019 NG 650.26 50.72 2022-03 :11 1:25 Shale SB_BHO2_N | SB_BH02_NG002 | NG | 250.36 | 250.49 | 2022-01-01 14:48 | Dolostone | |
| Jag. Jan. V. Novik Novik Jag. Jan. Jak. Jak. Jak. Jak. Jak. Jak. Jak. Jak | SB_BH02_NG003 | NG | 269.63 | 269.75 | 2022-01-02 0:20 | Shale | |
| Sig Hor NG HAB J J D D22-01-04-31-00 Dolostome SB_BH02_N6008 NG 483.54 388.54 2022-01-05-03-03 Dolostome SB_BH02_N6001 NG 433.34 433.7 2022-01-06-13-05 Shale SB_BH02_N6010 NG 441.13 2022-01-06-43-05 Umestome SB_BH02_N6011 NG 461.02 462.02 2022-01-06-23-25 Shale SB_BH02_N6013 NG 470.44 2022-01-07-02-25 Shale SB_BH02_N6013 NG 540.45 2022-03-07-22-52 Shale SB_BH02_N6015 NG 562.4 2022-03-07-22-52 Shale SB_BH02_N6015 NG 650.4 2022-03-07-12-55 Shale SB_BH02_N6015 NG 650.4 2022-03-07-12-55 Shale SB_BH02_N6015 NG 650.4 2022-03-07-12-55 Shale SB_BH02_N6015 NG 650.4 2022-03-11-12-25 Shale SB_BH02_N6027 NG 650.76 | SB_BH02_NG004 | NG | 313.75 | 233.33 313.87 | 2022-01-02 14:02 | Shale | |
| SB, BH02, NG00 NG 38.86.0 38.66.0 2022-01-06-05.0 Dolostone SB, BH02, NG00 NG 43.34 43.37 2022-01-06-05.0 Dolostone SB, BH02, NG01 NG 41.01 2022-01-06-05.0 Umestone SB, BH02, NG01 NG 41.01 2022-01-07-12.5 Shale SB, BH02, NG01 NG 481.6 481.2 2022-01-07-12.5 Shale SB, BH02, NG01 NG 497.4 2022-01-07-12.5 Shale SB, BH02, NG01 NG 497.4 2022-01-07-12.52 Shale SB, BH02, NG01 NG 540.6 541.6 2022-03-01-2.52 Shale SB, BH02, NG01 NG 543.8 2022-03-11.12.51 Shale SB, BH02, NG01 NG 650.3 650.4 2022-03-11.12.52 Shale SB, BH02, NG02 NG 650.3 657.4 2022-03-11.12.52 Shale SB, BH02, NG02 NG 650.3 657.4 2022-03-11.12.52 Shale SB, BH02, NG02 NG | SB_BH02_NG006 | NG | 348.91 | 349.01 | 2022-01-04 3:40 | Limestone | |
| SB_BH02_NG008 NG 403.75 2022-01-05.101 Dolostone SB_BH02_NG010 NG 413.43 433.47 2022-01-06.45.5 Shale SB_BH02_NG011 NG 410.10 411.12 2022-01-06.45.5 Shale SB_BH02_NG012 NG 481.16 481.26 2022-01-06.27.55 Shale SB_BH02_NG013 NG 497.04 497.13 2022-03-01 2.02 Shale SB_BH02_NG014 NG 554.16 2022-03-01 2.02 Shale SB_BH02_NG015 NG 603.72 638.2 2022-03-01 2.02 Shale SB_BH02_NG017 NG 603.72 638.2 2022-03-10 1.41 Shale SB_BH02_NG019 NG 650.6 650.74 2022-03-11 1.52 Shale SB_BH02_NG019 NG 657.05 657.67 2022-03-11 1.52 Shale SB_BH02_NG019 NG 670.05 67.67 2022-03-11 1.52 Shale SB_BH02_NG019 NG 670.05 67.67 2022-03-11 1.52 Shale < | SB_BH02_NG007 | NG | 388.54 | 388.65 | 2022-01-05 0:30 | Dolostone | |
| SB_BH02_NG009 NG 43.34 43.47 202-01-06 425 Immestone SB_BH02_NG011 NG 461.92 462.02 202-01-07 425 Shale SB_BH02_NG012 NG 481.06 2022-01-07 425 Shale SB_BH02_NG013 NG 497.04 497.13 2022-03-01 225 Shale SB_BH02_NG014 NG 540.6 560.4 2022-03-01 225 Shale SB_BH02_NG015 NG 560.4 2022-03-01 225 Shale SB_BH02_NG016 NG 603.72 603.82 202-03-01 225 Shale SB_BH02_NG016 NG 603.72 603.42 2022-03-01 215 Shale SB_BH02_NG018 NG 650.6 651.4 2022-03-11 12:05 Shale SB_BH02_NG019 NG 650.6 657.7 202-03-11 11:52 Shale SB_BH02_NG021 NG 657.0 671.4 202-03-11 20:53 Shale SB_BH02_NG023 NG 673.0 673.62 202-03-13 10:33 Immestone SB_BH02_NG024 NG 763.07 762.22 -31-13 10:33 Immestone | SB_BH02_NG008 | NG | 403.6 | 403.75 | 2022-01-05 10:10 | Dolostone | |
| SB_BH02_NG011 NG 46.12 46.02 202-01-06 23.25 Shale SB_BH02_NG012 NG 48.1.6 48.1.6 202-01-07 14.2.5 Shale SB_BH02_NG014 NG 49.1.0 497.1.3 202-03-01 20.2 Shale SB_BH02_NG014 NG 54.0.6 56.0.4 202-03-01 22.2 Shale SB_BH02_NG015 NG 603.2 50.0.4 202-03-01 22.4.3 Shale SB_BH02_NG017 NG 603.2 50.4.4 202-03-01 14.4 Shale SB_BH02_NG017 NG 650.3 622.2 30-11.4.1 Shale SB_BH02_NG019 NG 650.6 650.7 202-03-11.1.2.5 Shale SB_BH02_NG020 NG 657.57 657.67 202-03-11.1.5.2 Shale SB_BH02_NG021 NG 676.03 676.15 202-03-11.1.5.2 Shale SB_BH02_NG022 NG 676.03 676.15 202-03-11.1.5.2 Shale SB_BH02_NG023 NG 670.03 676.12 202-03-11.1.5.2 Shale | SB_BH02_NG009 | NG | 433.34 441.01 | 433.47 441 13 | 2022-01-06 0:45 | Snale | |
| sid BH02_NG012 NG 481.16 481.26 2022-01-714:25 Shale Sig_BH02_NG013 NG 497.04 497.03 2022-03-072:25 Shale Sig_BH02_NG015 NG 560.26 560.4 2022-03-072:25 Shale Sig_BH02_NG015 NG 603.72 638.82 2022-03-072:52 Shale Sig_BH02_NG017 NG 629.3 629.41 2022-03-112:05 Shale Sig_BH02_NG018 NG 665.08 657.67 2022-03-112:05 Shale Sig_BH02_NG020 NG 667.06 667.1 2022-03-112:05 Shale Sig_BH02_NG021 NG 667.06 67.15 2022-03-113:05 Shale Sig_BH02_NG022 NG 667.03 67.15 2022-03-13:13:05 Limestone Sig_BH02_NG023 NG 678.92 760.07 2022-03-13:13:65 Limestone Sig_BH02_NG025 NG 784.20 2022-03-13:13:65 Limestone Sig_BH02_NG025 NG 784.20 2022-03-14:15:45 | SB_BH02_NG010 | NG | 461.92 | 462.02 | 2022-01-06 23:25 | Shale | |
| SB BH02_NG013 NG 497.04 497.31 2022-03-01.020 Shale SB_BH02_NG015 NG 564.06 544.16 2022-03-02.252 Shale SB_BH02_NG016 NG 603.72 603.82 2022-03-01.48 Shale SB_BH02_NG016 NG 650.43 629.41 2022-03-01.12.05 Shale SB_BH02_NG019 NG 650.63 650.42 2022-03-11.12.05 Shale SB_BH02_NG019 NG 650.63 650.74 2022-03-11.12.05 Shale SB_BH02_NG021 NG 657.05 657.67 2022-03-11.12.05 Shale SB_BH02_NG022 NG 677.05 657.67 2022-03-11.15.20 Shale SB_BH02_NG022 NG 677.07 676.03 761.51 2022-03-11.51.50 Limestone SB_BH02_NG024 NG 742.07 724.04 724.04 724.04 2022-03-11.74.81 SB_BH02_NG027 NG 783.07 784.20 2022-03-12.14.21 Limestone SB_BH02_NG030 | SB_BH02_NG012 | NG | 481.16 | 481.26 | 2022-01-07 14:25 | Shale | |
| SB_BH02_NC014 NG 544.06 544.16 2022.03.02.23.0 Shale SB_BH02_NC015 NG 603.72 603.82 2022.03.09.10.48 Shale SB_BH02_NC017 NG 629.3 629.41 2022.03.20.3.10.1.41 Shale SB_BH02_NC019 NG 650.63 650.74 2022.03.10.1.41 Shale SB_BH02_NC019 NG 650.63 650.74 2022.03.11.1.52 Shale SB_BH02_NC021 NG 657.57 657.67 2022.03.11.1.52 Shale SB_BH02_NC022 NG 676.03 676.15 2022.03.12.0.59 Shale SB_BH02_NC022 NG 676.03 676.15 2022.03.13.10.38 Limestone SB_BH02_NC025 NG 742.40 724.16 2022.03.14.15.47 Limestone SB_BH02_NC026 NG 784.30 784.42 2022.03.14.15.47 Limestone SB_BH02_NC026 NG 784.30 784.42 2022.03.12.0.2 Limestone SB_BH02_NC030 NG 881.01 202.03.21.15.41 Shale SB_BH02_NC030 NG 881.04 2 | SB_BH02_NG013 | NG | 497.04 | 497.13 | 2022-03-01 0:20 | Shale | |
| Sa_BH02_NOLIS NG 500.2 500.4 2022-03-01 72252 Shale SB_BH02_NO016 NG 627.3 622.4 2022-03-01 01:41 Shale SB_BH02_NO017 NG 629.3 629.41 2022-03-01 1:41 Shale SB_BH02_NO019 NG 650.6 650.74 2022-03-11 12:52 Shale SB_BH02_NO019 NG 657.57 657.67 2022-03-11 10:52 Shale SB_BH02_NO021 NG 657.0 657.67 2022-03-11 10:53 Shale SB_BH02_NO021 NG 670.0 667.14 2022-03-11 10:53 Shale SB_BH02_NO021 NG 670.0 671.4 2022-03-11 10:53 Shale SB_BH02_NO021 NG 673.0 764.2 2022-03-11 10:53 Shale SB_BH02_NO024 NG 724.0 724.2 2022-03-11 10:51 Limestone SB_BH02_NO026 NG 768.92 769.07 2022-03-12 10:51 Limestone SB_BH02_NO026 NG 813.67 843.80 2022-03-12 451 Limestone SB_BH02_NO030 NG 813.67 | SB_BH02_NG014 | NG | 544.06 | 544.16 | 2022-03-04 23:20 | Shale | |
| SB_BH02_NG017 NG 629.3 629.41 2022.03-101.41 Shale SB_BH02_NG018 NG 645.08 645.18 2022.03-1112:05 Shale SB_BH02_NG020 NG 650.67 2022.03-1112:05 Shale SB_BH02_NG020 NG 657.57 657.67 2022.03-1112:05 Shale SB_BH02_NG021 NG 667.00 667.14 2022.03-1113:03 Limestone SB_BH02_NG022 NG 667.03 676.15 2022.03-131:03 Limestone SB_BH02_NG023 NG 676.03 676.15 2022.03-131:8:50 Limestone SB_BH02_NG024 NG 724.04 724.16 2022-03-15:1:16 Limestone SB_BH02_NG025 NG 742.30 742.42 2022-03-17:1:48 Limestone SB_BH02_NG025 NG 784.30 784.42 2022-03-18:2:45 Limestone SB_BH02_NG026 NG 881.91 882.06 2022-03-21:16:41 Sandstone SB_BH02_NG03 NK 881.91 820.06 2022-01:14:50 Dolostone SB_BH02_PW004 PW-VD 201.54 | SB_BH02_NG015 | NG | 603 72 | 500.4 603.82 | 2022-03-07 22:52 | Shale | |
| SB_BH02_NG018 NG 645.08 645.18 202-03-11 12:05 Shale SB_BH02_NG020 NG 650.63 650.74 202-03-11 12:05 Shale SB_BH02_NG020 NG 657.75 657.6 202-03-11 12:05 Shale SB_BH02_NG021 NG 667.00 667.14 202-03-12 11:53 Shale SB_BH02_NG022 NG 667.00 676.15 2022-03-13 13:53 Limestone SB_BH02_NG024 NG 673.00 693.80 2022-03-14 15:47 Limestone SB_BH02_NG025 NG 724.01 724.16 2022-03-18 12:45 Limestone SB_BH02_NG026 NG 743.00 724.24 2022-03-18 12:45 Limestone SB_BH02_NG026 NG 784.30 7022-03-17 17:48 Limestone SB_BH02_NG026 NG 784.30 2022-03-18 2:45 Limestone SB_BH02_NG026 NG 810.37 81.38 2022-03-18 2:45 Limestone SB_BH02_NG026 NG 81.02 202.01-11 12:05 Shale | SB_BH02_NG017 | NG | 629.3 | 629.41 | 2022-03-10 1:41 | Shale | |
| SB_BH02_NG019 NG 650.63 650.74 2022-03-11 13:22 Shale SB_BH02_NG021 NG 657.57 657.67 2022-03-12 11:53 Shale SB_BH02_NG022 NG 676.03 676.14 2022-03-12 11:53 Shale SB_BH02_NG023 NG 676.03 676.14 2022-03-13 10:38 Limestone SB_BH02_NG024 NG 674.30 742.40 2022-03-13 11:61 Limestone SB_BH02_NG025 NG 743.30 742.42 2022-03-15 1:16 Limestone SB_BH02_NG025 NG 768.32 769.07 2022-03-15 1:16 Limestone SB_BH02_NG026 NG 784.30 742.42 2022-03-13 12:45 Limestone SB_BH02_NG027 NG 784.30 742.42 2022-03-13 12:45 Limestone SB_BH02_NG028 NG 810.37 843.40 2022-03-12 13:24 Limestone SB_BH02_NG030 NG 843.67 843.67 2021-03 11:20 Shale SB_BH02_NG030 PW-PA 210.44 < | SB_BH02_NG018 | NG | 645.08 | 645.18 | 2022-03-11 12:05 | Shale | |
| SB_BH02_NG020 NG 657.57 2022-03-11 20:59 Shale SB_BH02_NG021 NG 667.00 667.41 2022-03-12 10:53 Shale SB_BH02_NG022 NG 676.03 676.15 2022-03-13 10:38 Limestone SB_BH02_NG023 NG 693.70 693.80 2022-03-13 10:50 Limestone SB_BH02_NG024 NG 724.04 724.42 2022-03-15 1:16 Limestone SB_BH02_NG025 NG 768.92 769.07 2022-03-15 1:16 Limestone SB_BH02_NG025 NG 784.32 2022-03-19 2:45 Limestone SB_BH02_NG027 NG 784.30 724.24 2022-03-19 2:45 Limestone SB_BH02_NG029 NG 810.27 810.38 2022-03-20 18:02 Limestone SB_BH02_NG030 NG 810.17 810.38 2022-03-21 16:21 Limestone SB_BH02_PW001 PW-PA 210.74 201.71 2:31 1:20 Shale SB_BH02_PW002 PW-PA 210.74 202.1-01 2:31 1:20 Shale | SB_BH02_NG019 | NG | 650.63 | 650.74 | 2022-03-11 15:22 | Shale | |
| SB_BH02_NG021 NG 607.00 607.11 2022-031212.1.33 Shale SB_BH02_NG022 NG 676.03 676.15 2022-031318.50 Limestone SB_BH02_NG024 NG 724.04 724.16 2022-03151:16 Limestone SB_BH02_NG025 NG 742.40 722.03-1717:48 Limestone SB_BH02_NG026 NG 784.30 784.42 2022-03-1717:48 Limestone SB_BH02_NG027 NG 784.30 784.42 2022-03-192:45 Limestone SB_BH02_NG028 NG 810.27 810.38 2022-03-2018:02 Limestone SB_BH02_NG029 NG 881.91 882.06 2022-03-216:41 Sadstone SB_BH02_PW001 PW-VD 210.54 201.74 201.74 201.74 Sadstone SB_BH02_PW002 PW-VD 210.54 201.74 201.74 Sadstone SB_BH02_PW003 PW-VD 20.54 201.74 201.74 201.74 Sadstone SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02.13:50 Dolostone SB_BH02_PW006 P | SB_BH02_NG020 | NG | 657.57 | 657.67 | 2022-03-11 20:59 | Shale | |
| BB_BH02_NG023 NG 693.70 693.80 2022-03-13 18:50 Limestone SB_BH02_NG024 NG 724.04 724.16 2022-03-14 15:47 Limestone SB_BH02_NG025 NG 724.04 724.42 2022-03-15 1:16 Limestone SB_BH02_NG026 NG 784.30 784.42 2022-03-15 1:16 Limestone SB_BH02_NG027 NG 784.30 784.42 2022-03-19 2:45 Limestone SB_BH02_NG028 NG 810.27 810.38 2022-03-19 2:45 Limestone SB_BH02_NG029 NG 843.67 843.80 2022-03-20 18:02 Limestone SB_BH02_PW001 PW-VD 210.54 2021-03-211:02 Limestone SB_BH02_PW002 PW-VD 210.54 2021-12-31 1:10 Shale SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-01 14:50 Dolostone SB_BH02_PW004 PW-PA 250.11 2022-01-02 0:19 Shale SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:19 Shale SB_BH02_PW006 PW-PA 260.1 2022-01-02 0: | SB_BH02_NG021 | NG | 676.03 | 676.15 | 2022-03-12 11:33 | Limestone | |
| SB_BH02_NG024 NG 724.04 724.16 2022-03-14 15:47 Limestone SB_BH02_NG025 NG 742.30 742.42 2022-03-15 1:16 Limestone SB_BH02_NG026 NG 789.27 720.77 Limestone SB_BH02_NG027 NG 784.30 784.42 2022-03-17 2:48 Limestone SB_BH02_NG028 NG 810.37 810.38 2022-03-19 2:45 Limestone SB_BH02_NG029 NG 843.67 843.80 2022-03-19 2:45 Limestone SB_BH02_NG030 NG 843.67 843.80 2022-03-21 1:6:41 Sandstone SB_BH02_PW001 PW-VD 210.54 210.74 2021-12-31 1:10 Shale SB_BH02_PW003 PW-VD 249.17 2021-0114:50 Dolostone SB_BH02_PW004 PW-PA 250.1 2022-01-02 1:25 Dolostone SB_BH02_PW005 PW-PA 269.9 2022-01-02 1:52 Dolostone SB_BH02_PW006 PW-PA 269.9 2022-01-02 1:52 Dolostone SB_BH02_ | SB_BH02_NG023 | NG | 693.70 | 693.80 | 2022-03-13 18:50 | Limestone | |
| SB_BH02_NG025 NG 742.30 742.42 2022-03-15 1:16 Limestone SB_BH02_NG026 NG 768.92 769.07 2022-03-17 17:48 Limestone SB_BH02_NG027 NG 784.30 784.42 2022-03-18 2:45 Limestone SB_BH02_NG028 NG 810.27 810.38 2022-03-19 2:45 Limestone SB_BH02_NG029 NG 843.67 843.80 2022-03-21 16:41 Sandstone SB_BH02_PW001 PW-VD 210.54 210.74 2021-12-31 1:01 Shale SB_BH02_PW002 PW-PA 210.74 2022-01-11 1:50 Dolostone SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-02 0:22 Shale SB_BH02_PW004 PW-PA 250.11 2022-01-02 0:22 Shale SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 299.93 2022-01-02 0:22 Shale | SB_BH02_NG024 | NG | 724.04 | 724.16 | 2022-03-14 15:47 | Limestone | |
| SB_BH02_NG025 NG 768.92 769.07 2022-03-1717.148 Limestone SB_BH02_NG027 NG 784.42 2022-03-182.45 Limestone SB_BH02_NG028 NG 810.27 810.38 2022-03-192.45 Limestone SB_BH02_NG029 NG 843.67 840.20 2022-03-2018:02 Limestone SB_BH02_PW001 PW-VD 210.54 210.74 2021-12-311:10 Shale SB_BH02_PW002 PW-PA 210.74 2021-12-311:20 Shale SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-01 14:50 Dolostone SB_BH02_PW004 PW-PA 250.11 2022-01-02 0:19 Shale SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 299.81 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 299.81 2022-01-02 0:25 Shale SB_BH02_PW006 | SB_BH02_NG025 | NG | 742.30 | 742.42 | 2022-03-15 1:16 | Limestone | |
| SB_BH02_NG027 NG NG NGA2 | SB_BH02_NG026 | NG | 768.92 | 769.07 | 2022-03-1/1/:48 | Limestone | |
| SB_BH02_NG029 NG 843.67 843.80 2022-03-2018:02 Limestone SB_BH02_NG030 NG 881.91 882.06 2022-03-2116:41 Sandstone SB_BH02_PW001 PW-VD 210.54 210.74 2021-12-311:10 Shale SB_BH02_PW002 PW-PA 210.74 2021-12-311:20 Shale SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-0114:50 Dolostone SB_BH02_PW004 PW-PA 250.11 2022-01-02 0:19 Shale SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 13:52 Dolostone SB_BH02_PW007 PW-VD 299.58 299.81 2022-01-02 13:52 Dolostone SB_BH02_PW008 PW-PA 299.3 300.17 2022-01-02 13:52 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:54 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 <td< td=""><td>SB_BH02_NG027</td><td>NG</td><td>810.27</td><td>810.38</td><td>2022-03-18 2:45</td><td>Limestone</td><td></td></td<> | SB_BH02_NG027 | NG | 810.27 | 810.38 | 2022-03-18 2:45 | Limestone | |
| SB_BH02_NG030 NG 881.91 882.06 2022-03-21 16:41 Sandstone SB_BH02_PW001 PW-VD 210.54 210.74 2021-12-31 1:10 Shale SB_BH02_PW002 PW-PA 210.74 20.21-12-31 1:20 Shale SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-01 14:50 Dolostone SB_BH02_PW004 PW-PA 250.11 250.36 2022-01-02 0:19 Shale SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:19 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:12 Shale SB_BH02_PW006 PW-VD 299.58 299.21 2022-01-02 13:52 Dolostone SB_BH02_PW006 PW-VD 299.58 299.21 2022-01-02 13:52 Dolostone SB_BH02_PW007 PW-VD 299.58 209.21 2022-01-02 13:52 Dolostone SB_BH02_PW008 PW-PA 299.93 30.01 2022-01-02 13:52 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:52 Shale SB_BH02_PW010 PW-PA 314.3 | SB_BH02_NG029 | NG | 843.67 | 843.80 | 2022-03-20 18:02 | Limestone | |
| SB_BH02_PW001 PW-VD 210.54 210.74 2021-12-31 1:0 Shale SB_BH02_PW002 PW-PA 210.74 210.96 2021-12-31 1:20 Shale SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-01 14:50 Dolostone SB_BH02_PW004 PW-PA 250.11 250.36 2022-01-01 14:50 Dolostone SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:19 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW006 PW-VD 299.81 2022-01-02 0:22 Shale SB_BH02_PW006 PW-VD 299.93 300.17 2022-01-02 1:352 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:52 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | SB_BH02_NG030 | NG | 881.91 | 882.06 | 2022-03-21 16:41 | Sandstone | |
| SB_BH02_PW003 PW-PA 210.74 210.96 2021-12-31.120 Shale SB_BH02_PW003 PW-VD 249.91 250.11 2022-01-01.14:50 Dolostone SB_BH02_PW004 PW-PA 250.11 250.36 2022-01-01.14:50 Dolostone SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02.019 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02.012.2 Shale SB_BH02_PW006 PW-VD 299.58 299.81 2022-01-02.13:2 Dolostone SB_BH02_PW008 PW-PA 299.93 300.17 2022-01-02.13:2 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03.0552 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03.0554 Shale | SB_BH02_PW001 | PW-VD | 210.54 | 210.74 | 2021-12-31 1:10 | Shale | |
| SB_BH02_PW004 PW-PA 250.11 250.201 (11.50) Dolostone SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:19 Shale SB_BH02_PW006 PW-PA 269.9 2022-01-02 0:22 Shale SB_BH02_PW007 PW-VD 299.58 299.81 2022-01-02 13:52 Dolostone SB_BH02_PW008 PW-PA 299.93 300.17 2022-01-02 13:52 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:52 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | | PW-PA | 210.74 249.91 | 210.96 250 11 | 2021-12-31 1:20 | Snale Dolostone | |
| SB_BH02_PW005 PW-VD 269.75 269.9 2022-01-02 0:29 Shale SB_BH02_PW006 PW-PA 269.9 270.1 2022-01-02 0:22 Shale SB_BH02_PW007 PW-VD 299.58 299.81 2022-01-02 13:52 Dolostone SB_BH02_PW008 PW-PA 299.93 300.17 2022-01-02 13:58 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:52 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | SB_BH02_PW004 | PW-PA | 250.11 | 250.36 | 2022-01-01 14:50 | Dolostone | |
| SB_BH02_PW006 PW-PA 269.9 270.1 2022-01-02 0:22 Shale SB_BH02_PW007 PW-VD 299.58 299.81 2022-01-02 13:52 Dolostone SB_BH02_PW008 PW-PA 299.93 300.17 2022-01-02 13:58 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:52 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | SB_BH02_PW005 | PW-VD | 269.75 | 269.9 | 2022-01-02 0:19 | Shale | |
| SB_BH02_PW007 PW-VD 299.58 299.81 2022-01-02 13:52 Dolostone SB_BH02_PW008 PW-PA 299.93 300.17 2022-01-02 13:58 Dolostone SB_BH02_PW009 PW-VD 314.15 314.3 2022-01-03 0:52 Shale SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | SB_BH02_PW006 | PW-PA | 269.9 | 270.1 | 2022-01-02 0:22 | Shale | |
| Sb_bh02_PW009 PW-PA 314.3 2022-01-03 0:52 Shale Sb_bh02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | SB_BH02_PW007 | PW-VD | 299.58 | 299.81 | 2022-01-02 13:52 | Dolostone | |
| SB_BH02_PW010 PW-PA 314.3 314.54 2022-01-03 0:54 Shale | SB_BH02_PW008 | PW-VD | 299.93 314.15 | 314.3 | 2022-01-02 13:58 | Shale | |
| | SB_BH02_PW010 | PW-PA | 314.3 | 314.54 | 2022-01-03 0:54 | Shale | |

