

# PHASE 2 INITIAL BOREHOLE DRILLING AND TESTING, IGNACE AREA

*WP03 Data Report – Geological and Geotechnical  
Core Logging, Photography and Sampling for  
IG\_BH04*

**APM-REP-01332-0258**

**August 2021**

**Wood Plc.**

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## **Phase 2 Initial Borehole Drilling and Testing, Ignace Area**

WP03 Data Report – Geological and Geotechnical Core  
Logging, Photography and Sampling for IG\_BH04

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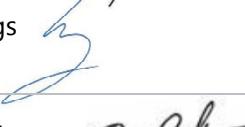
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## Table of Contents

<b>1.0</b>	<b>Introduction.....</b>	<b>1</b>
<b>2.0</b>	<b>Background Information.....</b>	<b>2</b>
2.1	Geological Setting .....	2
2.2	Work Package Technical Objectives .....	4
<b>3.0</b>	<b>Description of Work Procedures.....</b>	<b>5</b>
3.1	Health and Safety.....	5
3.2	Work Flow .....	5
3.3	Core Logging Procedures .....	7
3.4	Laboratory Core Sampling Procedures .....	9
3.4.1	Non Time-Sensitive Sampling .....	9
3.4.2	Time-Sensitive Sampling .....	10
3.5	Core Photography Procedures .....	11
3.6	Quality Confirmation .....	12
<b>4.0</b>	<b>Summary of Field Data Collection .....</b>	<b>13</b>
4.1	Lithology .....	13
4.1.1	Tonalite .....	14
4.1.2	Additional rock Types Encountered in IG_BH04 .....	15
4.2	Weathering and Alteration.....	17
4.3	Geotechnical Logging .....	20
4.3.1	TCR, SCR, RQD .....	21
4.3.2	Fracture Frequency (Broken Features) .....	22
4.3.3	Rock Field Strength .....	24
4.4	Structural Data .....	25
4.4.1	Orientation Data from Core Logging .....	26
4.4.2	Mechanical Breaks.....	27
4.4.3	Intact and Partially Intact Features .....	28
4.4.4	Broken Features .....	28
4.4.4.1	Joint Roughness, Joint Alteration and Joint Condition Rating (Jr, Ja, JCR).....	28
4.4.5	Other Relevant Structures Encountered.....	29
4.4.5.1	Fault and Shear Zones.....	29
4.4.5.2	Broken Core Zones .....	30
4.4.5.3	Contacts .....	31
4.4.5.4	Primary Igneous Structures .....	32
4.5	Core Photography Library .....	32
4.6	Core Samples Log .....	34
<b>5.0</b>	<b>References.....</b>	<b>36</b>

## List of Tables

Table 1: Summary of Rock Units Encountered in IG_BH04.....	14
Table 2: Statistics for Rock Quality Designation (RQD) for IG_BH04 by Main Rock Types .....	21
Table 3: Statistics for fracture frequency (fractures/m) for IG_BH04 by Main Rock Types.....	24
Table 4: Summary of Structure type, by number of occurrences, observed in IG_BH04 .....	25
Table 5: Summary of Joint Properties sorted by main rock types and fault/shear zones. ....	28
Table 6: Core Samples Time-Sensitive vs Non Time-Sensitive.....	34

## List of Figures

Figure 1: Ignace Borehole Site Locations for IG_BH01-to IG_BH06.....	1
Figure 2: Geological Setting of the Northern Portion of the Revell Batholith (Parmenter et al., 2020).....	4
Figure 3: Workflow followed for WP03 tasks (Wood, 2019b).....	7
Figure 4: AcQuire database displaying the Structure Tab.....	8
Figure 5: Core logging trailer, left side displays core split photography setup, far right side displays core box photograph set up and front right side shows sample and detailed structure photography setup (Light box) .....	11
Figure 6: Tonalite types observed in IG_BH04: A) Tonalite unit from approximately 153 m depth, and B) Biotite-Rich Tonalite unit from approximately 834.5 m depth .....	15
Figure 7: A) Feldspar-phyric tonalite (939.54-939.74 m), B) Amphibolite (metamorphic 619.51-619.71 m), C) Amphibolite dyke (905.44-905.64 m), D) Feldspar-phyric felsic (435.51-435.71 m), E) Mafic (575.91-576.11 m), F) Quartzolite dyke (989.14-989.34 m), G) Quartz Monzonite (616.79-616.95 m), and H) Aplite dyke (761.60-761.65 m) .....	17
Figure 8: Examples of weathering levels observed in IG_BH04: (a) Moderately weathered (W3) horizons at 575.78-576.34 m; (b) and at 906.36-906.51 m; (c) slightly weathered horizon at 17.38 m and (d) not weathered horizon at 185.21 m.....	18
Figure 9: A) Potassic alteration, B) Chloritization, C) Hematization, D) Silicification, E) Carbonatization, F) Bleaching, G) Sericitization, H) Albitization .....	20
Figure 10: Rock Quality Designation per Core Run (3 m intervals) by Depth .....	22
Figure 11: Fracture Frequency per Meter by Depth .....	24
Figure 12: Reference Lines: Arbitrary (red), Actual (yellow) and Back Oriented (dashed yellow) .....	27
Figure 13: A) Fault with fault gouge from 576.29-576.34 m, B) Shear (SHR) zone from 423.06-423.09 m, C) Ductile shear zone (SHRD) from 721.34-721.42 m D) Portion of fault zone from 327.51-327.71 m .....	30
Figure 14: A) Natural Broken core zone from 95.81-96.00 m in a slightly altered tonalite. B) Natural Broken core zone from 277.26-277.40 m in a highly altered tonalite. C) MB-BCZ at 99.61 m (15 cm long) .....	31
Figure 15: Contacts A) Intact Sharp at 434.78 m. B) Intact Gradational at 839.64 m. C) Broken Sheared at 434.78 m. D) Broken Faulted at 906.51 m .....	32
Figure 16: A) IPS IL at 817.67 m. B) IPS IFF at 805.78 m .....	32
Figure 17: Split tube photograph of CR154_B (407.21-410.21m) .....	33
Figure 18: Sample photographs of IG_BH04_BR007. [A] Front, B) Back, and C) Packaged sample .....	33
Figure 19: Detailed Structure Feature Photograph of SHRD from 410.21-410.47 m .....	33
Figure 20: Boxed core photography of core boxes 209-212 (526.55-538.24 m). A) Dry and B) Wet .....	34
Figure 21: Example of Fully Packaged Time Sensitive Sample .....	35

## List of Appendices

- A      IG\_BH04 Core Log – Gint
- B      Sampling Schedule Tables

## Abbreviation List

A	Alteration Index
APM	Adaptive Phased Management
BCD	Boxed Core Dry
BCW	Boxed Core Wet
BH	Borehole
BO	Back Oriented
BCZ	Broken Core Zone
BR	Broken
CEC	Cation Exchange Capacity
CO	Carbon Monoxide
D <sub>e</sub>	Effective Diffusion Coefficient
DMP	Data Management Plan
GSI	Geological Strength Index
HQ	BH size (Hole diameter = 95mm)
HQ3	Core Diameter (61.1mm)
ID	Identification
IG	Ignace
IN	Intact
Ja	Joint Alteration
JCR	Joint Condition Rating
Jn	Joint Number
Jr	Joint Roughness
K	Potassium
LED	Light Emitting Diode
LIS	List
MAN	Manual
mbgs	meters below ground surface
MEM	Memorandum
N	No
NGI	Norwegian Geotechnical Institute
NWMO	Nuclear Waste Management Organization
OGW	Opportunistic Ground Water
PE	Polyethylene
PIN	Partially Intact
PLC	Programmable Logic Controller
PLN	Plan
PPE	Personal Protective Equipment
PRA	Potential Repository Area
PVC	Polyvinyl Chloride
Q	NGI's Rock Mass Rating
QC	Quality Control

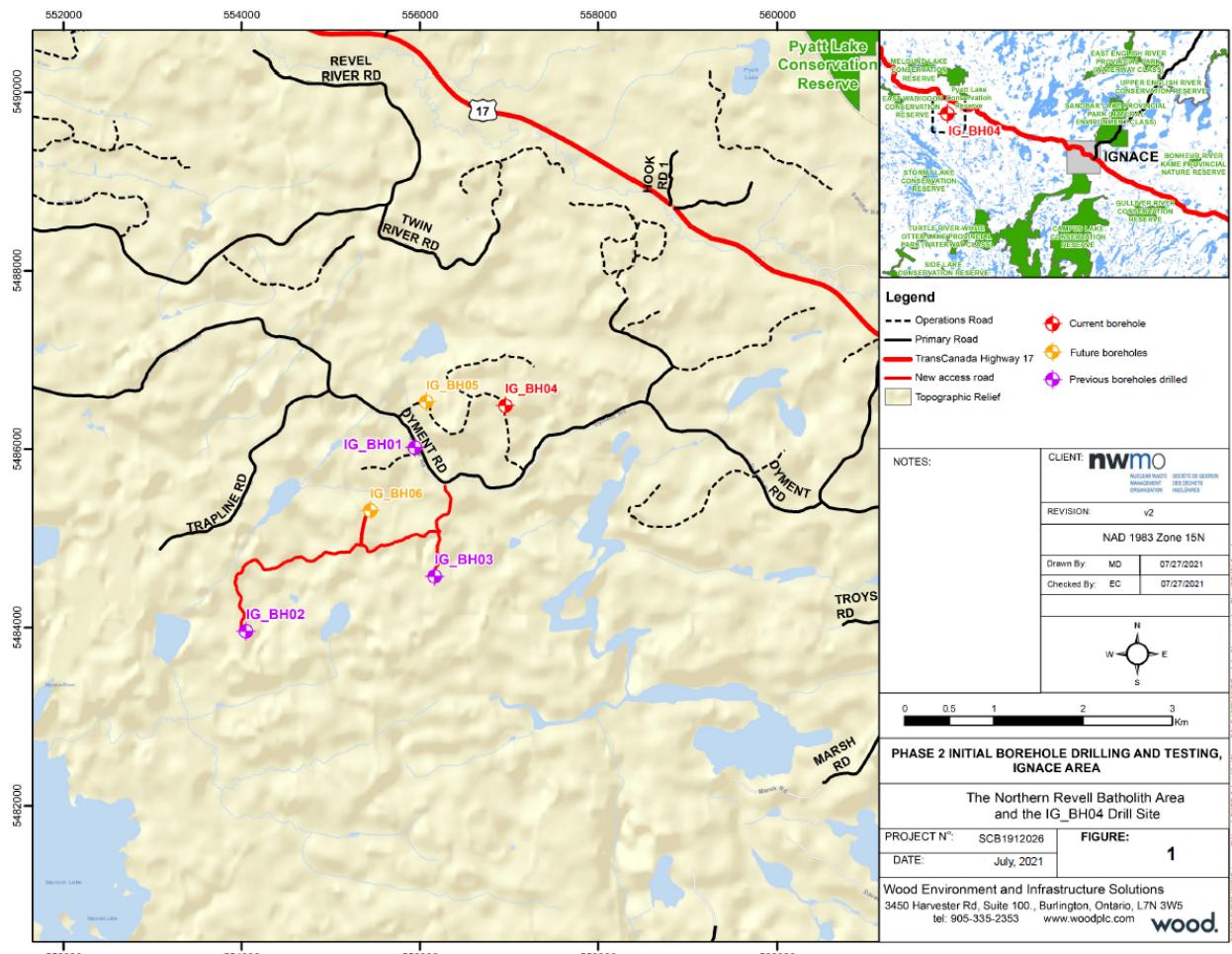
QA	Quality Assurance
QMS	Quality Management System
R0	Rock Strength
RFP	Request for Proposal
RQD	Rock Quality Designation
RMR	Rock Mass Rating
SCR	Solid Core Recovery
SOW	Scope of Work
TBD	To Be Determined
TCR	Total Core Recovery
TCS	Triaxial Compressive Strength
Th	Thorium
U	Uranium
UCS	Uniaxial Compressive Strength
W	Weathering
WP	Work Package

## 1.0 Introduction

The initial Borehole Drilling and Testing project at Ignace, Ontario is part of a Phase 2 Geoscientific Preliminary Field Investigation program lead by the Nuclear Waste Management Organisation (NWMO). This initiative is part of an Adaptive Phased Management (APM) Site Selection Phase.

This project, carried out by a team led by Wood on behalf of the NWMO, involves the drilling and testing of several deep inclined boreholes in the Ignace region within the identified Potential Repository Areas (PRAs). The targeted site is located in the northern part of the Revell batholith, an area predominantly underlain by a massive to weakly foliated granodiorite-tonalite intrusive complex (Golder and PGW, 2017).

This report describes the methodology, activities, and results for Work Package 03 (WP03): Geological and Geotechnical Core Logging, Photography, and Sampling with respect to IG\_BH04. As shown on Figure 1, Borehole BH04 is located 43 Km northwest of the Town of Ignace and is accessible via Highway 17 and primary logging roads.



**Figure 1: Ignace Borehole Site Locations for IG\_BH01-to IG\_BH06**

## 2.0 Background Information

### 2.1 Geological Setting

The PRA under investigation is located within the Revell Batholith, a 2.7 billion year old intrusion located within the western part of the Wabigoon Subprovince of the Archean Superior Province. As seen on (Figure 2), the batholith is roughly elliptical in shape with the long axis trending northwest, and is approximately 40 km in length, 15 km in width, and covers an area of approximately 455 km<sup>2</sup>. Based on geophysical modelling, the batholith has a relatively flat base that extends to depths of nearly 4 km in some regions (SGL, 2020). The batholith is surrounded by supracrustal rocks of the Raleigh Lake (to the north and east) and Bending Lake (to the southwest) greenstone belts.

Four main rock units are identified in the supracrustal rock group: mafic metavolcanic rocks, intermediate to felsic metavolcanic rocks, metasedimentary rocks, and mafic intrusive rocks. Sedimentation within the supracrustal rock assemblage was largely synvolcanic, although sediment deposition in the Bending Lake area may have continued past the volcanic period (Stone, 2009; Stone, 2010a; Stone, 2010b). All supracrustal rocks are affected, to varying degrees, by penetrative brittle-ductile to ductile deformation under greenschist- to amphibolite-facies metamorphic conditions (Blackburn and Hinz, 1996; Stone *et. al.*, 1998). In some locations, primary features, such as pillow basalt or bedding in sedimentary rocks are preserved, in other locations, primary relationships are completely masked by penetrative deformation. Uranium-lead (U-Pb) geochronological analysis of the supracrustal rocks produced ages that range between 2734.6 +/-1.1 Ma and 2725 +/-5 Ma (Stone *et. al.*, 2010).

Three main suites of plutonic rock are recognized in the Revell batholith, including, from oldest to youngest: a Biotite Tonalite to Granodiorite suite, a Hornblende Tonalite to Granodiorite suite, and a Biotite Granite to Granodiorite suite. Plutonic rocks of the Biotite Tonalite to Granodiorite suite occur along the southwestern and northeastern margins of the Revell batholith. The principal type of rock within this suite is a white to grey, medium-grained, variably massive to foliated or weakly gneissic, biotite tonalite to granodiorite. One sample of foliated and medium-grained biotite tonalite produced a U-Pb age of 2734.2+/-0.8 Ma (Stone *et. al.*, 2010). The Hornblende Tonalite to Granodiorite suite occurs in two irregularly shaped zones surrounding the central core of the Revell batholith. Rocks of the Hornblende Tonalite to Granodiorite suite range compositionally from tonalite through granodiorite to granite and also include significant proportions of quartz diorite and quartz monzodiorite. One sample of coarse-grained grey mesocratic hornblende tonalite produced a U-Pb age of 2732.3+/-0.8 Ma (Stone *et. al.*, 2010). Rocks of the Biotite Granite to Granodiorite suite underlie most of the northern, central and southern portions of the Revell batholith. Rocks of this suite are typically coarse-grained, massive to weakly foliated, and white to pink in colour. The Biotite Granite to Granodiorite suite ranges compositionally from granite through granodiorite to tonalite. This suite includes the oval-shaped potassium-feldspar megacrystic granite body in the central portion of the Revell batholith (**Error! Reference source not found.**). One sample of coarse-grained, pink, massive potassium-feldspar megacrystic biotite granite produced a U-Pb age of 2694.0+/-0.9 Ma (Stone *et. al.*, 2010).

Borehole IG\_BH04 is located within an investigation area of approximately 19 km<sup>2</sup> in size, situated in the northern portion of the Revell batholith. Bedrock exposure in the area is generally very good due to minimal overburden, few water bodies, and relatively recent logging activities. Ground elevations

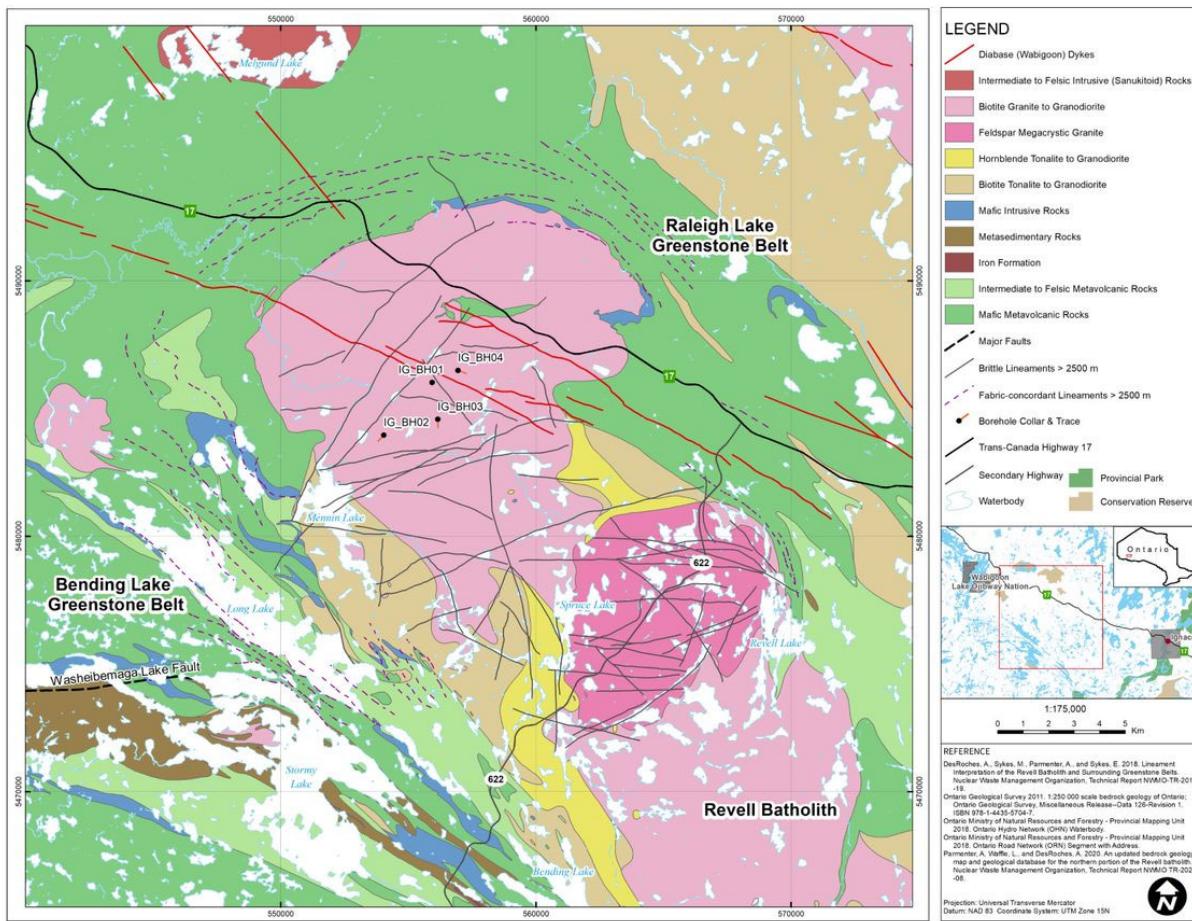
generally range from 400 to 450 m above sea level. The ground surface broadly slopes towards the northwest as indicated by the flow direction of the main rivers in the area. Local water courses tend to flow to the southwest towards Mennin Lake (Figure 1).

The bedrock surrounding IG\_BH04 is composed mainly of massive to weakly foliated felsic intrusive rocks that vary in composition between granodiorite and tonalite, and together form a relatively homogeneous intrusive complex. Bedrock identified as tonalite transitions gradationally into granodiorite and no distinct contact relationships between these two rock types are typically observed (SRK and Golder, 2015; Golder and PGW, 2017). Massive to weakly foliated granite is identified at the ground surface to the northwest of the feldspar-megacrystic granite. The granite is observed to intrude into the granodiorite-tonalite bedrock, indicating it is distinct from, and younger than, the intrusive complex (Golder and PGW, 2017).

West-northwest trending mafic dykes interpreted from aeromagnetic data extend across the northern portion of the Revell batholith and into the surrounding greenstone belts. One mafic dyke occurrence, located to the southwest of IG\_BH04, is approximately 15-20 m wide. All of these mafic dykes have a similar character and are interpreted to be part of the Wabigoon dyke swarm. One sample from the same Wabigoon swarm produced a U-Pb age of 1887+/-13 Ma (Stone *et. al.*, 2010), indicating that these mafic dykes are Proterozoic in age. It is assumed based on surface measurements that these mafic dykes are sub-vertical (Golder and PGW, 2017).

Long, narrow valleys are located along the western and southern limits of the investigation area. These local valleys host creeks and small lakes that drain to the southwest and may represent the surface expression of structural features that extend into the bedrock. A broad valley is located along the eastern limits of the investigation area and hosts a more continuous, un-named water body that flows to the south. The linear and segmented nature of this waterbody's shorelines may also represent the surface expression of structural features that extend into the bedrock.

Regional observations from mapping have indicated that structural features are widely spaced (typically 30 to 500 cm spacing range) and dominantly comprised of sub-vertical joints with two dominant orientations: northeast and northwest trending (Golder and PGW, 2017). Interpreted bedrock lineaments generally follow these same dominant orientations in the northern portion of the Revell batholith (DesRoches *et. al.*, 2018). Minor sub-horizontal joints have been observed with minimal alteration, suggesting they are younger and perhaps related to glacial unloading. One mapped regional-scale fault, the Washeibemaga Lake fault, trends east and is located to the west of the Revell batholith. Ductile lineaments, also shown on Figure 2, follow the trend of foliation mapped in the surrounding greenstone belts. Additional details of the lithological units and structures found at surface within the investigation area are reported in Golder and PGW (2017).



**Figure 2: Geological Setting of the Northern Portion of the Revell Batholith (Parmenter et al., 2020)**

## 2.2 Work Package Technical Objectives

The technical objectives of WP03 include:

- Provision of geological and geotechnical core logging of IG\_BH04 along with a photographic library of the recovered core (split tubes, core boxes, samples, and core details); and
- Provision of high quality, preservation of core samples for conducting laboratory core testing and analyses; the majority of these tests are described in the individual WP04 test plans listed in PLN-007 I04 WP03 Core Logging (Wood, 2019b); additional testing such as microbiological will be completed outside of the main scope of work of Wood for IG\_BH04.

The core logging data collected during drilling, and reported in this document, has been archived in an acQuire database. Ultimately, the data set provided is to aid in the assessment and delineation of initial subsurface geological and geotechnical domains. It can also complement surface-based information

(e.g., geological mapping and lineament interpretation), hydrogeological characterization, geophysical vertical seismic profiling and interpretation, and serve as a foundation for the development of an initial three-dimensional conceptual geological model.

## 3.0 Description of Work Procedures

The WP03 activities were carried out at the same time as WP02 (Borehole drilling and Coring) activities between November 19, 2019 and March 14, 2020. Full details of drilling progress will be documented in the WP02 Data Report- SCB1912026-REP-007\_WP02 Drilling and Coring (Wood, 2021a).

Work Package WP03 included several geological and geotechnical work procedures, intended to provide safe, efficient, comprehensive, and traceable handing, observing, and documentation of continuous recovered drill core from IG\_BH04. An overview of work procedures for WP03 is provided below:

- Geological and geotechnical core logging (Section 3.3) included marking the structural features and collecting core orientation data, core run data, structural feature information, lithological information, alteration observed, and rock strength quality information.
- Core sampling (Section 3.4) occurred throughout the drilling of the borehole. Core sampling was conducted at specific locations and in specific rock types as outlined in the sampling matrix. The various steps involved in core sampling, preservation, packaging, and shipping to temporary storage areas (at site / Ignace Warehouse) or to the laboratory are summarized within.
- Core photography (Section 3.5) included split tube photography (front and back photographs in split tubes), core box photography (front dry and wet photographs of 4 sequential core boxes), and structure feature and sample photography (front and back photographs of unmarked core samples).

Additional details relating to specific geological and geotechnical guidelines can be found in WP03 Test Plan - SCB1912026-PLN-007\_I04\_WP03 Core Logging, Photography and Sampling (Wood, 2019b).

### 3.1 Health and Safety

Mandatory health and safety toolbox meetings were conducted at the start of each shift (day and night) for all personnel on site. These meetings outlined all the activities planned for the current shift and identified potential hazards associated with the work, as well as mitigation actions that should be taken to reduce risk. Any personnel on site who did not attend the health and safety meeting (including visitors) were required to review and acknowledge the meeting report prior to performing any work on site. All applicable health and safety standards were adhered to for the duration of the program.

### 3.2 Work Flow

Wood provided a qualified Drill Supervisor to monitor and supervise the retrieval of the HQ3-sized drill core from the core barrel. The core was retrieved from the borehole by the drillers, oriented using a Reflex Act III core orientation tool, and the core tube was brought into the "wet shack" (Wood, 2019b) to pump the core splits out of the core barrel. The drill supervisor recorded the time ( $t_0$ ) each core run was

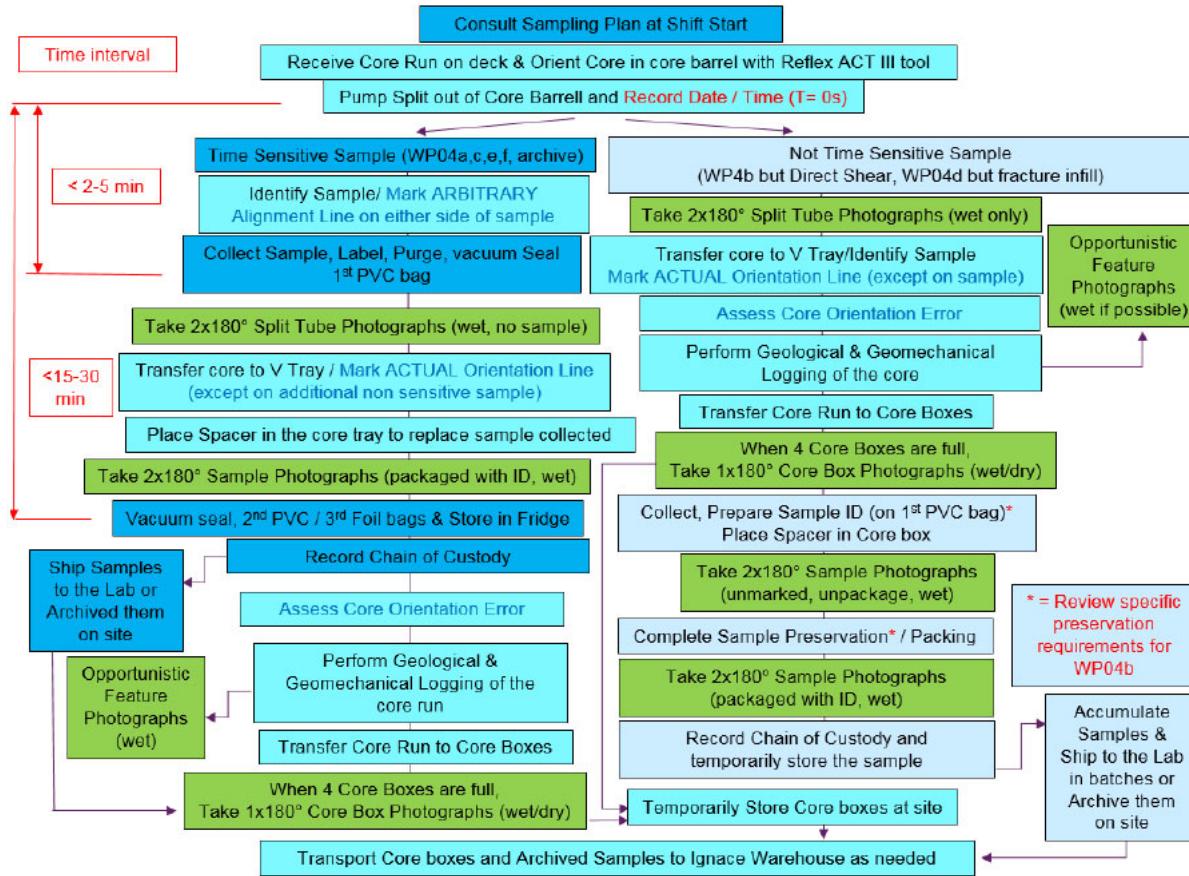
extracted from the core barrel. Once the core was extracted, the split tubes were immediately brought into the logging trailer or “dry shack” (Wood, 2019b) by the driller, driller helper and/or the drill supervisor. The core logger then immediately began WP03 activities.

The core logging trailer contained a designated area to receive the core splits and conduct core split photography. If time sensitive samples were to be collected in the core run, sampling would occur immediately after the top split was removed. In non-time sensitive core, the core splits were photographed (2x180° photographs front and back). The drill core was then transferred to a V-tray, pieced together (to best represent solid core in fractured zones), oriented using the mark from the Reflex ACT III and the edge of the V-tray, and logged for geological and geotechnical parameters following core logging procedures as detailed in WP03 Test Plan - SCB1912026-PLN-007 I04\_WP03 Core Logging, Photography and Sampling (Wood, 2019b).

Wood provided a qualified Core Logger to undertake core logging, core photography, and sampling of the drill core. The Core Logger recorded the time the splits arrived in the logging trailer, which would occur with a slight delay following the retrieval of the splits from the core barrel. An overview of the workflow that was followed during the geological and geotechnical core logging, photography and sampling activities is presented in Figure 3.

Geological and geotechnical sampling, logging, and photography were performed during drilling on a 24/7 basis. Two core loggers, working on alternating 12-hour shifts (dayshift and nightshift) ensured constant supervision during field work activities. A cross over shift period allowed time (approximately 15 mins) to exchange relevant logging features encountered or information obtained during the previous shift.

At the beginning of each shift, the incoming core logger would perform a quality check on the geological and geotechnical logging, photography, and sampling recorded during the previous shift. The logger then consulted the sampling matrix to be prepared for possible time-sensitive samples to be collected during the shift.



**Figure 3: Workflow followed for WP03 tasks (Wood, 2019b)**

### 3.3 Core Logging Procedures

Core logging procedures, as described in Appendix B of the WP03 Test Plan - SCB1912026-PLN-007 I04\_WP03 Core Logging, Photography and Sampling (Wood, 2019b), were performed on a per run basis.