Appendix A - Porewater, Dissolved Gas, and Noble Gas Sample Summary

| 58. Biolog. PW011 PW-V0 49411 49426 2022-0164332 Limestone 58. Biolog. PW013 PW-V0 385.17 385.22 2022-0164322 Diolstone 58. Biolog. PW013 PW-V0 385.17 285.22 2022-0164222 Diolstone 58. Biolog. PW015 PW-V0 387.42 388.09 2022-0160422 Diolstone 58. Biolog. PW017 PW-V0 433.5 433.2 2022-01650424 Diolstone 58. Biolog. PW017 PW-V0 433.6 433.2 2022-0165243 Shale 58. Biolog. PW017 PW-V0 433.6 433.2 2022-0165243 Shale 58. Biolog. PW017 PW-V0 440.7 440.33 2022-0165243 Shale 58. Biolog. PW017 PW-V0 440.37 400.32 2022-0165218 Shale 58. Biolog. PW017 440.33 2022-0162218 Shale Shale 58. Biolog. PW012 PW+V0 463.4 400.33 2022-0162218 Shale 58. Biolog. PW012 PW+V0 463.4 < | Sample ID | Sample Type | From (m) | To (m) | Date Sampled | Lithology | Comments |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------|----------|--------|------------------|-----------|------------------------------------------------------------------------------------------------|
| Sig Biol2, PW012 PW-M 387.1 388.21 2022-010-322 Diolstome Sig Biol2, PW013 PW-W 385.21 2022-010-0122 Diolstome Sig Biol2, PW015 PW-W 385.21 385.21 2022-010-0122 Diolstome Sig Biol2, PW015 PW-W 385.21 385.21 2022-010-0124 Diolstome Sig Biol2, PW015 PW-W 385.41 2022-010-0140 Diolstome Sig Biol2, PW015 PW-W 485.41 2022-010-0140 Diolstome Sig Biol2, PW015 PW-W 485.41 2022-010-05140 Shale Sig Biol2, PW015 PW-W 485.71 2022-010-65251 Shale Sig Biol2, PW012 PW-W 486.72 402.71 2022-010-65251 Shale Sig Biol2, PW012 PW-W 486.72 402.72 202-010-65251 Shale Sig Biol2, PW012 PW-W 486.72 401.73 202-010-62315 Shale Sig Biol2, PW012 PW-W 486.74 402.72 402.10-031 Shale < | SB BH02 PW011 | PW-VD | 349.11 | 349.26 | 2022-01-04 3:32 | Limestone | |
| Sign 102_PV013 PVV 380.12 202.01 04 22.01 PU0 locatione Sampling noct: Precautionary sample from bottom of AD Unit. Guelph was the targeted fm Sign 102_PV015 PVVA 387.23 386.01 2022.01 04 22.01 Pu0 locatione Sign 102_PV015 PVVA 438.23 388.43 388.43 2022.01 05 21.01 Pu0 locatione Sign 102_PV015 PVVA 403.2 403.2 2022.01 05 21.04 Pu0 locatione Sign 102_PV012 PVVA 403.2 2022.01 05 21.04 Shule Sampling note: Shale with carbonate interbeds. Sign 102_PV012 PVVA 40.75 40.05 2022.01 06 21.31 Shule Sign 102_PV012 PVVA 40.05 40.07 2022.01 06 23.15 Shule Sign 102_PV012 PVVA 40.05 40.07 2022.01 06 23.15 Shule Sign 102_PV012 PVVA 40.05 40.07 2022.01 06 23.15 Shule Sign 102_PV012 PVVA 40.05 40.07 2022.01 07 23.16 Shule Sign 102_PV012 PVVA 40.05 40.02 | SB BH02 PW012 | PW-PA | 348.71 | 348.91 | 2022-01-04 3:35 | Limestone | |
| Sign Bio Provide Sign Bio Provide | SB BH02 PW013 | PW-VD | 386.17 | 386.32 | 2022-01-04 22:20 | Dolostone | Sampling note: Precautionary sample from bottom of A0 Unit, Guelph was the targeted fm |
| Sig Bud 2, Wud B37.91 B37.92 B38.09 2022-01-05 0.41 Dolucome Sig BUD 2, Wud PW-VA 433.2 2022-01-05 0.01 Dolucome Sig BUD 2, Wud PW-VA 430.2 403.1 2022-01-05 0.00 Dolucome Sig BUD 2, Wud PW-VA 420.6 439.2 2022-01-05 0.10 Shule Sampling note: Shale with carbonate interbeds. Sig BUD 2, Wud 440.75 440.33 2022-01-05 2.13 Shule Sig BUD 2, Wud 440.75 40.17 410.2 2022-01-05 2.15 Shule Sig BUD 2, Wud 440.53 40.07 2022-01-05 2.15 Shule Sig BUD 2, Wud 440.53 2022-01 07 1.43 Shule Shule Sig BUD 2, Wud 440.64 490.57 2022-01 07 1.43 Shule Sig BUD 2, Wud 440.64 490.47 2022-04 07 2.24 Shule Sig BUD 2, Wud 495.66 53.37 2022-340 2.23 Shule <td>SB BH02 PW014</td> <td>PW-PA</td> <td>386.32</td> <td>386.54</td> <td>2022-01-04 22:24</td> <td>Dolostone</td> <td>Sampling note: Precautionary sample from bottom of A0 Unit. Guelph was the targeted fm</td> | SB BH02 PW014 | PW-PA | 386.32 | 386.54 | 2022-01-04 22:24 | Dolostone | Sampling note: Precautionary sample from bottom of A0 Unit. Guelph was the targeted fm |
| sig sig <td>SB BH02 PW015</td> <td>PW-VD</td> <td>387.92</td> <td>388.09</td> <td>2022-01-05 0:41</td> <td>Dolostone</td> <td></td> | SB BH02 PW015 | PW-VD | 387.92 | 388.09 | 2022-01-05 0:41 | Dolostone | |
| Sig Bud2_PWD2 PW-P 403.2 202.21.06 10.00 Delatione Sig BUD2_PWD3 PW-P 403.6 403.2 202.21.06 13.00 Delatione Sig BUD2_PWD2 PW-P 400.5 400.5 202.21.06 21.34 Shale Sampling note: Shale with carbonate interbeds. Sig BUD2_PWD2 PW-P 400.5 400.5 202.21.06 47.31 Shale Sig BUD2_PWD2 PW-P 400.5 400.5 202.20.106 47.31 Shale Sig BUD2_PWD2 PW-P 400.5 400.5 202.20.106 47.31 Shale Sig BUD2_PWD2 PW-P 400.5 401.7 202.20.106 47.31 Shale Sig BUD2_PWD2 PW-P 400.5 402.2 202.20.107.31 Shale Sig BUD2_PWD2 PW-P 406.5 402.2 202.20.01.02.3 Shale Sig BUD2_PWD3 PW-P 466.5 402.2 202.20.01.02.3 Shale Sig BUD2_PWD3 PW-P 403.8 30.20.20.07.22.4 Shale Sig BUD2_PWD3 PW-P 63.44 202.20. | SB BH02 PW016 | PW-PA | 388.34 | 388.54 | 2022-01-05 0:43 | Dolostone | |
| sig sig <td>SB BH02 PW017</td> <td>PW-VD</td> <td>403.05</td> <td>403.2</td> <td>2022-01-05 10:00</td> <td>Dolostone</td> <td></td> | SB BH02 PW017 | PW-VD | 403.05 | 403.2 | 2022-01-05 10:00 | Dolostone | |
| sig sig stabile stabile stabile stabile S8_BH02_PW02 PW-V0 4403 2022-016-643 umestone S8_BH02_PW02 PW-V0 4403 2022-016-643 umestone S8_BH02_PW02 PW-V0 4613 2022-016-643 umestone S8_BH02_PW02 PW-V0 4613 2022-016-6315 Stabile S8_BH02_PW02 PW-V0 4613 2022-016-6315 Stabile S8_BH02_PW02 PW-V0 480.6 2022-016-07-1430 Stabile S8_BH02_PW02 PW-V0 480.6 2022-01-07-1430 Stabile S8_BH02_PW02 PW-V0 496.6 460.5 2022-01-07-1430 Stabile S8_BH02_PW03 PW-V0 496.6 460.5 2022-01-07-1430 Stabile S8_BH02_PW03 PW-V0 496.6 405.5 2022-01-07-1430 Stabile S8_BH02_PW03 PW-V0 454.6 437.2 2022-01-07-1430 Stabile S8_BH02_PW03 PW-V0 654.6 502.201-01-12-30 | SB BH02 PW018 | PW-PA | 403.26 | 403.51 | 2022-01-05 10:00 | Dolostone | |
| Sig Bund2 PV-AA 422.58 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 42.57.8 | SB BH02 PW019 | PW-VD | 429.06 | 429.22 | 2022-01-05 21:40 | Shale | Sampling note: Shale with carbonate interbeds. |
| Sig Bardo PWV-VD 440.73 440.33 2022-01-66.433 timestome Sig BHCD PWV-VD 461.53 461.71 2022-01-66.231.5 Shale Sig BHCD PWV-VD 461.71 402.51 2022-01-66.231.5 Shale Sig BHCD PWV-VD 480.55 2022-01-66.231.5 Shale Sig BHCD PWV-VD 480.55 2022-01-66.231.5 Shale Sig BHCD PWV-VD 480.55 2022-01-61.20 Shale Sig BHCD PWV-VD 466.66 497.64 2022-01-61.22 Shale Sig BHCD PWV-VD 454.66 583.87 2022-03-01.22 Shale Sig BHCD PWV-VD 603.46 503.33 2022-03-08.52 Shale Sig BHCD PWV-VD 603.42 2022-03-08.65 Shale Sig BHCD PWV-VD 623.03 2022-03-08.65 Shale Sig BHCD PWV-VD | SB BH02 PW020 | PW-PA | 428.58 | 428.78 | 2022-01-05 21:43 | Shale | Sampling note: Shale with carbonate interbeds. |
| Sig Bardo PW-PA 40.02 202-01-06-455 Limestone Sig PW-PA 461.12 461.12 202-01-06-2315 Shale Sig PW-PA 461.12 461.12 202-01-06-2315 Shale Sig PW-PA 480.8 480.05 202-01-071-430 Shale Sig PW-PA 480.6 406.65 202-01-021 Shale Sig PW-PA 486.6 406.65 202-03-01-23 Shale Sig PW-PA 58.38 502-02-03-23 Shale Sig PW-PA 58.38 502-02-03-23 Shale Sig PW-PA 58.38 502-02-03-23 Shale Sig Add 702-03-08-52 Shale Sig PW-PA 653.8 602-02-03-03 Shale Sig BdO_2-PW03 PW-PA 673.83 202-03-01-26 Shale Sig BdO_2-PW03 PW-PA 673.83 623.20 202-03-11-26 Shale Sig </td <td>SB_BH02_PW021</td> <td>PW-VD</td> <td>440.75</td> <td>440.93</td> <td>2022-01-06 4:53</td> <td>Limestone</td> <td></td> | SB_BH02_PW021 | PW-VD | 440.75 | 440.93 | 2022-01-06 4:53 | Limestone | |
| Sig Bit O2_PW02 PW-VD 461.71 61.71 202-01-06 2.15 Shale Sig H02_PW02 PW-VD 480.8 480.95 202-01-07 14:30 Shale Sig H02_PW02 PW-VA 480.8 480.95 2022-01-07 14:30 Shale Sig H02_PW02 PW-VA 480.65 490.02 Shale Sig H02_PW02 PW-VA 480.65 497.04 202-03-01 0.23 Sig Sig Sig 202-03-01 0.23 Shale Sig H02_PW03 PW-VA 484.65 497.04 202-03-01 0.23 Sig Sig Sig 202-03-01 0.23 Shale Shale Sig H02_PW03 PW-VA 633.6 620-02 0.03 Shale Sig H02_PW03 PW-VA 633.8 620-02 0.02.3 Shale Sig H02_PW03 PW-VA 633.8 620-02 0.02.3 Shale Sig H02_PW03 PW-VA 633.8 620-02 0.01.26 Shale <tr< td=""><td>SB_BH02_PW022</td><td>PW-PA</td><td>440.52</td><td>440.75</td><td>2022-01-06 4:55</td><td>Limestone</td><td></td></tr<> | SB_BH02_PW022 | PW-PA | 440.52 | 440.75 | 2022-01-06 4:55 | Limestone | |
| Sig Bud2 PW-PA 46.1.7 46.0.2 022.01.07.1430 Shale Sig PW-V02 PW-V0 480.6 480.5 522.01.07.1430 Shale Sig PW-V02 PW-V0 480.6 480.5 522.01.07.1430 Shale Sig PW-V0 480.6 480.5 522.01.07.1430 Shale Sig PW-V0 486.6 496.8 502.01.01.23 Shale Sig PW-V0 538.6 633.67 202.03.01.23 Shale Sig PW-V0 538.6 600.21.02.03.01.23 Shale Sig PW-V0 538.6 600.22.03.07.22.4 Shale Sig PW-V0 633.0 603.12 602.03.01.2.6 Shale Sig PW-V0 633.0 602.23.01.12.66 Shale Sig PW-V0 633.0 202.03.10.12.6 Shale Sig PW-V0 643.5 632.20.30.11.2.66 Shale Sig PW-V0 658.1 673.1 | SB BH02 PW023 | PW-VD | 461.52 | 461.71 | 2022-01-06 23:15 | Shale | |
| Sig Burd2_PW025 PW-V0 480.8 480.95 2022.01.07.14.30 Shale Sig MC2_PW027 PW-V0 486.66 496.85 2022.03.01.02.0 Shale Sig MC2_PW027 PW-V0 486.66 496.85 2022.03.01.02.0 Shale Sig MC2_PW020 PW-V4 486.85 497.04 2022.03.01.02.0 Shale Sig MC2_PW020 PW-V4 554.86 537.2022.03.01.02.0 Shale Sig MC2_PW020 PW-V4 554.86 537.2022.03.07.22.46 Shale Sig MC2_PW020 PW-V4 603.40 603.42 2022.03.09.85.2 Shale Sig MC2_PW030 PW-V4 628.86 603.22 202.03.11.266 Shale Sig MC2_PW030 PW-V4 641.72 2022.03.11.266 Shale Sig MC2_PW030 PW-V4 643.13 653.3 2022.03.11.266 Shale Sig MC2_PW040 PW-V4 667.41 676.31 2022.03.11.266 <t< td=""><td>SB_BH02_PW024</td><td>PW-PA</td><td>461.71</td><td>461.92</td><td>2022-01-06 23:18</td><td>Shale</td><td></td></t<> | SB_BH02_PW024 | PW-PA | 461.71 | 461.92 | 2022-01-06 23:18 | Shale | |
| singling symplemetry symplemetry symplemetry symplemetry sig BH02_PW028 PW-PA 496.65 2022-03-01.020 Shale sig BH02_PW028 PW-PA 496.65 2022-03-01.020 Shale sig BH02_PW028 PW-PA 53.48 2022-03-02.23.15 Shale sig BH02_PW028 PW-PA 53.48 2022-03-07.22.45 Shale Sig BH02_PW038 PW-PA 603.49 2022-03-07.22.45 Shale Sig BH02_PW038 PW-PA 603.49 603.42 2022-03-07.22.45 Shale Sig BH02_PW038 PW-PA 603.42 2022-03-07.23.45 Shale Sig BH02_PW038 PW-PA 63.31 62.02 2022-03-10.12.64 Shale Sig BH02_PW038 PW-PA 63.31 65.33 2022-03-11.12.04 Shale Sig BH02_PW040 PW-PA 65.31 62.20-03-11.12.04 Shale Sig BH02_PW040 PW-PA 65.31 <td>SB_BH02_PW025</td> <td>PW-VD</td> <td>480.8</td> <td>480.95</td> <td>2022-01-07 14:30</td> <td>Shale</td> <td></td> | SB_BH02_PW025 | PW-VD | 480.8 | 480.95 | 2022-01-07 14:30 | Shale | |
| singling PW-VD Me6.6 Me6.6 V02.2 Shale SB_BH02_PW023 PW-VA 496.65 497.40 2022-03-012.23 Shale SB_BH02_PW023 PW-VA 543.80 2022-03-022.313 Shale SB_BH02_PW023 PW-VA 559.83 500.00 2022-03-072.245 Shale SB_BH02_PW032 PW-VA 559.83 500.00 2022-03-072.245 Shale SB_BH02_PW033 PW-VA 603.19 2022-03-072.245 Shale SB_BH02_PW034 PW-PA 603.19 2022-03-078.52 Shale SB_BH02_PW034 PW-PA 603.19 2022-03-078.52 Shale SB_BH02_PW034 PW-PA 603.19 2022-03-014.25 Shale SB_BH02_PW034 PW-PA 663.13 2022-03-111.206 Shale SB_BH02_PW034 PW-PA 663.1 663.20 2022-03-111.204 Shale SB_BH02_PW034 PW-PA 663.1 667.30 2022-03-111.204 Shale SB_BH02_PW041 PW-PA 667.4 | SB BH02 PW026 | PW-PA | 480.95 | 481.16 | 2022-01-07 14:30 | Shale | |
| sig Bund PW-PA 496.85 497.04 2022-03-01 22.31 Shale SB_BHO2_PW030 PW-VD 533.46 5022-03-04 23.13 Shale SB_BHO2_PW031 PW-VD 559.8 550.8 2022-03-04 23.13 Shale SB_BHO2_PW033 PW-VD 559.8 550.8 2022-03-09 22.45 Shale SB_BHO2_PW034 PW-VA 603.04 603.19 2022-03-09 22.45 Shale SB_BHO2_PW035 PW-VA 603.04 603.19 2022-03-09 8.53 Shale SB_BHO2_PW036 PW-VA 603.04 603.19 2022-03-01 12.66 Shale SB_BHO2_PW036 PW-VA 604.72 644.72 2022-03-11 12.06 Shale SB_BHO2_PW038 PW-VA 664.73 2022-03-11 12.06 Shale SB_BHO2_PW040 PW-VA 667.14 667.12 2022-03-11 12.06 Shale SB_BHO2_PW040 PW-VA 667.14 667.02 2022-03-11 12.06 Shale SB_BHO2_PW040 PW-VA 667.13 67.02 2022- | SB_BH02_PW027 | PW-VD | 496.66 | 496.85 | 2022-03-01 0:20 | Shale | |
| sig Bello PW-VD S43 69 S43 89 2022-03-02 2:15 Shale SB_BHO_PW031 PW-PA S59 83 C022-03-07 22:45 Shale SB_BHO_PW032 PW-PA S59 83 C022-03-07 22:45 Shale SB_BHO_PW033 PW-PA S59 83 C022-03-07 22:45 Shale SB_BHO_PW034 PW-PA G31 9 C022-03-09 85:2 Shale SB_BHO_PW034 PW-PA G31 9 C022-03-09 85:2 Shale SB_BHO_PW036 PW-PA G28 03 C022-03-01 12:6 Shale SB_BHO_PW037 PW-PA G28 03 C022-03-11 12:0 Shale SB_BHO_PW038 PW-PA G442 7 C022-03-11 12:0 Shale SB_BHO_PW039 PW-VA G58 13 G58 33 C022-03-11 12:0 Shale SB_BHO_PW040 PW-PA G58 13 G58 33 C02-03-11 12:0 Shale SB_BHO_PW040 PW-PA G58 13 G56 33 C02-03-11 12:0 Shale SB_BHO_PW040 PW-PA G58 13 G56 33 | SB_BH02_PW028 | PW-PA | 496.85 | 497.04 | 2022-03-01 0:23 | Shale | |
| sh D2_PW030 PW-PA S43.48 S43.69 202-03.07 22.45 Shale SB_BH02_PW031 PW-V0 S59.81 G20.307 22.45 Shale SB_BH02_PW033 PW-V0 G03.04 G03.04 G03.07 22.45 Shale SB_BH02_PW033 PW-V0 G03.04 G03.0 | SB BH02 PW029 | PW-VD | 543.69 | 543.87 | 2022-03-04 23:16 | Shale | |
| sb BH02_PW031 PW-V0 S59.83 S60.01 202-03-07 22.45 Shale SB_BH02_PW032 PW-PA S59.64 S59.84 202-03-07 22.46 Shale SB_BH02_PW034 PW-PA 603.19 602-03-09 85.3 Shale SB_BH02_PW035 PW-PA 628.83 620.06 2022-03-10 12.6 Shale SB_BH02_PW036 PW-PA 628.33 620.06 2022-03-11 12.06 Shale SB_BH02_PW037 PW-V0 644.56 644.22 202-03-11 12.06 Shale SB_BH02_PW038 PW-PA 658.31 668.33 2022-03-11 12.04 Shale SB_BH02_PW044 PW-PA 657.41 667.43 202-03-11 12.04 Shale SB_BH02_PW042 PW-PA 667.41 667.41 202-03-11 15.25 Shale SB_BH02_PW044 PW-PA 676.31 676.62 202-03-13 10.36 Limestone SB_BH02_PW044 PW-PA 676.31 676.62 202-03-13 10.45 Limestone SB_BH02_PW045 PW-PA 763.8 < | SB_BH02_PW030 | PW-PA | 543.48 | 543.69 | 2022-03-04 23:13 | Shale | |
| sis BR02_PW032 PW-PA S59.64 S59.84 S022-03-07 22:46 Shale SB_BH02_PW033 PW-V0 603.19 C022-03-09 8:52 Shale SB_BH02_PW035 PW-PA 603.19 C022-03-09 8:52 Shale SB_BH02_PW035 PW-PA 628.83 C022-03-09 1:56 Shale SB_BH02_PW037 PW-PA 628.83 C022-03-10 1:26 Shale SB_BH02_PW038 PW-PA 644.72 644.92 C022-03-11 1:206 Shale SB_BH02_PW038 PW-PA 665.33 C022-03-11 1:206 Shale SB_BH02_PW040 PW-PA 665.33 C022-03-11 1:206 Shale SB_BH02_PW041 PW-PA 667.41 67.63 2022-03-11 1:206 Shale SB_BH02_PW043 PW-VD 667.44 67.61 202-03-13 1:03 Limestone SB_BH02_PW044 PW-PA 676.15 676.3 2022-03-13 1:03 Limestone SB_BH02_PW045 PW-PA 676.15 676.3 2022-03-13 1:120 Limestone SB_BH02_PW04 | SB_BH02_PW031 | PW-VD | 559.83 | 560.01 | 2022-03-07 22:45 | Shale | |
| sh g HO2_PW033 PW-VD 603.04 2022-03-09.8:52 Shale SB_BH02_PW034 PW-AA 603.13 603.42 2022-03-09.8:32 Shale SB_BH02_PW035 PW-VA 628.03 620.20 Shale Shale SB_BH02_PW036 PW-VD 629.03 6222-03-11.2:66 Shale SB_BH02_PW037 PW-VA 664.72 644.92 2022-03-11.2:08 Shale SB_BH02_PW038 PW-VA 664.72 64.42 2022-03-11.2:04 Shale SB_BH02_PW039 PW-VA 658.33 568.33 0222-03-12.1:0.46 Shale SB_BH02_PW041 PW-PA 667.14 667.1 2022-03-12.1:5.15 Shale SB_BH02_PW044 PW-PA 676.31 676.6 2022-03-13.10:37 Limestone SB_BH02_PW045 PW-VD 676.51 0222-03-13.18:49 Limestone SB_BH02_PW047 PW-VD 73.88 2022-03-15.112 Limestone SB_BH02_PW045 PW-VD 74.18 0222-03-15.121 Limestone </td <td>SB BH02 PW032</td> <td>PW-PA</td> <td>559.64</td> <td>559.83</td> <td>2022-03-07 22:46</td> <td>Shale</td> <td></td> | SB BH02 PW032 | PW-PA | 559.64 | 559.83 | 2022-03-07 22:46 | Shale | |
| SB_BH02_PW034 PW-PA 603.19 603.42 2022-03-09.8:53 Shale SB_BH02_PW035 PW-PA 628.33 629.06 2022-03-10.12.6 Shale SB_BH02_PW036 PW-VD 629.09 629.3 2022-03-10.12.6 Shale SB_BH02_PW037 PW-VD 644.56 644.72 2022-03-11.12.06 Shale SB_BH02_PW040 PW-PA 658.33 2022-03-11.12.06 Shale SB_BH02_PW040 PW-PA 658.33 2022-03-11.12.06 Shale SB_BH02_PW040 PW-PA 658.33 2022-03-11.12.06 Shale SB_BH02_PW040 PW-PA 667.14 667.31 2022-03-11.15.26 Shale SB_BH02_PW041 PW-PA 667.13 676.31 2022-03-13.10.37 Limestone SB_BH02_PW045 PW-PA 676.31 2022-03-13.18.49 Limestone SB_BH02_PW046 SB_BH02_PW046 PW-PA 723.66 723.88 2022-03-15.11.1 Limestone SB_BH02_PW051 PW-PA 731.67 768.39 2022-03-15.12.1 | SB_BH02_PW033 | PW-VD | 603.04 | 603.19 | 2022-03-09 8:52 | Shale | |
| SB_BH02_PW035 PW-PA 628.83 629.06 2022-03-10.126 Shale SB_BH02_PW036 PW-VD 629.09 629.3 2022-03-10.436 Shale SB_BH02_PW037 PW-VD 644.56 644.72 2022-03-11.12:06 Shale SB_BH02_PW038 PW-PA 644.72 644.92 2022-03-11.12:06 Shale SB_BH02_PW040 PW-PA 658.33 658.53 2022-03-11.12:04 Shale SB_BH02_PW040 PW-PA 667.14 667.61 2022-03-12.11:51 Shale SB_BH02_PW041 PW-PA 667.15 676.61 2022-03-13.10:36 Limestone SB_BH02_PW044 PW-PA 676.15 676.61 2022-03-13.10:37 Limestone SB_BH02_PW045 PW-VD 694.41 694.62 2022-03-13.13:49 Limestone SB_BH02_PW048 PW-VD 73.88 72.40 2022-03-13.11:46 Limestone SB_BH02_PW051 PW-VD 78.36 78.38 2022-03-15.1:11 Limestone SB_BH02_PW052 PW-PA 7 | SB_BH02_PW034 | PW-PA | 603.19 | 603.42 | 2022-03-09 8:53 | Shale | |
| SB_BH02_PW036 PW-VD 629.09 629.39 202-03-10 4:36 Shale SB_BH02_PW037 PW-VD 644.52 642.72 2022-03-11 12:06 Shale SB_BH02_PW038 PW-VD 658.17 658.33 2022-03-11 12:06 Shale SB_BH02_PW040 PW-VD 658.17 658.33 2022-03-11 12:04 Shale SB_BH02_PW041 PW-PA 658.33 2022-03-11 12:04 Shale SB_BH02_PW042 PW-VD 676.14 676.31 2022-03-11 12:04 Shale SB_BH02_PW043 PW-VD 676.15 676.31 2022-03-11 12:04 Shale SB_BH02_PW044 PW-VD 676.15 676.31 2022-03-13 10:36 Limestone SB_BH02_PW045 PW-VA 694.41 202-03-13 18:49 Limestone SB_BH02_PW046 PW-VA 694.41 2022-03-13 18:49 Limestone SB_BH02_PW045 PW-VA 736.6 738.8 202-03-13 12:12 Limestone SB_BH02_PW050 PW-VA 741.8 2022-03-17 17:31 Limestone | SB BH02 PW035 | PW-PA | 628.83 | 629.06 | 2022-03-10 1:26 | Shale | |
| SB_BH02_PW037 PW-VD 644.56 644.72 2022-03-11 12:06 Shale SB_BH02_PW038 PW-VD 658.17 658.33 2022-03-11 12:06 Shale SB_BH02_PW030 PW-VD 658.33 628.33 2022-03-11 20:46 Shale SB_BH02_PW041 PW-PA 667.44 667.41 667.41 2022-03-12 11:52 Shale SB_BH02_PW042 PW-VD 667.41 676.31 2022-03-13 10:36 Limestone SB_BH02_PW044 PW-VA 676.31 676.61 2022-03-13 10:37 Limestone SB_BH02_PW044 PW-VA 676.31 676.61 2022-03-13 10:37 Limestone SB_BH02_PW045 PW-VA 676.31 676.61 2022-03-13 10:37 Limestone SB_BH02_PW046 PW-VA 694.41 694.20 2022-03-13 11:54 Limestone SB_BH02_PW048 PW-VA 732.66 723.88 2022-03-13 11:32 Limestone SB_BH02_PW051 PW-VA 741.8 742.04 2022-03-17 17:31 Limestone SB_BH02_PW052< | SB_BH02_PW036 | PW-VD | 629.09 | 629.3 | 2022-03-10 4:36 | Shale | |
| SB_BH02_PW038 PW-PA 644.72 644.92 2022-03-11 12:08 Shale SB_BH02_PW039 PW-VD 658.17 658.33 2022-03-11 20:44 Shale SB_BH02_PW040 PW-PA 658.33 658.33 2022-03-11 20:44 Shale SB_BH02_PW041 PW-PA 667.44 667.43 2022-03-12 11:52 Shale SB_BH02_PW042 PW-VD 667.44 667.61 2022-03-12 11:52 Shale SB_BH02_PW044 PW-PA 676.15 676.31 2022-03-13 10:36 Limestone SB_BH02_PW044 PW-PA 676.15 676.31 2022-03-13 18:49 Limestone SB_BH02_PW045 PW-PA 694.41 2022-03-13 18:49 Limestone SB_BH02_PW046 PW-VD 73.88 72.40 2022-03-14 15:45 Limestone SB_BH02_PW048 PW-VA 73.66 73.88 2022-03-15 111 Limestone SB_BH02_PW051 PW-VA 741.8 742.04 2022-03-15 112 Limestone SB_BH02_PW055 PW-VA 788.7 < | SB_BH02_PW037 | PW-VD | 644.56 | 644.72 | 2022-03-11 12:06 | Shale | |
| SB_BH0_PW039 PW-VD 658.17 658.33 202-03-11 20:44 Shale SB_BH02_PW040 PW-PA 658.33 658.33 202-03-11 20:46 Shale SB_BH02_PW041 PW-PA 667.41 667.43 202-03-12 11:52 Shale SB_BH02_PW043 PW-VD 667.41 667.61 202-03-12 11:52 Shale SB_BH02_PW044 PW-PA 667.61 602.03 -12 11:52 Shale SB_BH02_PW044 PW-PA 676.15 676.31 202-03-13 10:37 Limestone SB_BH02_PW044 PW-PA 676.14 676.2 202-03-13 18:49 Limestone SB_BH02_PW045 PW-VD 694.41 202-03-13 18:49 Limestone SB_BH02_PW047 PW-VD 723.88 724.04 202-03-15 1:11 Limestone SB_BH02_PW050 PW-VP 741.8 202-03-15 1:11 Limestone Stantone SB_BH02_PW054 PW-VP 768.7 768.92 202-03-17 17:33 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2 | SB_BH02_PW038 | PW-PA | 644.72 | 644.92 | 2022-03-11 12:08 | Shale | |
| SB_BH02_PW040 PW-PA 658.33 658.33 022.03.11 20:46 Shale SB_BH02_PW041 PW-PA 667.44 667.34 0202-03.12 11:51 Shale SB_BH02_PW042 PW-VD 667.44 667.51 2022-03.12 11:52 Shale SB_BH02_PW044 PW-PA 676.31 676.51 2022-03.13 10:37 Limestone SB_BH02_PW045 PW-PA 676.41 647.64 2022-03.13 18:49 Limestone SB_BH02_PW046 PW-PA 694.19 694.14 2022-03.13 18:49 Limestone SB_BH02_PW046 PW-PA 694.19 694.2 2022-03.14 15:45 Limestone SB_BH02_PW046 PW-PA 723.86 72.48 2022-03.14 15:45 Limestone SB_BH02_PW049 PW-PA 741.8 2022-03.15 1:11 Limestone SB_BH02_PW050 PW-PA 768.7 768.92 2022-03.17 17:38 Limestone SB_BH02_PW053 PW-PA 783.89 2022-03.18 2:40 Limestone Limestone SB_BH02_PW054 PW-PA 783.89< | SB_BH02_PW039 | PW-VD | 658.17 | 658.33 | 2022-03-11 20:44 | Shale | |
| SB_BH02_W041 PW-PA 667.44 667.44 667.44 667.44 667.41 2022-03:121:52 Shale SB_BH02_W043 PW-VD 667.44 667.51 2022-03:121:52 Shale SB_BH02_W044 PW-VD 667.51 676.51 2022-03:121:52 Shale SB_BH02_W044 PW-PA 676.51 676.51 2022-03:131:03 Limestone SB_BH02_W046 PW-PA 676.51 694.41 2022-03:131:84 Limestone SB_BH02_PW047 PW-PA 694.14 694.62 2022-03:141:545 Limestone SB_BH02_PW047 PW-PA 723.66 723.88 2022-03:151:154 Limestone SB_BH02_PW048 PW-PA 723.66 723.88 2022-03:151:11 Limestone SB_BH02_PW050 PW-PA 741.8 742.04 2022-03:171:31 Limestone SB_BH02_PW052 PW-PA 768.77 768.92 2022-03:171:73 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2022-03:18:240 Limestone | SB_BH02_PW040 | PW-PA | 658.33 | 658.53 | 2022-03-11 20:46 | Shale | |
| SB_BH02_PW042 PW-VD 667.41 607.61 2022-03-12 11:52 Shale SB_BH02_PW043 PW-VD 676.15 676.31 2022-03-13 10:36 Limestone SB_BH02_PW044 PW-PA 676.31 676.63 2022-03-13 10:37 Limestone SB_BH02_PW046 PW-PA 676.31 676.62 2022-03-13 18:49 Limestone SB_BH02_PW046 PW-VD 694.41 694.62 2022-03-14 15:45 Limestone SB_BH02_PW048 PW-VD 723.88 724.04 2022-03-12 11:52 Limestone SB_BH02_PW049 PW-VD 73.88 724.04 2022-03-12 11:52 Limestone SB_BH02_PW049 PW-VD 741.87 742.04 2022-03-12 11:12 Limestone SB_BH02_PW050 PW-VD 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW051 PW-VD 783.89 784.13 2022-03-182.43 Limestone SB_BH02_PW055 PW-VD 783.89 784.13 2022-03-182.43 Limestone SB_BH02_PW055 <td< td=""><td>SB_BH02_PW041</td><td>PW-PA</td><td>667.14</td><td>667.34</td><td>2022-03-12 11:51</td><td>Shale</td><td></td></td<> | SB_BH02_PW041 | PW-PA | 667.14 | 667.34 | 2022-03-12 11:51 | Shale | |