For each run, the core logger marked the core following project specific guidelines. When available, the logger drew an actual orientation line on the core using the ACT III orientation results for the current run or by transferring the orientation line from the previous run (i.e., back oriented). When core orientation was lost, an arbitrary reference line was used, as instructed by NWMO. The logger measured the length of the drill core and recorded the core run depths. The core logger also marked the downhole depth by meter on the core and then identified the various structures (mechanical breaks, broken structures, and intact or partially intact structures) and their corresponding depths.

All core logging details were captured in an acQuire database customized for this project. All required fields in the database were highlighted in red in the database software and data were entered on various tabs. The core logger recorded the core run data as follows: Drilled From (m), Drilled To (m), Core Run

Number, Retrieval Time (24hr), Logged By, Photo By, and Sampled By. For each run the logger measured the Total Core Recovery (TCR), Rock Quality Designation (RQD), Solid Core Recovery (SCR), Count of Mechanical Breaks, and Count of Natural Fractures and entered the data in the core run tab.

The core logger then populated the Reference Line tab. The Reference Line tab contains information pertaining to the orientation of each core run and the orientation error measured relative to the former run by the logger.

The core logger then entered all geological and geomechanical features observed into the Structure tab. The logger measured the depth of each structure (at the mid-point of the feature), identified the type of structure, and recorded specific information relating to the feature in the acQuire database (Figure 4), such as its orientation (alpha and beta angles) and mechanical/physical properties (aperture, shape, roughness, alteration, infill type etc.).

**Figure 4: AcQuire database displaying the Structure Tab**

A summary of the various structure types and occurrences recorded in the borehole are presented in Section 4.4.

After all the structural data was collected, the core logger identified every distinct lithological unit in the drill core. The lithological units within the core run were recorded in the Lithology tab, with each distinct unit greater than 5 cm in width recorded as an individual lithological unit.. The core logger entered the contact depths or run depths if the lithology did not change. The core logger then identified specific information relating to the lithological unit including rock type, textures observed, minerals identified, upper contact information, ground mass classification, grain size, and color of the unit. If the lithological unit contained phenocrysts / porphyroblasts, their grain size and mineral type were identified. On average, gamma readings were recorded in the lithological tab once every couple of runs or at every change in

lithology to distinguish different phases of granitoid units. The main lithology encountered was tonalite and is described below in Section 4.1.1.

Following the lithology identification, the core logger recorded alteration and weathering in their respective tabs. The borehole was dominantly unaltered and unweathered, as described below in Section 4.2. Weathering and rock strength classifications were based on the International Society of Rock Mechanics guidelines (ISRM, 1981). To minimize mechanical breaks in the core, rock strength was often measured when the core logger broke the core to fit into the core box and / or while breaking longer lengths of core during sampling.

The core sample tab was filled out for every single core sample collected. The From (m) and To (m) depths, Test Type, Sampled Date & Time (24hr format), Sampled By, Sample Weight (kg), and Comments for each sample were recorded in the sample tab.

The core logger moved the drill core from the V-tray to a core box after the core run was logged. The final tab filled by the core logger in the acQuire database was Boxed Core Photos. The core logger populated the photo banner and photographed 4 consecutive full boxes of core (wet and dry) in similar lighting and setting. The boxes were then labelled, wrapped, and placed in temporarily storage prior to shipping to the respective locations outlined in the sample matrix.

The core log can be found in Appendix A and the field data findings are summarised in Section 4.

### 3.4 Laboratory Core Sampling Procedures

Two categories of core samples were collected during this project: Non-Time Sensitive, and Time-Sensitive. There was no time restriction during the collection, sampling, or preservation of Non-Time Sensitive Samples. However, Time-Sensitive Samples were collected, sampled, and preserved specifically to maintain the integrity of the sample analysis over a specific period of time.

#### 3.4.1 Non Time-Sensitive Sampling

Three categories of Non-Time Sensitive samples were collected, including: 1) Geomechanical under WP04B (Wood 2019c), 2) Microbiology, and 3) Mineralogy and Geochemical Samples under WP04D (Wood, 2019e).

Geomechanical samples were collected for the following tests: Uniaxial Compressive Strength (UC, minimum 20 cm long sample), Indirect Tensile Strength (Brazilian, BR, minimum 20 cm long sample), Triaxial Compressive Strength (Triaxial, TC, minimum 20 cm long sample), and Thermal testing samples (TH, minimum 25 cm long sample). The core was first photographed (2x180° split tube core photography) prior to sampling. The logger selected the desired piece of core and broke it to the specified sample length with a rock hammer when required. Samples were collected adjacent to one another and all from the same lithological unit. The logger wiped the core samples clean with a blue paper towel. The core samples were each individually photographed under wet conditions (front and back) with a detailed photo banner and color charts. The logger then weighed the sample, placed it into a Ziplock bag and labelled the bag (IG-BH04\_XX\_YYY, depth from, depth to, date, time, where XX is a short form letter code for the test and YYY is a sequential number). The core logger updated the photo banner and

photographed the sample again displaying the packaged sample and label. Next, the logger wrapped the sample in plastic wrap, followed by aluminum foil. Ultimately, the logger sealed the foil with hot wax ensuring the wax did not get onto the core sample. The sealed/waxed core sample was then placed into a Ziplock bag. The bag was labelled with the core sample details using a Wood sticker. For additional protection, the sample was wrapped in bubble wrap, relabeled with a permanent black marker and placed in an up-right position in a 5-gallon pail for transportation.

Microbiology core samples were photographed ( $2 \times 180^\circ$  split tube core photography) prior to sampling. The logger wore a new pair of latex gloves during sampling to prevent microbial contamination. The selected core sample was broken to the desired lengths (20–30 cm) using a geological hammer, if required. The samples were individually placed in Ziplock bags and photographed (front & back). Afterwards, the sample information was entered in acQuire. The logger completed the preservation steps by writing the Sample ID on the Ziplock bag with a Sharpie and placing the samples in a freezer at site for temporary storage.

Mineralogy and Geochemical Samples were photographed ( $2 \times 180^\circ$  split tube core photography) prior to sampling. The core sample was broken to the desired minimum length of 20 cm. The logger wiped the core clean with a blue paper towel, then photographed the sample under wet conditions (front and back) with detailed photo banner and color chart. The logger then weighed the sample and placed it in a Ziplock bag. The logger labelled the bag with the core sample details using a Wood sticker. The logger then photographed the core sample with the packaging information displayed.

### 3.4.2 Time-Sensitive Sampling

Time-Sensitive Samples included: Effective Diffusion (ED, 20 cm long sample) under WP04E (Wood 2019f), Petrophysical Samples (PS, 35 cm long sample) under WP04A, Porewater Extraction Samples [1 sample and 2 replicates (PW 35 cm long sample, PW 35 cm long sample, PW 15 cm long sample)] under WP04C (Wood 2019d), Sorption Samples (SO, 45–50 cm long sample), Specific Surface Area & Cation Exchange Capacity Samples (SA, 35 cm long sample) under WP04F (Wood 2019g), and General Archived Samples (AR, 35 cm long sample). Prior to sampling, the logger consulted the sampling matrix, cut, weighed, and partially labelled the first polyethylene bag(s), ensuring there was enough extra-length for re-opening and re-sealing the bag. The logger always entered samples into acQuire in an increasing order of depth. At the time of sampling, the core logger began by putting on gloves and starting a timer when the top split was removed from the core run. If needed, the logger broke the sample using a rock hammer to obtain the required length. The logger drew an arbitrary alignment line on both sides of the sample without touching the sample to recover the orientation of the core on the rest of the run. The sample was wiped clean with a blue paper towel, parafilm was placed on the top and bottom of the sample, and the sample was transferred into a polyethylene (PE) bag (pre weighed and partially labelled, IG-BH04\_XX\_YYY, depth from, depth to, date, time, where XX is a short form letter code for the test and YYY is a sequential number). The logger then vacuum sealed the sample in the PE bag. The logger recorded the time of sampling for each individual sample bag. To ensure the sample was preserved in its original state, these steps needed to be completed in less than 5 minutes.

Afterwards, the logger re-opened the PE bag by cutting an edge with scissors and placing the excess material back into the bag. Following flushing of the sample with Nitrogen for a minimum of 10 seconds, the bag was resealed and labelled (Test Type, Depth, Date, Time). The sample was weighed in the bag and

the weight of the sample was back calculated by subtracting the weight of the bag itself; this weight was recorded on the Wood Label. The package was then photographed (front and back) with a detailed photo banner and color charts.

Next, the logger put the sample in a second PE bag and vacuum sealed the bag. Ultimately, a third foil film bag was placed over the second sealed PE bag, vacuum sealed and labelled with a Wood Sticker. The logger photographed the third bag displaying the Wood sticker and placed the samples in a refrigerator.

The logger cut a PVC tube about the length of the sample and placed it in the core box where each individual sample was collected. The sample details were written on the PVC tube. The core sample Chain of Custody (COC) log, summarizing the full list of samples collected, can be found in Appendix B.

### 3.5 Core Photography Procedures

Four different types of core photographs were taken during this project. They include 2x180° split-tube, 2x180° core sample, detailed structure feature, and 1x180° boxed core photographs. Examples can be found in section 4.5. All photographs were taken in the logging trailer using the camera set-up as seen in Figure 5.



**Figure 5: Core logging trailer, left side displays core split photography setup, far right side displays core box photograph set up and front right side shows sample and detailed structure photography setup (Light box)**

Split-tube Photography ( $2 \times 180^\circ$ ) was completed first and performed as soon as the core was brought into the core logging trailer. The core logger filled out a core run banner and placed a measuring tape below the length of the drill core, ensuring the start of the measuring tape was aligned with the start of the drill core. The core logger wet the core if needed to ensure the photographs were taken under wet conditions. The logger then captured 24 consecutive photographs of the back of the core run (displaying the orientation line) by sliding the camera carriage along a ceiling mounted track and using pre-spaced markers to ensure a consistent photo overlap between successive photos. The camera setup for split photos is shown on the left side of the photo in Figure 5. The logger then checked the quality of the photos and photo banner. If the photos were clear and visible, the logger rotated the core split  $180^\circ$  to capture another set of 24 photographs, this time of the front of the core. The core logger verified the quality of the photos, re-named all the photos, and uploaded them to Wood SharePoint / ProjectWise. Split-tube photographs for the front and back of the core were stitched in the office by support staff and shared with NWMO as they became available.

After the logger completed the  $2 \times 180^\circ$  split-tube photography, the logger collected any non-time sensitive samples. Core sample photographs ( $2 \times 180^\circ$ ) were taken of each sample, from a portable folding light box (front right, Figure 5). The core logger turned on the LED lights, placed the sample in a wooden core holder, positioned the sample photo banner and color chart, and took a picture of the core from an opening in the top of the light box. The logger rotated the sample  $180^\circ$  to capture the back of the sample, adjusted the photo banner, and took another picture. After ensuring the quality and clarity of the sample photos, the photos were re-named and uploaded onto the Wood SharePoint / ProjectWise site.

Detailed structure feature photography was performed on an opportunistic basis. These photographs were taken using a measuring tape, photo banner, and the split tube camera set up. The logger collected these photographs to outline features not seen in the split photographs, such as fracture surfaces.

Boxed core photographs were taken when 4 consecutive core boxes were full. The logger would ensure the orientation line was visible, the tape measure, photo banner and color charts were in place and would photograph the core boxes dry. After ensuring the quality of the photo was acceptable, the core box photos were saved on the computer and renamed for upload to Sharepoint / ProjectWise site. These steps were repeated by the core logger after wetting the core and adjusting the photo banner. All core photography information was subsequently entered into acQuire.

### 3.6 Quality Confirmation

A series of quality confirmation procedures were established and implemented for the duration of the drilling program. At the drill site, daily cross-over shifts were held for approximately 10-15 minutes at each shift change to pass along any information or progress that occurred on the previous shift. The cross-shifts lengths were extended as necessary to ensure all relevant additional information was relayed. In addition, every 2 to 3 weeks, when a core logger staff rotation occurred, 6 to 12 hour cross-over shifts were carried out to maintain consistency in the logging and coring procedures.

On site, daily quality confirmation (DQC) forms were completed by the core logger on duty. The site coordinator and the day shift core logger were in charge of filing the forms for the work done both on their shift and the former night shift, so each daily form covered the prior 24 hour period. This process included calibration checks, and reviewing the previous core photos, core sampling and core logging

sheets. These forms were included in the WP02-03 daily report submitted to NWMO. They were also compiled as part of the WP03 Data Delivery.

In parallel, from the office the WP03 lead, supported by a team of experienced geologists and engineers, would perform an extensive daily review of the core logging data base either directly in acQuire or via csv export files on a run-by-run basis. This review also included a review of the core photographs, core sampling logs, core tracking sheets and chain of custody documents. Further reviews of the core logging data were completed, following reception of NWMO's comments based on their data review. Ultimately, a Master compilation QAQC table was produced summarizing the comments of both parties as well as implementations of any changes made in the core logging data base (acQuire). The Master compilation QAQC table can be consulted as part of WP03 final data delivery.

## 4.0 Summary of Field Data Collection

IG\_BH04 was drilled to a depth of 1000.20 m. At the borehole collar, 0.67 m of construction gravel, followed by 0.94 m of PQ core was drilled initially to seat the PWT casing. Then a total of 998.59 m (1000.2 m - 0.67 m - 0.94 m) of HQ3 rock core was drilled over 359 core runs. Both the PQ and HQ3 core were logged as part of WP03 for a total drilled core length of 999.53 m (= 998.59 m + 0.94 m). The borehole dip was 70 degrees, and the average core run length was 3m. A full description of the drilling and coring process can be found in WP02 Data report - SCB1912026-REP-007\_WP02 Drilling and Coring (Wood, 2021a). An additional 26.6 m of core was logged (raw data only), sampled and photographed for IG\_BH04A and 12.4 m of core was photographed for IG\_BH04B. These where short borehole branches developed as a result of wedging through the requirement to maintain trajectory of the main hole within a ± 5 degrees cone.

The following section provides a summary of the core logging orientation and rock / features observed for IG\_BH04 only as the other 2 partial holes were essentially considered a duplicate of the main hole. Information on the lithology encountered and logged in IG\_BH04 is presented in (Section 4.1), followed by weathering and alteration (Section 4.2), geotechnical logging (Section 4.3), and structural data (Section 4.4) logging observations. The core logging data for the entire borehole is presented in a comprehensive strip log in Appendix A.

### 4.1 Lithology

Lithology was logged continuously on all recovered core during the drilling of IG\_BH04. Lithological descriptions below are based on initial visual inspection of the drill core. Petrographic and geochemical analysis were conducted to provide supplemental data and to refine the mineral phases identified.

Any lithology changes greater than 5 cm in length were described as an individual lithological unit. A Gamma Ray Spectrometry spot analysis was utilized during drilling operations to help distinguish between granitoid phases. The distribution of the distinct rock units encountered in IG\_BH04 is shown in Table 1.

The predominant rock type encountered was tonalite (0.67-883.96 m), followed by feldspar-phyric tonalite (883.96-1000.20 m), biotite-rich tonalite, amphibolite (mafic), a second mafic unit, and several phases of

felsic dykes, including: feldspar-phyric, quartzolite, quartz monzonite, and aplite. Some of the amphibolite occurrences may also be dykes; however, that is only a field-level interpretation.

Within the core, the majority of the lithological contacts observed (upper contact considered) were intact (not broken or partially intact).

Note that the total lithology length (999.53 m) is short by 0.67 m of the total drilled depth (1000.20 m) because the surface construction gravel (0.67 m) drilled at the collar of the hole was excluded from logging. Additionally, the total recovered core length (999.72 m) is 19 cm longer than the total drilled core (999.53 m) due to the rounding of core recovery depth measurements during logging, which corresponds to a 2% difference over the entire length of the borehole.

**Table 1: Summary of Rock Units Encountered in IG\_BH04**

Rock Type	Texture	Fabric	Total Length of Core ** Logged (m)	% of Total Length of Core Logged	Upper Contact (#)*		
					BR	IN	PIN
Tonalite	Equigranular	Massive	853.63	85.40	2	21	0
Feldspar-phyric Tonalite	Porphyritic	Massive	110.30	11.04	4	5	0
Biotite-rich Tonalite	Equigranular	Massive	22.58	2.26	0	9	0
Amphibolite	Aphanitic / equigranular	Massive / foliated	9.82	0.98	5	4	0
Feldspar-phyric Felsic	Porphyritic	Massive	1.99	0.20	0	2	0
Mafic	Equigranular	Foliated	0.56	0.06	0	1	0
Quartzolite	Equigranular	Massive	0.44	0.04	0	2	1
Quartz Monzonite	Equigranular	Massive	0.16	0.02	0	1	0
Aplite	Equigranular	Massive	0.05	0.01	0	1	0
<b>Total</b>			<b>999.53</b>	<b>100.00</b>	<b>11</b>	<b>47</b>	<b>1</b>

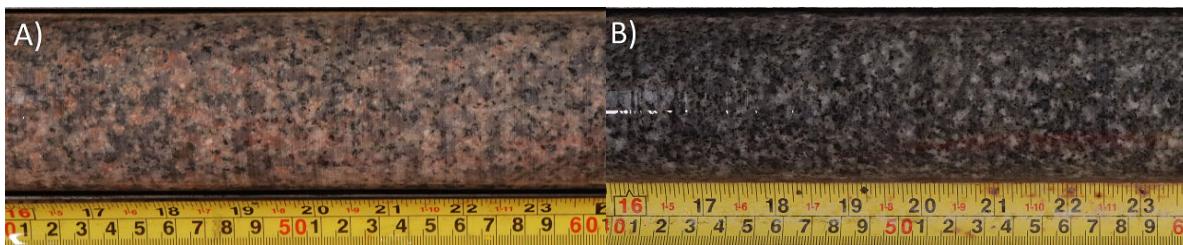
\* BR = Broken, IN = Intact, PIN = Partially Intact

\*\* PQ core and HQ3 core combined

#### 4.1.1 Tonalite

As indicated above, 85% of the total length of logged core of IG\_BH04 was tonalite (853.63 m). The tonalite is a massive to weakly foliated, equigranular, light to medium white-grey, medium grained (1-5 mm) unit. The three main minerals observed were quartz, feldspars (alkali-feldspar and plagioclase), and biotite. The very weak foliation was defined by the biotite minerals below 780 m depth (Figure 6A).

A biotite-rich tonalite was identified and represents 22.58 m (2%) of the total logged core. The biotite-rich tonalite was described as a massive, equigranular, medium to dark grey, fine to medium grained unit with approximately 20-25% biotite (Figure 6B).



**Figure 6: Tonalite types observed in IG\_BH04: A) Tonalite unit from approximately 153 m depth, and B) Biotite-Rich Tonalite unit from approximately 834.5 m depth**

The biotite-rich tonalite was logged in nine occurrences, ranging in length from 0.22 m to 7.84 m, and representing approximately 2% of the logged core. The biotite-rich tonalite was distinguished from the tonalite by the decrease in grain size, increase in biotite content, and the darker color of the unit. The contact between the tonalite and the biotite-rich tonalite was mainly intact and varied between sharp and gradational. The typical K values for tonalite and biotite rich tonalite combined ranged between 0.1 and 0.7% K, the Uranium (U) and Thorium (Th) content ranged from 0.1 to 4.9 ppm (U) and from 0.1 to 3.5 ppm (Th).

#### 4.1.2 Additional rock Types Encountered in IG\_BH04

In IG\_BH04, the remaining rock types encountered represent a total of 13% of the total recovered core (Table 1). Examples of each rock type are shown below in Figure 7, and their distribution along the length of the borehole is displayed in Appendix A. All the additional rock types, along with their main characteristics, are described below.

**Feldspar-phyric tonalite:** Nine occurrences of Feldspar-phyric tonalite were logged in IG\_BH04, accounting for 11% (110.30 m) of the total recovered core. The Feldspar-phyric tonalite was present after 883 m depth to the end of the borehole (Figure 7A) (939.54–939.74 m, all depths are based on split photos). The Feldspar-phyric tonalite is described as massive, porphyritic, medium grained, medium to dark grey-black, contain 45–50% quartz, 40–45% plagioclase, and 5–10% biotite. The porphyroblasts were subhedral, white, up to 1 cm plagioclase grains.

**Amphibolite:** Nine occurrences of amphibolite were logged in IG\_BH04, accounting for 1% (9.81 m) of the total recovered core. Two of these occurrences were logged as being metamorphic between 616–621 m and the remaining amphibolite was logged as dykes below 905.00 m. The metamorphic amphibolite was black, massive, fine grained, and contained 50% amphibole, 40% hornblende, and 10% calcite (Figure 7B, 619.51–619.71 m). The upper and lower contacts of the metamorphic amphibolite with the tonalite are mainly sharp and are moderately altered for approximately 0.5 m. The metamorphic amphibolite unit was intruded by a quartz monzonite creating two separate units.

The amphibolite dykes occurred below 905 m depth and intruded the Feldspar-phyric tonalite. The amphibolite dykes ranged from 0.09 to 3.69 m in length. Amphibolite dykes were observed as dark grey-green, massive to foliated and usually fine-grained (<1 mm) (Figure 7C, 905.44–95.64 m). The main mineral phases in the amphibolite dykes included amphibole and plagioclase feldspar. Biotite, epidote,

hornblende, and chlorite may have also present. The amphibolite dykes consistently exhibit a sharp upper and lower contact. Within the amphibolite transitions from massive to moderately foliated were often sharp.

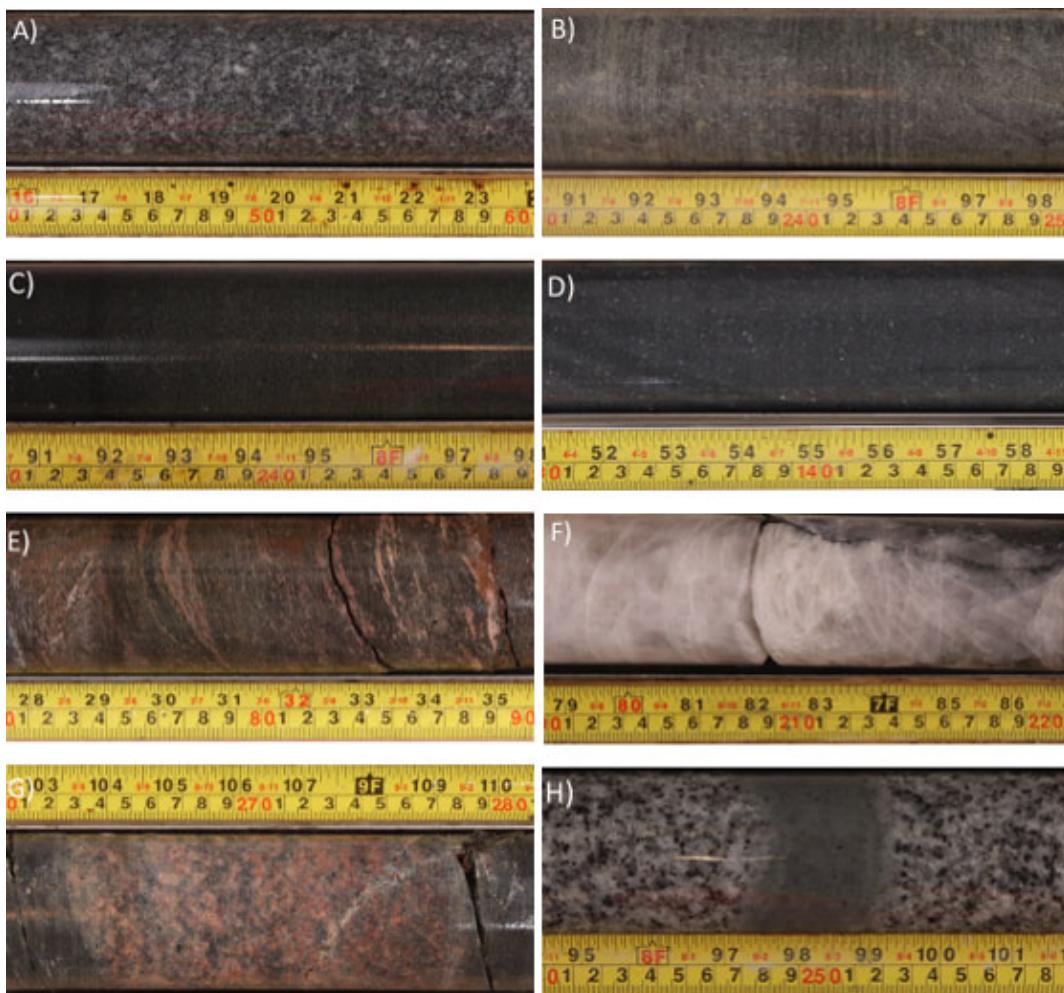
**Feldspar-phyric felsic dykes:** Two occurrences of feldspar-phyric felsic dykes were logged, one from 434.78–435.78 m and from 740.55–741.54 m. Figure 7D below is from 435.51–435.71 m. The occurrences combined have a total length of 1.99 m representing less than 1% of the recovered core. These dykes are medium to dark grey with a very fine matrix composed of quartz and plagioclase with 3–5% medium grained feldspar phenocrysts up to 7 mm wide. These dykes display very sharp contacts with the adjacent tonalite.

**Mafic:** One occurrence of a mafic unit was observed from 575.78 to 576.34 m. Figure 7E captures the mafic unit from 575.91–576.11 m. The mafic unit is dark brown to dark green, fine grained, highly foliated and composed of 40% amphibole, 40% Chlorite, and 20% Calcite. This unit has a faulted broken lower contact with the tonalite. It may be that this mafic unit represent a very strongly deformed equivalent of the metamorphic amphibolite described above.

**Quartzolite dykes:** Two occurrences of quartzolite dykes were observed with lengths of 0.10 and 0.29 m respectfully. One of the quartzolites are displayed in Figure 7F) from 989.14–989.34 m. These dykes are milky white to smoky grey, massive, medium grained (5–10 mm) and composed almost entirely of quartz with minor occurrences of the host rock infilling fractures. These contacts are oriented at low angles relative to the core axis.

**Quartz Monzonite:** One occurrence of quartz monzonite was observed with a total length of 0.16 m (Figure 9Figure 7G). The quartz monzonite was observed to contain 75% plagioclase, 20% quartz, and 5% biotite minerals. The unit is rusty to red, massive, equigranular, and medium to fine grained. The unit was moderately silicified and contained moderate potassiac alteration.

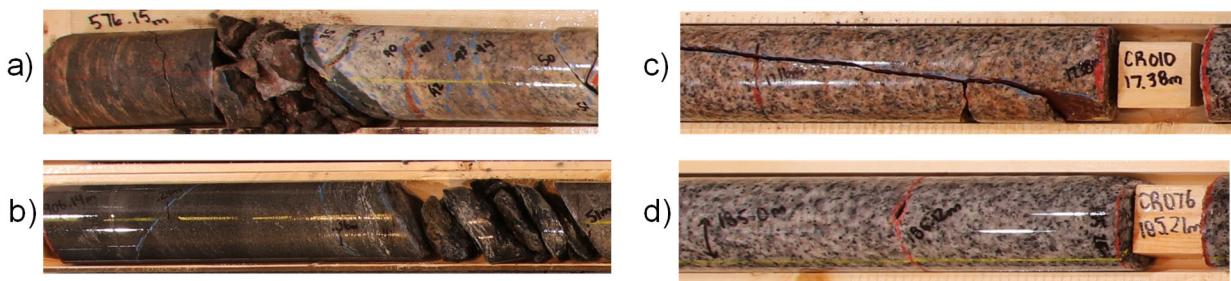
**Aplite dyke:** One aplite dyke of 0.05 m occurred at 761.60 m (Figure 7H). The aplite dyke was light grey, equigranular, and fine grained (<1 mm) to aphanitic. The aplite is rich in quartz and alkali feldspar with minor biotite. The contacts with the adjacent tonalite were intact, at a relatively high angle, and sharp with a slight silicified alteration halo of approximately 1 cm.



**Figure 7: A) Feldspar-phyric tonalite (939.54-939.74 m), B) Amphibolite (metamorphic 619.51-619.71 m), C) Amphibolite dyke (905.44-905.64 m), D) Feldspar-phyric felsic (435.51-435.71 m), E) Mafic (575.91-576.11 m), F) Quartzolite dyke (989.14-989.34 m), G) Quartz Monzonite (616.79-616.95 m), and H) Aplite dyke (761.60-761.65 m)**

## 4.2 Weathering and Alteration

Weathering and alteration of the rock mass were logged along the entire length of the recovered core using the alteration index (Wood, 2019b) and weathering classification (ISRM, 1981). Weathering refers to a destructive process by which rock, on exposure to atmospheric agents at or near the Earth's surface, is changed in colour, texture, composition or form. The majority of the core (87%) was found to be fresh, with no visible sign of rock material weathering (W1), while the remainder showed either slight signs (W2) or moderate signs (W3) of weathering. The highest level of weathering was found in two locations over the length of IG BH04. These correspond to faulted zones encountered at the following depths: 575.78-576.34 m, and 906.36-906.51 m (Figure 8).



**Figure 8: Examples of weathering levels observed in IG\_BH04:** (a) Moderately weathered (W3) horizons at 575.78-576.34 m; (b) and at 906.36-906.51 m; (c) slightly weathered horizon at 17.38 m and (d) not weathered horizon at 185.21 m

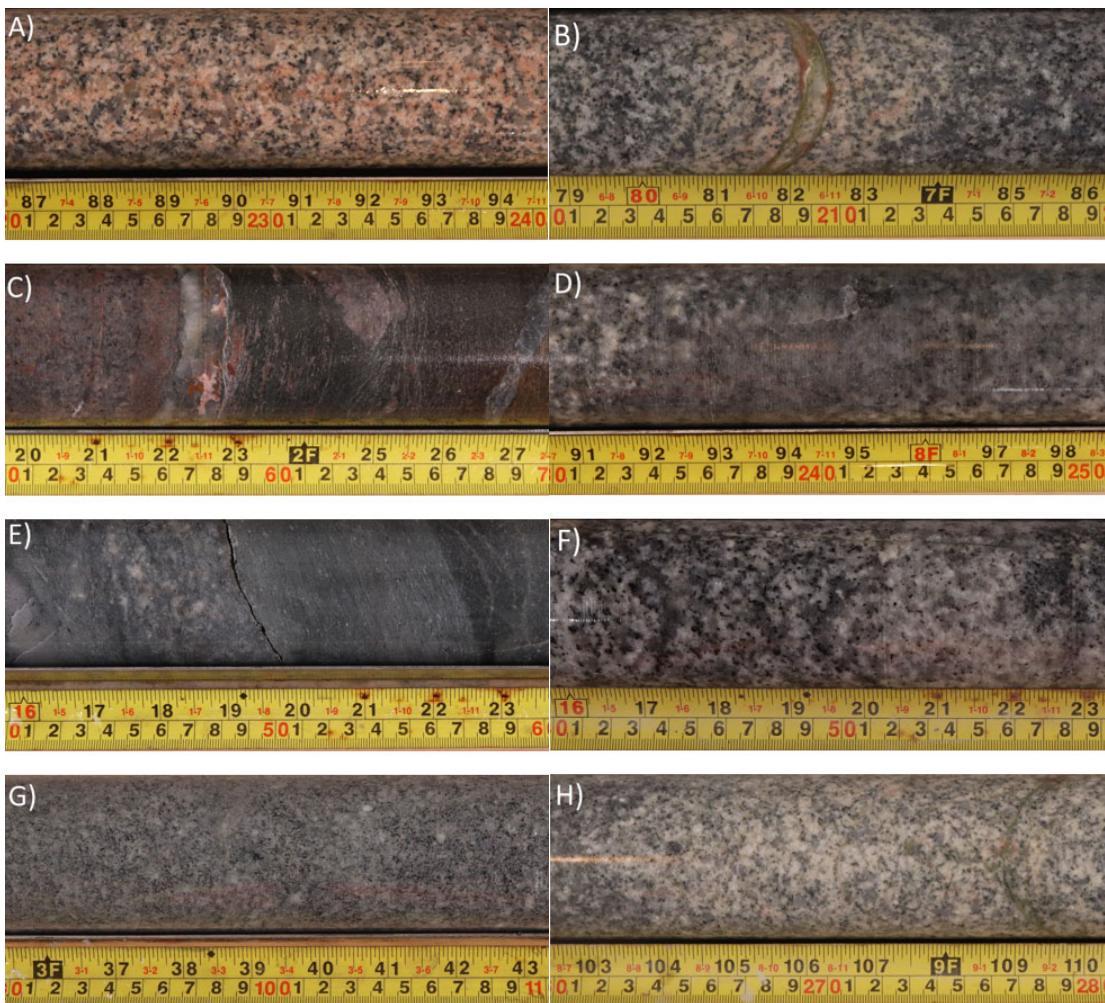
Alteration refers to any change in the mineralogical composition of the rock caused by hydrothermal solutions interacting with and changing the chemical composition of the minerals in the rock mass. Most of the recovered drill core (894.65 m) was unaltered (A1) to slightly altered (A2). A breakdown of the various degrees and types of alteration is summarized below.