| SB_BH02_PW043 PW-VD 676.15 676.31 2022-03-13 10:36 Limestone SB_BH02_PW044 PW-PA 676.31 676.6 2022-03-13 10:37 Limestone SB_BH02_PW045 PW-VD 694.41 2022-03-13 18:49 Limestone SB_BH02_PW046 PW-VD 694.41 2022-03-13 18:49 Limestone SB_BH02_PW046 PW-VD 723.88 724.04 2022-03-14 15:45 Limestone SB_BH02_PW048 PW-VD 723.88 2022-03-15 1:14 Limestone SB_BH02_PW049 PW-VD 741.87 741.8 2022-03-15 1:11 Limestone SB_BH02_PW050 PW-PA 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-PA 741.8 742.04 2022-03-17 1:31 Limestone SB_BH02_PW052 PW-PA 783.89 2022-03-17 1:31 Limestone SB_BH02_PW054 PW-PA 783.89 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-PA 783.89 2022-03-19 2:47 Limestone SB_BH02_PW056 PW-PA 809.53 809.7 2022-03-19 2:47 | SB_BH02_PW042 | PW-VD | 667.44 | 667.61 | 2022-03-12 11:52 | Shale | |
| SB_BH02_PW044 PW-PA 676.31 676.6 2022-03-13 10:37 Limestone SB_BH02_PW045 PW-PA 694.19 694.41 2022-03-13 18:49 Limestone SB_BH02_PW047 PW-VD 694.14 2022-03-13 18:49 Limestone SB_BH02_PW048 PW-VD 723.88 724.04 2022-03-13 18:49 Limestone SB_BH02_PW048 PW-PA 723.66 723.88 2022-03-14 15:46 Limestone SB_BH02_PW050 PW-PA 741.8 2022-03-15 1:12 Limestone SB_BH02_PW050 PW-PA 741.8 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-PA 768.7 768.92 2022-03-17 1:73 Limestone SB_BH02_PW052 PW-PA 783.89 2022-03-18 2:40 Limestone Limestone SB_BH02_PW054 PW-PA 783.89 2022-03-18 2:40 Limestone Limestone SB_BH02_PW055 PW-VD 783.79 2022-03-19 2:47 Limestone Limestone SB_BH02_PW055 PW-PA 809.53 809.75 | SB_BH02_PW043 | PW-VD | 676.15 | 676.31 | 2022-03-13 10:36 | Limestone | |
| SB_BH02_PW045 PW-PA 694.19 694.41 2022-03-13 18:49 Limestone SB_BH02_PW046 PW-VD 694.41 694.62 2022-03-13 18:49 Limestone SB_BH02_PW047 PW-VD 723.88 724.04 2022-03-14 15:45 Limestone SB_BH02_PW049 PW-VD 741.57 741.8 2022-03-15 1:11 Limestone SB_BH02_PW050 PW-PA 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-VD 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW052 PW-PA 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 783.89 2022-03-18 2:40 Limestone SB_BH02_PW053 PW-PA 783.89 784.13 2022-03-18 2:43 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2022-03-19 2:45 Limestone SB_BH02_PW055 PW-PA 809.53 809.57 2022-03-20 16:22 Limestone SB_BH02_PW056 PW-PA | SB_BH02_PW044 | PW-PA | 676.31 | 676.6 | 2022-03-13 10:37 | Limestone | |
| SB_BH02_PW046 PW-VD 694.41 694.62 2022-03-13 18:49 Limestone SB_BH02_PW047 PW-VD 723.88 724.04 2022-03-14 15:45 Limestone SB_BH02_PW048 PW-PA 723.66 723.88 2022-03-14 15:45 Limestone SB_BH02_PW049 PW-VD 741.57 741.8 2022-03-15 1:11 Limestone SB_BH02_PW051 PW-PA 741.8 7202-03-15 1:12 Limestone SB_BH02_PW052 PW-PA 769.07 769.32 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 783.72 783.89 2022-03-17 17:33 Limestone SB_BH02_PW053 PW-PA 783.89 784.13 2022-03-18 2:40 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-PA 783.89 784.13 2022-03-19 2:47 Limestone SB_BH02_PW055 PW-PA 809.75 2022-03-19 2:47 Limestone Limestone SB_BH02_PW055 PW-PA | SB_BH02_PW045 | PW-PA | 694.19 | 694.41 | 2022-03-13 18:49 | Limestone | |
| SB_BH02_PW047 PW-VD 723.88 724.04 2022-03-14 15:45 Limestone SB_BH02_PW048 PW-PA 723.66 723.88 2022-03-15 1:11 Limestone SB_BH02_PW049 PW-VD 741.57 741.8 2022-03-15 1:11 Limestone SB_BH02_PW050 PW-PA 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-VD 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 769.07 769.34 2022-03-17 17:31 Limestone SB_BH02_PW053 PW-VD 783.72 783.89 2022-03-18 2:48 Limestone SB_BH02_PW054 PW-PA 783.89 2022-03-18 2:48 Limestone SB_BH02_PW055 PW-VD 783.72 783.89 2022-03-18 2:48 Limestone SB_BH02_PW055 PW-PA 809.75 809.9 2022-03-19 2:47 Limestone SB_BH02_PW056 PW-PA 809.75 809.9 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-VD 842.97 843.13 2022-03-19 2:45 Limestone SB_BH02_PW | SB_BH02_PW046 | PW-VD | 694.41 | 694.62 | 2022-03-13 18:49 | Limestone | |
| SB_BH02_PW048 PW-PA 723.66 723.88 2022-03-14 15:46 Limestone SB_BH02_PW049 PW-VD 741.57 741.8 2022-03-15 1:11 Limestone SB_BH02_PW050 PW-PA 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-VD 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 769.07 769.34 2022-03-17 17:33 Limestone SB_BH02_PW053 PW-PA 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW054 PW-PA 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-VD 783.75 80.99 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-VA 809.75 809.75 2022-03-20 16:22 Limestone SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:22 Limestone SB_BH02_PW059 <td< td=""><td>SB_BH02_PW047</td><td>PW-VD</td><td>723.88</td><td>724.04</td><td>2022-03-14 15:45</td><td>Limestone</td><td></td></td<> | SB_BH02_PW047 | PW-VD | 723.88 | 724.04 | 2022-03-14 15:45 | Limestone | |
| SB_BH02_PW049 PW-VD 741.57 741.8 2022-03-15 1:12 Limestone SB_BH02_PW050 PW-PA 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-VD 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 769.07 769.34 2022-03-17 17:33 Limestone SB_BH02_PW053 PW-VD 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW054 PW-VA 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-VD 783.75 2022-03-18 2:43 Limestone Limestone SB_BH02_PW055 PW-VD 809.75 809.9 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-VA 809.53 809.75 2022-03-20 16:22 Limestone SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:22 Limestone SB_BH02_PW059 < | SB_BH02_PW048 | PW-PA | 723.66 | 723.88 | 2022-03-14 15:46 | Limestone | |
| SB_BH02_PW050 PW-PA 741.8 742.04 2022-03-15 1:12 Limestone SB_BH02_PW051 PW-VD 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 769.07 769.34 2022-03-17 17:38 Limestone SB_BH02_PW053 PW-VD 783.72 783.89 2022-03-17 17:38 Limestone SB_BH02_PW054 PW-VD 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-VA 783.89 784.13 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-VA 809.75 809.9 2022-03-19 2:47 Limestone SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-PA 843.33 2022-03-20 16:22 Limestone Lab noted that sample had low water content (~0.1%) SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:22 Limestone SB_BH02_PW059 PW-VD 88.174 88.191 2022-03-21 15:24 Sandstone < | SB_BH02_PW049 | PW-VD | 741.57 | 741.8 | 2022-03-15 1:11 | Limestone | |
| SB_BH02_PW051 PW-VD 768.67 768.92 2022-03-17 17:31 Limestone SB_BH02_PW052 PW-PA 769.07 769.34 2022-03-17 17:38 Limestone SB_BH02_PW053 PW-VD 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-VD 809.75 809.9 2022-03-19 2:47 Limestone SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW057 PW-VD 842.97 843.3 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:20 Limestone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW050 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW050 | PW-PA | 741.8 | 742.04 | 2022-03-15 1:12 | Limestone | |
| SB_BH02_PW052 PW-PA 769.07 769.34 2022-03-17 17:38 Limestone SB_BH02_PW053 PW-VD 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2022-03-18 2:40 Limestone SB_BH02_PW055 PW-VD 809.75 809.9 2022-03-19 2:47 Limestone SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-VD 842.97 843.13 2022-03-19 2:45 Limestone SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:22 Limestone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW050 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW051 | PW-VD | 768.67 | 768.92 | 2022-03-17 17:31 | Limestone | |
| SB_BH02_PW053 PW-VD 783.72 783.89 2022-03-18 2:40 Limestone SB_BH02_PW054 PW-PA 783.89 784.13 2022-03-18 2:38 Limestone SB_BH02_PW055 PW-VD 809.75 809.9 2022-03-19 2:47 Limestone SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone SB_BH02_PW056 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-VD 843.3 843.54 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW050 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW052 | PW-PA | 769.07 | 769.34 | 2022-03-17 17:38 | Limestone | |
| SB_BH02_PW054 PW-PA 783.89 784.13 2022-03-18 2:38 Limestone SB_BH02_PW055 PW-VD 809.75 809.9 2022-03-19 2:47 Limestone Lab noted that sample had low water content (~0.1%) SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-VD 841.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW053 | PW-VD | 783.72 | 783.89 | 2022-03-18 2:40 | Limestone | |
| SB_BH02_PW055 PW-VD 809.75 809.9 2022-03-19 2:47 Limestone Lab noted that sample had low water content (~0.1%) SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone Limestone SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone Lab noted that sample had low water content (~0.1%) SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:20 Limestone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW054 | PW-PA | 783.89 | 784.13 | 2022-03-18 2:38 | Limestone | |
| SB_BH02_PW056 PW-PA 809.53 809.75 2022-03-19 2:45 Limestone SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:20 Limestone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW055 | PW-VD | 809.75 | 809.9 | 2022-03-19 2:47 | Limestone | Lab noted that sample had low water content (~0.1%) |
| SB_BH02_PW057 PW-VD 842.97 843.13 2022-03-20 16:22 Limestone Lab noted that sample had low water content (~0.1%) SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:20 Limestone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW056 | PW-PA | 809.53 | 809.75 | 2022-03-19 2:45 | Limestone | |
| SB_BH02_PW058 PW-PA 843.3 843.54 2022-03-20 16:20 Limestone SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone | SB_BH02_PW057 | PW-VD | 842.97 | 843.13 | 2022-03-20 16:22 | Limestone | Lab noted that sample had low water content (~0.1%) |
| SB_BH02_PW059 PW-VD 881.74 881.91 2022-03-21 15:24 Sandstone SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone Sampling note: Unable to collect full 20cm length within the glauconitic sands, Shipped on COC | SB_BH02_PW058 | PW-PA | 843.3 | 843.54 | 2022-03-20 16:20 | Limestone | |
| SB_BH02_PW060 PW-PA 882.16 882.33 2022-03-21 15:28 Sandstone Sampling note: Unable to collect full 20cm length within the glauconitic sands, Shipped on COC | SB_BH02_PW059 | PW-VD | 881.74 | 881.91 | 2022-03-21 15:24 | Sandstone | |
| | | Ρ\Λ/-ΡΔ | 882 16 | 882 33 | 2022-03-21 15.28 | Sandstone | Sampling note: Unable to collect full 20cm length within the glauconitic sands, Shipped on COC |
| GFSB_Uof0_0046. | 05_51102_1 00000 | | 002.10 | 002.33 | 2322 03 21 13.20 | Sanastone | GFSB_UofO_0046. |

DG = Dissolved Gas

NG = Noble Gas

PW-VD = Porewater Vacuum Distillation

PW-PA = Porewater Paper Absorption

WP04C Data Report: Porewater Extraction and Analyses, and Petrographic Analysis for SB_BH02, Phase 2 Initial Borehole Drilling and Testing, South Bruce

Appendix B

Results Tables for Porewater Characterization Activities at SB_BH02

B.1. – Porewater Sample Results – VDL
B.2 – Porewater Sample Results – PA
B.3 – Noble Gas Sample Results
B.4. Dissolved Gas Sample Results

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_PW001 | SB_BH02_PW003 | SB_BH02_PW005 | SB_BH02_PW007 | SB_BH02_PW009 | SB_BH02_PW011 | SB_BH02_PW013 |
|---------------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Aluminum (Al) | mmol/kgw | 0.43 | 1.39 | 0.17 | 0.13 | 0.32 | 2.63 | 0.27 |
| Boron (B) | mmol/kgw | 5.17 | 11.67 | 2.70 | 2.49 | 6.45 | 32.74 | 1.64 |
| Bromine (Br) | mmol/kgw | 0.38 | 0.49 | 0.61 | 0.42 | 0.37 | 0.45 | 0.60 |
| Calcium (Ca) | mmol/kgw | 433.48 | 393.27 | 178.35 | 147.21 | 133.74 | 255.51 | 94.88 |
| Chlorine (Cl) | mmol/kgw | 365.07 | 480.96 | 442.53 | 286.71 | 214.58 | 1661.92 | 3518.38 |
| Iodine (I) | mmol/kgw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
| Iron (Fe) | mmol/kgw | 0.01 | 0.04 | 0.00 | 0.00 | 0.03 | 0.02 | 0.02 |
| Lithium (Li) | mmol/kgw | 0.23 | 0.36 | 0.27 | 0.12 | 0.11 | 0.78 | 0.20 |
| Magnesium (Mg) | mmol/kgw | 68.90 | 90.16 | 28.59 | 35.28 | 39.69 | 161.60 | 31.28 |
| Manganese (Mn) | mmol/kgw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Potassium (K) | mmol/kgw | 18.54 | 20.49 | 17.44 | 2.86 | 17.71 | 59.11 | 11.82 |
| Rubidium (Rb) | mmol/kgw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
| Silicon (Si) | mmol/kgw | 17.85 | 40.46 | 6.31 | 4.19 | 10.86 | 95.32 | 9.32 |
| Sodium (Na) | mmol/kgw | 320.31 | 625.68 | 444.47 | 158.08 | 322.83 | 2041.84 | 3582.09 |
| Strontium (Sr) | mmol/kgw | 3.16 | 3.12 | 1.12 | 1.56 | 2.99 | 51.60 | 0.95 |
| Sulfur (S) | mmol/kgw | 486.68 | 535.58 | 216.45 | 112.13 | 220.44 | 518.93 | 53.35 |
| Environmental Isotopes | | SB_BH02_PW001 | SB_BH02_PW003 | SB_BH02_PW005 | SB_BH02_PW007 | SB_BH02_PW009 | SB_BH02_PW011 | SB_BH02_PW013 |
| δ ¹⁸ Ο | ‰VSMOW | -10.1 | -11.1 | -11.1 | -11.2 | -10.4 | -12.6 | -11.6 |
| δ ² H | ‰VSMOW | -63.5 | -54.4 | -54.4 | -51.6 | -55.7 | -70.4 | -81.3 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW001 | SB_BH02_PW003 | SB_BH02_PW005 | SB_BH02_PW007 | SB_BH02_PW009 | SB_BH02_PW011 | SB_BH02_PW013 |
| Chlorine-37 (δ ³⁷ Cl) | ‰ SMOC | 0.37 | -0.10 | 0.31 | <u>2.73</u> | -0.38 | -0.22 | -0.03 |
| Chlorine-36 (³⁶ Cl/Cl) | | 5.79E-15 | 5.90E-15 | 5.04E-15 | 3.46E-15 | 5.23E-15 | 3.62E-15 | 9.04E-16 |
| lodine-129 (¹²⁹ l) | atoms/kgw | 2.03E+05 | 1.37E+05 | 1.34E+06 | 1.76E+06 | 6.52E+05 | 5.91E+04 | 3.83E+05 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.70966 | 0.70908 | 0.70922 | 0.70879 | 0.70864 | 0.71022 | 0.70875 |