In total, 523.31 m or 52% of core was found to be altered to varying degrees. Approximately 40% (402.50 m) of the recovered drill core was slightly altered (A2) with the alteration concentrated on fractured surfaces and adjacent to infilled fractures. Approximately 11% of the recovered drill core was identified as being moderately altered (A3) and 1% of the recovered drill core was logged as highly altered (A4). No occurrences of completely altered rock (A5) were identified. Note, an occurrence of alteration is defined for this report as consecutive sections of rock with the same alteration type. For example, a potassic alteration that spans from the end of one run to the start of the next will have been logged twice in acquire but will count as one occurrence. The distribution of each alteration type is shown in Appendix A. The main characteristics of each alteration type are described below, photographs are represented in Figure 9, depths in photo were estimated using split photos.

- **Potassic:** Potassic alteration was identified in 84 occurrences, and is the predominant alteration observed in the recovered core. Approximately 33% (331.52 m) of the core was logged with some degree of potassic alteration, the majority of which is described as slightly altered. Potassic alteration is due to the formation of new k-feldspar and is pink to orange in color, as shown in Figure 9A. Potassic alteration was observed forming halos around quartz and feldspar crystals, as fracture filling from hairline fractures to 1 mm infill, as patchy alteration, and as pervasive in some areas. Potassic alteration mainly occurs between 86 m and 589 m depth.
- **Chloritization:** Chloritization was described in 77 occurrences, ranging in lengths from hairline zones to 32.21 m of the recovered core. Approximately 27% (274.71 m) of the recovered core displayed chloritic alteration, the majority of which is described as slightly altered. The appearance of blue-green to dark-green minerals and mineral strength were the main diagnostic characteristics of the alteration type. Chloritization occurs mainly below 876 m depth. Figure 9B displays 2 epidote fracture infills, with minor iron oxide, and weak bleaching around the fractures in tonalite.
- **Hematization:** Hematization was identified in 19 occurrences, representing approximately 8% (75.57 m) of the recovered core. The altered rock mass was primarily described as slightly to

moderately altered with less than 1% described as being highly altered. Individual occurrences of hematization range in lengths from hairline to 9 m. This alteration is characterized by rust, red, brown staining of the rock and/or coating around mineral grains. Hematization was mainly observed in the upper 75 m of the borehole. Figure 9C is a contact between a tonalite unit and the mafic unit; on the left side of the photo hematite alteration has altered the minerals of the tonalite to a reddish / rusty color. The mafic unit displays chlorite alteration; the chlorite is partially to completely replacing biotite.

- **Silicification:** Silicification was identified in 66 occurrences, representing approximately 5% (46.71 m) of the recovered core. This alteration was characterized by a light to medium grey discoloration of the drill core, increase in rock strength, and reduced clarity to the rock texture (Figure 9D). Silicification occurs sporadically between 359 m to 890 m. Individual occurrences range in length from 0.01 to 2.23 m and most of the silicified zones were described as slightly altered.
- **Carbonatization:** Carbonatization was identified in 15 occurrences, representing approximately 4% (37.52 m) of the recovered core. Carbonate alteration was occasionally associated with silicification in the lithological units. Figure 9E displays the contact between a tonalite and an amphibolite, the foliated, light grey, altered contact of the amphibolite displays pervasive carbonate alteration. Silicification and carbonatization were distinguished by the hardness of the minerals and by using hydrochloric acid to verify if the minerals effervesced. The altered drill core was primarily described as slightly to moderately altered with 1% described as highly altered.
- **Bleaching:** Bleaching was observed in 20 occurrences, ranging in length from 0.2 m to 3 m and representing approximately 3% (31.38 m) of the recovered core. Bleaching caused a whitening to the minerals in the drill core (Figure 9F). Bleaching was mainly observed between 745 m and 900 m depth.
- **Sericitization:** Sericitization was observed in 3 occurrences, ranging in length from 0.2 m to 3 m and representing 7.69 m (less than 1%) of the recovered core. Sericite alteration was mainly concentrated from 900.14-909.14 m. This alteration was characterized by white alteration patches and the presence of white mica on the drill core (Figure 9G).
- **Albitization:** Albitization was observed in 4 occurrences representing 1.94 m (less than 1%) ranging in length from 0.09 m to 1.48 m and were all described as being slightly altered. Albite was observed to partially to completely replace plagioclase feldspar (Figure 9H).



**Figure 9: A) Potassic alteration, B) Chloritization, C) Hematization, D) Silicification,  
 E) Carbonatization, F) Bleaching, G) Sericitization, H) Albition**

### 4.3 Geotechnical Logging

Geotechnical parameters were assessed to provide an overall rock quality and rock strength.

Total core recovery (TCR), solid core recovery (SCR), and rock quality designation (RQD) were determined for the entire interval, whereas discontinuity properties were recorded for each individual discontinuity observed. Fracture frequency was determined by assessing the count of broken features per run (i.e., not intact or partially intact features). Rock strength data was recorded opportunistically, typically when sampling (non-sensitive samples) or when fitting the core into the core boxes, to preserve the integrity of the core as much as possible.

### 4.3.1 TCR, SCR, RQD

As defined in the WP03 Test Plan - SCB1912026-PLN-007 I04\_WP03 Core Logging, Photography and Sampling (Wood, 2019b), TCR records the total amount of core recovered over the measured length drilled for each core run. The length of any lost core zones, broken or gouge filled material was estimated/back calculated as fine particles would have been washed away during drilling. These estimates were included in the total core recovery length. The majority of the runs (97%) had a TCR above 95% and the lowest recorded TCR was 72% in CR089 (221m).

SCR involved recording the cumulative length of all core pieces, regardless of individual length, that were recovered at full axial diameter (full circumference). More than 75% of the core runs recorded measured a SCR of 90% or more. Areas with poor SCR were often associated with shear zones or areas of difficult drilling.

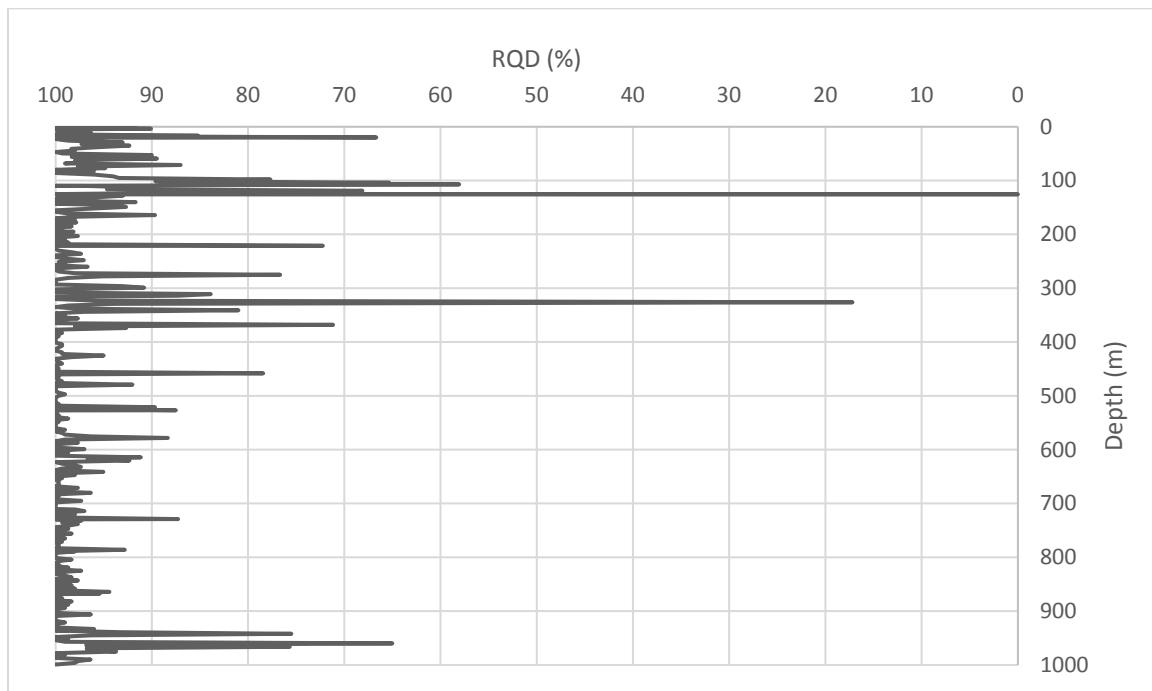
RQD values determined after Deere (1989), record the total cumulative length of intact core recovered in lengths greater than 10 cm from discontinuity to discontinuity over the run length. Total cumulative lengths were measured from midpoint to midpoint of natural broken discontinuities, along the center line axis of the core.

The results for IG\_BH04 indicate that the overall rock quality is excellent, averaging 98% RQD, and ranging between 0% and 100%, along the length of the borehole. The minimum RQD value recorded is approximately 60%, with the exception of two core runs showing values less than 20%: 125 m (0%) and 325 m (17%). These lower values were associated with shear zones or broken core zones.

The RQD statistics for the four main rock types are summarized in Table 2 and the overall RQD per core run is shown in Figure 10.

**Table 2: Statistics for Rock Quality Designation (RQD) for IG\_BH04 by Main Rock Types**

Rock Type	# Runs (3m)	Min (%)	Average (%)	Max (%)	Std Deviation (%)
Tonalite	307	0	97	100	9
Biotite-rich Tonalite	50	65	97	100	7
Amphibolite	2	92	95	97	2
Feldspar-phyric Felsic	1	99	99	99	0



**Figure 10: Rock Quality Designation per Core Run (3 m intervals) by Depth**

#### 4.3.2 Fracture Frequency (Broken Features)

A fracture count captured the number of naturally occurring non-cohesive (completely broken) discontinuities over the length of the core run and includes broken core and lost core zones. The fracture count excluded mechanical breaks, intact or partially intact fractures. When broken or lost core zones were encountered, the maximum number of fractures applied was 1 fracture per 1 cm of broken or lost core.

AcQuire calculated Fracture Spacing (fracs/m) based on the recorded Fracture Count. A QA step was included in the acQuire database to confirm that the total number of broken structures logged in the Structure Tab was consistent with the count of fractures made in the Core Run tab. This step ensured more consistency in the data collection process.

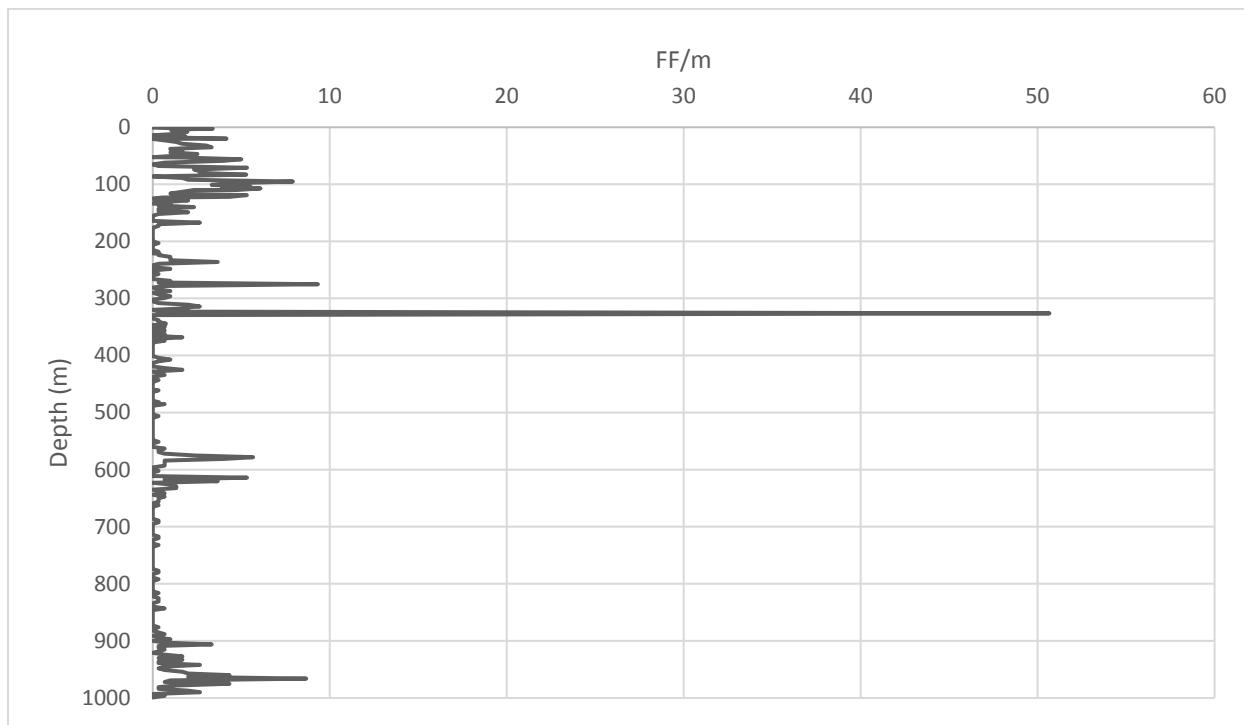
The fracture frequency is generally very low with an average of 0.88 fracture / m. The first 100 m of the borehole tends to have slightly higher fracture frequency; isolated areas (typically shear zones) have the highest fracture frequencies throughout the borehole.

The fracture frequency statistics per the main rock types are summarized in

Table 3 and the fracture frequency is shown per depth in Figure 11.

**Table 3: Statistics for fracture frequency (fractures/m) for IG\_BH04 by Main Rock Types**

Rock Type	# Runs (3m)	Min	Avg (fracture/m)	Max	Standard Deviation
Tonalite	307	0.00	0.86	50.67	3.16
Biotite-rich Tonalite	50	0.00	1.01	8.67	1.53
Amphibolite	2	0.67	2.17	3.67	1.50
Feldspar-phyric Felsic	1	0.00	0.00	0.00	N/A



**Figure 11: Fracture Frequency per Meter by Depth**

#### 4.3.3 Rock Field Strength

Rock field strength data was logged into acQuire using the Field Hardness Estimation tests as defined by the International Society of Rock Mechanics or ISRM Standards (1981). Rock strength data was recorded on a per run basis, using a series of simple tests (knife peeling, knife cutting, hammer pick, and hammer blow) to determine the rock mass classification. As indicated earlier, to reduce the number of mechanical breaks, the core logger assessed the rock strength when sampling the core, or when fitting the core into the core boxes. For greater accuracy, rock field strength tests should be compared and when possible correlated to available Uniaxial Compressive Strength (UCS) results found in WP04B Data Report – SCB1912026-REP-TBD I04\_ IG-BH04 Core Geomechanical Testing (Wood, 2021b).

## 4.4 Structural Data

A total of 4255 structures were logged during the data collection of IG\_BH04. Table 4 provides a breakdown of the recorded structural data. The list below includes the field information recorded, where applicable, for each identified structure. Rock Core Logging Procedures are outlined in WP03 Test Plan - SCB1912026-PLN-007 I04\_WP03 Core Logging, Photography and Sampling (Wood, 2019b) and a comprehensive reproduction of the collected dataset is included in Appendix A.

The following Structure data was recorded (as applicable) in the Structure tab within the acQuire database:

- Structure Depth (m);
- Structure Type, Sub-type, Width, Depth and Intensity;
- Broken/Intact/Partially Intact Structure;
- Defining Mineral(s) present in the matrix;
- Joint Infill Hardness (Arbitrary Hardness Ratings: 1 = Hard, 2 = Soft);
- Joint / Discontinuity Wall Weathering (Scale W0 to W6);
- Shape and Roughness (see description provided below for Jr);
- Infill Character, Type and Thickness / Aperture (See description provided below for Ja);
- Planar Structure Orientation (Alpha and Beta Angles); and
- Linear Structure Orientation (Gamma and Delta Angles).

**Table 4: Summary of Structure type, by number of occurrences, observed in IG\_BH04**

Structure Type	# Occurrences Logged in IG_BH04
Joint (JN)	2300
Mechanical Break (MB)	1711
Vein (VN)	154
Brittle-Ductile Shear Zone (SHR)	20
Broken Core Zone (BCZ)	15
Foliation (FO)	10
Fault (FLT)	8
Ductile Shear Zone (SHRD)	10
Lost Core Zone (LCZ)	2
Igneous Primary Structure (IPS)	25
Total	4255

Characteristics of individual structural feature types (e.g., foliation, fault, vein, joint, etc.), including their widths (where applicable), angles to the core axis (Alpha) and angles of the maximum dip vector to the reference line (Beta), measured clockwise, on a downhole structure, was entered in the acQuire Structure tab (see Figure 4**Error! Reference source not found.**).

#### 4.4.1 Orientation Data from Core Logging

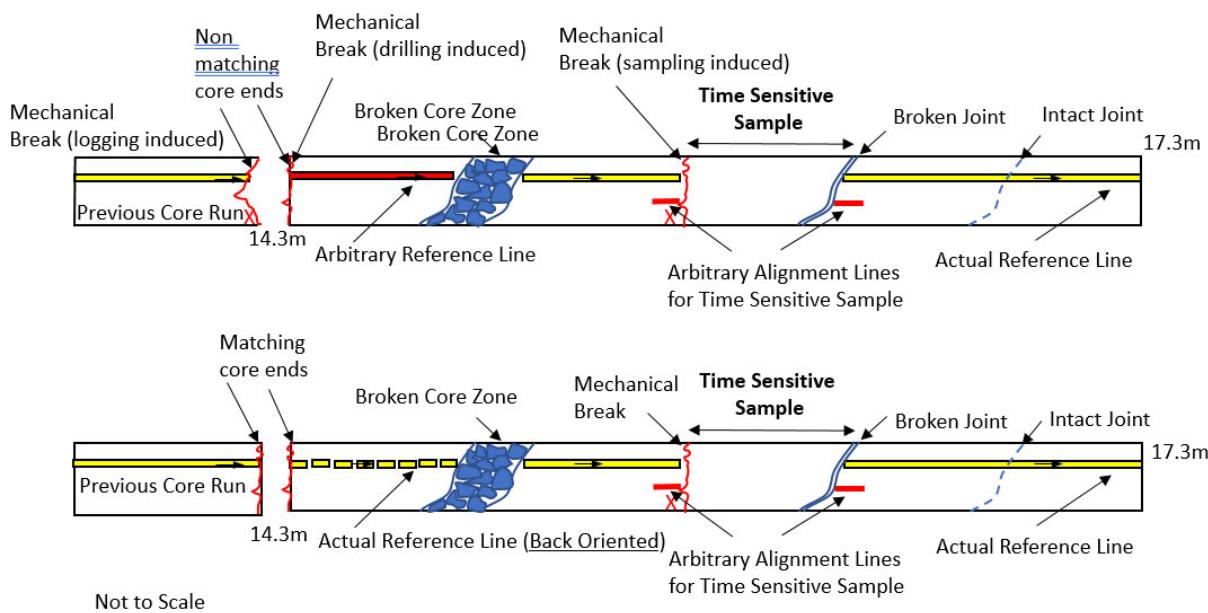
The recovered drill core was oriented during the coring process using the Reflex ACT III System (see section 3.0).

Three (3) types of core orientation were recorded over the course of the drilling programme depending on the circumstances. Figure 12 illustrates the differences between each of the reference lines marked on the core: Arbitrary line (red) or Actual line from the current core run (full yellow) or carried forward from the former core run (Back Oriented core, dashed yellow).

The most common orientation line used was the actual line from the current core run (77%), followed by the back oriented (14%). Together, they represent more than 91% of the core run logged (HQ3 core only) according to the Reference tab (see acQuire or WP03 final data delivery). For the few occasions (less than 9% of the length drilled), when the core orientation was lost due to ACT III tool failures or drilling blockages (i.e., presence of faults / shear zones, and broken/lost core zones), an arbitrary line was used to recover the orientation (alpha, beta angles) of the features logged (joints, veins etc.).

The convention of 180° was used for successful orientation of the core using the ACT III (i.e., marking the lowest point on the core). This angle represents the position of the reference line (drawn on the back of the core) with respect to the top of the core. By contrast, a convention of 0° indicated that no actual orientation was available for the entire run and an arbitrary line had to be used.

Core orientation error was assessed, where possible, by matching the last piece of oriented core from the previous run to the first oriented piece of core from the subsequent core run. The difference between the respective reference lines were measured in degrees using the same measurement system used to measure the beta angle. The Core Orientation Error field was populated in the acQuire database for every full or partial run to provide an appreciation of the level of confidence of the structural data collected for further data integration.



**Figure 12: Reference Lines: Arbitrary (red), Actual (yellow) and Back Oriented (dashed yellow)**

To facilitate logging, the core was placed in a V-shaped tray. The core pieces were rotated to best fit together and the reference line was marked along the entire length of the core run. When core from the core run could not be confidently fit together, the core was preferentially back oriented or was not oriented. In the latter case, an arbitrary line was drawn on the core.

The orientation of the features logged ( $0^\circ < \alpha < 90^\circ$  and  $0 < \beta < 359^\circ$ ) were assessed in the borehole referential. At the next stage, they will be converted into true dip / dip direction for comparison with OTV/ATV data to obtain the final structure log. The results of this analysis (data reconciliation / integration) will be performed following completion of WP05 scope of work (geophysics downhole surveys over the full length of IG\_BH-04) described in WP05 Test Plan – SCB1912026-PLN-013 I04 – Geophysical borehole logging for IG-BH04 and presented under WP10 data report (Single Borehole Data Integration to be completed by NWMO).

Therefore, the structure log presented in Appendix A of this report, consists of the final QAQC oriented core data log as collected / recorded in acQuire, reviewed post drilling (see Master Compilation QAQC Table) and delivered under WP03. The following subsections describe in more detail the observations pertaining to the main categories of structure logged: mechanical breaks, intact and partially intact features, broken features, and other relevant structures encountered.

#### 4.4.2 Mechanical Breaks

Mechanical breaks occurred during drilling process, while retrieving the core barrel, while pumping the core out of the core barrel, or during handling of the core by the core logger. Mechanical breaks characteristically display a clean, fresh, irregular surface that is usually at a high angle or perpendicular to

the core axis. The core logger used their best judgement while logging mechanical breaks; when in doubt, the logger adopted a conservative approach and logged the break as a natural feature. A total of 1711 mechanical breaks-single breaks (MB-SB) were identified (Table 2). Mechanical breaks could be reclassified as clean joints or broken core zones, where appropriate, in the final structure log for IG-BH04. This reclassification would be based on interpretation of the optical and acoustic televiewer logs.

#### **4.4.3 Intact and Partially Intact Features**

Intact or partially intact features were generally characterized by the infilling of a joint by a secondary mineral phase or by localized alteration. Where a feature was identified as being intact or partially intact, there is more uncertainty associated with identifying the occurrence and the type of mineral phase(s) that may be present, as the observation is limited to the portion of the structure surface that is exposed. The most common mineral phases identified as a stain, slight alteration, coat or infill on the surface logged joints, veins and faults included 694 (22.9%) occurrences of chlorite, 693 (22.9%) occurrences of quartz, 453 (15.0%) occurrences of calcite, 417 (13.8%) occurrences of epidote, 361 (11.9%) occurrences of alkali feldspar, and 257 (8.5%) occurrences of iron oxide. Other mineral phases were logged but each was less than 2% of occurrences throughout the borehole.

#### **4.4.4 Broken Features**

Broken structures, in the context of geotechnical characterization, refer to all-natural fractures that break the core into separate pieces. They are non-cohesive. The shape and roughness of each natural discontinuity was described and recorded in the acQuire database.

##### **4.4.4.1 Joint Roughness, Joint Alteration and Joint Condition Rating (Jr, Ja, JCR)**

The joint roughness (Jr) and joint alteration (Ja) numbers were qualitatively assessed for naturally broken structures according to Barton's classification system (1974) and further field tests (Milne et. al., 1992; Nickson et. al., 2001) to refine assigned ratings. These two parameters were used to statistically assess the strength of discontinuities as summarized in Table 5.

**Table 5: Summary of Joint Properties sorted by main rock types and fault/shear zones.**

Rock Type	# of Features	Ja				Jr				JRC			
		Min	Avg	Max	Std Dev	Min	Avg	Max	Std Dev	Min	Avg	Max	Std Dev
Tonalite	3268	0.8	1.0	4.0	0.4	1.0	3.5	4.0	1.0	10.0	27.3	30.0	4.8
Biotite-rich Tonalite	881	0.8	1.0	3.0	0.2	1.0	3.6	4.0	1.0	11.0	28.0	30.0	4.6
Amphibolite	43	1.0	1.0	1.0	0.0	1.3	3.1	4.0	1.1	16.0	25.2	30.0	5.8
Feldspar-phyric Felsic	19	N/A	N/A	N/A	N/A	4	4	4	0	30	30	30	0
Shear/Ductile Shear/Fault	30	1.5	3.9	10.0	3.0	1.0	2.8	4.0	2.4	9.0	22.2	30.0	12.9

For both Jr and Ja, tonalite and Biotite-rich tonalite have very similar values with average Jr around 3.5 and average Ja around 1.0. This corresponds to rough and irregular, undulating surfaces and hard unaltered joint walls with some surface staining. Faults and shear zones have slightly more degraded conditions as expected with average Jr ranging from 1 to 4 and Ja ranging from 1.5 to 10. For shear and fault zones, this combination corresponds to discontinuous joints and softening mineral coatings (clay, chlorite, etc.) due to possible movement along the plane. See Appendix B for the occurrences (depths) of shear and fault zones.

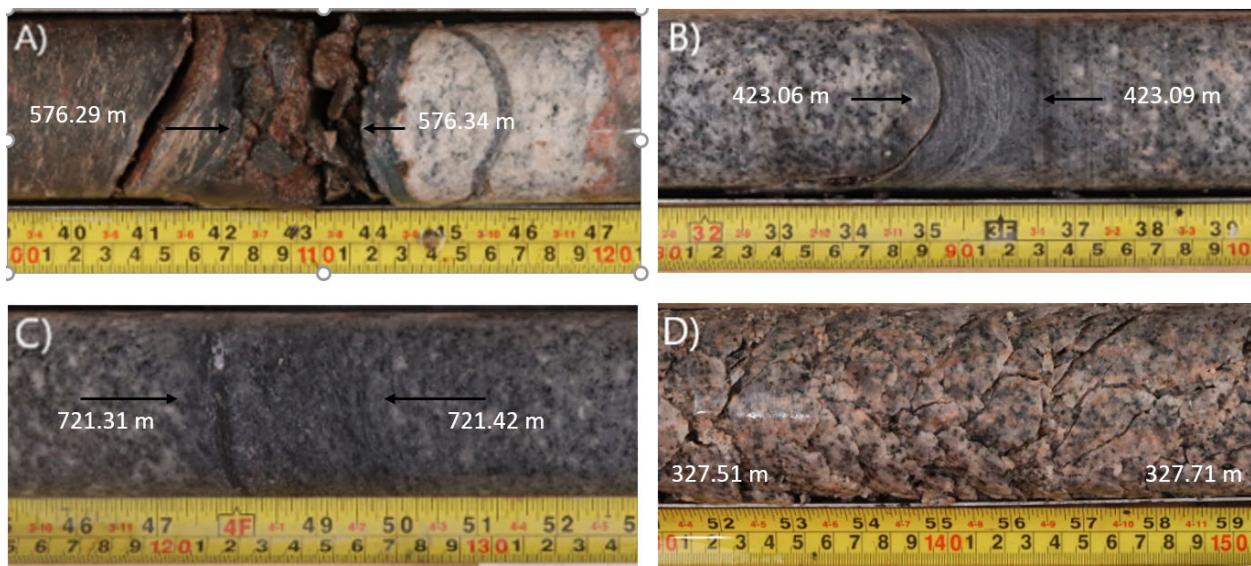
#### 4.4.5 Other Relevant Structures Encountered

##### 4.4.5.1 Fault and Shear Zones

A fault (FLT) is a fracture or a zone of fractures that occur as a result of brittle deformation and within which there is relative displacement (> 5cm) parallel to the fracture surfaces. A shear zone (SHR) is a planar zone of strong deformation surrounded by rocks with a lower state of finite strain. Both shear zones and fault zones are features that are interpreted to have formed due to deformation in the rock. There are 38 occurrences of fault or shear zones (8 faults, 30 shear zones) logged in IG\_BH04. These zones were identified by the decrease in rock quality as well as the pervasive jointing along a particular plane. Faults were identified by visible movement or discontinuity along the shear plane as well as the presence of gouge and slickenlines. Examples encountered in IG\_BH04 are illustrated in

Figure 13:

- A) Is a faulted (FLT) contact between a mafic dyke and a tonalite. The mafic dyke is brittle, contains fault gouge, broken rock fragments and has been altered by chlorite, clay, and calcite.
- B) Is a brittle ductile shear zone (SHR), defined by a network of hairline fractures infilled with quartz and calcite minerals. The deformed zone exhibits brittle and ductile characteristics.
- C) Is a ductile shear zone (SHRD) displaying only ductile characteristics, the shear is defined by biotite and quartz crystals which have been elongated defining the shear.
- D) Is a major fault encountered between 327.24 m and 328.95 m, with intense broken core zones but minimal gouge.