BDL = Below Detection Limit

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_PW015 | SB_BH02_PW017 | SB_BH02_PW019 | SB_BH02_PW021 | SB_BH02_PW023 | SB_BH02_PW025 | SB_BH02_PW027 |
|---------------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Aluminum (Al) | mmol/kgw | 0.43 | 0.62 | 0.49 | 1.25 | 0.38 | 0.26 | 0.38 |
| Boron (B) | mmol/kgw | 3.01 | 6.79 | 12.14 | 17.75 | 7.72 | 5.48 | 6.14 |
| Bromine (Br) | mmol/kgw | 0.36 | 0.31 | 4.13 | 11.13 | 14.96 | 15.15 | 13.95 |
| Calcium (Ca) | mmol/kgw | 68.95 | 746.66 | 168.92 | 575.88 | 1066.20 | 775.56 | 736.48 |
| Chlorine (Cl) | mmol/kgw | 4082.95 | 3452.05 | 2816.48 | 3846.59 | 3925.19 | 3895.94 | 4122.75 |
| Iodine (I) | mmol/kgw | 0.00 | 0.00 | 0.02 | 0.06 | 0.06 | 0.06 | 0.07 |
| Iron (Fe) | mmol/kgw | 0.08 | 0.01 | 0.00 | 0.02 | 0.01 | 0.00 | 0.01 |
| Lithium (Li) | mmol/kgw | 0.11 | 0.10 | 1.05 | 1.40 | 1.46 | 1.09 | 1.22 |
| Magnesium (Mg) | mmol/kgw | 31.31 | 64.23 | 91.91 | 295.40 | 230.02 | 262.54 | 243.99 |
| Manganese (Mn) | mmol/kgw | 0.00 | 0.01 | 0.01 | 0.04 | 0.08 | 0.08 | 0.06 |
| Potassium (K) | mmol/kgw | 11.38 | 17.67 | 156.93 | 128.96 | 269.79 | 252.32 | 264.73 |
| Rubidium (Rb) | mmol/kgw | 0.00 | 0.00 | 0.04 | 0.03 | 0.07 | 0.06 | 0.07 |
| Silicon (Si) | mmol/kgw | 17.17 | 24.02 | 16.25 | 44.87 | 14.21 | 10.34 | 15.06 |
| Sodium (Na) | mmol/kgw | 3766.03 | 3373.88 | 2085.28 | 2099.74 | 2286.93 | 2353.97 | 2273.43 |
| Strontium (Sr) | mmol/kgw | 0.74 | 1.47 | 1.68 | 6.10 | 7.72 | 6.61 | 6.92 |
| Sulfur (S) | mmol/kgw | 63.27 | 814.74 | 23.72 | 51.35 | 343.89 | 12.44 | 22.57 |
| Environmental Isotopes | | SB_BH02_PW015 | SB_BH02_PW017 | SB_BH02_PW019 | SB_BH02_PW021 | SB_BH02_PW023 | SB_BH02_PW025 | SB_BH02_PW027 |
| δ^{18} O | ‰VSMOW | -12 | -12 | -10.2 | -7.4 | -5.9 | -5.9 | -6 |
| δ ² H | ‰VSMOW | -83.3 | -82.7 | -67.4 | -57.1 | -48.3 | -47.2 | -47.3 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW015 | SB_BH02_PW017 | SB_BH02_PW019 | SB_BH02_PW021 | SB_BH02_PW023 | SB_BH02_PW025 | SB_BH02_PW027 |
| Chlorine-37 (δ ³⁷ Cl) | ‰ SMOC | -0.13 | 0.17 | -0.15 | 0.18 | 0.25 | 0.14 | 0.23 |
| Chlorine-36 (³⁶ Cl/Cl) | | 1.19E-15 | 1.60E-15 | 3.91E-15 | 4.94E-15 | 5.82E-15 | 5.51E-15 | 5.08E-15 |
| lodine-129 (¹²⁹ l) | atoms/kgw | 5.93E+05 | 4.50E+05 | 9.31E+05 | 2.05E+05 | 6.47E+06 | 7.49E+05 | 5.49E+05 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.70886 | 0.70910 | 0.71056 | 0.71011 | 0.71013 | 0.71018 | 0.71014 |

BDL = Below Detection Limit

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_PW029 | SB_BH02_PW031 | SB_BH02_PW033 | SB_BH02_PW036 | SB_BH02_PW037 | SB_BH02_PW039 | SB_BH02_PW042 |
|---------------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Aluminum (Al) | mmol/kgw | 0.33 | 0.50 | 0.35 | 0.22 | 0.69 | 0.44 | 0.38 |
| Boron (B) | mmol/kgw | 5.76 | 6.20 | 5.12 | 3.53 | 8.21 | 6.07 | 6.18 |
| Bromine (Br) | mmol/kgw | 17.34 | 22.01 | 18.77 | 18.26 | 17.74 | 15.41 | 17.03 |
| Calcium (Ca) | mmol/kgw | 829.32 | 880.77 | 1167.00 | 926.19 | 846.83 | 819.90 | 843.76 |
| Chlorine (Cl) | mmol/kgw | 4159.00 | 4642.68 | 5820.42 | 3925.23 | 4739.49 | 4239.17 | 4344.50 |
| lodine (I) | mmol/kgw | 0.08 | 0.09 | 0.07 | 0.07 | 0.07 | 0.06 | 0.06 |
| Iron (Fe) | mmol/kgw | 0.02 | 0.04 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 |
| Lithium (Li) | mmol/kgw | 1.47 | 2.03 | 1.34 | 1.20 | 1.68 | 1.04 | 1.38 |
| Magnesium (Mg) | mmol/kgw | 228.39 | 270.54 | 207.59 | 220.24 | 200.57 | 188.49 | 194.79 |
| Manganese (Mn) | mmol/kgw | 0.24 | 0.36 | 0.32 | 0.35 | 0.29 | 0.30 | 0.28 |
| Potassium (K) | mmol/kgw | 281.47 | 383.57 | 321.99 | 245.31 | 299.28 | 208.99 | 256.59 |
| Rubidium (Rb) | mmol/kgw | 0.08 | 0.10 | 0.08 | 0.06 | 0.09 | 0.05 | 0.07 |
| Silicon (Si) | mmol/kgw | 15.41 | 18.37 | 15.25 | 11.08 | 27.71 | 15.53 | 32.56 |
| Sodium (Na) | mmol/kgw | 2360.45 | 2452.36 | 5000.80 | 2383.01 | 2467.88 | 2284.24 | 2346.91 |
| Strontium (Sr) | mmol/kgw | 9.37 | 11.10 | 16.18 | 11.72 | 10.53 | 10.23 | 10.53 |
| Sulfur (S) | mmol/kgw | 6.01 | 11.00 | 116.09 | 25.87 | 17.06 | 11.28 | 9.32 |
| Environmental Isotopes | | SB_BH02_PW029 | SB_BH02_PW031 | SB_BH02_PW033 | SB_BH02_PW036 | SB_BH02_PW037 | SB_BH02_PW039 | SB_BH02_PW042 |
| δ ¹⁸ Ο | ‰VSMOW | -4.6 | -4.4 | -4.3 | -4.2 | -4.1 | -4.5 | -4.5 |
| δ ² H | ‰VSMOW | -42.2 | -41.3 | -41.9 | -41.9 | -41.3 | -42.8 | -41.5 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW029 | SB_BH02_PW031 | SB_BH02_PW033 | SB_BH02_PW036 | SB_BH02_PW037 | SB_BH02_PW039 | SB_BH02_PW042 |
| Chlorine-37 (δ ³⁷ Cl) | ‰ SMOC | 0.25 | 0.27 | 0.06 | -0.10 | -0.23 | -0.05 | -0.15 |
| Chlorine-36 (³⁶ Cl/Cl) | | 6.89E-15 | 6.56E-15 | 7.49E-15 | 6.98E-15 | 6.68E-15 | 7.59E-15 | 7.96E-15 |
| lodine-129 (¹²⁹ l) | atoms/kgw | 9.67E+04 | 3.05E+05 | 4.67E+05 | 6.28E+05 | 3.84E+05 | 4.12E+05 | 6.00E+05 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.71019 | 0.71033 | 0.71030 | 0.71025 | 0.71033 | 0.71043 | 0.71038 |

BDL = Below Detection Limit

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_PW043 | SB_BH02_PW046 | SB_BH02_PW047 | SB_BH02_PW049 | SB_BH02_PW051 | SB_BH02_PW053 | SB_BH02_PW055 |
|---------------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Aluminum (Al) | mmol/kgw | 1.48 | 1.89 | 0.87 | 1.58 | 2.41 | 0.70 | 7.89 |
| Boron (B) | mmol/kgw | 20.94 | 18.51 | 8.84 | 13.30 | 24.16 | 8.82 | 64.25 |
| Bromine (Br) | mmol/kgw | 12.94 | 18.81 | 18.03 | 17.45 | 16.48 | 16.63 | 16.36 |
| Calcium (Ca) | mmol/kgw | 387.65 | 852.88 | 645.48 | 660.19 | 778.91 | 710.09 | 1025.24 |
| Chlorine (Cl) | mmol/kgw | 3152.97 | 4433.25 | 4341.32 | 3972.87 | 4233.33 | 4136.58 | 4194.73 |
| lodine (I) | mmol/kgw | 0.25 | 0.10 | 0.08 | 0.07 | 0.12 | 0.07 | 0.07 |
| Iron (Fe) | mmol/kgw | 0.05 | 0.12 | 0.14 | 0.10 | 0.46 | 0.02 | 0.37 |
| Lithium (Li) | mmol/kgw | 1.98 | 2.14 | 1.62 | 1.45 | 2.66 | 1.56 | 3.06 |
| Magnesium (Mg) | mmol/kgw | 181.67 | 372.56 | 277.73 | 271.41 | 246.36 | 256.90 | 439.49 |
| Manganese (Mn) | mmol/kgw | 0.01 | 0.04 | 0.02 | 0.02 | 0.01 | 0.02 | 0.02 |
| Potassium (K) | mmol/kgw | 178.24 | 221.75 | 234.45 | 202.77 | 231.60 | 208.39 | 98.79 |
| Rubidium (Rb) | mmol/kgw | 0.05 | 0.07 | 0.06 | 0.05 | 0.05 | 0.04 | 0.02 |
| Silicon (Si) | mmol/kgw | 67.31 | 89.95 | 37.58 | 68.16 | 337.57 | 126.59 | 1274.94 |
| Sodium (Na) | mmol/kgw | 2555.60 | 2890.16 | 2590.22 | 2899.01 | 2832.65 | 2617.84 | 2693.65 |
| Strontium (Sr) | mmol/kgw | 5.92 | 13.62 | 9.57 | 10.79 | 16.61 | 11.23 | 18.05 |
| Sulfur (S) | mmol/kgw | 98.13 | 180.36 | 44.18 | 105.49 | 144.73 | 51.26 | 447.72 |
| Environmental Isotopes | | SB_BH02_PW043 | SB_BH02_PW046 | SB_BH02_PW047 | SB_BH02_PW049 | SB_BH02_PW051 | SB_BH02_PW053 | SB_BH02_PW055 |
| δ ¹⁸ Ο | ‰VSMOW | -5.6 | -5.1 | -5.3 | -5.9 | -5.7 | -6.4 | <u>-7.9</u> |
| δ ² H | ‰VSMOW | -44.4 | -43.7 | -40.9 | -42.1 | -42 | -41.2 | <u>-48.8</u> |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW043 | SB_BH02_PW046 | SB_BH02_PW047 | SB_BH02_PW049 | SB_BH02_PW051 | SB_BH02_PW053 | SB_BH02_PW055 |
| Chlorine-37 (δ ³⁷ Cl) | ‰ SMOC | -0.18 | -0.30 | -0.17 | -0.18 | -0.20 | 0.11 | 0.02 |
| Chlorine-36 (³⁶ Cl/Cl) | | 3.54E-15 | 3.18E-15 | 2.81E-15 | 3.04E-15 | 2.24E-15 | 3.85E-15 | 2.60E-15 |
| lodine-129 (¹²⁹ l) | atoms/kgw | 9.17E+04 | 2.79E+04 | BDL | 5.64E+04 | 1.69E+04 | 2.21E+05 | BDL |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.70954 | 0.70944 | 0.70994 | 0.70954 | 0.70946 | 0.70988 | 0.70869 |

BDL = Below Detection Limit

| | Sample ID | SB_BH02_PW057 | SB_BH02_PW059 |
|---------------------------------------------------------------|-----------|---------------|---------------|
| Major/Minor Ions | | | |
| Aluminum (Al) | mmol/kgw | 10.47 | 0.60 |
| Boron (B) | mmol/kgw | 78.54 | 8.02 |
| Bromine (Br) | mmol/kgw | 15.86 | 20.86 |
| Calcium (Ca) | mmol/kgw | 1171.18 | 1261.55 |
| Chlorine (Cl) | mmol/kgw | 4800.96 | 4908.67 |
| lodine (I) | mmol/kgw | 0.09 | 0.09 |
| Iron (Fe) | mmol/kgw | 1.78 | 0.04 |
| Lithium (Li) | mmol/kgw | 2.52 | 0.38 |
| Magnesium (Mg) | mmol/kgw | 558.84 | 294.53 |
| Manganese (Mn) | mmol/kgw | 0.04 | 0.43 |
| Potassium (K) | mmol/kgw | 113.60 | 128.26 |
| Rubidium (Rb) | mmol/kgw | 0.02 | 0.05 |
| Silicon (Si) | mmol/kgw | 1388.76 | 87.25 |
| Sodium (Na) | mmol/kgw | 2989.17 | 2324.45 |
| Strontium (Sr) | mmol/kgw | 21.97 | 16.14 |
| Sulfur (S) | mmol/kgw | 576.43 | 149.11 |
| Environmental Isotopes | | SB_BH02_PW057 | SB_BH02_PW059 |
| δ ¹⁸ Ο | %VSMOW | <u>-8.6</u> | -5.7 |
| δ ² H | ‰VSMOW | <u>-46.5</u> | -38 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW057 | SB_BH02_PW059 |
| Chlorine-37 (δ ³⁷ Cl) | ‰ SMOC | -0.04 | 0.09 |
| Chlorine-36 (³⁶ Cl/Cl) | | 2.53E-15 | 4.38E-15 |
| lodine-129 (¹²⁹ l) | atoms/kgw | 2.22E+03 | 3.84E+04 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.70873 | 0.71019 |

BDL = Below Detection Limit

Flagged as anomalous result

SB_BH02 - WP04C Data Report

| Sample ID | | SB_BH02_PW002 | SB_BH02_PW004 | SB_BH02_PW006 | SB_BH02_PW008 | SB_BH02_PW010 | SB_BH02_PW012 | SB_BH02_PW014 |
|---------------------------------------------------------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Barium (Ba) | mmol/kgw | 0.00 | 0.01 | 0.00 | 0.07 | 0.00 | 0.01 | 0.00 |
| Bromine (Br) | mmol/kgw | 1.08 | 1.51 | 2.39 | 17.80 | 0.00 | 2.13 | 0.00 |
| Calcium (Ca) | mmol/kgw | 110.82 | 84.26 | 101.61 | 1149.55 | 22.21 | 313.91 | 62.40 |
| Chlorine (Cl) | mmol/kgw | 712.83 | 818.73 | 1083.21 | 6800.67 | 209.13 | 4301.51 | 4178.30 |
| Lithium (Li) | mmol/kgw | 0.51 | 0.68 | 1.18 | 11.75 | 0.56 | 1.86 | 0.22 |
| Magnesium (Mg) | mmol/kgw | 54.22 | 40.88 | 51.54 | 649.88 | 20.27 | 309.99 | 13.00 |
| Potassium (K) | mmol/kgw | 3.58 | 5.64 | 5.02 | 29.25 | 3.62 | 44.49 | 6.80 |
| Sodium (Na) | mmol/kgw | 427.54 | 660.53 | 830.94 | 3666.26 | 221.24 | 3087.79 | 4031.28 |
| Strontium (Sr) | mmol/kgw | 0.98 | 0.66 | 0.91 | 7.87 | 0.20 | 2.46 | 0.66 |
| Sulfate (SO ₄) | mmol/kgw | 21.89 | 61.68 | 24.84 | 44.26 | 30.81 | 74.10 | 42.79 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW002 | SB_BH02_PW004 | SB_BH02_PW006 | SB_BH02_PW008 | SB_BH02_PW010 | SB_BH02_PW012 | SB_BH02_PW014 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.708530 | 0.708610 | 0.708650 | 0.708470 | 0.708570 | 0.708490 | 0.708440 |

| Sample ID | | SB_BH02_PW016 | SB_BH02_PW018 | SB_BH02_PW020 | SB_BH02_PW022 | SB_BH02_PW024 | SB_BH02_PW026 | SB_BH02_PW028 |
|---------------------------------------------------------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Barium (Ba) | mmol/kgw | 0.00 | 0.00 | 0.03 | 0.05 | 0.02 | 0.01 | 0.01 |
| Bromine (Br) | mmol/kgw | 0.97 | 0.00 | 14.85 | 34.60 | 60.14 | 66.17 | 63.16 |
| Calcium (Ca) | mmol/kgw | 81.29 | 54.81 | 714.23 | 1512.69 | 2442.55 | 2641.68 | 2586.39 |
| Chlorine (Cl) | mmol/kgw | 3899.81 | 3872.01 | 6367.89 | 6872.05 | 10471.93 | 11112.90 | 10765.36 |
| Lithium (Li) | mmol/kgw | 0.35 | 0.14 | 3.59 | 6.55 | 9.67 | 9.82 | 9.61 |
| Magnesium (Mg) | mmol/kgw | 12.77 | 17.63 | 222.85 | 383.52 | 449.42 | 489.35 | 481.86 |
| Potassium (K) | mmol/kgw | 7.81 | 4.71 | 72.63 | 82.46 | 127.42 | 133.08 | 126.56 |
| Sodium (Na) | mmol/kgw | 3765.51 | 3826.98 | 4418.80 | 3311.95 | 4903.87 | 5041.85 | 4739.18 |
| Strontium (Sr) | mmol/kgw | 0.85 | 0.47 | 6.79 | 12.87 | 18.82 | 20.62 | 22.50 |
| Sulfate (SO ₄) | mmol/kgw | 33.26 | 61.60 | 20.12 | 23.58 | 0.00 | 0.00 | 0.00 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW016 | SB_BH02_PW018 | SB_BH02_PW020 | SB_BH02_PW022 | SB_BH02_PW024 | SB_BH02_PW026 | SB_BH02_PW028 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.708380 | 0.708730 | 0.709710 | 0.709790 | 0.709910 | 0.709860 | 0.709880 |