**Figure 13: A) Fault with fault gouge from 576.29-576.34 m, B) Shear (SHR) zone from 423.06-423.09 m, C) Ductile shear zone (SHRD) from 721.34-721.42 m D) Portion of fault zone from 327.51-327.71 m**

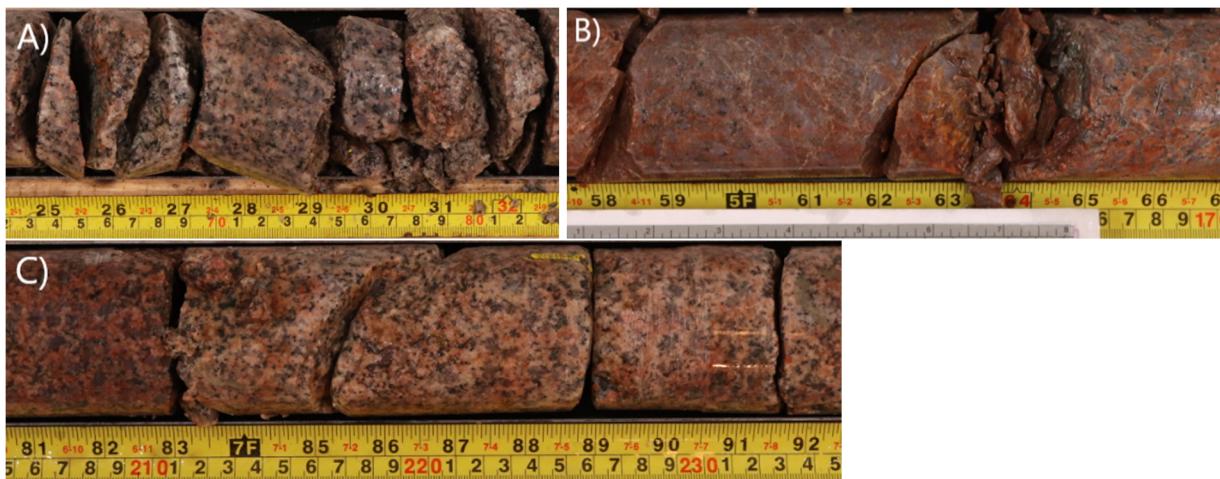
Note that the faults as shown in

Figure 13A) and D), showing evidence of either thick clay gouge or heavily broken core zones, are critical in core logging for future geomechanical design (i.e., stability of underground openings).

#### 4.4.5.2 Broken Core Zones

A broken core zone (BCZ) is a naturally occurring feature characterized by core pieces that do not form full circumferential segments (e.g., not disks or cylinders). Broken core generally consists of angular to sub-angular fragments. Broken core shows intact rock strength equal to or lower than the surrounding core, depending on weathering and alteration levels. One fracture per BCZ was added to the natural fracture count. Figure 14 shows various examples encountered in this hole:

- A) Is a broken core zone observed in a very weakly altered tonalite, the fragments are blocky and there is relatively very little infill material.
- B) Is a broken core zone observed in a highly altered tonalite, broken rock fragments, hematite and quartz are infilling the broken core zone. The broken tonalite fragments have had a quartz fluid partially to fully heal the fractures in the core.
- C) Is an exception, where numerous mechanical breaks forming a broken core zone, where encountered (Wood, 2019b). The example shown has at mid-point at 99.61 m.



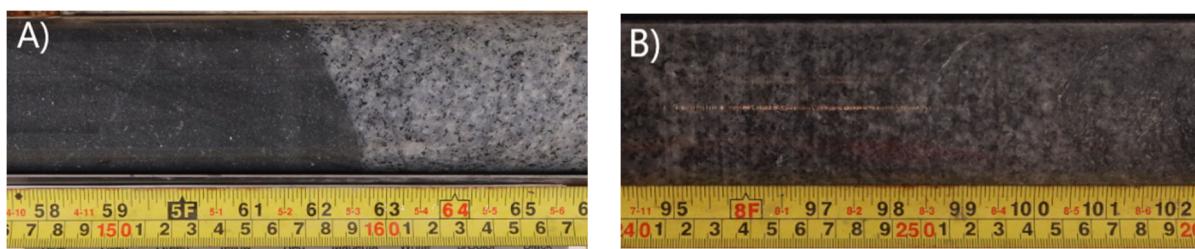
**Figure 14: A) Natural Broken core zone from 95.81-96.00 m in a slightly altered tonalite. B) Natural Broken core zone from 277.26-277.40 m in a highly altered tonalite. C) MB-BCZ at 99.61 m (15 cm long)**

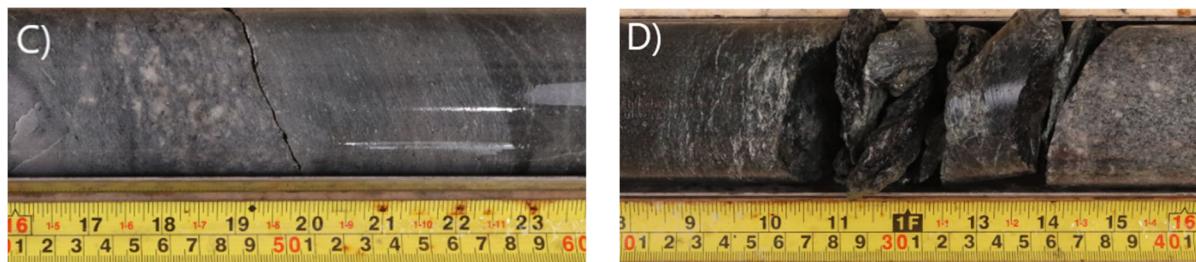
#### 4.4.5.3 Contacts

Top and bottom contacts were logged for each lithological unit described in Section 4.1. In total, 59 contacts (CO) were logged. Table 1, including a summary of their distribution per type (Broken, Intact, Partially intact) and lithology. Most of the contact observed were intact (80%), followed by broken (19%) and partially broken (1%). All upper contacts were intact for the Feldspar-phyric Felsic, Mafic, Quartz Monzonite, and Aplite units, while this proportion dropped to 91% for the tonalite, 67% for the Quartzolite and 56% for both the amphibolite and Feldspar-phyric Tonalite.

Figure 1Figure 15 below displays the 4 sub-types of contacts found in IB\_BH04 for intact and broken core:

- A) Is a sharp contact at 65° to the core axis displayed between a Feldspar-phyric Felsic and a Tonalite.
- B) Is a gradational contact observed between a biotite-rich tonalite and a tonalite.
- C) Is a sheared contact between a tonalite and amphibolite. The sheared contact is displayed at the upper contact of the amphibolite and is defined by calcite and chlorite minerals.
- D) Is a faulted contact between an amphibolite and a Feldspar-pyric tonalite. The amphibolite is weaker and the deformation is observed to be concentrated in this more malleable unit as the Feldspar-phyric tonalite is harder with a higher strength index.

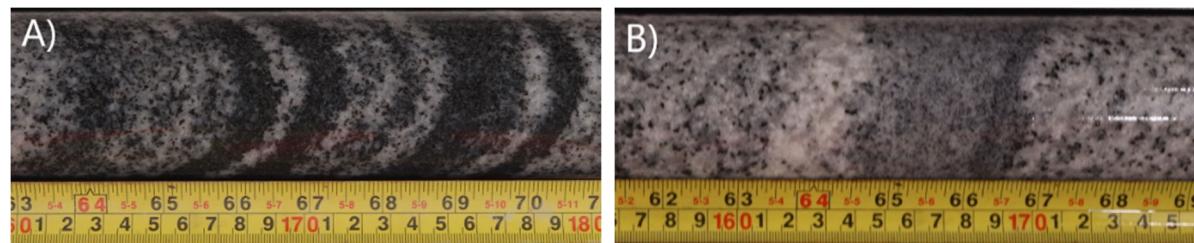




**Figure 15: Contacts A) Intact Sharp at 434.78 m. B) Intact Gradational at 839.64 m. C) Broken Sheared at 434.78 m. D) Broken Faulted at 906.51 m**

#### 4.4.5.4 Primary Igneous Structures

An igneous primary structure (IPS) is a structure found in an igneous rock that originated with the formation of the rock before its final consolidation. This structure varies with the nature of the magma and cooling temperatures involved. In IG\_BH04, 25 occurrences were identified and were characterized by a sharp to gradational change in the concentration of the mineral components or a change in grain size. There are two sub-types: Igneous layering (IL) and Igneous Flow Foliation (IFF). The biotite grains are concentrated in bands (Figure 16 A) when displaying igneous layering sub-type or showing a gradational change in grain size (Figure 16 B) when displaying Igneous Flow Foliation sub-type. In the figure below (Figure 16 B), the size and content of biotite grains increases downhole.



**Figure 16: A) IPS IL at 817.67 m. B) IPS IFF at 805.78 m**

### 4.5 Core Photography Library

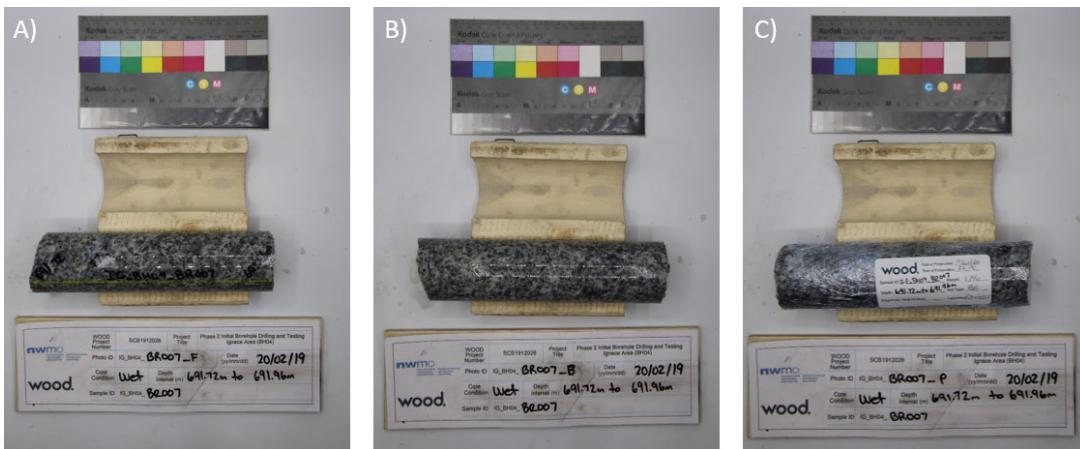
As explained in Section 3.5, four different types of core photography were completed during the drilling of IG\_BH04. They are as follows: 2x180° split tube, 2x180° core sample, detailed structure feature, and 1x180° boxed core photos. All core photographs taken in IG\_BH04 have been provided to NWMO as part of WP03 final data delivery. A listing is also available through the data delivery check list. Typical examples of the main category of core photographs taken on this project are shown below.

AFigure 1 stitched image of a split tube core photograph (back of core run 154) is shown on Figure 17.



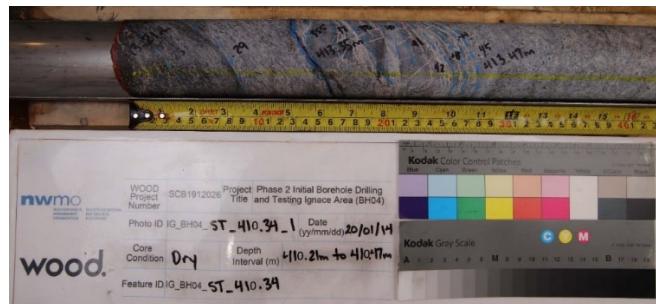
**Figure 17: Split tube photograph of CR154\_B (407.21-410.21m)**

An example of a non-time sensitive core sample (IG\_BH04\_BR007) photographs are shown in Figure 18.



**Figure 18: Sample photographs of IG\_BH04\_BR007. [A] Front, B) Back, and C) Packaged sample**

Figure 19 shows an example of a detailed structure feature photograph in an area of interest at 410.34 m deep where a ductile sheared zone containing calcite, quartz, and minor hematite infill was encountered. The structure has an angle to the core axis (alpha) of 50° and a beta angle of 40°.



**Figure 19: Detailed Structure Feature Photograph of SHRD from 410.21-410.47 m**

Core box photographs incorporating four consecutive full boxes of logged core are shown in Figure 20. The white PVC tubes represent samples that were removed from the core run for further laboratory testing.



**Figure 20: Boxed core photography of core boxes 209-212 (526.55-538.24 m). A) Dry and B) Wet**

## 4.6 Core Samples Log

Core samples were taken at specific locations for specific purposes during the drilling of IG\_BH04 according to the sampling plan instructed by NWMO and documented in WP03 Test Plan - SCB1912026-PLN-007 I04\_WP03 Core Logging, Photography and Sampling (Wood, 2019b).

In total, 212 core samples were collected. Table 6 summarizes the number of samples collected per test category.

**Table 6: Core Samples Time-Sensitive vs Non Time-Sensitive**

Time-Sensitive	Number of Samples	Non-Time Sensitive	Number of Samples	
Archive Samples (AR)	30	Brazilian (BR)	8	
Effective Diffusion Coefficients (ED)	10	Microbiology (MB)	6	
Petrophysics Suite (PS)	11	Mineralogical & Geochemical Analysis (MG)	30	
Porewater Extraction (PW)	93	Thermal Samples (TH)	10	
Specific Surface Area (SA)	1	Triaxial Samples (TS)	3	
Sorption (SO)	2	UC	8	
<b>Total</b>	<b>147</b>		<b>Total</b>	<b>65</b>

A full core sample log, also used as an overall Chain of Custody, can be consulted in Appendix B. It provides sample details such as: samples depth, weight, type of testing, date, time as well as sample destinations. Figure 21 shows an example of a fully packaged time sensitive sample.



**Figure 21: Example of Fully Packaged Time Sensitive Sample**

Note that the count of samples in the log (218) include a description for 6 extra samples, 4 sampled post drilling by NWMO and 2, not sampled as planned.

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Wood (2019d). WP04C Test Plan – WP04C Porewater Testing of Core for IG-BH04 (Wood Reference Number: SCB1912026-PLN-009 I04).

Wood (2019e). WP04D Test Plan –Mineralogical and Geochemical Analysis of Core for IG-BH04 (Wood Reference Number: SCB1912026-PLN-010 I04).

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Wood (2019g). WP04F Test Plan –Measurement of Surface Area and Cation Exchange Capacity for IG-BH04 (Wood Reference Number: SCB1912026-PLN-012 I04).

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Wood (2021b). WP04B Data Report –IG-BH04 Core Geomechanical Testing (Wood Reference Number: SCB1912026-REP-TBD I04).



## Appendix A

### **IG\_BH04 Core Log – Gint**

## Lithological and Geotechnical Rock Description Terminology

Full rock core logging details can be found in the WP3 Test Plan Appendix B.

### Core Logging Parameters: Abbreviations and Definitions

- TCR Total Core Recovery:  
The total length of core recovered over the measured length drilled for each core run.
- SCR Solid Core Recovery:  
The length of solid cylindrical core recovered in a run. Cylindrical core is defined as core that does not contain any broken fractures.
- RQD Rock Quality Designation:  
The total cumulative length of core recovered in pieces greater than 10cm measured along the center line axis of the core from the mid-point of one natural fracture to the next.
- Jr Joint Roughness:  
Number determination after Barton (1974); Hutchinson and Diederichs (1996)
- Ja Joint Alteration:  
Number determination after (Milne *et al.*, 1992; Nickson *et al.*, 2001).
- JCR Joint Condition Rating:  
Conditions of discontinuity after Bienwasky (1989).

Note: Fracture index per m refers to natural broken fractures logged by core run and does not include intact fractures.

### Legend

#### Lithology

-  Amphibolite
-  Aplite
-  Bt-rich Tonalite
-  Fsp-phyric Felsic
-  Fsp-phyric Tonalite
-  Mafic
-  Quartz Monzonite
-  Quartzolite
-  Tonalite

### Feature Type

FO	Foliation
CL	Cleavage
SCH	Schistosity
GNG	Gneissosity
IPS	Igneous Primary Structure
MYL	Mylonite Zone
SHRD	Shear Zone Ductile
SHR	Shear Zone Brittle-Ductile
FAX	Fold Axial Plane
LIN	Lineation
VN	Vein
JN	Joint
FLT	Fault
BCZ	Broken Core Zone
IFZ	Intact Fracture Zone
LCZ	Lost Core Zone
MB	Mechanical Break

### Infill type

CL	Clean
ST	Staining
SA	Slightly Altered
CT	Continuous Coating
IN	Continuous Infill

### Infill Minerals

Afs	Alkali-Feldspar
Am	Amphibole
And	Andalusite
Ap	Apatite
Bc	Breccia
Br	Broken Rock
Bt	Biotite
Ca	Calcite
Chl	Chlorite
Cl	Clay
Crd	Cordierite
Crd-P	Cordeirite (Pinite)
Ep	Epidote
Fe	Iron Oxide
Go Sw	Clay Gouge (Swelling)
Go So	Clay Gouge (Soft)
Go St	Clay Gouge (Stiff)
Gr	Graphite
Grt	Garnet
Hbl	Hornblende
Ky	Kyanite
Mag	Magnetite
Ms	Muscovite
Ol	Olivine
Oz	Quartz
Phl	Phlogopite
Pl	Plagioclase
Px	Pyroxene
Sil	Silimanite
Talc	Talc
Tur	Tourmaline

### Feature Status

BK	Broken
IN	Intact
PIN	Partially Intact

### Shape

CU	Curved
IR	Irregular
PL	Planar
ST	Stepped
UN	Undulated

### Roughness

GO	Gouge filled >5mm
K	Slickensided
SM	Smooth
SR	Slightly Rough
RO	Rough
VR	Very Rough

## Alteration Rating

- A1 Unaltered
- A2 Slightly Altered
- A3 Moderately Altered
- A4 Highly Altered
- A5 Completely Altered

## Weathering Rating

- W1 Fresh
- W2 Slightly Weathered
- W3 Moderately Weathered
- W4 Highly Weathered
- W5 Completely Weathered
- W6 Residual Soil

## Strength Rating

- R0 Extremely Weak Rock
- R1 Very Weak Rock
- R2 Weak Rock
- R3 Medium Strong Rock
- R4 Strong Rock
- R5 Very Strong Rock
- R6 Extremely Strong Rock

## Sample Types

- AR Archive Samples
- BR Brazilian
- ED Effective Diffusion Coefficients
- MB Microbiology
- MG Mineralogical & Geochemical Analysis
- PS Petrophysics Suite
- PW Porewater Extraction
- SA Specific Surface Area
- SO Sorption
- TH Thermal Samples
- TS Triaxial Samples
- UC Uniaxial Compression

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5.0 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES							
												Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
1	Core not logged			19/11/19 PQ																					Core not logged from 0-0.67m (PQ).		
2	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3		19/11/19 HQ3	444.09 0.67	CR000							0.67	MB												Core run unoriented	
2	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A3		19/11/19 HQ3	444.97 1.61	CR001							1 1.005	MB												Core run unoriented	
3	Tonalite Massive, Igneous, Equigranular,			20/11/19 HQ3	446.00 2.70	CR002							1.36 1.365 1.6 1.61 1.77 1.96 2.22 2.35 2.52 2.6 2.62 2.76 2.765 2.83	MB													
4	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A3		20/11/19 HQ3	447.11 3.88	CR003							3.415 3.42 3.46 3.71	MB	BR	52	0	UN	SR	ST	Fe	0	3	3	1	22	
5		A4				CR004							3.97	JN	BR	25	33	UN	RO	CT	Fe	0.8	0.2	2.5	1.5	20	
5		A1				CR005							4.25 4.34	JN	IN	15	22	UN		SA	Fe	0.8	0	4		30	
6													4.97 5.06 5.12	JN	IN	30	180	UN	SA	Fe	0.2	0	4			30	
6													5.45 5.5 5.56 5.6 5.69 5.97	JN	BR	51	260	UN	RO	ST	Fe	0.1	2	2.5	1	20	
7													6.24	MB													
7													6.99	MB													
8	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A3		20/11/19 HQ3	451.04 8.07	CR006							7.72 7.73	MB	BR	68	174	UN	RO	CL		0	5	2.5	0.7522		
9													9 9.14 9.21	JN	BR	86	352	UN	RO	CL		0	3	2.5	0.7519		
9													9.49	JN	BR	64	205	UN	RO	ST	Cl	0.5	5	2.5	3	15	
9													9.81	JN	BR	66	174	UN	VR	SA	Cl	0.012	3	1	16		

SHEET 1 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES				
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	ICOND		
12	20/11/19	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A2		453.94 11.15	CR005								10.06	JN	BR	80	332	UN	VR	CL	0	3	3	0.75	20	
14	20/11/19	Tonalite Massive, Igneous, Equigranular,	A1		456.76 14.15	CR006								10.93	MB												
16	23/11/19	Tonalite Massive, Igneous, Equigranular,	A1		458.17 15.65	CR007								11.04	MB												
18	24/11/19	Tonalite Massive, Igneous, Equigranular,	A1		459.28 16.84	CR008								11.15	MB												
		Tonalite Massive, Igneous, Equigranular,	A1		459.79 17.38	CR009								11.94	JN	PIN	65	0				0	4		30		
			A1			CR010								11.96	MB								0	4		30	
														12.1	JN	IN	35	0				0	4		30		
														12.15	JN	IN	42	0				0	4		30		
														13.08	JN	BR	74	95	UN	VR	ST	Cl	0.1	5	3	1	16
														13.16	JN	BR	58	110	PL	SR	ST	Fe	0	3	1	2.50	17
														13.22	JN	BR	66	220	IR	RO	ST	Fe	0	5	3.5	0.75	19
														13.24	MB	BR	60	180	IR	RO	ST	Fe	0	5	3.5	0.75	19
														13.26	JN	IN	40	0				Cal	0.5	0	4	0.75	30
														13.29	MB	IN	33	5	CU	VR	SA	Afs	0.5	0	4	0.75	30
														13.41	JN	IN	33	5	SA	Chl	0.1		0	4		19	
														13.45	MB	BR	30	0					0	3		30	
														13.46	JN	IN	30	0					0	4		30	
														13.48	JN	IN	20	0					0	4		30	
														13.51	JN	IN	30	0					0	4		30	
														13.74	MB	IN	30	0					0	4		30	
														13.79	JN												
														13.85	JN												
														14.15	MB												
														14.88	JN	IN	20	0					0	4		30	
														15.08	JN	PIN	0	0	UN	RO	SA	Cal	0.02	1	4	1	30
														15.1	JN	BR	68	202					2.5	1		20	
														15.48	MB												
														15.65	MB												
														15.94	JN	IN	20	0					0	4		30	
														16.07	JN	IN	20	0					0	4		30	
														16.23	MB	BR	45	0	PL	SR	SA	Cal	0	2	1.25	0.75	17
														16.24	JN	BR	55	140	PL	SR	SA	Cal	0	2	1.25	0.75	22
														16.32	JN	BR	50	180	PL	RO	SA	Cal	0	1	1.5	0.75	
														16.84	MB												
														17.16	JN	BR	12	350	PL	SR	SA	Fe	0	1	1.25	0.75	18
														17.28	MB												
														17.35	MB												
														17.36	J	MB											
														18.2	MB												
														19.67	MB												

SHEET 2 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

SHEET 3 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA										NOTES												
							TOTAL CORE %	SOLID CORE %	RECOVERY	R.Q.D.	5	10	15	20	ROCK STRENGTH INDEX	WEATHERING INDEX	Depth (m)	Type	Broken/Inact	Beta angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Thickness (mm)	Aperature (mm)	Jr	Ja	JCOND
32	25/11/19 HQ3	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A2	473.67	32.15	CR015	20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	29.96	JN											
34			A2	476.49	35.15	CR016	20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	30.44	MB BR	CU VR CL	0	1	3	0.75	17					
36			A2	479.31	38.15	CR017	20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	30.67	JN BR 74	173 UN VR CL	0	1	3	0.75	23					
38			A1			CR018	20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	30.76	JN BR 73	298 PL RO ST Fe	0.1	0.5	1.5	1	20					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	31.2	JN BR 77	170 UN VR CL	0	1	3	0.75	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	31.48	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	31.97	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	32.15	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	32.16	MB BR	63 65 UN VR SA Chl	0.1	1.5	3	1	16					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	32.25	JN BR 76	230 PL VR CL	0	0.5	1.75	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	32.39	JN BR 76	PL VR CL	0	0.5	1.75	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	32.46	MB BR	PL VR CL	0	0.5	1.75	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	33.2	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	33.32	JN BR 68	142 UN VR SA Chl	0	2	3	1	20					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	33.4	JN BR 15	278 UN VR SA Chl	0	1	3	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	33.56	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	34.22	MB BR	UN VR CL	0	1	3	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	34.58	JN BR 76	15 UN VR CL	0	1	3	1	25					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	34.91	MB BR	PL RO CL	0	0.5	1.5	0.75	22					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	35.15	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	35.4	JN BR 62	13 UN VR SA Cal	0.3	1	3	1	25					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	36.55	JN BR 63	108 UN VR CL	0	1	3	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	36.81	JN BR 69	2 UN VR CL	0	1	3	0.75	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	36.83	JN BR 68	238 UN VR SA Cal	0	2	3	0.75	20					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	36.89	JN BR 47	76 UN VR SA Cal	0.2	1	3	1.25	21					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	37.41	MB BR	CU VR CL	0	1	3	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	37.51	MB BR	44 187 CU RO CL	0	0.5	2.5	1	22					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	37.55	JN BR 68	32 PL VR SA Chl	0.2	2	3	1.75	16					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	37.63	JN BR 68	32 CU RO CL	0	0.5	2.5	1	22					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	37.9	MB BR	IR VR CL	0	0.2	4	1	23					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.15	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.25	JN IN 20	0 CT Fe	1	0	4	30						
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.52	JN PIN 10	170	0	4	30							
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.62	JN BR 38	0 PL SR ST Fe	0	2	1.25	1	15					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.68	JN BR 35	190 PL SR SA Fe	0	3	1.25	1	17					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.69	MB											
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	38.93	JN IN 89	0 IR RO CL	0	1	4	0.75	30					
							20 40 60 80	20 40 60 80	20 40 60 80	20	5	10	15	20	5	10	39.02	JN PIN 5	310 IR RO CL	0	4	4	0.75	30					

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
42	25/11/19 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	482.15 41.17		CR018																				
44	26/11/19 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	484.97 44.17		CR019																				
46						CR020																				
48		Tonalite Massive, Igneous, Equigranular, Hematization alteration	A2	487.79 47.17		CR021																				
					490.40																					

SHEET 5 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	ICOND			
52	27/11/19	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A2	49.95		CR022								49.99	JN	BR	75	2	CU	RO	IN	OT	0	3	2.5	1.5	19	
														50.01	MB	BR			IR	VR	CL		1	4	0.75	23		
		HQ3												51.26	JN	BR	71	118	UN	RO	ST	Fe	0.05	0.5	2.5	1.25	20	
54	28/11/19	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A3	493.05		CR023								52.3	JN	IN	35	0				CT	Fe	1	0	4	30	
														52.65	JN	BR	55	263	UN	RO	SA	Cal	0.1	1	2.5	1.25	20	
														52.77	MB													
														52.88	JN	IN	77	240										
														52.91	JN	IN	10	170	PL	SR	SA	Chl	0	1	4	1	30	
														52.94	JN													
														53.17	MB													
														53.4	JN	BR	64	130	PL	SR	CL		0	2	1.25	0.75	18	
														53.48	JN	BR	68	150	PL	SR	CL		0	3	1.25	0.75	18	
56	28/11/19	Tonalite Massive, Igneous, Equigranular, Hematization alteration	A2	493.42		CR024								53.95	MB	IN	10	0				CT	Fe	1	0	4	30	
														53.955	JN													
														54.45	MB	BR			IR	SR	CL		0	2	3	0.75	18	
														54.47	MB													
														54.81	JN	BR	25	0	PL	SR	SA	Cal	0	1	1.25	1.25	21	
														54.93	MB													
														55.16	JN	BR	71	0	PL	SR	SA	Cal	0	2	1.25	1	18	
														55.33	MB													
														55.71	MB													
														55.92	MB													
														56.06	MB													
														56.17	MB													
58	28/11/19	Tonalite Massive, Igneous, Equigranular,	A1	496.24		CR025								56.57	MB	BR			PL	RO	CL		0	0.5	1.5	1	22	
														56.79	JN	PIN	57	84	UN	RO	CL		0	1	4	1	30	
														56.92	JN	BR	84	57	PL	RO	CL		0	0.2	1.5	1	22	
														57.02	JN	IN	40	77		IN		Chi	0	0	4	1	30	
														57.1	MB	BR			UN	VR	CL		0	0.5	3	1	23	
														57.28	JN	BR	84	290	PL	VR	CL		0	0.5	1.75	1	23	
														57.43	JN	BR	88	44	PL	VR	CL	F <sub>e</sub>	0	0.3	1.75	1	23	
														57.47	JN	BR	86	300	PL	VR	ST		0.1	2	1.75	1	18	
														57.75	JN	PIN	53	84	UN	SR	CT	Ms	0.1	0.5	4	1.25	30	
														57.87	JN	BR	86	72	UN	RO	CL		0	0.5	2.5	1	22	
														57.9	MB	BR			UN	VR	CL		0	1	3	1	23	
														58.35	BCZBR								SA	Br	0			
														58.9	MB	JN	PIN	15	323	UN	VR	CT	Fe	0.5	0	4	1	30
														58.96	JN													
														59.17	r MB													
														59.67	JN	BR	75	152	UN	VR	CL		0	0.5	3	0.75	23	
														59.75	JN	IN	3	240	UN	SR	IN		0	0	4	1	25.30	
														59.81	JN	BR	87	320	CU	RO	CL		0	0.5	2.5	0.75	22	
														59.82	JN	BR	76	110	UN	RO	CL		0	0.5	2.5	0.75	22	

SHEET 6 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACURE INDEX PER 1 m	DISCONTINUITY DATA						NOTES								
											TOTAL CORE %	SOLID CORE %	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80								
											Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
62	28/11/19 HQ3	A2			501.92	CR026																			
63		Tonalite Massive, Igneous, Equigranular,	A1	62.21																					
64																									
65																									
66																									
67																									
68																									
62	28/11/19 HQ3	A1	Tonalite Massive, Igneous, Equigranular,	65.18	504.71	CR027																			
63																									
64																									
65																									
66																									
67																									
68																									
62	28/11/19 HQ3	A1	Tonalite Massive, Igneous, Equigranular,	68.17	507.52	CR028																			
63																									
64																									
65																									
66																									
67																									
68																									
62	28/11/19 HQ3	A1	Tonalite Massive, Igneous, Equigranular,	68.17	507.52	CR029																			
63																									
64																									
65																									
66																									
67																									
68																									

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRAC TURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA									NOTES				
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
28/11/19	HQ3																									
28/11/19	HQ3	Tonalite Massive, Igneous, Equigranular,			510.34		CR029																			
				A1	71.17																					
72																										
				A2			CR030																			
74				A3	513.16																					
					74.17																					
29/11/19	HQ3	Tonalite Massive, Igneous, Equigranular, Chloritization alteration																								
				A1			CR031																			
76																										
				A2																						
78				A2	515.98																					
					77.17																					
							CR032																			
79.25																										
79.65																										
79.95																										

SHEET 8 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 40 60 80	5 10 15 20	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA							NOTES								
															Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
82	29/11/19	Tonalite Massive, Igneous, Equigranular,	A1	80.18		CR033										80.11 RU 18 / MB														
83	29/11/19	HQ3														80.39 MB BR	IR	VR	CL	0	0.2	4	0.75	24						
84																80.69 MB BR	CU	VR	CL	0	1	3	0.75	24						
85																81.12 MB BR	PL	VR	CL	0	1	1.75	0.75	23						
86																81.45 MB BR	PL	VR	SA	Cal	0	0.5	1.75	0.75	23					
87																82.09 MB BR	IR	VR	CL	0	0.5	4	0.75	24						
88																82.49 MB BR	IR	VR	CL	0	1	4	0.75	24						
89																82.73 MB BR	UN	VR	CL	0	1	3	0.75	23						
90																83.02 MB BR	31	81	PL	RO	SA	Chl	0.1	1	1.5	1	18			
91																83.03 JN														
92																83.19 JN / MB														
93	30/11/19	HQ3														83.45 JN BR	54	240	PL	SR	CL		0	2	1.25	0.75	18			
94																83.55 MB														
95																83.86 MB														
96																84.04 MB														
97																84.22 JN BR	61	0	IR	SR	CL		0	2	3	0.75	18			
98																84.24 MB														
99																84.4 MB	PIN	3	0					SA	Cal	0.5	0	4	30	
100																84.44 MB	PIN	3	0											
101																84.46 VN														
102																84.7 MB														
103																84.79 JN BR	35	0	PL	SR	SA	Cal	0	2	1.25	0.75	18			
104																84.82 JN IN	0	0						0	4	30				
105																85.01 MB														
106																85.16 JN BR	18	0	PL	SR	SA	Chl	0	1	1.25	0.75	21			
107																85.24 MB														
108																85.4 VN PIN	9	0	PL	RO	SA	Cal	2	0	4	0.75	30			
109																85.48 MB														
110																85.55 MB														
111																85.63 MB														
112																85.75 BCZBR								SA	Cal	0				
113																86.03 MB														
114																86.16 MB														
115																86.22 JN / MB	BR	19	290	PL	SR	SA	Chl	1	1.25	1	21			
116																87.34 MB														
117																88.56 MB														
118																88.62 MB														
119																89.12 MB														
120																89.17 JN / MB														
121																89.74 MB														
122																89.91 JN IN	45	270						CT	Fe	1	0	4	30	

SHEET 9 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY										R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES
								TOTAL CORE %		SOLID CORE %		R.O.D. %		VI		VII		VIII		IX		X		XI		XII		XIII				
								20	40	60	80	20	40	60	80	20	40	60	80	20	40	60	80	20	40	60	80	20	40			
92	30/11/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	530.07	92.17	CR036																										
94	HQ3	A2				CR037																										
96		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	532.89	95.17	CR038																										
98		A3				CR039																										
		A2																														
		A3																														
		A4																														

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1m	DISCONTINUITY DATA								NOTES		
											TOTAL CORE %	40 60 80	SOLID CORE %	40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	
	30/11/19	HQ3			538.56		CR039														
102		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	101.20			CR040														Core run unoriented.
104					541.38		CR041														
106	08/12/19	HQ3			543.25		CR042														Core run unoriented.
108		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	106.19			CR043														Core run unoriented.
					544.20																
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	107.21																	Core run unoriented.
					545.62																
		Tonalite Massive, Igneous, Equigranular, Potassic alteration			108.72																
					546.83																

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES										
											TOTAL CORE %	40 60 80	SOLID CORE %	40 60 80	20 40 60 80	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill									
112	17/12/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	110.00 547.02	110.21	CR044																									Core run unoriented
112	18/12/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	549.84	113.21	CR045																									Core run unoriented
114		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	549.84	113.21	CR046																									Core run unoriented
116		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	552.66	116.21	CR047																									Core run unoriented
118		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	555.48	119.21	CR048																									Core run unoriented

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
 NAME / : IG\_BH04  
 LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
 INCLINATION (Deg.) : 70.0  
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DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1m	DISCONTINUITY DATA										NOTES		
											TOTAL CORE %		SOLID CORE %		80		60		40		20		
											40	60	40	60	40	60	40	60	40	60			
122	18/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	558.31	122.22	CR048					20	40	20	40	20	40	20	40	20	40	20	120.5 JN BR 31 102 UN SR CT Cal 0.1 0.1 2 1 17 120.51 VN BR 34 265 SA Ep 1 0 1 4 30 120.69 JN BR 69 40 UN SR CT Cal 0.1 0.1 2 1 15 120.71 VN BR 55 265 UN SR SA Ep 3 0 4 1 30 120.79 JN BR 52 222 UN SR SA Cal 0.5 0.1 2 1 17 120.84 JN PIN 23 292 UN SR SA Cal 1 0.1 4 1 30 120.89 JN BR 8 360 UN SR CT Fe 0.1 0.1 2 1 17 120.95 JN BR 46 360 UN SR CT Cl 0 0.1 2 1 19 120.96 VN PIN 45 360 UN SR CT Ep 0 0 4 1 30 121.02 JN BR 7 360 UN SR CT Fe 0.1 0.1 2 1 19 121.09 JN BR 29 360 UN SR CT Cal 0.1 0.1 2 1 19 121.16 JN BR 25 360 UN SR CT Cl 0.1 0.1 2 1 15 121.23 MB IN 14 212 SA Cal 1 0 4 30 121.23 JN IN 20 360 SA Cal 1 0 4 30 121.45 JN 121.56 MB PIN 15 360 0 4 30 121.9 JN BR 35 360 UN SR SA Afs 0 0.1 2 1 21 122.02 JN BR 35 360 UN SR SA Ep 0 0.1 2 1 21 122.1 MB BR 60 0 UN SR ST Fe 0 0.1 2 1 21 122.11 MB BR 43 26 PL SM CT Cl 0 0.1 1 1 13 122.12 BQZB 16 310 UN SM CT Cl 0 0.1 1 1 13 122.15 JN BR 43 26 PL SM CT Cl 0 0.1 1 1 13 122.21 MB BR 54 360 ST RO SA Cl 0 0.1 3.5 1 23 122.3 JN BR 76 360 UN SM CT Cal 0.1 0.1 1.751 15 122.36 JN IN 35 20 SA Afs 0 0 4 30 122.38 JN 122.39 MB 122.42 JN 122.5 VN	Core run unoriented.
124	18/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	559.40	123.38	CR049					20	40	20	40	20	40	20	40	20	40	20	123.16 JN BR 60 180 UN SR SA Ct 0 0 2 1 17 123.21 JN BR 76 265 UN RO CL Ep 0 0 2 1 2.5 0.7525 123.23 VN IN 50 0 IN Ep 0 0 2 0 4 30 123.24 JN IN 54 342 IN Ep 0 0 2 0 4 30 123.38 MB	
126	19/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	561.12	125.21	CR050					20	40	20	40	20	40	20	40	20	40	20	125.07 JN PIN 72 275 PL SR ST Cal 0.1 1 4 0.7530 125.11 JN IN 53 302 PL SM ST Cal 0.1 0 4 0.7530 125.21 MB	
128	19/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	561.43	125.54	CR052	051				20	40	20	40	20	40	20	40	20	40	20	125.54 MB 125.61 MB IN 14 142 SA Fe 1 0 4 30 125.66 JN 125.71 MB	
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	561.54	125.54					20	40	20	40	20	40	20	40	20	40	20			
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	563.94	128.21	CR053					20	40	20	40	20	40	20	40	20	40	20	126.94 MB 127.16 MB 127.23 JN BR 40 230 UN SR SA Ep 0 1 1 2 1 20	
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	563.94	128.21	CR054					20	40	20	40	20	40	20	40	20	40	20	127.56 JN BR 23 175 UN SR SA Ep 1 0 2 1 18 127.58 JN IN 37 318 SA Cal 1 0 4 30 127.71 MB 127.87 MB IN 14 68 SA Afs 0.5 0 4 30 127.88 JN 128.12 MB 128.16 MB IN 32 302 SA Fe 1 0 4 30 128.21 MB 128.27 JN IN 37 342 SA Ep 0 1 2 2 18 128.49 JN BR 45 280 UN SR SA Ep 0 1 2 2 18	
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	563.94	128.21					20	40	20	40	20	40	20	40	20	40	20	129.24 MB 129.485 JN BR 35 280 IR SR SA Ep 0 2 3 1 15 129.53 MB IN 36 318 SA Cal 1 0 4 30 129.6 JN IN 26 355 UN RO SA Cal 0 0 4 2 30 129.61 JN BR 63 180 UN SR SA Ep 0 1 2.5 2 20 129.67 JN IN 37 342 SA Ep 0 0 4 30 129.71 JN BR 35 350 SA Ep 0 1 2 2 20		

SHEET 13 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY		R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA											NOTES								
								TOTAL CORE %							VI VV VW VW VV VW		Type	Broken/In tact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	ICOND				
								20 40 60 80	20 40 60 80					5	10	15	20	25	30	35	40	45	50	55	60	65	70						
132	19/12/19	HQ3			566.76		CR054																										
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	131.21																													
134					569.17		CR055																										
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	133.78																													
					569.58		CR056																										
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	134.21																													
136					572.40		CR057																										
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	137.21																													
138							CR058																										

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

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DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES											
											TOTAL CORE % 20 40 60 80	SOLID CORE % 20 40 60 80	RQD % 20 40 60 80	ROCK STRENGTH INDEX	WEATHERING INDEX	V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW	V5 VV VW VW VW VW	V6 VV VW VW VW VW	V7 VV VW VW VW VW	V8 VV VW VW VW VW	V9 VV VW VW VW VW	V10 VV VW VW VW VW	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill
142	19/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	575.21 140.21		CR059																										
144	20/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	578.03 143.21		CR060																										
146		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	580.85 146.21		CR061																										
148		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	583.67 149.21		CR062																										

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

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INCLINATION (Deg.) : 70.0

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DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA												NOTES															
							CORE RUN			RECOVERY			R.Q.D.			FRACTURE INDEX PER 1 m			ROCK STRENGTH INDEX			WEATHERING INDEX			Depth(m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)
							20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	5 10 15 20	20 30 40 50 60	20 30 40 50 60	VI VI VI VI VI	VII VII VII VII VII	VIII VIII VIII VIII VIII	VII VII VII VII VII	VIII VIII VIII VIII VIII	VII VII VII VII VII	VIII VIII VIII VIII VIII	Depth(m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
152	21/12/19	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	586.49	CR062																												
				A3	152.21																													
154	21/12/19	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	589.31	CR064																												
				A3	155.21																													
156	22/12/19	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	589.71	CR065																												
				A2	155.64																													
158	22/12/19	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	592.13	CR066																												
				A2	158.21																													

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
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DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES				
								TOTAL CORE %	SOLID CORE %	20 40 60 80					Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
								20 40 60 80	20 40 60 80	20 40 60 80					VII VI V IV III II I												
162	22/12/19	HQ3	Tonalite Massive, Igneous, Equigranular, Potassiac alteration	A2	594.95 161.21	PW001 PW002 PW003 MG001	CR066																			Core run unoriented.	
164	23/12/19	HQ3	Tonalite Massive, Igneous, Equigranular, Potassiac alteration	A2	597.77 164.21		CR067																			Core run unoriented	
166							CR068																				
168			Tonalite Massive, Igneous, Equigranular, Potassiac alteration	A2	600.59 167.21	PW004 PW005 PW006	CR069																		Core run unoriented		
			A3																								
			A2																								

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRAC TURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES			
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Thickness (mm)	Aperture (mm)			
														JN	IN	45	0				Jr	Ja	JCOND	
172	24/12/19 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	603.41 170.21		CR070								169.23 169.24 169.53 169.57 169.96 170.1 170.21 170.32	JN JN JN JN JN JN MB VN	IN IN BR IN IN IN MB	45 10 61 15 0 180 0 0	0 0 160 0 0 0 1.25 4	0 1 0 0 0 0 30 30					
174		Tonalite Massive, Igneous, Equigranular,	A1	606.22 173.21		CR071								171.16 171.78 171.8	MB JN JN	BR IN IN	65 20 270	PL SR SA	170 0 Ep	0 0 10	0 0 0	3 4 0	1.25 0.75 30	
176		Tonalite Massive, Igneous, Equigranular,	A1	609.04 176.21		CR072								172.55 173.03 173.21	JN MB JN	IN IN SA	30 0 Ep	0 0 10	0 0 0	4 4 0	0 0 0	30 30 30		
178		Tonalite Massive, Igneous, Equigranular,	A1	610.56 177.82		CR073								174.55 176.05 176.14	JN MB MB	BR IN IN	31 45 0	PL SR SA	200 0 Ep	0 5 0	5 1.25 1	18 1 18		
		Tonalite Massive, Igneous, Equigranular,	A1	611.86 179.21		CR074								177.14 177.35 177.36	JN MB JN	IN PIN IN	45 25 0	0 0 0	0 0 0	4 4 0	0 0 0	30 30 30		
														177.73 177.82	MB MB									
														179.03 179.1 179.21	MB MB MB									

SHEET 18 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA										NOTES												
							CORE RUN			RECOVERY			R.Q.D.			FRACTURE INDEX PER 1 m			ROCK STRENGTH INDEX			WEATHERING INDEX							
							TOTAL CORE %	SOLID CORE %											V1 VV VW VV VV	V2 VV VW VV VV	V3 VV VW VV VV	V4 VV VW VV VV	V5 VV VW VV VV	V6 VV VW VV VV	V7 VV VW VV VV	V8 VV VW VV VV	V9 VV VW VV VV	V10 VV VW VV VV	
182																			180.45	MB									
																			182.04	MB									
																			182.21	MB									
184	24/12/19	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	614.68	182.21																							
186			Tonalite Massive, Igneous, Equigranular,	A1	617.50	185.21														185.12	MB								
																			185.21	MB									
188			Tonalite Massive, Igneous, Equigranular,	A1	620.32	188.21														186.66	JN IN 40 0	0	4	30					
																			187.03	JN IN 10 0	0	4	30						
																			188.1	MB									
																			188.21	MB									

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA						NOTES														
							CORE RUN	TOTAL CORE %	RECOVERY	SOLID CORE %	R.Q.D.	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	Depth(m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja
192	24/12/19	Tonalite Massive, Igneous, Equigranular,	A1	623.14 191.21		CR077									191.1 191.21	MB								0	4	30	
194	25/12/19	HQ3																									
		Tonalite Massive, Igneous, Equigranular,	A1	625.96 194.21		CR078										194.08 194.21	MB										
		Tonalite Massive, Igneous, Equigranular,	A1	626.78 195.08		CR079																					
		Tonalite Massive, Igneous, Equigranular,	A1	628.78 197.21		CR080																					
		Tonalite Massive, Igneous, Equigranular,	A1	628.78 197.21		CR081																					

SHEET 20 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRACURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
202	25/12/19	Tonalite Massive, Igneous, Equigranular,	A1	631.60 200.21		CR082							200.08 MB													
204	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	634.41 203.21		CR083							201.41 MB													
206		Tonalite Massive, Igneous, Equigranular,	A1	637.23 206.21		CR084							201.7 MB													
208		Tonalite Massive, Igneous, Equigranular,	A1	640.05 209.21		CR085							201.97 MB													
													202.38 MB													
													202.76 MB													
													202.81 JN IN 40 0													
													203.02 MB													
													203.21 MB													
													203.81 JN BR 35 80 PL SR SA Chl 0 1 1.250.7521													
													204.52 MB													
													205.54 MB													
													205.9 JN IN 35 0													
													206.21 MB													
													207.68 MB													
													207.9 JN PIN 0 0													
													207.91 MB													
													208.5 JN IN 50 0													
													208.89 MB													
													209.12 MB													
													209.21 MB													

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	DISCONTINUITY DATA						NOTES
								TOTAL CORE %	SOLID CORE %	R.Q.D.	5	10	15	20
212	25/12/19 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	642.87 212.21	CR085	MG002 MB003 MB004	20 40 60 80	20 40 60 80	20 40 60 80	5	10	15	20	210.33 MB 210.5 MB 210.75 MB
214			A1	645.69 215.21	CR086	PW007 PW008 PW009	20 40 60 80	20 40 60 80	20 40 60 80	5	10	15	20	211.55 MB 212.02 MB IN 25 0 CT Chl 0.5 0 4 30 212.05 JN 212.21 MB
216			A1	648.51 218.21	CR087		20 40 60 80	20 40 60 80	20 40 60 80	5	10	15	20	215.18 MB 215.21 MB
218		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	648.51 218.21	CR088		20 40 60 80	20 40 60 80	20 40 60 80	5	10	15	20	218 MB 218.21 MB

SHEET 22 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	TOTAL CORE %	SOLID CORE %	R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES							
															VN	MB	PIN	25	150	IR	SR	SA	Ep	2	0	2	4	Jr	Ja	JCOND		
222	25/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, 651.33	A1	221.21	651.67	CR088			20 40 60 80	20 40 60 80	20 40 60 80					220.04 220.05 220.1 220.25	VN MB VN MB	PIN PIN VN MB	25 15 170	150	IR	SR	SA	SA	Ep	2	0	2	4	0.75	30	
224	26/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, 654.15	A1	221.57	654.15	CR090										221.06 221.14 221.21 221.29 221.34 221.4 221.57	MB MB MB MB MB MB MB															
226		Tonalite Massive, Igneous, Equigranular, 656.97	A2	224.21	656.97	CR091										223.66 223.68	MB JN	BR	37	180	PL	SM	SA	Chl	0.1	2	1	1	12			
228		Tonalite Massive, Igneous, Equigranular, 656.97	A2	227.21	656.97	CR092										224.21 224.29 224.54	MB JN IN	IN	45	10							0	4	30			
															224.8 224.95	VN JN	IN BR	20 63	180 210	PL	RO	SA	Qtz	0	0	1	1.5	1	23			
															226.19 226.37 226.43	JN JN JN	IN IN IN	50 35 55	330 0 0			SA	Fe	0.1	0	4			30			
															226.93 227.11 227.21 227.3	JN MB MB JN	IN IN IN IN	70 30	330 0 0			SA	Ep	1	0	4			30			
															228.21 228.23	MB JN	BR	39	320	PL	SR	SA	Chl	0	2	1.250	0.75	18				
															229.24	JN	IN	35	0							0	4	30				
															229.67 229.78 229.94	JN JN MB	IN IN BR	15 35 50	0 0 110	PL	SR	SA	Cal	0	2	1.250	0.75	18				

SHEET 23 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 40 60 80	5 FRACTURE INDEX PER 1 m 10 15 20	ROCK STRENGTH INDEX 10 20 30 40 50 60 70 80	DISCONTINUITY DATA										NOTES									
													V1 VV VW VW VW VW VW VW	V2 VV VW VW VW VW VW VW VW	V3 VV VW VW VW VW VW VW VW	V4 VV VW VW VW VW VW VW VW	V5 VV VW VW VW VW VW VW VW	V6 VV VW VW VW VW VW VW VW	V7 VV VW VW VW VW VW VW VW	V8 VV VW VW VW VW VW VW VW	V9 VV VW VW VW VW VW VW VW	V10 VV VW VW VW VW VW VW VW	V11 VV VW VW VW VW VW VW VW	V12 VV VW VW VW VW VW VW VW	V13 VV VW VW VW VW VW VW VW	V14 VV VW VW VW VW VW VW VW	V15 VV VW VW VW VW VW VW VW					
232	26/12/19	Tonalite Massive, Igneous, Equigranular,	A1	659.79	230.21	CR093							229.95 JN IN 20 10 PL SR SA Ep Chl 0 0 0 4 30 230.06 VN IN BR 66 130 PL SR SA Ep Chl 0 0 0 1 1.25 1.25 21 230.13 JN MB BR 15 90 PL SR SA Ep 0 1 1.25 0.75 21 230.21 JN IN 0 0 230.31 JN IN 0 0 230.55 JN IN 0 0 230.75 MB BR 24 250 CU SR CL 0 1 2 0.75 21 230.77 JN IN 0 0																			
234	26/12/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	662.61	233.21	CR094							231.65 JN PIN 15 0 231.74 JN IN 40 0 CT Fe 1 0 4 30 232.13 JN PIN 5 0 232.17 JN MB 0 4 30 232.45 JN IN 40 0 ST Fe 0.1 0 4 30 232.64 JN PIN 40 310 PL SR SA Fe 0 1 4 1 30 232.7 JN IN 0 0 233.05 MB 233.21 MB 233.29 JN IN 10 200 0 4 30 233.54 MB 233.78 JN IN 25 0 0 4 30 234.07 JN IN 20 0 0 4 30 234.25 JN BR 65 220 PL SR CL 0 2 1.25 0.75 18 234.26 JN IN 0 0 0 4 30 234.32 JN IN 20 0 0 4 30 234.34 JN IN 20 0 0 4 30 234.39 JN IN 20 10 0 4 30 234.48 JN IN 20 0 IR RO SA Fe 0 0 4 0.75 30 234.52 MB IN 25 170 IR RO SA Fe 0 0 4 30 234.56 JN PIN 10 290 0 4 30 234.57 JN IN 15 310 0 4 30 234.65 JN BR 32 270 2 3.5 20 234.73 JN IN 5 0 0 4 30 234.82 JN IN 15 0 0 4 30 234.86 JN IN 60 0 0 4 30 235.11 MB 235.19 MB 235.37 JN IN 40 200 0 4 30 235.59 JN BR 55 140 PL SR SA Cal 0 2 1.25 0.75 18 235.64 JN IN 0 0 235.89 JN IN 20 0 0 4 30 236.06 MB 236.21 MB																			
236	27/12/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	665.42	236.21	PW010							237.05 JN IN 40 0 237.12 JN IN 40 0 0 4 30 237.22 JN BR 20 0 PL SR SA Chl 0 1 1.25 1 21 237.29 JN BR 25 0 PL SR SA Cal 0 1 1.25 1 21 237.3 JN BR 70 0 IR SR SA Cal 0 1 3 1 21 237.32 VN IN 40 0 PL SR SA Ep 0 0 4 0.75 30 237.55 JN BR 35 0 PL SR SA Cal 0 1 1.25 0.75 21 237.57 MB 237.87 MB 238.115 BCZBR CL 0																			
238	27/12/19	Tonalite Massive, Igneous, Equigranular,	A3			PW011							238.55 MB IN 0 0 238.58 JN IN 25 5 0 4 30 238.63 JN IN 0 0 0 4 30																			
			A2			PW012							239.04 MB 239.21 MB																			
			A1	668.24	239.21	PS001							239.94 MB																			

SHEET 24 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES															
											TOTAL CORE %	SOLID CORE %	RQD %	80	70	60	50	40	30	20	10	5	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
242	27/12/19				671.06		ED001				20	40	60	80	20	40	60	80	20	40	60	80	5													
	HQ3				242.21	A1	ED001				20	40	60	80	20	40	60	80	20	40	60	80	5													
		Tonalite Massive, Igneous, Equigranular,					MG003																													
244							CR096																													
246							CR097																													
248							CR098																													
							AR002																													
		Tonalite Massive, Igneous, Equigranular, Potassic alteration					CR099																													

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRACURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES							
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
252	27/12/19	Tonalite Massive, Igneous, Equigranular,	A1	679.52	251.21	CR099							250.94 250.96 251 251.03 251.21	JN VN VN JN MB	BR IN IN BR IN	59 30 40 55 0	0 0 0 0 0	PL SR CT SA SA Chl	0 0.2 0 0 0	0 0 0 0 1	1 4 4 0 1.25	0 1 30 4 0.75 21						
254	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	682.34	254.21	CR100							254.06 254.21	MB														
256						CR101																						
258		Tonalite Massive, Igneous, Equigranular,	A1	685.16	257.21	CR102							257.11 257.21 257.26	MB MB JN	IN IN IN	43 10 10	10 10 10	SA Fe	0.1 0 0	0 4 4	1 1 30							
													257.8 257.801	JN	PIN MB	30 20	20 20											
													258.69 258.7 258.73 258.77	MB JN JN MB	BR IN IN 41	41 15 15 15	15 15 15 15	PL SR SA Cal	0 0 0 0	2 0 0 2	1.25 0.75 30 18							
													259.52	MB														

SHEET 26 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	TOTAL CORE %	SOLID CORE %	R.Q.D. %	5 FRAC TURE INDEX PER 1 m	8 RO CK STRE NGTH INDEX	VI WEA THE RIN G INDEX	DISCONTINUITY DATA								NOTES				
															Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
262	28/12/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	687.98	260.21		CR03		20 40 60 80	20 40 60 80	20 40 60 80					260.02 260.11 260.21 260.23	JN MB JN JN	IN Z IN 41	5 40 0	0	SA Ep	1	0	4	30		Core run unoriented.
264	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	690.80	263.21		CR104		20 40 60 80	20 40 60 80	20 40 60 80					261.71 261.99	MB MB									Core run unoriented.	
266		Tonalite Massive, Igneous, Equigranular,	A1	693.62	266.21	PW013	CR105		20 40 60 80	20 40 60 80	20 40 60 80					262.96 263.21 263.77 263.93	MB MB FO FO									Core run unoriented.	
268						PW014										264.83 266.04 266.21	MB MB MB										
						PW015										266.77 266.79 267.06	JN MB PIN 30 192										
						MG004										268.37	MB										
							CR106									268.86 268.87 269 269.21	MB JN PIN 20 310										
																269.6 269.93	JN IN BR 30 310 PL SM CT Ot 0.1 59 120										

SHEET 27 of 101

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

SHEET 28 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES						
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
282	29/12/19	Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2	707.71 281.21	CR109																						Core run unoriented.
284	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	710.53 284.21	CR110																						
286		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	713.35 287.21	CR111																						
288					CR112																						

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 60 80	5 FRACTURE INDEX PER 1 m 10 15 20	ROCK STRENGTH INDEX 80 82 84 86 88	WEATHERING INDEX VI VII VIII IX X XI XII XIII XIV XV XVI XVII XVIII XIX XVII	DISCONTINUITY DATA						NOTES									
														Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
292	29/12/19	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	716.17 290.21	CR13	MG005									290.21 MB														
294	29/12/19	HQ3	A2	718.99 293.21	CR114	PW016 PW017 PW018									293.21 MB														
296	30/12/19	HQ3	A2	721.81 296.21	CR115										294.59 MB														
298		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	724.63 299.21	CR116										296.21 MB														Core run unoriented.
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2												296.25 JN IN 50 0	ST	Afs	0.5	0	4									
															296.28 JN IN 60 0	ST	Afs	0.5	0	4									
															296.4 JN IN 10 20	SA	Afs	0.5	0	4									
															296.58 JN IN 10 14	SA	Afs	0.5	0	4									
															296.66 JN IN 30 0	ST	Afs	0.5	0	4									
															296.7 JN IN 10 6	SA	Afs	0.5	0	4									
															296.85 JN IN 10 5	SA	Afs	0.5	0	4									
															296.92 JN IN 5 30	SA	Afs	0.5	0	4									
															296.97 JN IN 35 64	CL	Afs	0.5	0	4									
															296.98 JN IN 35 0	ST	Afs	0.5	0	4									
															297.1 JN IN 10 14	SA	Afs	0.5	0	4									
															297.19 JN IN 40 80	PL	SR	ST	Afs	0.5	0	4							
															297.2 JN IN 40 100	ST	Afs	0.5	0	4									
															297.31 JN BR 35 200	CL	Afs	0	2	1.25									
															297.36 JN IN 25 310	SA	Afs	0.5	0	4									
															297.38 JN IN 20 302	SA	Afs	0.5	0	4									
															297.44 JN IN 44 32	SA	Fe	0.5	0	4									
															297.45 JN IN 40 0	PL	SR	SA	Afs	0.5	0	4							
															297.55 JN IN 10 12	SA	Afs	0.5	0	4									
															297.55 JN IN 55 82	ST	Afs	0.5	0	4									
															297.62 JN IN 20 308	PL	SR	SA	Afs	0.5	0	4							
															297.7 JN IN 70 348	ST	Afs	0.5	0	4									
															297.75 JN IN 20 0	SA	Cal	0.5	0	4									
															297.76 JN IN 5 200	ST				0.5	0	4							
															297.85 JN BR 49 200	CL				0	2	1.25							
															297.9 MB BR 29 200	CL	Afs	0	2	1.25									
															298.08 JN IN 30 0	SA	Cal	0.1	0.1	4									
															298.28 JN IN 50 2	ST				0.5	0	4							
															298.54 JN IN 30 0	SA	Afs	0.1	0.1	4									
															298.65 MB PIN 30 6	SA				0.5	0	4							
															298.76 MB IN 30 0	SA	Afs	0.5	0	4									
															298.83 JN IN 40 50					0	4								
															299.1 JN IN 5 0					0	4								
															299.21 MB IN 40 340					0	4								
															299.25 JN IN 55 194	PL	SR	ST	Cal	0.5	0	4							
															299.27 JN IN 50 46	SA	Ep	0.5	0	4									
															299.31 JN IN 50 0	PL	SM	SA	Fe	0.5	0	4							
															299.36 JN IN 40 0	SA	Chi	0.9	0	4									
															299.46 JN IN 46 20	SA				1.25	1								

SHEET 30 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRAC TURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES					
											Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
302	30/12/19 HQ3	Tonalite Massive, Igneous, Equigranular,	A3		727.44 302.21	AR003	CR116																			Core run unoriented
304			A1		730.26 305.21		CR117																			
306		Tonalite Massive, Igneous, Equigranular,	A1		733.08 308.21		CR118																			
308		Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2				CR119																			

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES		
312	30/12/19 HQ3	Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2		735.90 311.21		CR119							310.02 JN IN 29 85					0	4	30				
314			A2		738.72 314.21		CR120							310.36 FO 51 268											
316		Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2		740.49 316.09		CR121							310.76 JN IN 22 285 310.84 JN BR 44 214 UN SM ST PI 0 0 2 1.750.7515 310.85 MB 310.86 MB 311.07 MB 311.21 MB											
318		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2		741.54 317.21		CR122							311.33 JN BR 39 15 PL SR ST PI 0 0.1 1.250.7522 311.46 JN IN 24 192 311.54 JN BR 27 185 PL SM CL Chl 0 0.5 1 0.7519 311.57 JN BR 37 192 PL SM CT Cal 0 0.5 1 1 19 311.73 JN IN 23 192											
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	PW019			CR123							312.16 JN IN 33 115					0	4	30				
			A3	PW020										312.66 JN IN 26 145					0	4	30				
			A3	PW021										313.32 MB 313.38 JN BR 24 355 UN SR ST Afs 0 0.1 2 1 22 313.65 JN BR 39 325 UN SR ST Cal 0 0.5 2 0.7521 313.66 MB 313.95 JN BR 14 232 UN SR CL 0 1 2 0.7521 314.02 MB 314.21 MB											
			A3	MG006										314.43 FO 39 294											
			A3											314.71 JN IN 14 0 IN Ep 1 0 0 4 30 314.83 JN IN 38 340 IN Ep 1 0 0 4 30 314.88 JN IN 13 210 UN SM SA Cal 0 0.5 1.75 1 19 314.97 JN BR 46 185 UN SM SA Cal 0 0 0 4 30 315.02 JN IN 29 75 315.18 JN IN 8 84											
														315.36 JN BR 39 190 UN SR SA Chl 0 0.5 2 1 21 315.38 MB IN 32 165 315.39 JN IN 29 174 315.45 JN BR 33 345 UN SM ST Cal 0 2 1.750.7515 315.63 MB 315.66 JN 315.89 JN BR 49 322 CU SM ST PI 0 0.5 1.750.7519 315.9 JN BR 35 188 UN SR ST Chl 0 1 2 1 21 316.09 MB											
														316.23 JN IN 25 180 SA Ep 1 0 0 4 30											
														316.56 JN BR 31 30 PL RO SA Chl 0.5 2 1.5 1 16 316.76 JN BR 30 200 PL SR SA Cal 0.1 2 1.250.7514											
														316.99 MB 317.08 MB 317.21 MB											
														Core run unoriented.											