| Sample ID | | SB_BH02_PW030 | SB_BH02_PW032 | SB_BH02_PW034 | SB_BH02_PW035 | SB_BH02_PW038 | SB_BH02_PW040 | SB_BH02_PW041 |
|---------------------------------------------------------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Barium (Ba) | mmol/kgw | 0.03 | 0.04 | 0.03 | 0.04 | 0.04 | 0.04 | 0.05 |
| Bromine (Br) | mmol/kgw | 67.63 | 88.89 | 86.89 | 88.71 | 89.94 | 89.67 | 93.04 |
| Calcium (Ca) | mmol/kgw | 2780.12 | 3315.79 | 3272.17 | 3323.91 | 3238.93 | 3113.63 | 3223.20 |
| Chlorine (Cl) | mmol/kgw | 10941.55 | 12092.32 | 11802.06 | 12172.70 | 11850.57 | 11847.42 | 12251.78 |
| Lithium (Li) | mmol/kgw | 9.15 | 10.48 | 10.45 | 10.64 | 10.77 | 11.43 | 12.29 |
| Magnesium (Mg) | mmol/kgw | 471.35 | 501.87 | 490.15 | 495.89 | 460.27 | 437.95 | 443.59 |
| Potassium (K) | mmol/kgw | 120.06 | 121.86 | 111.47 | 110.26 | 108.09 | 115.42 | 123.67 |
| Sodium (Na) | mmol/kgw | 4622.33 | 4765.73 | 4348.75 | 4488.49 | 4473.33 | 4834.73 | 5011.88 |
| Strontium (Sr) | mmol/kgw | 30.09 | 37.62 | 39.47 | 41.75 | 40.62 | 39.12 | 39.30 |
| Sulfate (SO ₄) | mmol/kgw | 14.48 | 14.28 | 15.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW030 | SB_BH02_PW032 | SB_BH02_PW034 | SB_BH02_PW035 | SB_BH02_PW038 | SB_BH02_PW040 | SB_BH02_PW041 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.709980 | 0.710030 | 0.710110 | 0.710120 | 0.710110 | 0.710130 | 0.710110 |

| Sample ID | | SB_BH02_PW044 | SB_BH02_PW045 | SB_BH02_PW048 | SB_BH02_PW050 | SB_BH02_PW052 | SB_BH02_PW054 | SB_BH02_PW056 |
|---------------------------------------------------------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Major/Minor Ions | | | | | | | | |
| Barium (Ba) | mmol/kgw | 0.02 | 0.07 | 0.09 | 0.08 | 0.07 | 0.06 | 0.08 |
| Bromine (Br) | mmol/kgw | 93.12 | 106.53 | 101.55 | 98.84 | 105.30 | 98.57 | 71.88 |
| Calcium (Ca) | mmol/kgw | 56.61 | 1701.39 | 2635.62 | 2510.42 | 933.96 | 1383.62 | 1354.51 |
| Chlorine (Cl) | mmol/kgw | 12262.60 | 13112.88 | 13091.02 | 13012.71 | 13390.74 | 13315.47 | 10935.33 |
| Lithium (Li) | mmol/kgw | 28.85 | 24.94 | 18.68 | 15.78 | 22.03 | 18.50 | 13.00 |
| Magnesium (Mg) | mmol/kgw | 20.13 | 269.26 | 429.27 | 347.78 | 89.04 | 135.99 | 272.27 |
| Potassium (K) | mmol/kgw | 219.60 | 187.43 | 139.03 | 147.82 | 186.16 | 188.78 | 128.20 |
| Sodium (Na) | mmol/kgw | 11915.04 | 9158.86 | 7204.00 | 7551.99 | 11279.82 | 10175.68 | 7697.82 |
| Strontium (Sr) | mmol/kgw | 0.14 | 16.53 | 30.66 | 30.19 | 9.60 | 14.13 | 12.83 |
| Sulfate (SO ₄) | mmol/kgw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW044 | SB_BH02_PW045 | SB_BH02_PW048 | SB_BH02_PW050 | SB_BH02_PW052 | SB_BH02_PW054 | SB_BH02_PW056 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | | 0.710040 | 0.710050 | 0.710050 | 0.710030 | 0.710030 | 0.709630 |

| SB | BH02 - | • WP04C | Data | Report |
|----|--------|---------|------|--------|
| _ | | | | |

| Sample ID | | SB_BH02_PW058 | SB_BH02_PW060 |
|---------------------------------------------------------------|----------|---------------|---------------|
| Major/Minor Ions | | | |
| Barium (Ba) | mmol/kgw | 0.24 | 0.02 |
| Bromine (Br) | mmol/kgw | 50.19 | 35.57 |
| Calcium (Ca) | mmol/kgw | 1855.98 | 1811.13 |
| Chlorine (Cl) | mmol/kgw | 8871.92 | 6603.06 |
| Lithium (Li) | mmol/kgw | 4.57 | 1.64 |
| Magnesium (Mg) | mmol/kgw | 609.28 | 319.93 |
| Potassium (K) | mmol/kgw | 71.56 | 39.27 |
| Sodium (Na) | mmol/kgw | 4285.64 | 2455.82 |
| Strontium (Sr) | mmol/kgw | 23.22 | 23.13 |
| Sulfate (SO ₄) | mmol/kgw | 16.98 | 6.64 |
| Radiohalides and Strontium Isotopes | | SB_BH02_PW058 | SB_BH02_PW060 |
| Strontium isotope ratio (⁸⁷ Sr/ ⁸⁶ Sr) | | 0.709800 | 0.710080 |

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_NG001 | SB_BH02_NG002 | SB_BH02_NG003 | SB_BH02_NG004 | SB_BH02_NG005 | SB_BH02_NG006 | SB_BH02_NG007 |
|--------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Noble Gas Concentrations | | | | | | | | |
| Helium (He) - total | cc/ccw | 8.21E-05 | 6.75E-04 | 2.38E-04 | 2.58E-05 | 3.12E-04 | 7.50E-04 | 7.88E-05 |
| ⁴ He | cc/ccw | 8.21E-05 | 6.75E-04 | 2.38E-04 | 2.58E-05 | 3.12E-04 | 7.50E-04 | 7.88E-05 |
| ³ He | cc/ccw | 3.91E-12 | 2.00E-11 | 7.96E-12 | 1.07E-12 | 1.27E-11 | 6.09E-11 | 4.34E-12 |
| Neon (Ne) - total | cc/ccw | 4.01E-06 | 7.71E-06 | 1.90E-06 | 3.67E-07 | 1.46E-06 | 4.12E-05 | 3.79E-06 |
| ²⁰ Ne | cc/ccw | 3.64E-06 | 7.00E-06 | 1.73E-06 | 3.32E-07 | 1.33E-06 | 3.74E-05 | 3.44E-06 |
| ²² Ne | cc/ccw | 3.71E-07 | 7.13E-07 | 1.74E-07 | 3.43E-08 | 1.35E-07 | 3.76E-06 | 3.57E-07 |
| Argon (Ar) - total | cc/ccw | 6.78E-02 | 1.26E-01 | 1.63E-02 | 8.30E-03 | 2.78E-02 | 4.94E-01 | 2.72E-02 |
| ⁴⁰ Ar | cc/ccw | 6.76E-02 | 1.26E-01 | 1.63E-02 | 8.27E-03 | 2.77E-02 | 4.93E-01 | 2.71E-02 |
| ³⁶ Ar | cc/ccw | 2.19E-04 | 4.08E-04 | 5.23E-05 | 2.63E-05 | 8.80E-05 | 1.59E-03 | 8.90E-05 |
| Krypton (Kr) - total | cc/ccw | 8.10E-04 | 1.94E-03 | 4.45E-04 | 8.90E-05 | 4.22E-04 | 5.47E-03 | 1.33E-03 |
| Xenon (Xe) - total | cc/ccw | 5.55E-08 | 1.49E-07 | 2.10E-08 | 4.10E-09 | 3.10E-08 | 3.04E-07 | 1.19E-07 |
| Noble Gas Isotopic Ratios | | | | | | | | |
| ³ He/ ⁴ He (air-normalized, xRa) | | 3.45E-02 | 2.15E-02 | 2.42E-02 | 3.01E-02 | 2.96E-02 | 5.88E-02 | 3.99E-02 |
| ²² Ne/ ²⁰ Ne | | 1.02E-01 | 1.02E-01 | 1.00E-01 | 1.03E-01 | 1.02E-01 | 1.00E-01 | 1.04E-01 |
| ⁴⁰ Ar/ ³⁶ Ar | | 3.1E+02 | 3.1E+02 | 3.1E+02 | 3.1E+02 | 3.1E+02 | 3.1E+02 | 3.0E+02 |

NV = Not reported or no value measured

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_NG008 | SB_BH02_NG009 | SB_BH02_NG010 | SB_BH02_NG011 | SB_BH02_NG012 | SB_BH02_NG013 | SB_BH02_NG014 |
|--------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Noble Gas Concentrations | | | | | | | | |
| Helium (He) - total | cc/ccw | 7.16E-05 | 2.14E-03 | 5.84E-03 | 3.73E-03 | 1.97E-03 | 2.74E-03 | 2.70E-03 |
| ⁴ He | cc/ccw | 7.16E-05 | 2.14E-03 | 5.84E-03 | 3.73E-03 | 1.97E-03 | 2.74E-03 | 2.70E-03 |
| ³ He | cc/ccw | 3.59E-12 | 1.08E-10 | 2.70E-10 | 1.09E-10 | 7.45E-11 | 1.21E-10 | 1.05E-10 |
| Neon (Ne) - total | cc/ccw | 1.92E-06 | 3.86E-06 | 6.03E-06 | 2.46E-06 | 1.94E-06 | 3.59E-06 | 1.53E-06 |
| ²⁰ Ne | cc/ccw | 1.74E-06 | 3.50E-06 | 5.48E-06 | 2.23E-06 | 1.76E-06 | 3.26E-06 | 1.39E-06 |
| ²² Ne | cc/ccw | 1.78E-07 | 3.58E-07 | 5.55E-07 | 2.29E-07 | 1.79E-07 | 3.30E-07 | 1.42E-07 |
| Argon (Ar) - total | cc/ccw | 4.51E-02 | 4.86E-02 | 1.63E-01 | 6.67E-02 | 4.53E-02 | 6.79E-02 | 5.02E-02 |
| ⁴⁰ Ar | cc/ccw | 4.49E-02 | 4.84E-02 | 1.63E-01 | 6.65E-02 | 4.52E-02 | 6.77E-02 | 5.02E-02 |
| ³⁶ Ar | cc/ccw | 1.45E-04 | 1.42E-04 | 3.81E-04 | 1.33E-04 | 1.17E-04 | 1.93E-04 | 8.39E-05 |
| Krypton (Kr) - total | cc/ccw | 5.09E-04 | 6.58E-04 | 6.93E-04 | 1.79E-04 | 1.59E-04 | 3.61E-04 | 1.28E-04 |
| Xenon (Xe) - total | cc/ccw | 4.89E-08 | 2.94E-08 | 5.65E-08 | 1.73E-08 | 1.25E-08 | 2.31E-08 | 1.77E-08 |
| Noble Gas Isotopic Ratios | | | | | | | | |
| ³ He/ ⁴ He (air-normalized, xRa) | | 3.63E-02 | 3.65E-02 | 3.35E-02 | 2.11E-02 | 2.74E-02 | 3.19E-02 | 2.81E-02 |
| ²² Ne/ ²⁰ Ne | | 1.03E-01 | 1.02E-01 | 1.01E-01 | 1.03E-01 | 1.02E-01 | 1.01E-01 | 1.02E-01 |
| ⁴⁰ Ar/ ³⁶ Ar | | 3.1E+02 | 3.4E+02 | 4.3E+02 | 5.0E+02 | 3.9E+02 | 3.5E+02 | 6.0E+02 |

NV = Not reported or no value measured

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_NG015 | SB_BH02_NG016 | SB_BH02_NG017 | SB_BH02_NG018 | SB_BH02_NG019 | SB_BH02_NG020 | SB_BH02_NG021 |
|--------------------------------------------------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Noble Gas Concentrations | | | | | | | | |
| Helium (He) - total | cc/ccw | 2.81E-03 | 5.63E-03 | 4.02E-03 | 3.52E-03 | 4.99E-03 | 7.12E-03 | 3.18E-03 |
| ⁴ He | cc/ccw | 2.81E-03 | 5.63E-03 | 4.02E-03 | 3.52E-03 | 4.99E-03 | 7.12E-03 | 3.18E-03 |
| ³ He | cc/ccw | 1.22E-10 | 2.12E-10 | 1.38E-10 | 1.01E-10 | 1.74E-10 | 2.33E-10 | 8.41E-11 |
| Neon (Ne) - total | cc/ccw | 1.27E-06 | 7.47E-05 | 1.80E-06 | 2.02E-06 | 2.52E-06 | 1.03E-05 | 1.51E-06 |
| ²⁰ Ne | cc/ccw | 1.15E-06 | 6.73E-05 | 1.64E-06 | 1.84E-06 | 2.28E-06 | 9.32E-06 | 1.37E-06 |
| ²² Ne | cc/ccw | 1.18E-07 | 7.39E-06 | 1.65E-07 | 1.89E-07 | 2.35E-07 | 9.61E-07 | 1.39E-07 |
| Argon (Ar) - total | cc/ccw | 3.45E-02 | 3.21E+00 | 4.76E-02 | 5.67E-02 | 3.32E-02 | 4.37E-02 | 1.51E+00 |
| ⁴⁰ Ar | cc/ccw | 3.45E-02 | 3.20E+00 | 4.75E-02 | 5.66E-02 | 3.31E-02 | 4.36E-02 | 1.50E+00 |
| ³⁶ Ar | cc/ccw | 5.92E-05 | 1.01E-02 | 6.85E-05 | 1.03E-04 | 5.63E-05 | 1.01E-04 | 1.97E-03 |
| Krypton (Kr) - total | cc/ccw | 1.56E-04 | 1.05E-02 | 2.84E-04 | 2.78E-04 | 5.92E-04 | 2.00E-03 | 5.86E-04 |
| Xenon (Xe) - total | cc/ccw | 1.62E-08 | 3.82E-07 | 3.04E-08 | 2.56E-08 | 5.12E-08 | 1.04E-07 | 4.66E-08 |
| Noble Gas Isotopic Ratios | | | | | | | | |
| ³ He/ ⁴ He (air-normalized, xRa) | | 3.15E-02 | 2.74E-02 | 2.49E-02 | 2.08E-02 | 2.52E-02 | 2.37E-02 | 1.92E-02 |
| ²² Ne/ ²⁰ Ne | | 1.02E-01 | 1.10E-01 | 1.01E-01 | 1.03E-01 | 1.03E-01 | 1.03E-01 | 1.01E-01 |
| ⁴⁰ Ar/ ³⁶ Ar | | 5.8E+02 | 3.2E+02 | 6.9E+02 | 5.5E+02 | 5.9E+02 | 4.3E+02 | 7.6E+02 |

NV = Not reported or no value measured

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_NG022 | SB_BH02_NG023 | SB_BH02_NG024 | SB_BH02_NG025 | SB_BH02_NG026 | SB_BH02_NG027 | SB_BH02_NG028 |
|--------------------------------------------------------|-----------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Noble Gas Concentrations | | | | | | | | |
| Helium (He) - total | cc/ccw | <u>1.11E-01</u> | 6.31E-03 | 3.45E-03 | 1.16E-02 | 1.15E-02 | 4.56E-03 | 3.96E-02 |
| ⁴ He | cc/ccw | <u>1.11E-01</u> | 6.31E-03 | 3.45E-03 | 1.16E-02 | 1.15E-02 | 4.56E-03 | 3.96E-02 |
| ³ He | cc/ccw | <u>3.51E-08</u> | 3.50E-10 | 1.52E-10 | 5.89E-10 | 7.66E-10 | 3.27E-10 | 2.40E-09 |
| Neon (Ne) - total | cc/ccw | <u>4.06E-04</u> | 4.04E-04 | 3.59E-06 | 6.02E-06 | 6.97E-06 | 3.96E-06 | 4.37E-05 |
| ²⁰ Ne | cc/ccw | <u>3.68E-04</u> | 3.64E-04 | 3.26E-06 | 5.46E-06 | 6.32E-06 | 3.59E-06 | 3.97E-05 |
| ²² Ne | cc/ccw | <u>3.84E-05</u> | 4.01E-05 | 3.35E-07 | 5.63E-07 | 6.48E-07 | 3.68E-07 | 4.04E-06 |
| Argon (Ar) - total | cc/ccw | <u>9.48E+01</u> | 1.79E+01 | 1.18E-01 | 2.10E-01 | 2.35E-01 | 1.40E-01 | 1.36E+00 |
| ⁴⁰ Ar | cc/ccw | <u>9.45E+01</u> | 1.79E+01 | 1.18E-01 | 2.10E-01 | 2.34E-01 | 1.40E-01 | 1.35E+00 |
| ³⁶ Ar | cc/ccw | <u>3.04E-01</u> | 5.74E-02 | 2.01E-04 | 2.17E-04 | 1.95E-04 | 1.01E-04 | 1.14E-03 |
| Krypton (Kr) - total | cc/ccw | <u>6.33E-02</u> | 3.95E-02 | 1.95E-04 | 5.88E-04 | 5.94E-04 | 2.91E-04 | 3.92E-03 |
| Xenon (Xe) - total | cc/ccw | <u>2.94E-06</u> | 1.94E-06 | 2.99E-08 | 8.46E-08 | 8.85E-08 | 4.80E-08 | 5.99E-07 |
| Noble Gas Isotopic Ratios | | | | | | | | |
| ³ He/ ⁴ He (air-normalized, xRa) | | 2.29E-01 | 4.01E-02 | 3.19E-02 | 3.69E-02 | 4.82E-02 | 5.19E-02 | 4.40E-02 |
| ²² Ne/ ²⁰ Ne | | 1.04E-01 | 1.10E-01 | 1.03E-01 | 1.03E-01 | 1.03E-01 | 1.03E-01 | 1.02E-01 |
| ⁴⁰ Ar/ ³⁶ Ar | | 3.1E+02 | 3.1E+02 | 5.9E+02 | 9.7E+02 | 1.2E+03 | 1.4E+03 | 1.2E+03 |

NV = Not reported or no value measured

| SB_E | 3 H02 - | WP04C | Data | Report |
|------|----------------|-------|------|--------|
|------|----------------|-------|------|--------|

| | Sample ID | SB_BH02_NG029 | SB_BH02_NG030 |
|--------------------------------------------------------|-----------|---------------|---------------|
| Noble Gas Concentrations | | | |
| Helium (He) - total | cc/ccw | 3.15E-02 | 4.43E-03 |
| ⁴ He | cc/ccw | 3.15E-02 | 4.43E-03 |
| ³ He | cc/ccw | 2.40E-09 | 3.34E-10 |
| Neon (Ne) - total | cc/ccw | 4.18E-05 | 3.23E-06 |
| ²⁰ Ne | cc/ccw | 3.79E-05 | 2.93E-06 |
| ²² Ne | cc/ccw | 3.88E-06 | 3.01E-07 |
| Argon (Ar) - total | cc/ccw | 1.31E+00 | 3.02E-02 |
| ⁴⁰ Ar | cc/ccw | 1.31E+00 | 3.01E-02 |
| ³⁶ Ar | cc/ccw | 1.23E-03 | 4.73E-05 |
| Krypton (Kr) - total | cc/ccw | 2.43E-03 | 3.40E-04 |
| Xenon (Xe) - total | cc/ccw | 3.40E-07 | 1.79E-08 |
| Noble Gas Isotopic Ratios | | | |
| ³ He/ ⁴ He (air-normalized, xRa) | | 5.52E-02 | 5.46E-02 |
| ²² Ne/ ²⁰ Ne | | 1.02E-01 | 1.03E-01 |
| ⁴⁰ Ar/ ³⁶ Ar | | 1.1E+03 | 6.4E+02 |

NV = Not reported or no value measured

| Sample ID | | SB_BH02_DG001 | SB_BH02_DG002 | SB_BH02_DG003 | SB_BH02_DG004 | SB_BH02_DG005 | SB_BH02_DG006 | SB_BH02_DG007 | SB_BH02_DG008 |
|-------------------------------------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Carbon Dioxide and Methane Concentrations | | | | | | | | | |
| CO ₂ | mmol/kgw | 2.04E-03 | 6.94E-01 | 6.98E-02 | 1.49E-01 | 1.65E+00 | 1.08E+01 | 9.34E-01 | 5.76E-01 |
| CH ₄ | mmol/kgw | BDL | BDL | BDL | 4.25E-04 | 4.45E-04 | 1.58E+00 | BDL | BDL |
| Carbon Dioxide and Methane Isoto | opic Ratios | | | | | | | | |
| $\delta^{\rm 13}{\rm CO_2}$ | VPDB (‰) | -16.2 | -14.8 | -16.3 | -9.3 | -11.5 | -6.1 | -6.4 | -10.5 |
| δ^{13} C CH ₄ | VPDB (‰) | BDL | BDL | BDL | BDL | BDL | -51.9 | BDL | BDL |
| δ^2 H CH ₄ | VSMOW (‰) | BDL | BDL | BDL | BDL | BDL | -306.9 | BDL | BDL |

| Sample ID | | SB_BH02_DG009 | SB_BH02_DG010 | SB_BH02_DG011 | SB_BH02_DG012 | SB_BH02_DG013 | SB_BH02_DG014 | SB_BH02_DG015 | SB_BH02_DG016 |
|-------------------------------------------|-------------------|---------------|---------------|-------------------|---------------|---------------|---------------|---------------|---------------|
| Carbon Dioxide and Methane Concentrations | | | | | | | | | |
| CO ₂ | mmol/kgw | 1.91E+00 | 1.55E+00 | 2.35E+00 | 6.64E-01 | 4.68E-01 | 1.54E-01 | 1.12E+00 | 1.44E+00 |
| CH ₄ | mmol/kgw 7.40E-01 | | 5.47E-01 | 8.77E-01 5.16E-01 | | 1.45E-01 BDL | | 1.40E+00 | 1.85E+00 |
| Carbon Dioxide and Methane Isoto | opic Ratios | | | | | | | | |
| $\delta^{13} \operatorname{CO}_2$ | VPDB (‰) | -7.9 | -6.5 | -8.7 | -6.7 | -6.9 | -8.0 | -6.9 | -1.5 |
| δ^{13} C CH ₄ | VPDB (‰) | -45.7 | -45.5 | BDL | -44.5 | -45.0 | BDL | -46.4 | -45.9 |
| δ^2 H CH ₄ | VSMOW (‰) | -237.2 | -250.8 | BDL | -240 | -238 | BDL | -262 | -260 |

| Sample ID | | SB_BH02_DG017 | SB_BH02_DG018 | SB_BH02_DG019 | SB_BH02_DG020 | SB_BH02_DG021 | SB_BH02_DG022 | SB_BH02_DG023 | SB_BH02_DG024 |
|-------------------------------------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Carbon Dioxide and Methane Concentrations | | | | | | | | | |
| CO ₂ | mmol/kgw | 1.19E+00 | 8.47E-01 | 8.04E-01 | 1.06E+00 | 7.11E-01 | 3.76E-01 | 1.08E+00 | 1.23E+00 |
| CH ₄ | mmol/kgw | 5.65E+00 | 3.49E+00 | 3.09E+00 | 8.42E+00 | 1.19E+01 | 1.17E+01 | 7.18E+00 | 5.32E+00 |
| Carbon Dioxide and Methane Isoto | opic Ratios | | | | | | | | |
| $\delta^{13} \operatorname{CO}_2$ | VPDB (‰) | -2.2 | 0.0 | -0.9 | 0.2 | 0.6 | -10.7 | -10.9 | -7.7 |
| δ^{13} C CH ₄ | VPDB (‰) | -47.4 | -47.1 | -46.1 | -46.1 | -46.9 | -46.4 | -45.9 | -43.3 |
| $\delta^2 H CH_4$ | VSMOW (‰) | -267 | -257 | -267 | -257 | -267 | -258 | -255 | -228 |

SB_BH02 - WP04C Data Report

| | Sample ID | SB_BH02_DG025 | SB_BH02_DG026 | SB_BH02_DG027 | SB_BH02_DG028 | SB_BH02_DG029 | SB_BH02_DG030 |
|-------------------------------------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Carbon Dioxide and Methane Concentrations | | | | | | | |
| CO ₂ | mmol/kgw | 4.22E+00 | 3.06E+00 | 7.99E-01 | 2.03E+00 | 3.15E+00 | 7.66E-02 |
| CH ₄ | mmol/kgw | 1.20E+01 | 1.69E+01 | 1.26E+01 | 4.73E+01 | 2.59E+01 | 1.21E+00 |
| Carbon Dioxide and Methane Isot | opic Ratios | | | | | | |
| $\delta^{13} CO_2$ | VPDB (‰) | -8.0 | -9.6 | -10.6 | -9.8 | -11.9 | -11.5 |
| δ^{13} C CH ₄ | VPDB (‰) | -42.7 | -41.5 | -41.3 | -34.8 | -38.1 | BDL |
| $\delta^2 H CH_4$ | VSMOW (‰) | -220.7 | -208.7 | -206 | -186 | -193.2 | BDL |

WP04C Data Report: Porewater Extraction and Analyses, and Petrographic Analysis for SB_BH02, Phase 2 Initial Borehole Drilling and Testing, South Bruce

Appendix C

Mineralogical Results for Porewater Samples at SB_BH02

C.1. – X-Ray Diffraction Results (XRD)

Appendix C.1. X-Ray Diffraction (XRD) Results for Select Core Porewater Samples

| | | Phase Proportion (%) by Relative Intensity Ratio | | | | | | | | | | | | | | | |
|---------------|---------|--------------------------------------------------|----------|--------|-------------------------------------------------------------------|-----------------------------|-------------|--------|--------------|-----------|-----------|--------|--------|----------|----------|----------|-------|
| Sample ID | Calcite | Dolomite | Ankerite | Quartz | Muscovite and/or illite and/or glauconite and/or celadonite | Other micas and/or clays | Clinochlore | Gypsum | Anhydrite | Celestite | Feldspars | Pyrite | Halite | Hematite | Goethite | Anatatse | Sum |
| SB_BH02_PW002 | | 19.60 | | 10.10 | 18.30 | | 4.00 | 35.40 | | | 12.60 | | | | | | 100.0 |
| SB_BH02_PW004 | | 76.10 | | 8.90 | 3.60 | 1.90 | 5.90 | | | | 3.60 | | | | | | 100.0 |
| SB_BH02_PW006 | | 63.80 | | 14.80 | 9.50 | | 1.80 | 1.10 | | 0.80 | 8.10 | | | | | | 99.9 |
| SB_BH02_PW008 | | 14.40 | | 17.20 | 11.70 | | 1.60 | 46.30 | | | 8.90 | | | | | | 100.1 |
| SB_BH02_PW010 | | 68.60 | | 5.00 | 19.10 | | | 4.70 | | | | 2.70 | | | | | 100.1 |
| SB_BH02_PW012 | 72.10 | 4.70 | | 4.20 | 9.70 | | | 3.60 | | 3.50 | | 2.20 | | | | | 100.0 |
| SB_BH02_PW014 | | 96.00 | | 0.70 | | | | | | | 2.80 | | 0.40 | 0.10 | | | 100.0 |
| SB_BH02_PW016 | | 95.70 | | 2.30 | 1.00 | | | | | | | 0.20 | 0.80 | | | | 100.0 |
| SB_BH02_PW018 | | 90.30 | | 2.90 | | 0.60 | | 2.00 | | | 4.20 | | | | | | 100.0 |
| SB_BH02_PW020 | 72.80 | 6.50 | | 8.40 | 2.50 | | | | | | 7.80 | 2.00 | | | | | 100.0 |
| SB_BH02_PW022 | 46.70 | 11.20 | | 19.00 | 3.70 | | 3.70 | | | | 14.30 | 1.40 | | | | | 100.0 |
| SB_BH02_PW024 | 22.50 | | 5.50 | 32.70 | 28.40 | | 4.20 | | 5.20 | | | | | 1.50 | | | 100.0 |
| SB_BH02_PW026 | 19.90 | 7.20 | | 32.40 | 19.80 | | 8.50 | | | | 10.70 | | | 1.50 | | | 100.0 |
| SB_BH02_PW028 | 28.70 | | | 35.40 | 27.70 | | 6.00 | | | | | | | 2.30 | | | 100.1 |
| SB_BH02_PW030 | 1.10 | 1.20 | | 24.80 | 56.10 | | 10.20 | | | | 5.00 | | 0.80 | | | 0.90 | 100.1 |
| SB_BH02_PW032 | 3.4 | | | 41.2 | 28.6 | | 11.4 | | | | 15.5 | | | | | | 100.1 |
| SB_BH02_PW034 | 3.2 | | 1.9 | 62 | 14.9 | | 11.7 | | | | 5.4 | 0.9 | | | | | 100.0 |
| SB_BH02_PW035 | 1.5 | 1.9 | | 51.1 | 28 | | 7.2 | | | | 7.3 | 3 | | | | | 100.0 |
| SB_BH02_PW038 | | | | 47.1 | 38.6 | | 10.3 | | 1.6 | | | 2.4 | | | | | 100.0 |
| SB_BH02_PW040 | 3.8 | | | 49 | 23.6 | | 15.1 | | 5.8 | | | 2.7 | | | | | 100.0 |
| SB_BH02_PW041 | 2.6 | | 1.3 | 38.4 | 47.1 | | 9.3 | | | | | 1.3 | | | | | 100.0 |
| SB_BH02_PW044 | 52.9 | | 1 | 19.7 | 17 | | 2.5 | | | | 7 | | | | | | 100.1 |
| SB_BH02_PW045 | 73.7 | | 7.2 | 9.4 | 3.3 | | 0.9 | | | | 4.3 | 1.2 | | | | | 100.0 |
| SB_BH02_PW048 | 62.6 | 4.5 | | 17.8 | 7.8 | | | | | | 5.7 | 1.6 | | | | | 100.0 |
| SB_BH02_PW050 | 60.4 | 5.5 | | 15.4 | 5.4 | | 4.4 | | | | 7.3 | 1.6 | | | | | 100.0 |
| SB_BH02_PW052 | 68.8 | | | 10.7 | 7 | | 2.5 | | | | 6.4 | 4.7 | | | | | 100.1 |
| SB_BH02_PW054 | | | | | | | | | Not analysed | 1 | | | | | | | |
| SB_BH02_PW056 | 93.3 | 1.3 | | 5.4 | | | | | | | | | | | | | 100.0 |
| SB_BH02_PW058 | 92.1 | 3.9 | | 4 | | | | | | | | | | | | | 100.0 |

-- = not detected or not reported