SHEET 32 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA							NOTES			
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	
322	31/12/19 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	744.36 320.21 ED002 PS002	CR24 TH001	MG006																30	Core run unoriented.
324		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	747.18 323.21	CR125																	30	
326		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	750.00 326.21	CR126																	30	Core run unoriented.
328		Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A3	752.82 329.21	CR127																	18	

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA										NOTES							
							CORE RUN			RECOVERY			R.Q.D.			FRACTURE INDEX PER 1 m			ROCK STRENGTH INDEX			WEATHERING INDEX		
							TOTAL CORE %	SOLID CORE %											V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW	V5 VV VW VW VW VW	V6 VV VW VW VW VW
332	31/12/19 HQ3	Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2	755.64 332.21		CR127													330.59 MB					
334						CR128													332.04 MB					
																		332.1 MB						
																		332.14 MB						
																		332.16 MB						
																		332.1601 MB						
																		332.21 MB						
																		332.45 MB						
336		Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2	758.45 335.21		CR129												333.45 MB						
338		Tonalite Massive, Igneous, Equigranular,	A1	761.27 338.21		CR130												333.89 MB						
			A2														334.25 MB							
																	334.39 MB							
																	334.93 MB							
																	335.21 MB							
																	335.84 MB							
																	337.96 MB							
																	338.19 MB							
																	338.21 MB							
																	338.42 MB							
																	339.6 MB							

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

SHEET 35 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES			
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	ICOND	
352	01/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	772.55 350.21			CR35																			
354		Tonalite Massive, Igneous, Equigranular,	A1	775.37 353.21			CR136																			
356		Tonalite Massive, Igneous, Equigranular,	A1	778.19 356.21		AR004	CR137																			
358		Tonalite Massive, Igneous, Equigranular, Silicification alteration	A2 A1	781.01 359.21			CR138																			

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRAC TURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
362	01/01/20 HQ3	Tonalite Foliated, Igneous, Equigranular, Carbonatization alteration	A2	783.83 362.21	CR138																					
364			A2	786.65 365.21	CR139																					
366		Tonalite Foliated, Igneous, Equigranular, Potassic alteration	A2	789.46 368.21	CR140																					
368		Tonalite Foliated, Igneous, Equigranular, Carbonatization alteration	A2	792.29 368.21	CR141																					

SHEET 37 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 FRACTURE INDEX PER 1 m 10 15 20	ROCK STRENGTH INDEX 80 82 84 86 88 90	WEATHERING INDEX VI VII VIII IX X XI XII XIII XIV XV XVI XVII XVIII XIX XVII	DISCONTINUITY DATA											NOTES							
														Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND					
372	01/01/20	Tonalite Foliated, Igneous, Equigranular, Chloritization alteration	A2		792.28 371.21		CR141									370.16 MB	BR 31	248 UN	SM CT	Chi 0	0.5	1.751	19									
				PW025												370.18 MB	BR 9	0 UN	SM ST	Afs 0	0.5	1.750	75.19									
				PW026												370.19 JN	BR 32	342 UN	SR ST	Afs 0	1	2	0.7521									
				PW027												370.35 JN	MB															
				MG008												370.44 JN	MB															
				TH002												370.48 JN	MB															
374	10/01/20	Tonalite Massive, Igneous, Equigranular, Silicification alteration	A3 A1		795.10 374.21		CR142									370.91 MB	BR 21	205 UN	SR CL	0	2	2	0.7518									
				A4												370.95 JN	MB															
				A1												370.99 MB	MB															
																371.21 MB	MB															
376	10/01/20	Tonalite Massive, Igneous, Equigranular, Silicification alteration	A1		797.92 377.21		CR143									374.21 MB	IN	55 60	SA	Cal 0.5 0	4	30										
																374.23 JN	IN	20 0	SA	Qtz 0.5 0	4	30										
																374.25 JN	IN	55 50	SA	Cal 0.5 0	4	30										
																374.27 JN	IN	50 60	ST	Cal 0.5 0	4	30										
																374.32 SHR	IN															
																374.73 JN	BR	39 20	PL	SR SA Cal 0.1 0	1.251	21										
																374.77 JN	IN	50 0	SA	Cal 0.5 0	4	30										
																374.78 JN	IN	5 0	SA	Cal 0.5 0	4	30										
																374.81 JN	IN	64 80	SA	Cal 0.5 0	4	30										
																374.86 JN	IN	55 90	SA	Qtz 0.5 0	4	30										
																374.87 JN	IN	65 320 IR	SR	SA Cal 0.5 0	4	1	0.7530									
																374.88 JN	IN	65 320 IR	SA	Qtz 0.5 0	4	0.7530										
																374.89 JN	IN	50 320	SA	Qtz 0.5 0	4	30										
																374.9 JN	IN	40 20	SA	Chl 0.5 0	4	30										
																374.93 JN	IN	55 260	SA	Cal 0.5 0	4	30										
																374.94 JN	IN	30 230	SA	Cal 0.5 0	4	30										
																374.95 JN	IN	25 200	SA	Cal 0.5 0	4	30										
																374.96 JN	IN	40 0	ST	Cal 0.5 0	4	30										
																374.97 JN	IN	15 270	SA	Cal 0.5 0	4	30										
																374.98 JN	IN	25 260	SA	Cal 0.5 0	4	30										
																374.99 JN	IN	25 260	SA	Cal 0.5 0	4	30										
																375.01 SHR	IN	60 80	ST	Cal 0.5 0	4	30										
																375.01 VN	IN	40 0	SA	Cal 0.5 0	4	30										
																375.02 JN	IN	40 0	SA	Cal 0.5 0	4	30										
																375.03 JN	IN	40 0	SA	Cal 0.5 0	4	30										
																375.04 JN	IN	30 0	SA	Cal 0.5 0	4	30										
																375.05 JN	IN	25 0	SA	Cal 0.5 0	4	30										
																375.06 JN	IN	70 0	SA	Cal 0.5 0	4	30										
																375.11 JN	IN	45 0	SA	Cal 1 0	4	30										
																375.12 JN	IN	30 234	SA	Chl 0.5 0	4	30										
																375.13 JN	IN	45 0	SA	Cal 0.5 0	4	30										
																375.14 JN	IN	35 0	SA	Cal 0.5 0	4	30										
																375.15 JN	IN	35 0	SA	Cal 0.1 2	3	16										
																375.16 JN	IN	60 140	SA	Cal 0.5 0	4	30										
																375.17 MB	IN	60 230	SA	Cal 0.5 0	4	30										
																375.19 JN	IN	25 130	SA	Chl 0.5 0	4	30										
																375.22 JN	IN	30 130	SA	Cal 1 0	4	30										
																375.3 JN	IN	25 170														
																375.36 JN	IN															
																375.58 JN	IN															
																376.53 MB	IN															
																376.85 MB	IN															
																377 JN	IN															

SHEET 38 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	TOTAL CORE %	SOLID CORE %	R.Q.D. %	5	10	15	20	FRACURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES						
																			Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
382	11/01/20	Tonalite Massive, Igneous, Equigranular,	A1	800.74 380.21	CR45				20 40 60 80	20 40 60 80	20 40 60 80									380.04 MB													
384	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	803.56 383.21	CR146				20 40 60 80	20 40 60 80	20 40 60 80									383.05 MB 383.21 MB													
386		Tonalite Massive, Igneous, Equigranular,	A2 A1 A2 A1	806.38 386.21	CR147				20 40 60 80	20 40 60 80	20 40 60 80									385.59 JN IN 55 90													
388		Tonalite Massive, Igneous, Equigranular,	A1 A2 A1	809.20 389.21	CR148				20 40 60 80	20 40 60 80	20 40 60 80									385.87 JN IN 55 95 386.04 MB 386.21 MB	SA Cal 0.5	0	4	30									
																			386.5 JN IN 50 80	SA Chl 0.01	4	30											
																			389.08 MB 389.21 MB														

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRAC TURE INDEX PER 1 m	8 RO CK STR ENG TH INDEX	DISCONTINUITY DATA								NOTES			
								TOTAL CORE %	SOLID CORE %	20 40 60 80				20 40 60 80											
392	11/01/20	Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2	812.02	392.21	CR148																			390.09 JN PIN 28 274 UN VR CL 0 0.1 4 1 30
394	13/01/20	Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2	814.84	395.21	CR149																			390.69 MB 390.83 JN IN 5 25 CU ST Afs 0.1 0 4 30
396						CR150																			392.05 MB 392.21 MB
398		Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2	817.65	398.21	CR151	MG009 PW030 PW029 PW028 ED003 PS003																	392.68 JN IN 20 172 UN SA Cal 0.5 0 4 30	
																									393.88 JN IN 60 352 SA Qtz 0.5 0 4 30
																									395.21 MB
																									396.81 MB
																									398.03 MB 398.21 MB
																									398.47 MB
																									399.08 MB

SHEET 40 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY		R.Q.D. %	5 10 15 20	FRACtURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA						NOTES								
								TOTAL CORE %	SOLID CORE %						Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
402	13/01/20 HQ3	Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2		820.47 401.21		CR151								401.21 r MB														
404			A2		823.29 404.21		CR152								403.56 JN IN 35 182 UN	CT Chl	0.8 0 4												
406						AR005									404.21 r MB														
408		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2		826.11 407.21		CR153								404.84 JN BR 27 268 UN VR ST Cal	0.1	0.8 3 1												
							CR154								406.17 MB														
															406.52 MB														
															406.78 JN IN 20 178 UN	CT Cal	0.8 0 4												
															407.1 JN IN 20 0	SA Afs	0.1 0 4												
															407.21 MB														
															407.54 MB														
															408.11 JN IN 50 50	SA Chl	0.5 0 4												
															408.13 MB IN 60 340		0 4												
															408.24 JN MB														
															408.25 MB														
															408.58 MB														
															408.78 MB														
															408.9 JN IN 20 290	SA Cal	0.5 0 4												
															408.96 JN IN 20 0	SA Cal	0.5 0 4												
															409.09 JN IN 29 295	SA Cal	0.5 0 4												
															409.18 MB BR 15 270 PL SR SA Chl	1 2	1.250.75 16												
															409.2 JN IN 15 270 PL SR SA Chl	1	4 1												
															409.21 JN BR 43 230	SA Chl	0.1 1	1.25											
															409.22 JN IN 35 290	SA Fe	0.5 0 4												
															409.35 JN IN 35 110	SA Fe	0.5 0 4												
															409.45 JN IN 35 0	SA Cal	0.5 0 4												
															409.55 MB IN 25 260 PL SM	SA Cal	0.5 0 4												
															409.63 JN IN 25 0	SA Cal	0.5 0 4												
															409.64 JN IN 30 146	SA Cal	0.5 0 4												

SHEET 41 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES		
											TOTAL CORE %	40 60 80	20 40 60	SOLID CORE %	20 40 60 80								
412	14/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A2	828.93 410.21		CR155																	
414		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	831.75 413.21		CR156																	
416		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	834.57 416.21	A1 A2 A1	CR157																	
418		Tonalite Massive, Igneous, Equigranular,	A1	837.39 419.21	A2	CR158																	

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	DISCONTINUITY DATA						NOTES					
								RECOVERY		R.Q.D. %	5.0 FRACURE INDEX PER 1 m	WEATHERING INDEX							
								TOTAL CORE %	SOLID CORE %			ROCK STRENGTH INDEX		WEATHERING INDEX					
								20	40	60	80	20	40	60	80	10	20	30	40
422	14/01/20	A1	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	840.21	CR158	PW031									420.33	JN IN 5 286 PL CT Ep 0.2 0 4 30		
		A2			422.21											420.67	MB PIN 21 290 ST VR SA Afs 0.2 1 4 1 30		
															420.88	JN IN 3 80 PL ST Afs 0.1 0 4 30			
															420.92	JN			
															421.4	MB			
		A2	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	843.03	CR159	PW032									421.46	JN IN 5 293 PL ST Ep 0.1 0 4 30		
															422.21	- MB			
															422.44	JN IN 5 294 UN CT Ep 0.2 0 4 30			
															423.06	JN BR 42 62 UN RO ST Chl 0.1 0.3 2.5 0.7521			
															423.07	SHRIN 42 62 UN CL 0 0 4 30			
		A3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	845.85	CR160	PW033								423.08	JN IN 40 58 PL CL 0 0 4 30			
															423.13	JN 25 352			
															423.42	MB			
															424.54	MB			
															424.67	JN IN 33 276 ST Afs 0.1 0 4 30			
		A3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	846.21	CR160	MG010								424.77	JN IN 5 24 ST Cal 0.1 0 4 30			
															424.84	MB BR 21 6 UN VR ST Fe 0.1 0.3 3 0.7522			
															424.87	JN			
															424.9	MB			
															425.04	MB IN 20 156 CT Ep 0.5 0 4 30			
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	845.85	CR161	PW034								425.16	JN 20 MB CT Ep 0.5 0 4 30			
															425.21	MB			
															425.93	JN IN 23 10 PL RO SA Afs 0.5 0 4 1 30			
															425.95	JN PIN 23 10 SA Cal 0.5 1 4 30			
															426.07	JN IN 50 270 ST Cal 0.1 0 4 30			
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	428.21	CR161	PW035								426.12	JN IN 20 20 ST Qtz 0.5 0 4 30			
															426.23	JN IN 20 20 ST Afs 0.1 0 4 30			
															426.44	JN IN 30 292 ST Afs 0.1 0 4 30			
															426.59	JN IN 20 304 SA Afs 0.5 0 4 30			
															426.72	JN IN 20 0 ST Afs 0.5 0 4 30			
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	428.21	CR161	PW036								426.8	JN IN 5 0 SA Chl 0.5 0 4 30			
															427.01	JN BR 59 10 PL SM SA Chl 0.1 0.5 1 1.5 17			
															427.08	JN IN 27 0 SA Afs 0.5 0 4 30			
															427.27	JN IN 55 350 ST Cal 0.5 0 4 30			
															427.4	JN IN 60 230 PL RO SA Bt 0.5 0 4 1 30			
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	428.21	CR161	PW037								427.41	VN BR 60 170 PL SR SA Chl 0.5 2 1.5 1 22			
															427.42	MB BR 22 220 SA Chl 0.1 0.5 1.25 19			
															427.44	JN IN 51 205 PL SR CT Fe 0.5 0 4 1 30			
															427.47	JN IN 15 84 PL SR ST Cal 0.5 0 4 0.7530			
															427.58	JN BR 64 30 SA Chl 0.1 0.1 1.25 24			
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	428.21	CR161	PW038								427.66	JN BR 56 25 CL Afs 0.5 0 4 21			
															427.72	JN IN 20 275 ST Ep 0.1 0 4 30			
															427.72	JN IN 20 275 SA Ep 0.5 0 4 30			
															427.87	JN MB			
															428.96	MB			

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
 NAME / : IG\_BH04  
 LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
 INCLINATION (Deg.) : 70.0  
 AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES	
													TOTAL CORE %									
													20	40	60	80	20	40	60	80		
432	15/01/20	Tonalite Massive, Igneous, Equigranular,	A2		848.66		CR161															430.06 JN IN 13 30 CT Ep 0.2 0 4 30
			A1		431.21																	430.42 MB
			A2																			430.55 JN IN 25 3 PL ST Cal 0.1 0 4 30
																						430.76 MB
																						430.85 JN IN 22 260 PL CT Ep 0.5 0 4 30
																						430.94 JN IN 15 260 PL ST Cal 0.1 0 4 30
																						431.21 MB
434	15/01/20		A2		851.48		CR162															431.88 MB
			A2		434.21																	432.3 JN IN 25 282 UN SA Chl 0.5 0 4 30
																						432.87 JN IN 20 300 PL SA Afs 0.1 0 4 30
																						432.85 JN IN 30 278 UN ST Chl 0.1 0 4 30
																						432.99 JN IN 40 278 UN CT Chl 0.2 0 4 30
																						433.05 JN IN 35 315 CU CT Chl 0.3 0 4 30
																						433.14 JN IN 45 332 UN ST Afs 0.1 0 4 30
																						433.37 MB
436	15/01/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2		851.84																	433.8 JN IN 40 300 PL ST Afs 0.5 0 4 30
			A2		434.21																	433.85 JN IN 40 285 UN ST Afs 0.1 0 4 30
																						433.87 JN IN 50 280 PL VR ST Afs 0.5 0 4 0.75 30
																						433.95 JN IN 15 240 UN ST Cal 0.5 0 4 30
																						434.02 JN IN 24 250 UN SA Chl 0.1 0.5 4 30
																						434.2 JN IN 20 208 VR SA Chl 0.1 0 4 30
																						434.20 MB IN 20 220 SA Cal 0.5 0 4 30
																						434.21 MB
																						434.29 JN IN 65 18 IN Qtz 6 0 4 30
																						434.59 VJ IN 65 18 IN Qtz 6 0 4 30
																						434.72 SH RD 20/ 288 SA Cal 0.5 0 4 30
																						434.77 MB IN 28 304 PL SA Cal 0.5 0 4 30
																						434.78 JN IN 38 315 UN SA Cal 0.5 0 4 30
																						434.86 JN IN 65 20 UN SA Cal 0.5 0 4 30
																						434.91 JN IN 70 280 UN SA Cal 0.5 0 4 30
																						435.02 JN IN 45 15 CU SA Cal 0.5 0 4 30
																						435.07 JN IN 40 8 UN SA Cal 0.5 0 4 30
																						435.09 JN IN 45 260 UN SA Cal 0.5 0 4 30
																						435.14 JN IN 60 265 UN SA Cal 0.5 0 4 30
																						435.23 JN IN 50 305 UN SA Cal 0.5 0 4 30
																						435.36 JN IN 50 305 UN SA Cal 0.5 0 4 30
																						435.37 JN IN 65 308 UN SA Qtz 0.4 0 4 30
																						435.42 JN IN 65/ 356 UN SA Cal 0.5 0 4 30
																						435.78 JN BR 20 225 PL RO SA Chl 0.1 0 4 0.75 30
																						435.8 JN BR 44 255 SA Cal 1 1.5 21
																						435.81 JN
																						435.98 JN
																						436.07 MB
																						436.42 MB
																						436.58 JN IN 25 252 PL CT Ep 0.3 0 4 30
																						436.81 JN IN 25 295 PL IN Ep 1.1 0 4 30
																						437.06 JN IN 20 268 PL SA Chl 0.2 0 4 30
																						437.15 JN BR 45 248 CU VR SA Afs 0.1 0.8 3 0.75 22
																						437.21 MB
																						437.35 JN IN 57 215 UN VR SA Chl 0.1 0 4 0.75 30
																						437.57 JN IN 20 263 UN SA Afs 0.5 0 4 30
																						437.67 MB
																						437.76 JN IN 25 90 SA Cal 0.5 0 4 30
																						437.84 JN IN 25 100 SA Cal 0.5 0 4 30
																						437.88 MB IN 30 265 SA Cal 0.5 0 4 30
																						437.92 JN IN 30 100 SA Afs 0.5 0 4 30
																						438.06 JN IN 25 270 SA Afs 0.5 0 4 30
																						438.15 JN IN 20 250 SA Afs 0.5 0 4 30
																						438.26 JN IN 20 310 SA Bt 0.5 0 4 30
																						438.31 JN IN 30 280 ST Cal 0.1 0 4 30
																						439.09 MB
																						439.3 JN IN 30 270 SA Afs 0.5 0 4 30
																						439.35 JN IN 25 290 SA Afs 0.5 0 4 30
																						439.59 JN IN 30 280 ST Cal 0.1 0 4 30

SHEET 44 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 40 60 80	5 10 15 20	FRACTURE INDEX PER 1 m 00 02 05 08 12 15 20	ROCK STRENGTH INDEX 00 02 05 08 12 15 20	WEATHERING INDEX VI VII VIII IX X XI XII	DISCONTINUITY DATA							NOTES						
															Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
442	16/01/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	857.12 440.21			CR165									440.03 MB												
444	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	859.94 443.21			CR166									440.21 MB												
446			A2													440.55 MB												
448			A1													440.7 JN IN 30 280	SA	Afs	0.5	0	4							
			A2	862.76 446.21			CR167								441.03 JN IN 15 0	SA	Afs	0.5	0	4								
															442.06 MB													
															443.02 MB													
															443.21 MB													
															443.51 MB													
															444.25 MB													
															445.02 MB	JN	IN	35	65	PL	ST	Afs	0.1	0	4			
															445.07 JN IN 35 65 PL													
															445.31 JN BR 30 184 PL SR IN Cal 1.2 0.5 1.250.7519													
															445.81 MB													
															445.96 MB IN 20 40 PL													
															445.98 JN IN 20 40 PL													
															446.21 MB													
															446.39 MB													
															446.78 MB													
															447.06 MB													
															447.31 MB													
															448.19 MB													
															449.1 MB	JN	IN	10	142	UN	SA	Chi	0.5	0	4			
															449.21 MB													
															449.39 MB IN 10 142 UN													
															449.42 JN IN 10 142 UN													

SHEET 45 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRAC TURE INDEX PER 1 m	80 82 84 86 88 90 92 94 96 98 20	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA						NOTES						
								TOTAL CORE %	SOLID CORE %	80 82 84 86 88 90 92 94 96 98 20						Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
452	16/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	868.40 452.21	PS004 ED004	CR168		20 40 60 80	20 40 60 80	20 40 60 80	80	5	80 82 84 86 88 90 92 94 96 98 20	80 82 84 86 88 90 92 94 96 98 20	450.47 MB													
454																451.62 MB	451.76 MB											
456	17/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	871.22 455.21		CR169										452.21 MB												
458																453.02 MB												
																453.74 MB	453.87 MB											
																455.1 MB	455.21 MB											
																456.7 MB												
																458.05 MB	458.18 MB	458.21 MB										
																459.6 MB	459.71 MB	459.81 MB										

SHEET 46 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 60 80	5 10 15 20	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES					
															Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
462	17/01/20	Tonalite Massive, Igneous, Equigranular,	A1	875.95 460.25	AR007	CR172										460.08 MB														
			A2	876.86 461.21	AR008	CR173										460.21 MB														
464	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1	879.67 464.21		CR174										461.02 MB														
			A2													461.21 MB														
		Tonalite Massive, Igneous, Equigranular,	A1	882.49 467.21		CR175										461.35 VN BR 31 192 PL RO IN Cal 1.1 0.2 1.5 1 21														
466			A2													461.99 JN IN 10 114 PL	CT	Chi	0.5	0	4									
			A1													462.18 JN IN 45 40 PL			0	4										
			A2													462.29 JN IN 30 42 PL	ST	Qtz	0.1	0	4									
			A1													462.46 MB														
			A2													462.53 MB														
468		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A1			CR175										463.29 MB														
			A2													463.55 JN IN 4 38 PL	SA	Cal	0.5	0	4									
			A1													463.82 JN IN 35 42 PL	SA	Cal	0.1	0	4									
			A2													463.92 JN IN 35 22	SA	Cal	0.5	0	4									
			A1													463.96 MB IN 15 220 PL	SA	Cal	0.5	0	4									
			A2													463.99 JN IN 30 12	SA	Cal	0.5	0	4									
			A1													464.04 JN IN 30 198 PL	SA	Chi	0.5	0	4									
			A2													464.16 JN MB														
			A1													464.21 MB														
			A2													465.21 JN IN 13 290	ST	Afs	0.1	0	4									
			A1													465.38 MB														
			A2													465.63 JN IN 10 285	SA	Cal	0.5	0	4									
			A1													465.69 JN IN 8 298	CT	Ep	0.2	0	4									
			A2													466.37 JN IN 20 288 UN	ST	Afs	0.1	0	4									
			A1													466.65 JN IN 10 302	ST	Afs	0.5	0.1	4									
			A2													466.86 JN IN 9 245 PL	RO	SA	Chi	0.1	0									
			A1													466.89 MB														
			A2													467.07 JN IN 13 94	ST	Afs	0.5	0	4									
			A1													467.21 MB														
			A2													467.49 JN IN 10 274	ST	Chi	0.1	0	4									
			A1													468.13 JN IN 10 272 PL	ST	Chi	0.1	0	4									
			A2													468.29 MB														
			A1													468.37 JN IN 13 272 PL	ST	Afs	0.1	0	4									
			A2													468.72 JN IN 20 335 UN	ST	Afs	0.1	0	4									
			A1													469.8 MB JN IN 15 345 PL	ST	Afs	0.1	0	4									
			A2													469.84 MB JN IN 15 345 PL	ST	Afs	0.1	0	4									

SHEET 47 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

SHEET 48 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE %	SOLID CORE %	R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES					
														Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
482	18/01/20	HQ3													480.08	JN	IN	30	0	SA	Cal	0.5	0	4	30				
															480.09	JN	IN	30	280	SA	SA	0.5	0	4	4	30			
															481.74	JN	IN	10	310	SA	Qtz	0.5	0	4		30			
															481.85	MB													
															481.97	MB	IN	13	300	PL	SA	Qtz	0.1	0	4		30		
															482.02	JN	IN	13	300	PL	SA	Qtz	0.1	0	4		30		
															482.18	MB													
															482.87	MB													
															483.47	JN	IN	15	344	PL				0	4	30			
															484.36	MB													
484															485.01	JN	IN	30	10	PL	VR	SA	Cal	0.5	0	4	0.75	30	
															485.02	JN	IN	28	10	VR	CL	SA	Cal	0	0.1	1.75	25		
															485.15	VN	IN	3	316	PL	IN	Qtz	7	0	4		30		
															485.21	MB	IN	30	186	PL	SA	Cal	0.5	0	4		30		
															485.25	JN													
															485.66	MB	IN	25	294		SA	Qtz	0.1	0	4		30		
															485.74	MB													
															486.02	JN	BR	33	188	UN	RO	CT	Ep	0.2	0.1	2.5	1	20	
															486.2	JN	BR	24	8	CU	VR	CL	Afs	0	0.2	3	0.75	24	
															486.21	JN	IN	45	20	CU	SA	Cal	0.5	0	4		30		
															486.45	JN	IN	70	165	UN	SA	Qtz	0.5	0	4		30		
															486.88	MB	IN	25	40	UN	SA	Cal	0.5	0	4		30		
															486.89	JN	IN	40	340		ST	Fe	0.1	0	4		30		
															486.99	JN	IN	15	300		SA	Cal	0.5	0	4		30		
															487.08	JN	IN	40	200	UN	CT	Ep	0.8	0	4		30		
															487.2	JN	IN	15	10		SA	Qtz	0.5	0	4		30		
															487.22	MB	IN	40	235		SA	Ch	0.5	0	4		30		
															487.24	JN	IN	15	330		SA	Qtz	0.5	0	4		30		
															487.25	JN	IN	25	190	PL	IN	Ch	1.1	0	4		30		
															487.47	JN													
															487.52	MB													
															487.53	JN	IN	15	180	PL	IN	Ep	1.2	0	4		30		
															487.79	JN													
															488.08	MB	PIN	20	182		SA	Cal	0.5	0	4		30		
															488.09	JN	IN	60	0		IN	Qtz	2	0	4		30		
															488.11	JN	MB												
															488.21	MB													
															488.25	VN													
															488.66	MB													
															489.21	MB													

SHEET 49 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

## RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	DISCONTINUITY DATA				NOTES													
										TOTAL CORE %	SOLID CORE %	5 FRACURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja
492	18/01/20	HQ3	Bt-rich Tonalite Massive, Igneous, Equigranular,	A2 A1	905.05 491.21		CR183			20 40 60 80	20 40 60 80	5 10 15 20	10 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 110 120 130 140 150 160 170 180 190 200 210			489.98 490.12 490.25	MB MB JN IN 20 298 PL	CT	Ep 0.8 0 4		30						
			Quartzlite Massive, Dyke, Equigranular,	A2 A1	905.86 492.08										491.21 MB												
			Tonalite Massive, Igneous, Equigranular,	A2 A1											491.45 491.52	VN IN 50 318	CT	Qtz 2 0 4		30							
															492.07 JPS IN 65 220 PL 492.09 JN IN 20 282 492.19 JN IN 30 0	IN Hbl 13 0 4 CT Ep 0.8 0 4 CL 0.1 0 4				30							
494			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2 A2 A1	907.87 494.21										492.88 JN IN 15 310 PL 493.01 MB	ST Afs 0.1 0 4				30							
															494.21 JN IN 15 140 494.44 MB 494.5 MB	SA Ep 0.2 0 4				30							
															495.14 JN IN 55 25 UN 495.17 JN IN 5 145	SA Qtz 4 0 4 SA Cal 0.5 0 4				30							
496															495.91 MB 496.01 MB												
															496.95 MB 497.05 MB 497.21 JPS												
498	19/01/20	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	910.68 497.21		CR185								497.37 MB												
															497.6 JN IN 70 0		SA Qtz 0.5 0 4		30								
															498.03 JN IN 45 0		CL 0 0 4		30								
															498.45 JN IN 30 150 PL		SA Cal 0.5 0 4		30								
															498.86 MB 499.01 JPS	65 170											
															499.91 MB												

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA										NOTES																				
							CORE RUN	RECOVERY			R.Q.D.	FRACTURE INDEX PER 1 m			ROCK STRENGTH INDEX			WEATHERING INDEX	Depth(m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND					
502	19/01/20	Tonalite Massive, Igneous, Equigranular,	A1		500.03			20	40	60		5	10	15	20				500.07 MB																		
504	HQ3	Tonalite Massive, Igneous, Equigranular,	A1		916.32	503.21		20	40	60		5	10	15	20				500.21 MB																		
506		Tonalite Massive, Igneous, Equigranular,	A1		919.14	506.21	PW040 PW041 PW042 MG013	CR188	20	40	60		5	10	15	20				503.05 MB																	
508		Tonalite Massive, Igneous, Equigranular,	A1		921.96	509.21	PS005 ED005	CR189	20	40	60		5	10	15	20				503.19 MB BR	503.21f MB																
		Tonalite Massive, Igneous, Equigranular,	A1					CR190	20	40	60		5	10	15	20				504.9 MB																	
									20	40	60		5	10	15	20				506.03 MB	506.14 MB	506.21f MB															
									20	40	60		5	10	15	20				506.62 JN IN 20 170	506.81 MB										0	4	30				
									20	40	60		5	10	15	20				507.41 MB																	
									20	40	60		5	10	15	20				509.06 MB	509.13 MB BR 20 100 PL VR CL	509.18 JN 0 0.1 1.75 0.75 25	509.21 MB														

SHEET 51 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRAC TURE INDEX PER 1 m	80 82 84 86 88 90 92 94 96 98 20	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA						NOTES								
								TOTAL CORE %	SOLID CORE %	80 82 84 86 88 90 92 94 96 98 20						Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
512	19/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	924.78 512.21			CR190										510.51 MB													
514																	511.54 MB													
516																	512.21 MB													
518	20/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	927.60 515.21			CR191										515.07 MB 515.18 MB 515.21 MB													
							AR011																							
							AR012																							
							CR192																							
							CR193																							
																	517.62 JN IN 30 310													
																	518.03 MB 518.21 MB													

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA							NOTES							
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
522	20/01/20	Tonalite Massive, Igneous, Equigranular,	A1		933.24 521.21	CR193															521.04 MB	521.21 MB					
524	HQ3		A2			CR194															522.15 MB						
526		Tonalite Massive, Igneous, Equigranular,	A1		936.06 524.21															523.25 JN IN 10 260	SA Ep 1 0 4	30					
528		Tonalite Massive, Igneous, Equigranular,	A1		938.65 526.97 938.88	CR195														523.54 MB 523.64 MB 523.69 MB 523.85 MB	524.21 MB						
		Tonalite Massive, Igneous, Equigranular,	A1		527.21	CR196														525.04 MB							
						CR197														526.55 MB 526.8 MB	526.97 MB						
																			527.07 MB 527.21 MB	527.07 MB							
																			527.94 MB	528.45 JN IN 18 214	SA Qtz 0.1 0 4	30					
																			529.42 MB								

SHEET 53 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES					
													V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15 V16 V17 V18	Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
532	20/01/20	Tonalite Massive, Igneous, Equigranular,	A1	941.69	530.21		CR98							530.06 MB														
			A2											530.13 MB														
			A1											530.21/ MB														
			A2												530.7 JN IN 15 290 PL	CT	Ep	0.5	0	4						30		
			A1				PW044							530.86 MB														
							PW043							531.02 JN IN 30 254	SA	Qtz	0.1	0	4									
							PW045							531.17 JN IN 10 282 PL	CT	Ep	0.8	0	4									
							MG014							531.54 JN IN 10 0 PL	CT	Ep	0.1	0	4									
														531.66 MB														
															532.83 MB													
														533.13 MB														
														533.18 MB														
														533.2 MB														
														533.21 MB														
														533.37 JN	IN	15	304	PL	SA	Chi	0.1	0	4			30		
														533.83 MB														
															534.66 JN IN 40 188		IN	Chi	1.2	0	4						30	
														534.81 MB														
															535.32 MB													
															535.9 MB													
															536.15 MB													
															536.21 MB													
																536.74 MB												
															538.24 MB													
															539.12 MB													
															539.21 MB													
															539.68 MB													

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

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DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES									
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND					
542	20/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	952.97 542.21	AR013 AR014	CR201							541.19 MB																	
544	21/01/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	955.79 545.21		CR202							543.38 MB																	
546						CR203							544.1 MB																	
548			A3	958.61 548.21		CR204							544.75 MB																	
		Tonalite Massive, Igneous, Equigranular,	A1	548.21									545.09 MB 545.21 MB																	
													545.59 MB																	
													547.09 MB																	
													547.98 JN IN 10 0 548.06 MB IN 40 20 548.07 JN IN 40 20 548.08 JN IN 35 40 548.1 JN IN 30 40 548.11 JN IN 35 50 548.12 JN IN 25 40 548.19 JN 548.21 MB 548.49 MB																	
													SA Qtz 0.5 0 0 4 SA Qtz 0 0 4 30 SA Qtz 0 0 4 30																	

SHEET 55 of 101

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 40 60 80	5 10 15 20	FRACTURE INDEX PER 1 m 00 02 04 06 08 10 12 14 16 18 20	ROCK STRENGTH INDEX 00 02 04 06 08 10 12 14 16 18 20	WEATHERING INDEX VI VII VIII IX X XI XII XIII XIV XV XVI XVII XVIII XIX XVII	DISCONTINUITY DATA							NOTES						
															Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
562	21/01/20	Tonalite Massive, Igneous, Equigranular,	A1	969.89 560.21		PW046 PW047 PW048	CR208								560.21	MB												
564	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	972.70 563.21		SO001	CR209								560.85	JN IN 20 192 PL									0	4	30	
566		Tonalite Massive, Igneous, Equigranular,	A1	975.52 566.21		SA001 SO002	CR210								561.08	MB												
568			A2 A1				AR015 AR016								561.83	MB												
			A2 A1												561.85	MB												
															561.98	MB												
															563.21	MB												
															563.91	MB												
															564.39	MB												
															564.73	JN BR 26 104 PL RO SA Chl 0.3 0.1 1.5 1 22												
															564.95	JN BR 12 148 PL RO IN Chl 1.2 0.1 1.5 1 22												
															565.18	MB												
															566.02	MB												
															566.18	MB												
															566.79	JN IN 20 14 UN									0	4	30	
															567.34	JN IN 20 352 CU									0	4	30	
															567.44	JN IN 15 348 CU									0	4	30	
															567.59	MB												
															568.32	MB												
															568.58	JN BR 68 182 PL RO SA Chl 0.1 0.3 1.5 0.7521												
															568.89	MB												
															569.14	MB												
															569.21	MB												

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5. FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES			
											TOTAL CORE %		SOLID CORE %		80		80		80		80			
											20	40	60	80	20	40	60	80	20	40	60	80		
572	21/01/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	981.16	572.21	CR211																		
574	21/01/20	HQ3				CR212																		
576	22/01/20		Tonalite Massive, Igneous, Equigranular, Hematization alteration	A3	983.98																			
			Mafic Foliated, Dyke, Equigranular, Chloritization alteration	A4	984.52	575.21																		
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	985.04	575.78																		
						576.34	CR213																	
578	22/01/20	HQ3	Tonalite Massive, Igneous, Equigranular, Silicification alteration	A4	986.37	576.75																		
			Tonalite Massive, Igneous, Equigranular, Potassic alteration	A4	986.80	578.21	CR214																	
				A2																				

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 FRACTURE INDEX PER 1 m 10 15 20	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA						NOTES							
													Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
													V1 VV VW VW VW VW VW VW	V2 VV VW VW VW VW VW VW	V3 VV VW VW VW VW VW VW	V4 VV VW VW VW VW VW VW	V5 VV VW VW VW VW VW VW									
582	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	989.62	581.21	CR214																					
584	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3	992.44	584.21	CR215																					
586	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2			CR216																					
		A3			PW051																					
		A2			PW049																					
		A3			PW050																					
588	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	995.26	587.21	CR217																					
		A1			MG016																					

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 FRACTURE INDEX PER 1 m 10 15 20	ROCK STRENGTH INDEX	DISCONTINUITY DATA								NOTES										
													V1 W1 W2 W3 W4 W5 W6	V2 W2 W3 W4 W5 W6	V3 W3 W4 W5 W6	V4 W4 W5 W6	V5 W5 W6	Type	Depth (m)	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
													VI VII VIII VIX VII VIII VIX	VII VIII VIX VII VIII VIX	VIII VIX VII VII VIII VIX	VIX VII VII VII VII VIX	VII VII VII VII VII VIX														
17/02/20	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	998.08	590.21		CR218																								
14/02/20	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1000.90	593.21		CR219																								
16/02/20	HQ3	Tonalite Massive, Igneous, Equigranular,	A2 A1	1003.71	596.21	AR017 AR018	CR220																								
17/02/20	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1006.53	599.21		CR221																								

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA							NOTES						
													Type	Depth(m)	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)				
																							Aperture (mm)	Jr	Ja	JCOND
612	17/02/20	Tonalite Massive, Igneous, Equigranular,	A1	1017.81 611.21			CR224																			
614	HQ3																									
616		Tonalite Massive, Igneous, Equigranular, Silicification alteration	A2	1020.63 614.21	PW052 PW053 PW054		CR225																			
618		Amphibolite Massive, Metamorphic,, Chloritization alteration	A2	1022.43 616.13			CR226																			
		Quartz Monzonite Massive, Igneous, Equigranular, Silicification alteration	A2	1023.05 616.79																						
		Amphibolite Massive, Metamorphic,, Chloritization alteration	A2	1023.45 617.21	UC005 TH007		CR227																			
		Amphibolite Massive, Metamorphic,,	A1		BR005																					

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 7

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY				R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES								
								TOTAL CORE %		SOLID CORE %					ROCK STRENGTH INDEX		WEATHERING INDEX		Depth (m)		Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)		
								20	40	60	80			20	40	60	80	VI	VII	VIII	VII	VIII	VII	VIII	VII	VIII	VII	VIII				
632	18/02/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A3		1037.54		CR231																									
634	HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	632.21			CR232																									
636		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	635.21			PW055																									
638		Tonalite Massive, Igneous, Equigranular, Silicification alteration	A3	638.21			PW056																									
			A2	1043.18			PW057																									
			A3	638.21			MG018																									
			A2	1043.18			CR234																									
			A3	638.21																												
			A2	1043.18																												
			A3	638.21																												
			A1	638.21																												

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 10 15 20	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES						
															Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
642	18/02/20	Tonalite Massive, Igneous, Equigranular,	A1	1046.00	641.21		CR234									640.88 JN IN 41 0	CT	Fe	1	0	4				30				
																640.98 VN IN 85 360	IN	Qtz	10	0	4				30				
																641.14 JN IN 50 200	CT	Qtz	1	0	4				30				
																641.21 MB													
																641.31 MB													
																641.89 JN IN 35 340	SA	Qtz	1	0	4				30				
644	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1048.82	644.21		CR235									642.7 JN IN 5 120	IN	Qtz	1	0	4				30				
																642.79 MB													
																642.925 JN BR 10 310 UN SR SA Qtz 0.011	2	1	18										
																643.14 JN BR 18 280 CU SR SA Br 0.1 2	2	1	15										
																643.9 MB													
																644.13 MB													
																644.21 MB													
																644.83 MB													
646																645.555 MB													
																645.64 MB													
648		Tonalite Massive, Igneous, Equigranular,	A1	1051.64	647.21		CR236									646.77 JN IN 55 180	SA	Qtz	1	0	4				30				
																646.78 JN IN 55 180	SA	Qtz	1	0	4				30				
																646.85 JN IN 55 160	SA	Qtz	1	0	4				30				
																646.865 JN IN 50 160	SA	Qtz	1	0	4				30				
																646.92 MB													
																647.15 MB	IN	75	130	SA	Qtz	0.5	0	4					
																647.21 MB	IN	75	160	SA	Qtz	1	0	4					
																647.22 JN IN 65 155	SA	Qtz	1	0	4				30				
																647.23 JN IN 55 160	SA	Qtz	0.5	0	4				30				
																647.24 JN IN 55 165	SA	Qtz	1.5	0	4				30				
																647.26 JN BR 15 300 UN RO	SA	Chi	0.1	0.5	2.5	1			18				
																647.285 JN IN 15 300	SA	Qtz	0.5	0	4				30				
																647.625 JN													
																647.73 JN													
																648.42 JN BR 25 330 PL SR CT Ep 1 1 1.253	16												
																648.5 MB													
																649.44 MB													
																649.82 MB													
																649.925 MB													

SHEET 65 of 101

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

SHEET 66 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY						R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA						NOTES							
								TOTAL CORE %	40 60 80	20 40 60	SOLID CORE %	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)
662	18/02/20	HQ3	A1	1065.73	662.21		CR241																						
664	19/02/20	HQ3	A1	1068.55	665.21	MG019	CR242																						
666			A1	1071.37	668.21	PW058	CR243																						
668			A1	1071.37	668.21	PW059	CR244																						
						PW060																							

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRAC TURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
672	19/02/20	Tonalite Massive, Igneous, Equigranular,	A1		1074.19 671.21		CR244						670.64 MB													
674	HQ3	Tonalite Massive, Igneous, Equigranular,	A1		1077.01 674.21		CR245						671.11 MB 671.21 MB													
676						AR022							672.04 MB													
678		Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2		1079.83 677.21		CR246						673.57 MB													
			A2				CR247						674.01 MB													
			A1										674.21 MB													
			A1										674.37 MB													
			A1										674.54 MB													
			A2										674.97 MB													
			A1										675.37 MB													
			A2										676.48 MB													
			A1										676.7 JN IN 50 0													
			A1										676.85 JN IN 50 5													
			A1										677.17 JN IN 50 0													
			A1										677.21 MB													
			A1										677.48 JN IN 50 0													
			A1										677.535 JN IN 50 0													
			A2										677.85 MB													
													679.39 MB													

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRACURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES					
													Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
682	19/02/20	Tonalite Massive, Igneous, Equigranular,	A2 A1 A1	1082.65 680.21	CR248								680	JN	IN	15	0	CT	Cal	0.5	4	30						
	HQ3		A1	1084.42 682.10									680.02	MB				IN	Ep	1.5	4	30						
		Tonalite Massive, Igneous, Equigranular,	A1 A2 A1 A2 A1	1085.47 683.21	CR249								680.065	MB														
			A1 A2										680.21	MB														
		Tonalite Massive, Igneous, Equigranular,	A1 A2	1088.29 686.21	CR250								680.865	MB														
			A2 A1 A2 A1										682.23	MB														
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	1091.11 689.21	CR251								682.28	MB														
			A2										682.29	MB														
			A1										682.365	MB														
			A2 A1										683.21	MB														
			A2 A1										683.29	MB														
			A2 A1										683.45	JN	IN	55	310	CT	Ep	0.5	4	30						
			A2 A1										683.92	MB														
			A2 A1										684.96	JN	IN	20	5	CT	Ep	0.750	4	30						
			A2 A1										685.41	MB														
			A2 A1										685.5	MB														
			A2 A1										685.91	JN	IN	30	310	CT	Ep	1	0	4	30					
			A2 A1										686.115	MB														
			A2 A1										686.21	MB														
			A2 A1										686.43	JN	IN	35	320	CT	Qtz	1	0	4	30					
			A2 A1										686.71	JN	IN	30	350	CT	Ep	1	0	4	30					
			A2 A1										686.83	JN	IN	25	290	IN	Ep	2	0	4	30					
			A2 A1										686.86	MB	IN	45	340	CT	Qtz	1	0	4	30					
			A2 A1										686.88	JN	IN	30	290	CT	Ep	1	0	4	30					
			A2 A1										687	JN				CT	Qtz	1	0	4	30					
			A2 A1										687.19	JN	IN	40	5	CT	Qtz	1	0	4	30					
			A2 A1										687.62	JN	IN	20	290	CT	Ep	1	0	4	30					
			A2 A1										687.73	MB	IN	20	285	IN	Ep	2	0	4	30					
			A2 A1										688.25	JN	IN	30	350	CT	Qtz	1	0	4	30					
			A2 A1										688.37	MB														
			A2 A1										688.67	JN	IN	20	340	IN	Chl	2	0	4	30					
			A2 A1										689.02	MB														
			A2 A1										689.21	MB														
			A2 A1										689.3	JN	IN	35	340	CT	Ep	1	0	4	30					
			A2 A1										689.7	JN	IN	25	310	CT	Ep	1	0	4	30					
			A2 A1										689.83	JN	IN	25	310	CT	Ep	1	0	4	30					
			A2 A1										689.84	MB														

SHEET 69 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES		
								TOTAL CORE %	SOLID CORE %	20 40 60 80			20 40 60 80												
692	19/02/20 HQ3	A2 Tonalite Massive, Igneous, Equigranular, Potassic alteration	CR251	1093.92	692.21	UC007 BR007 MG020 PW061 PW062 PW063																		690.39 JN IN 25 350 CT Ep 1 0 0 4 30 690.42 JN IN 70 350 CT Ep 1 0 0 4 30  690.79 JN IN 20 40 CT Ep 1 0 0 4 30 690.87 JN IN 20 320 CT Ep 1 0 0 4 30 690.92 JN IN 20 320 CT Ep 1 0 0 4 30 691.07 JN IN 30 5 CT Qtz 1 0 0 4 30 691.08 JN IN 30 320 PL RO IN Ep 2 0 0 4 0.75 30 691.09 JN IN 30 320 IN Ep 2 0 0 4 30 691.12 MB BR 41 20 CL Ep 0 0.5 1.5 23 691.13 JN IN 50 325 CT Chl 1 0 0 4 30 691.21 MB IN 15 55 CT 1 0 0 4 30 691.22 JN 691.35 JN 691.37 MB IN 65 200 CT Afs 1 0 0 4 30 691.47 MB 691.50 MB 691.57 JN IN 40 240 CT Afs 1 0 0 4 30 691.58 MB IN 40 340 CT Afs 1 0 0 4 30  692.06 JN 692.13 JN 692.21 MB  692.6 MB  692.99 MB 693.2 MB  693.46 JN IN 40 330 CT Ep 0.5 0 0 4 30 693.5 JN IN 35 280 CT Ep 1 0 0 4 30 693.52 JN IN 15 10 PL RO IN Ep 1 0 0 4 30 693.55 JN IN 20 350 CT Ep 1 0 0 4 30 693.56 JN IN 40 300 CT Ep 1 0 0 4 30 693.58 JN IN 40 300 CT Ep 1 0 0 4 30 693.59 JN IN 40 300 CT Afs 1 0 0 4 30 693.6 JN PIN 20 275 CL Ep 0 1 0 4 30 693.62 JN IN 60 260 CT Ep 1 0 0 4 30 693.7 JN IN 40 270 CT Ep 1 0 0 4 30 693.71 JN IN 40 270 CT Ep 1 0 0 4 30 693.75 JN IN 40 270 CT Ep 1 0 0 4 30 693.79 JN IN 40 270 CT Qtz 1 0 0 4 30 694.05 JN IN 40 280 CT Ep 1 0 0 4 30 694.15 JN IN 40 340 CT Ep 1 0 0 4 30 694.32 JN IN 25 180 IN Qtz 2 0 0 4 30 694.37 MB IN 55 350 CT 1 0 0 4 30 694.66 JN  695.14 JN IN 30 70 CT Qtz 1 0 0 4 30 695.21 MB  695.48 MB 695.66 JN IN 40 310 CT Ep 1 0 0 4 30 695.81 MB 695.87 MB 696.01 JN IN 40 320 0 4 30  697.08 JN IN 15 270 ST RO CT Cal 1 0 0 4 30 697.14 JN PIN 10 280 ST RO CL Ep 0 0.5 4 0.75 30 697.18 JN IN 30 270 CT Ep 1 0 0 4 30 697.32 JN IN 40 270 CT Ep 1 0 0 4 30 697.34 MB IN 35 280 IN Afs 23 0 4 30 697.45 JN 697.63 JN IN 30 280 CT Ep 1 0 0 4 30 697.8 JN IN 20 280 CT Ep 1 0 0 4 30  698 JN IN 25 290 PL RO CT Ep 1 0 0 4 30 698.03 JN PIN 20 305 CL 0.5 4 0.75 30 698.21 MB PIN 20 305 CT Ep 1 0 0 4 30  698.22 JN IN 20 305 CT Ep 1 0 0 4 30 698.35 JN IN 30 305 CT Ep 1 0 0 4 30 698.38 JN IN 5 290 CT Ep 1 0 0 4 30 698.45 JN IN 5 290 CT Afs 1 0 0 4 30 698.55 JN  698.86 MB  699.56 JN IN 20 90 CT Cal 1 0 0 4 30 699.73 JN IN 20 90 CT Cal 1 0 0 4 30	
694	20/02/20 HQ3	A2 Tonalite Massive, Igneous, Equigranular, Potassic alteration	CR252	1096.74	695.21																				
696	20/02/20 HQ3	A2 Tonalite Massive, Igneous, Equigranular, Potassic alteration	CR253	1099.56	698.21																				
698		A3 Tonalite Massive, Igneous, Equigranular, Potassic alteration	CR254	1099.56	698.21																				
		A1																							

SHEET 70 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES						
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND		
702	20/02/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	1102.38	AR023	CR254							700.39 MB														
704	HQ3	Tonalite Massive, Igneous, Equigranular,	A3	701.21		CR255							700.72 MB														
706			A1	1105.20									701.11 MB	701.21 MB	IN	Ep	5	0	4								
708			A1	704.21		CR256							701.22 JN	701.44 JN	IN	30	350										
			A2										701.86 MB														
			A1			CR257							703.38 MB														
													704.12 MB	704.21 MB													
													704.76 MB	704.91 JN	IN	50	300										
													705.625 JN	705.925 JN	IN	55	330										
													706.12 JN	706.265 MB	IN	0	0										
													707.025 MB	707.03 MB	707.21 MB												
													707.675 MB														
													707.925 JN	708.145 JN	IN	50	350										
													708.145 JN	709.13 MB	IN	50	320										

SHEET 71 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 10 15 20	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES								
															V1 VV VW VV VV	V2 VV VW VV VV	V3 VV VW VV VV	V4 VV VW VV VV	V5 VV VW VV VV	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja
712	21/02/20	Tonalite Massive, Igneous, Equigranular,	A1	1110.84	710.21		CR258									710.095 MB	710.21 - MB														
			A1	1111.71		PW064										710.5 MB															
		Tonalite Massive, Igneous, Equigranular,	A1	1111.14		PW065										710.96 MB	711.14 - MB														
						PW066										712.28 MB															
714	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1114.53	714.14	PS008										713.475 MB															
			A2			ED008										713.855 JN IN 25 295		IN	Qtz	1.5	0	4									
		Tonalite Massive, Igneous, Equigranular,	A1	1114.53			CR260									714.14 - MB															
			A2													714.75 MB															
716			A1	1117.35	717.14											716.5 MB															
		Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2				CR261									716.99 MB	717.14 - MB														
			A1	1117.35												717.42 JN IN 35 340		CT	Ep	1	0	4									
			A2													717.71 JN IN 25 5		CT	Afs	1	0	4									
															717.75 JN IN 50 340		CT	Ep	1	0	4										
															717.84 JN IN 50 350		CT	Ep	1	0	4										
															717.93 JN IN 40 340		CT	Ep	1	0	4										
															718.04 JN IN 35 340		CT	Ep	1	0	4										
															718.05 MB		CT	Ep	1	0	4										
															718.25 JN IN 85 0		CT	Qtz	1	0	4										
718															718.79 JN BR 21 265 PL RO SA Chl 0.1 0.5 1.5 0.7521																
															719.06 JN IN 45 310		CT	Afs	1	0	4										
															719.28 JN IN 45 310		CT	Ep	1	0	4										
															719.42 JN IN 45 310		CT	Afs	1	0	4										
															719.55 MB																
															719.74 JN IN 50 340		CT	Afs	1	0	4										
															719.83 JN		CT	Afs	1	0	4										

SHEET 72 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 FRACTURE INDEX PER 1 m 10 15 20	ROCK STRENGTH INDEX 80 82 84 86 88	WEATHERING INDEX VI VII VIII IX X XI XII XIII XIV XV XVI XVII XVIII XIX XVII	DISCONTINUITY DATA							NOTES							
														Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
722	2/02/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2		720.14		CR262								719.98	MB												
			A2	A2											720.11	JN	IN	35	300	CT	Ep	1	0	4	30			
														720.14J	JN	IN	50	340	CT	Ep	1	0	4	30				
														720.25														
														720.63	JN	IN	25	280	CT	Cal	1	0	4	30				
														720.7	JN	IN	50	300	PL	RO	CT	Ep	1	0	4	0.75	30	
														720.74	JN	PIN	52	285			CL	Cal	0	0.5	4	30		
														720.79	JN	IN	30	290			CT	Qtz	1	0	4	30		
														720.92	JN	IN	25	70			IN	Qtz	2	0	4	30		
														720.99	MB													
														721.18	JN	IN	50	340			IN	Qtz	2	0	4	30		
														721.38	SHRD		71	150										
														721.55	JN	BR	76	175	PL	RO	SA	Qtz	0.5	0.1	1.5	1	22	
														722	JN	IN	60	170			CT	Qtz	1	0	4	30		
														722.15	JN	IN	30	335			CT	Ep	1	0	4	30		
														722.34	JN	IN	70	360			CT	Qtz	1	0	4	30		
														722.49	MB													
														723.14J	MB													
														723.46	JN	IN	30	345			IN	Ep	2	0	4	30		
														723.62	JN	IN	40	330			CT	Qtz	1	0	4	30		
														723.8	JN	IN	40	5			CT	Qtz	1	0	4	30		
														723.85	JN	IN	45	350			CT	Ep	0.5	0	4	30		
														723.93	JN	IN	40	5			CT	Qtz	0.5	0	4	30		
														723.98	JN	IN	20	10			CT	Qtz	1	0	4	30		
														724.02	JN	IN	20	5			CT	Qtz	1	0	4	30		
														724.03	MB	IN	30	5			CT	Qtz	1	0	4	30		
														724.08	JN	IN	40	5			CT	Qtz	1	0	4	30		
														724.12	JN	IN	40	5			CT	Qtz	1	0	4	30		
														724.23	JN	IN	35	20			CT	Qtz	1	0	4	30		
														724.34	JN	IN	30	350			CT	Qtz	1	0	4	30		
														724.45	JN	IN	20	330			IN	Ep	2	0	4	30		
														724.54	JN													
														724.98	JN	IN	35	300			CT	Qtz	1	0	4	30		
														725	JN	IN	35	300			CT	Qtz	1	0	4	30		
														725.53	MB													
														726.12J	MB													
														726.88	MB													
														727	JN	IN	25	355			CT	Qtz	1	0	4	30		
														728.4	MB													
														728.61	MB													
														729.01	MB													
														729.14	MB													
														729.26	MB													
														729.56	MB													
														729.69	MB													
														729.76	MB													

SHEET 73 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES									
													20 40 60 80	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)							
732	24/02/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1131.45 732.14		CR266																								
734			A2 A1			CR267																								
736	29/02/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1134.27 735.14		CR268																								
738	01/03/20 HQ3	Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2	1137.08 738.14		CR269																								

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 7

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

SHEET 75 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	TOTAL CORE %	SOLID CORE %	R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES		
															V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW	V5 VV VW VW VW VW	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type
752	01/03/20	Tonalite Massive, Igneous, Equigranular, Bleaching alteration	A2	750.14		CR273			20 40 60 80	20 40 60 80	20 40 60 80	5	10	15	20	PL	CT	Chl	0.9	0	4	4	30				
															750.14 JN MB	IN	25	60	30	IN	Qtz	2	0	0	4	30	
															750.16 JN	IN	40	30									
															750.46 JN	IN	15	42	UN	CL		0	0	4		30	
															750.73 MB												
															750.96 VN	IN	30	250		IN	Qtz	8	0	4		30	
															751.12 VN	IN	40	210		IN	Qtz	7	0	4		30	
															752.25 MB												
															752.41 VN	IN	25	88		IN	Qtz	11	0	4		30	
															752.98 VN	IN	40	200		IN	Qtz	3	0	4		30	
															752.99 MB	IN	30	0		SA	Qtz	0.1	0	4		30	
															753.14 JN	IN	65	200		IN	Qtz	1	0	4		30	
															753.3 JN												
															753.66 IPS		70	325									
															753.7 IPS												
															754.37 JN	IN	15	235		CT	Chl	0.8	0	4		30	
															754.97 JN	IN	30	160		CT	Qtz	0.5	0	4		30	
															755.1 JN	IN	20	48		CT	Qtz	0.9	0	4		30	
															755.15 MB												
															755.66 MB												
															755.88 MB												
															756.04 MB												
															756.14 MB												
															756.54 MB												
															757.03 JN	IN	25	292		IN	Qtz	2	0	4		30	
															758.02 MB												
															758.66 JN	IN	18	63		IN	Qtz	1.5	0	4		30	
															758.92 MB												
															759.14 MB												
															759.55 MB												
															759.87 VN	IN	18	60	UN	IN	Qtz	25	0	4		30	
															759.88 JN	IN	15	335	PL	IN	CT	Qtz	0.9	0	4	30	

SHEET 76 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRAC TURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
762	01/03/20 HQ3	Aplite Massive, Dyke, Equigranular, Tonalite Massive, Igneous, Equigranular, Tonalite Massive, Igneous, Equigranular, Bleaching alteration	A2	1159.13 761.60 1159.64 762.14	CR276								760.19 JN IN 80 17 UN IN Qtz 1.1 0 4 30													
764	01/03/20 HQ3												760.39 JN IN 80 340 PL IN Qtz 1.5 0 4 30													
764	01/03/20 HQ3												761.06 MB													
764	01/03/20 HQ3												761.24 JN IN 20 210 PL CT Qtz 0.8 0 4 30													
764	01/03/20 HQ3												761.25 JN IN 15 88 PL SA Qtz 0.5 0 4 30													
764	01/03/20 HQ3												761.32 JN IN 20 60 UN CT Qtz 0.5 0 4 30													
766	02/03/20 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	1162.46 765.14	CR277								762.03 MB													
766	02/03/20 HQ3												762.14 MB													
766	02/03/20 HQ3												762.46 JN IN 15 40 CT Qtz 0.1 0 4 30													
766	02/03/20 HQ3												762.47 MB													
768	02/03/20 HQ3	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2	1165.28 768.14	CR278								764 MB													
768	02/03/20 HQ3												764.47 JN IN 25 40 CT Qtz 0.1 0 4 30													
768	02/03/20 HQ3												765.14 MB													
768	02/03/20 HQ3												765.48 MB													
768	02/03/20 HQ3												766.99 MB													
768	02/03/20 HQ3												767.79 JN IN 20 270 CT Ep 0.1 0 4 30													
768	02/03/20 HQ3												768.14 MB													
768	02/03/20 HQ3												768.47 MB													
768	02/03/20 HQ3												768.73 JN IN 20 10 CT Qtz 0.5 0 4 30													
768	02/03/20 HQ3												769.65 JN IN 20 355 CT Qtz 0.1 0 4 30													
768	02/03/20 HQ3												769.77 JN IN 40 180 IN Bt 2 0 4 30													
768	02/03/20 HQ3												769.92 IPS 40 180													

SHEET 77 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. 40 60 80	5 10 15 20 FRACTURE INDEX PER 1 m	80 60 40 20 ROCK STRENGTH INDEX	VI VII VIII IX WEATHERING INDEX	DISCONTINUITY DATA									NOTES									
														Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND					
772	02/03/20	Tonalite Massive, Igneous, Equigranular,	A1	1168.09	771.14	MG023	CR279								769.99 770.15	MB JN IN	55	330	CT	Qtz	0.1	0	4	30								
			PW070												770.87	MB																
			PW071												771.14	r MB																
			PW072												771.42	MB																
			A3 A1				CR280								771.82	MB																
			A3 A1												772.24	MB																
			A2	1170.91	774.14										772.44 772.48	MB JN IN	10	20	IN	Qtz	1	0	4	30								
		Tonalite Massive, Igneous, Equigranular, Potassic alteration					CR281								772.8	JN IN	10	20	IN	Qtz	1	0	4	30								
															772.95 772.96	JN IN MB IN	15	20	IN	Qtz	1	0	4	30								
															772.97	JN																
															774.14	r MB																
															774.44	MB																
															775.47 775.5 775.64 775.83 775.95	JN IN 60 85 IN 85 MB	30 270 360 360 350	5 270 360 360 350	CT IN CT CT IN	Afs Qtz Ep Ep Gt	0.1 2 0.1 0.1 10	0 0 0 0 0	4 4 4 4 4	30 30 30 30 30								
															776.12	VN IN	60	350	IN	Gt	10	0	4	30								
															776.8	JN IN	10	270	CT	Ep	0.1	0	4	30								
															777.05 777.13 777.14 777.33 777.35	MB MB r MB IN 20 JN 20																
															777.7	JN IN	25	182	PL	CT	Qtz	0.3	0	4	30							
															778.58	JN BR	26	278	PL	VR	SA	Chi	0.1	0.5	1.750.7522							
															778.84	MB																
															779.95	MB																

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

SHEET 78 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	TOTAL CORE %	SOLID CORE %	R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES			
															V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW	V5 VV VW VW VW VW	V6 VV VW VW VW VW	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type
782	02/03/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2 A2 A1		780.14		CR283		20 40 60 80	20 40 60 80	20 40 60 80	5 10 15 20			780.1 780.14/ MB	JN IN	20	348 PL	SA	Chl	0.2	0	4	30				
						AR026									780.51	IPS	22	135										
784	02/03/20	Tonalite Massive, Igneous, Equigranular,	A1		783.14		CR284								781.09	MB												
			A2												781.84	JN IN	50	40 UN	IN	Qtz	1.2	0	4	30				
			A1												782.2	MB												
786	02/03/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2		1182.19		CR285								782.58	MB												
						786.14									782.84 782.86 782.87 783.14	IPS JN MB MB	55 54	192 198	PL	RO	IN	Chl	3	1	1.5	1.25	21	
788	03/03/20	Tonalite Massive, Dyke, Equigranular,			1183.99										783.34	MB												
					788.06										783.63	JN IN	20	335 UN	CL		0	0	4	30				
					1184.20										784.84	MB												
					788.28										785.35	MB												
					1184.67										786.09/ 786.14/ MB	MB												
					788.78		CR286								786.74 786.85	JN MB	12	288 PL	IN	Chl	1.5	0	4	30				
					1185.01										787.66	JN IN	25	274 UN	SA	Afs	0.2	0	4	30				
					789.14		CR287								788.28 788.3 788.44 788.58 788.68 788.75	JN MB MB MB IPS MB	20	276		CT	Ep	0.9	0	4	30			
															788.89 788.92	MB IPS	20	298 300	IN	Qtz	46	0	4	30				
															789.14	MB				IN	Ot	20	0	4	30			
															789.68	IPS	35	178										

SHEET 79 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA									NOTES						
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
792	03/03/20	Tonalite Massive, Igneous, Equigranular, Potassic alteration	A2		1187.83		CR287							790.03 JN IN 30 27	CT	Qtz	0.5	0	4	30								
			A2		792.14									790.15 IPS IN 45 290														
794	HQ3						CR288							790.4 IPS IN 30 164	CT	Chi	0.8	0	4	30								
														790.41 IPS IN 15 175														
														790.47 IPS IN 45 170	SA	Chi	0.1	0	4	30								
														790.63 MB IN 37 296	SA	Chi	0.1	0	4	30								
														790.65 JN IN 25 293	IN	Qtz	21	0	4	30								
														790.73 JN IN 45 243	IN	Qtz	4	0	4	30								
														790.81 VN IN 55 312	SA	Chi	0.1	0	4	30								
														790.88 VN IN 55 268	IN	Qtz	14	0	4	30								
														790.92 JN IN 50 110														
														791.09 VN IN 18 320	SA	Ep	0.1	0	4	30								
														791.31 JN IN 25 305	SA	Afs	0.1	0	4	30								
														791.4 JN IN 30 315	SA	Afs	0.1	0	4	30								
														791.45 JN IN 20 275	ST	Fe	0.8	0	4	30								
														791.65 JN IN 20 280	CL		0	0	4	30								
														791.71 MB IN 20 48	CT	Chi	0.8	0	4	30								
														791.75 JN IN 65 290	SA	Chi	0.2	0	4	30								
														791.88 JN PIN 20 262	SA	Afs	0.1	0	4	30								
														791.91 MB IN 35 196	ST	Qtz	0.1	0	4	30								
														791.93 JN IN 20 275														
														791.94 IPS MB														
														792.08 JN MB														
														792.08 JN MB														
														792.29 MB IN 26 274	ST	Qtz	0.1	0	4	30								
														792.55 JN														
796		Tonalite Massive, Igneous, Equigranular,	A1		1190.65		PW073							793.36 JN IN 16 330	ST	Afs	0.1	0	4	30								
			A1		795.14		PW074							793.62 MB														
							PW075							793.79 MB														
798		Tonalite Massive, Igneous, Equigranular,	A1		1193.47		CR289							793.9 JN BR 16 226 PL SR CL	0	0.5	1.250.7521											
			A1		798.14		MG024							794.22 JN IN 16 308	SA	Qtz	0.5	0	4	30								
					1194.07		CR290							794.34 JN IN 31 134	SA	Qtz	0.1	0	4	30								
		Bt-rich Tonalite Massive, Igneous, Equigranular,			798.78									795.14 MB														
														795.5 MB														
														795.87 MB														
														796.03 MB														
														796.53 JN IN 4 300	SA	Qtz	0.5	0	4	30								
														796.96 JN IN 14 345	SA	Qtz	0.5	0	4	30								
														797.28 MB														
														797.49 MB														
														798.14 MB														
														798.6 JN IN 9 275	SA	Qtz	0.5	0	4	30								
														799.61 MB														

SHEET 80 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRAC TURE INDEX PER 1 m	80 ROCK STRENGTH INDEX	DISCONTINUITY DATA							NOTES			
								TOTAL CORE %	SOLID CORE %	20 40 60 80				5 Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr
	03/03/20	HQ3			1195.53 800.34		CR280																	
802		Bt-rich Tonalite Massive, Igneous, Equigranular,	A1		1196.29 801.14																			
	04/03/20	HQ3			1197.20 802.11		CR291																	
804		Tonalite Massive, Igneous, Equigranular,	A1		1199.10 804.14																			
	04/03/20	HQ3			1201.92 807.14		CR292																	
806		Tonalite Massive, Igneous, Equigranular,	A1				CR293																	
808																								

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	TOTAL CORE %	SOLID CORE %	R.Q.D. %	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES							
															V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW	V5 VV VW VW VW VW	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr
812	04/03/20	Tonalite Massive, Igneous, Equigranular,	A1	810.14		CR294			20 40 60 80	20 40 60 80	20 40 60 80	5 10 15 20			810.05 MB 810.14 J MB 810.33 MB															
814		Tonalite Massive, Igneous, Equigranular,	A1	1207.56		CR295										811.51 MB														
816		Tonalite Massive, Igneous, Equigranular,	A1	813.14												812.99 MB 813.14 J MB														
818		Tonalite Massive, Igneous, Equigranular,	A1	1210.38		CR296										814.43 MB 814.57 JN IN 15 48														
			A2	816.14												815.89 MB 815.97 MB 816.14 J MB														
			A2													817.38 MB														
			A2	1213.20		CR297										817.67 IPS 50 153														
		Tonalite Massive, Igneous, Equigranular,	A1	819.14												818.17 IPS BR 40 160 PL RO IN Chl 4 1 1.5 1.25 21 818.19 VN 38 159														
																818.72 JN IN 25 346 CT Chl 0.5 0 4 30 818.73 JN IN 35 168 IN Chl 2 0 4 30 818.78 MB 819 MB 819.08 JN IN 20 356 SA Chl 0.2 0 4 30 819.14 J MB IN VN IN 27 292 IN Qtz 5 0 4 30 819.23 VN IN														

SHEET 82 of 101

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRAC TURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES							
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
822	04/03/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1216.02 822.14		CR297							820.31	MB														
824						CR298							820.92	VN IN 55 0	IN	Gt	1.5	0	4	30								
826	05/03/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A1	1218.84 825.14	PW076 PW077 PW078 MG025	CR299							821.79	MB														
828			A3										823.29	MB														
			A1		PW076 PW077 PW078 MG025								824.12	MB														
			A2										824.14	MB														
			A1										824.63	MB														
													824.81	MB														
													824.95	MB														
													825.06	MB														
													825.08	IPS MB														
													825.14	MB														
													825.5	MB														
													826.02	MB														
													826.21	MB														
													826.42	MB														
													827.05	JN IN 21 280	SA	Qtz	0.5	0	4	30								
													827.55	FLT BR 13 318 UN SM CT Chl 2.5 0.8 1.752														
													827.75	MB														
													828.14	MB														
													828.51	MB														
													828.74	MB														
													828.95	JN IN 24 8	SA	Qtz	0.5	0	4	30								
													829.27	MB														

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES			
								TOTAL CORE %	SOLID CORE %	20 40 60 80					5 FRACTURE INDEX PER 1 m	RO BR SR CL SA	VI VII VIII VII VII	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	
								20 40 60 80	20 40 60 80	20 40 60 80					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80				
832	05/03/20	HQ3	A2 A1	A2	1224.48 831.14	CR300																						
		Tonalite Massive, Igneous, Equigranular,																										
834		Bt-rich Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2 A2	A2	1226.77 833.58	CR301																						
		Bt-rich Tonalite Massive, Igneous, Equigranular,	A1	A1	1227.30 834.14	CR302																						
836			A2 A2 A2	A2	1230.11 837.14	AR027																						
		Bt-rich Tonalite Massive, Igneous, Equigranular, Bleaching alteration																										
838		Tonalite Massive, Igneous, Equigranular, Silicification alteration	A3	A3	1231.66 838.78	CR303																						
		Bt-rich Tonalite Massive, Igneous, Equigranular,	A1	A1	1232.26 839.42 1232.46	839.64																						
		Tonalite Massive, Igneous, Equigranular,																										

SHEET 84 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	DISCONTINUITY DATA							NOTES					
								TOTAL CORE %	SOLID CORE %	20 40 60 80				5 Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
852	06/03/20	Tonalite Massive, Igneous, Equigranular,	A2 A1	A1	1244.21 852.14	PW081 MG026 TH009	CR307																			
854	HQ3	Tonalite Massive, Dyke, Equigranular, Tonalite Massive, Igneous, Equigranular,	A1	A1	1246.05 854.10		CR308																			
856		Tonalite Massive, Igneous, Equigranular,	A1	A1	1247.03 855.14		CR309																			
858		Tonalite Massive, Igneous, Equigranular,	A1	A1	1249.85 858.14		CR310																			
		Bt-rich Tonalite Massive, Igneous, Equigranular,			1250.63 858.97																					

SHEET 86 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA										NOTES						
							CORE RUN			RECOVERY			R.Q.D.			FRACTURE INDEX PER 1 m			ROCK STRENGTH INDEX			WEATHERING INDEX	
							TOTAL CORE %	40 60 80	40 60 80	40 60 80	40 60 80	20 40 60 80	10 15 20	80 82 84 86 88	80 82 84 86 88	VI VII VIII IX X	VII VIII IX X XI	VI VII VIII IX X	VI VII VIII IX X	VI VII VIII IX X	VI VII VIII IX X	VI VII VIII IX X	VI VII VIII IX X
862	06/03/20	Tonalite Massive, Igneous, Equigranular,	A2		1252.51																		
		Tonalite Massive, Igneous, Equigranular, Bleaching alteration	A1		860.97																		
			A2		1253.87																		
864	06/03/20	Bt-rich Tonalite Massive, Igneous, Equigranular,			862.42																		
		Tonalite Massive, Igneous, Equigranular,	A2		1254.46																		
			A1		863.05																		
		Bt-rich Tonalite Massive, Igneous, Equigranular,			1254.77																		
			A1		863.38																		
866	06/03/20	Tonalite Massive, Igneous, Equigranular,	A1		1255.49																		
			A2		864.14																		
					1257.17																		
868	07/03/20	Tonalite Massive, Igneous, Equigranular,	A1		865.93																		
					1258.31																		
		Tonalite Massive, Igneous, Equigranular,	A2		867.14																		
			A1		1259.73																		
		Tonalite Massive, Igneous, Equigranular,	A1		868.66																		
					1259.73																		

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)					
														Depth (m)												
872	07/03/20	HQ3	Tonalite Massive, Igneous, Equigranular,	A1	870.14		CR316							870.03 MB												
														870.14 MB												
			Bt-rich Tonalite Massive, Igneous, Equigranular,	A3	1262.73									870.39 VN IN 50 350	IN	Qtz	7	0	4						30	
					871.85									870.48 MB												
			Tonalite Massive, Igneous, Equigranular,		1263.42									871.98 MB												
					872.58									872.43 JN IN 40 65	SA	Chl	0.2	0	4						30	
			Tonalite Massive, Igneous, Equigranular, Silicification alteration	A2	1263.94		CR317							872.58 VN IN 15 52	IN	Qtz	15	0	4						30	
					873.14									872.98 MB												
874														873.13 JN IN 15 325	JN	Chl	4	0	4							30
														873.14 MB												
														873.27 VN IN 60 15	IN	Qtz	6	0	4							30
														873.36 JN IN 70 230	IN	Chl	3	0	4							30
														873.45 MB												
														873.61 VN IN 35 358 UN	IN	Qtz	20	0	4							30
														873.63 JN IN 30 334	IN	Chl	2	0	4							30
														873.78 VN IN 35 322	IN	Qtz	10	0	4							30
														874.09 JN IN 45 330	IN	Chl	1.5	0	4							30
														874.45 JN IN 25 318	IN	Chl	2	0	4							30
														874.97 MB												
876			Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2	1266.76		CR317							875.93 MB												
				A1	876.14									876.08 MB												
														876.14 MB												
														876.24 JN IN 39 294	SA	Chl	0.5	0	4							30
														876.4 JN IN 31 303 UN SM SA Chl 1 0 4 1	IN	Chl	1	0	4							30
														876.56 MB												
														877.56 MB												
														877.94 MB												
														878.32 MB												
														878.52 MB												
														878.79 MB												
														878.91 MB												
														879.14 MB												
878			Tonalite Massive, Igneous, Equigranular, Chloritization alteration	A2	1269.58		CR319							879.35 JN IN 6 115	CT	Chl	1	0	4							30
				A1	879.14									879.37 MB												

SHEET 88 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA									NOTES						
													Type	Broken/Impact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND			
882	07/03/20 HQ3	Tonalite Massive, Igneous, Equigranular,	A2 A1	A1	1272.40 882.14	CR319								880.85 MB														
		Fsp-phyric Tonalite Massive, Igneous, Porphyritic,			1273.40 883.20									881.56 JN IN 21 178	SA	Qtz	0.5	0	4									30
		Tonalite Massive, Igneous, Equigranular,			1274.11 883.96	CR320								882.06 MB 882.14 MB 882.26 MB														
		Fsp-phyric Tonalite Massive, Igneous, Porphyritic,			1274.48 884.35									882.95 JN IN 30 274	IN	Chl	1.5	0	4									30
		Tonalite Massive, Igneous, Equigranular,	A2	A2	1275.22 885.14									883.2 JN IN 40 58	SA	Qtz	0.5	0	4									30
		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Bleaching alteration												883.77 MB														
		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chlorization alteration	A2	A2	1278.04 888.14	CR321								883.99 JN IN 50 150	SA	Chl	0.2	0	4									30
886	08/03/20 HQ3													884.6 JN IN 25 165	SA	Qtz	0.2	0	4									30
														884.82 JN IN 20 170	SA	Qtz	0.2	0	4									30
														884.97 MB 885.03 JN IN 30 184	SA	Qtz	0.2	0	4									30
														885.14 MB 885.26 JN IN 46 275 PL SR 885.31 JN IN 52 254	SA	Qtz	0.5	0.1	4	0.75	30							
														885.48 JN IN 32 78 PL SR 885.53 JN BR 26 302 PL SR	SA	Qtz	0.1	0	4		30							
														885.94 JN IN 23 294	SA	Chl	1	0	4		30							
														886.06 JN IN 24 262	SA	Qtz	0.1	0	4		30							
														886.6 JN IN 21 260	SA	Qtz	0.1	0	4		30							
														886.72 JN IN 41 202	SA	Qtz	0.5	0	4		30							
														886.74 MB IN 25 338	CT	Qtz	0.5	0	4		30							
														886.76 JN IN 29 328	SA	Qtz	0.1	0	4		30							
														886.87 JN IN 39 278	SA	Qtz	0.1	0	4		30							
														887.25 JN IN 46 278	SA	Qtz	0.1	0	4		30							
														887.27 JN IN 23 292	SA	Qtz	0.1	0	4		30							
														887.41 JN IN 33 292	SA	Qtz	0.1	0	4		30							
														887.57 JN IN 42 272	SA	Qtz	0.1	0	4		30							
														887.74 JN IN 23 350	SA	Afs	0.1	0	4		30							
														887.76 JN IN 46 280	SA	Afs	0.5	0	4		30							
														887.83 JN IN 25 334	SA	Afs	0.5	0	4		30							
														887.88 JN IN 50 265	SA	Afs	0.5	0	4		30							
														888.02 JN IN 44 276	SA	Qtz	0.5	0	4		30							
														888.14 MB														
														888.4 JN IN 43 302	SA	Qtz	0.5	0	4		30							
														888.47 MB IN 50 0	SA	Afs	0.5	0	4		30							
														888.48 JN BR 49 276 PL SR	CL	0	0.5	1.25	0.75	21								
														888.55 JN MB														
														888.64 MB														
														889.01 MB														
														889.29 JN BR 53 294 IR SR CT Chl 1 0.5 3 1 17														
														889.62 MB														
														889.9 MB														

SHEET 89 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation

NAME / : IG\_BH04

LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5. FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES																	
													20 40 60 80	Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill																	
	08/03/20	HQ3																																				
892		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1280.86	891.14	UC008 BR008	CR322																															
894	09/03/20	HQ3																																				
896		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Bleaching alteration	A2	1283.68	894.14		CR323																															
898		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1286.50	897.14		CR324																															
						AR028	CR325																															

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 10 15 20	FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES				
															V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr
902		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Sericitization alteration	A2	900.14			CR326									899.98 JN PIN 20 266	SA Qtz 0.1 0 4	30											
																900.04 JN PIN 35 280	SA Qtz 0.1 0 4	30											
																900.14 MB	SA Chl 0.1 0 4	30											
																900.15 JN													
																900.7 JN IN 40 268	CT Chl 0.5 0 4	30											
																901.44 MB													
904	09/03/20	HQ3	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1292.13			CR327								902.99 MB JN IN 5 250	SA Chl 0.1 0 4	30											
																903.03 MB JN													
																903.14 MB													
																903.41 JN IN 25 318	SA Qtz 0.1 0 4	30											
																903.54 MB													
																903.76 MB													
																904.17 MB													
																904.56 MB													
																904.74 MB													
906			Amphibolite Massive, Dyke, Equigranular, Chloritization alteration	A2	1293.88			CR328								905.00 VN BR 50 105 PL	SM IN Qtz 4 0.5 1	1.25 14											
																905.0001 SHRIN 50 105	SA Qtz 0.1 0 4	30											
																905.07 JN 60 106													
																905.39 JN IN 33 338	SA Chl 0.2 0 4	30											
																905.63 JN IN 30 340	CT Qtz 0.5 0 4	30											
																905.71 JN IN 60 108	SA Chl 0.2 0 4	30											
																905.83 SHRD 57 100													
																905.88 MB JN IN 55 205	CT Qtz 0.5 0 4	30											
																906.01 MB IN 30 160	CT Qtz 0.8 0 4	30											
			Amphibolite Massive, Dyke, Equigranular, Chloritization alteration	A2	906.14											906.11 JN IN 50 248	CT Qtz 0.8 0 4	30											
																906.13 MB JN													
																906.14 MB													
																906.24 VN BR 60 142 PL	GO CT Br 1 100 1	2 9											
																906.43 ELT	IN Ep 1.3 0 4	30											
																906.6 JN IN 20 302													
																906.72 JN IN 50 185	SA Chl 0.1 0 4	30											
																906.88 VN IN 45 267	IN Qtz 6 0 4	30											
																907.08 JN IN 65 115	SA Chl 0.1 0 4	30											
																907.31 MB													
908			Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A3	906.51											908.03 JN IN 15 338	CT Chl 0.8 0 4	30											
																908.13 MB													
																908.27 MB IN 30 328	CT Qtz 0.3 0 4	30											
																908.29 JN IN 35 330	CL 0 0 4	30											
																908.71 MB IN 40 350	CL 0 0 4	30											
																908.72 MB IN 20 350	SA Qtz 0.1 0 4	30											
																908.86 JN													
																909.14 MB JN IN 45 5	CT Qtz 0.1 0 4	30											
																909.21 JN IN 25 340	CT Chl 0.5 0 4	30											

SHEET 91 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0  
DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES											
											TOTAL CORE %		SOLID CORE %		ROCK STRENGTH INDEX		WEATHERING INDEX		Depth(m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
											20	40	60	80	20	40	60	80	V1 VV VW VW VW VW	V2 VV VW VW VW VW	V3 VV VW VW VW VW	V4 VV VW VW VW VW										
912	09/03/20	HQ3	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1300.59	912.14	CR329													910.25 JN IN 8 98	SA Chl 0.1 0 4	30										
																			910.27 MB													
																			910.79 JN IN 67 148	SA Chl 0.5 0 4	30											
																		910.85 JN IN 4 308	SA Qtz 0.1 0 4	30												
																		911.27 JN IN 20 320	ST Chl 0.1 0 4	30												
																		911.34 JN IN 24 348	IN Chl 0 0 4	30												
																		911.48 JN IN 36 12	SA Qtz 0.1 0 4	30												
																		911.63 JN IN 9 302	SA Chl 0.5 0 4	30												
																		911.77 JN BR 38 8 UN SR CL	0 0.5 2	0.7521												
																		911.8 MB														
914	10/03/20	HQ3	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1303.41	915.14	CR330											912.13 JN PIN 30 12	ST Chl 0.1 0 4	30												
																		912.45 JN BR 31 333 PL	SM ST Chl 0.1 0.5 1	1 15												
																		912.76 JN IN 19 8	SA Qtz 0.1 0 4	30												
																		913.19 MB														
																		913.6 JN IN 39 348	SA Qtz 0.1 0 4	30												
																		913.99 JN IN 24 356	SA Qtz 0.5 0 4	30												
																		914.35 JN IN 20 0	SA Qtz 0.5 0 4	30												
																		914.63 JN IN 27 182	SA Qtz 0.5 0 4	30												
																		914.68 MB														
																		914.78 JN IN 37 0	SA Qtz 0.1 0 4	30												
																		914.89 JN IN 28 352	SA Qtz 0.1 0 4	30												
916			Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1306.23	918.14	CR331											915.14 MB														
																		915.25 JN IN 21 338	SA Qtz 0.5 0 4	30												
																		916.08 JN BR 21 18 PL	SM CT Chl 0.5 0.5 1	1 15												
																		916.11 MB PIN 3 302 UN	SA Chl 0.5 0 4	30												
																		916.69 JN BR 29 18 PL	SM CT Chl 0.5 0.5 1	1 15												
																		916.97 JN IN 5 298	SA Qtz 0.5 0 4	30												
																		917.56 MB														
																		917.96 MB														
																		918.14 MB														
																		918.78 JN IN 10 296	SA Qtz 0.5 0 4	30												
918			Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1306.23	918.14	CR332											918.9 MB														
																		919.73 JN BR 31 352 ST	SM CT Chl 0.5 0.5 2.5 1	15												
																		919.87 JN IN 14 312 ST	Qtz 0.1 0 4	30												
																		919.88 JN IN 24 346 ST	Qtz 0.1 0 4	30												

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D.	5 FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES		
											TOTAL CORE %	SOLID CORE %	20 40 60 80										
922	10/03/20	Fsp-phyric Tonalite Massive, Igneous, Porphyritic,	A1	1309.05	921.14	CR332																	
924	11/03/20	Fsp-phyric Tonalite Massive, Igneous, Porphyritic,	A2	1311.87	924.14	CR333																	
926	HQ3	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	1314.69	927.14	CR334																	
928						CR335																	

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY TOTAL CORE % 40 60 80	SOLID CORE % 40 60 80	R.Q.D. %	5 10 15 20	FRACTURE INDEX PER 1 m	DISCONTINUITY DATA										NOTES				
													Depth (m)	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
932	11/03/20	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chlorization alteration	A2		930.14																						
						PW088																					
						PW089																					
						PW090																					
934	HQ3	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chlorization alteration	A2		1320.32																						
			A2		933.14																						
			A2																								
			A2																								
			A2																								
			A2																								
			A2																								
936		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chlorization alteration	A2		1323.14																						
			A2		936.14																						
			A2																								
			A2																								
938		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chlorization alteration	A2		1325.96																						
			A2		939.14																						

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 7

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 7

AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

# **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

## INCLINATION

AZIMUTH (Deg.) : 110.0

: 110.0 DATUM: NAD83 UTM Z15N

Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. (m)	DEPTH (m)	SAMPLE ID	DISCONTINUITY DATA												NOTES						
							CORE RUN			RECOVERY			R.O.D.			FRACTURE INDEX			ROCK STRENGTH INDEX			WEATHERING INDEX			
							TOTAL CORE %	SOLID CORE %	PER 1 m	20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	
962	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2	960.14			CR346				20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	959.61 MB IN 60 60 IN Ep 3 0 4 30
964	HQ3	A2	1348.52			CR346				20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	959.73 MB IN 72 360 SA Ep 0.5 0 4 30
966	12/03/20	A2	963.14			CR347				20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	959.82 JN IN 37 48 SA Ep 0.5 0 4 30
968	13/03/20	HQ3	1349.04			CR347				20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	959.84 MB IN 56 98 SA Qtz 0.5 0 4 30
			963.70							20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.04 MB IN 49 90 ST Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.14 MB IN 50 142 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.18 JN IN 66 222 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.2 JN IN 54 162 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.32 JN IN 37 134 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.55 JN IN 36 105 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.62 JN IN 37 54 ST Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.72 JN IN 33 94 ST Afs 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.8 JN IN 26 65 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.92 MB IN 57 74 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	960.96 JN IN 51 318 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.03 JN IN 40 112 PL SM SA Qtz 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.05 JN IN 25 75 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.11 JN IN 49 112 PL SM Chl 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.16 JN IN 66 10 PL SM Afs 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.2 JN IN 19 94 ST Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.22 JN IN 47 298 ST Afs 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.31 JN BR 33 290 CL Qtz 0.5 0 1 0.75 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.34 JN BR 41 72 PL SM SA Qtz 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.42 JN BR 24 114 ST Afs 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.49 JN BR 53 92 PL ST Afs 0.5 0 1 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.63 JN BR 46 124 PL SM SR ST Qtz 0.5 0 1 0.75 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.66 JN BR 43 130 IR SR ST Qtz 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.71 JN PIN 41 300 PL SM SA Qtz 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.72 JN PIN 55 328 UN SM SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.82 JN PIN 50 328 SA Ep 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.88 JN BR 7 114 ST Afs 0.5 0 1 17
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.9 MB PIN 34 88 ST Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	961.98 JN IN 47 308 UN SM Qtz 0.5 0 4 1 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.05 JN IN 56 262 ST Afs 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.1 JN PIN 46 74 ST Afs 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.15 JN PIN 34 148 UN SM Qtz 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.25 JN PIN 187 122 PL SM SA Afs 0.5 0 4 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.31 JN BR 48 121 PL SA Afs 0.5 0 4 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.34 JN BR 50 76 UN SM Afs 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.4 JN BR 62 148 ST Afs 0.5 0 4 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.45 JN BR 53 296 ST Afs 0.5 0 4 1.75 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.48 JN BR 66 148 ST Afs 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.55 JN IN 47 40 UN SM Qtz 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.6 JN IN 67 350 SA Ep 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.64 JN IN 22 121 ST Chl 0.5 0 4 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.69 JN BR 31 8 ST Fe 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.7 JN IN 47 38 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.73 JN IN 42 30 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.88 JN IN 69 52 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	962.99 JN IN 66 48 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.02 JN IN 66 58 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.14 MB IN 83 360 SA Ep 0.5 0 4 17
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.34 JN BR 82 350 ST Fe 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.38 JN IN 26 190 SA Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.41 JN IN 30 356 PL SM SA Ep 0.5 0 4 0.75 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.56 JN IN 50 0 SA Ep 0.5 0 4 0.75 19
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.63 JN IN 19 0 CL Qtz 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.65 JN IN 20 4 SA Chl 0.5 0 4 30
										20	40	60	20	40	60	20	40	60	20	40	60	20	40	60	963.7 JN IN 19 108 ST Ep 0.5 0 4 30
										20	40	60	20	40	60										

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA										NOTES					
								TOTAL CORE %	40 60 80	SOLID CORE %					5 FRACTURE INDEX PER 1 m	RO E2 E3 E4 E5 E6 E7 E8 E9	RO E2 E3 E4 E5 E6 E7 E8 E9	Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND
								20 40 60 80	20 40 60 80	20 40 60 80					20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80	20 40 60 80					
972	13/03/20	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2		1356.97	972.14	CR349																							
974	HQ3	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2		1359.79	975.14	CR350																							
976		Amphibolite Foliated, Dyke, Equigranular,			1361.77	977.25	CR351																							
978		Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chloritization alteration	A2		1362.49	978.01	CR352																							

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

## **RECORD OF BOREHOLE No. IG BH04**

wood.

PROJECT No. : SCB1912026

**CLIENT** : Nuclear Waste Management Organisation  
**NAME /** : IG\_BH04  
**LOCATION** : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70

AZIMUTH (Deg.) : 110.0

( 8 )

SHEET 99 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

wood.

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION : Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020  
INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY	R.Q.D. %	5 FRACTURE INDEX PER 1 m	ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES					
													Type	Broken/Intact	Alpha angle (deg.)	Beta angle (deg.)	Shape	Roughness	Infill	Infill Type	Infill Thickness (mm)	Aperture (mm)	Jr	Ja	JCOND	
992	14/03/20	Fsp-phyric Tonalite Massive, Igneous, Porphyritic, Chlorization alteration	A3	990.14		CR356							989.89 JN IN 57 312 PL SR ST Qtz 0.5 0 4 0.75 30													
			A2										990.02 JN BR 71 308 UN SR CL Chl 0 1 2 1.25 0.75 21													
													990.11 JN IN 66 342 CL Qtz 0 0 4 30													
													990.13 JN BR 73 302 CL Qtz 0 0 0.5 1.5 23													
													990.14 MB IN 45 0 PL SR SA Qtz 0.1 0 4 0.75 30													
													990.18 JN IN 81 270 UN SM ST Qtz 0.5 0 4 1 30													
													990.22 JN IN 72 270 ST Chl 0.5 0 4 30													
													990.29 JN IN 42 278 SA Chl 0.5 0 4 30													
													990.32 JN IN 75 278 SA Chl 0.5 0 4 30													
													990.36 JN BR 52 325 SA Chl 0.1 0.5 4 30													
													990.38 JN PIN 61 93 UN SM ST Chl 0 0.5 1.75 0.75 15													
													990.43 BCZBR 35 198 SA Chl 0.5 0 4 30													
													990.47 MB IN 43 198 SA Qtz 0.5 0 4 30													
													990.51 JN IN 47 170 SA Chl 0.5 0 4 30													
													990.53 JN IN 32 227 SA Chl 0.5 0 4 30													
													990.56 JN IN 22 272 IN Chl 0 0 4 30													
													990.59 JN IN 47 346 SA Chl 0.5 0.5 1.75 19													
													990.62 JN BR 51 174 CL Chl 0 0 4 30													
													990.72 VN IN 55 148 CT Chl 1 0 4 30													
													990.94 JN IN 54 148 SA Chl 0.5 0 4 30													
													991.02 JN IN 59 168 SA Qtz 0.5 0 4 30													
													991.38 JN IN 61 168 SA Chl 0.5 0 4 30													
													991.44 JN IN 73 14 SA Qtz 0.5 0 4 30													
													991.47 JN IN 43 164 SA Chl 1 0 4 30													
													991.58 JN IN 52 164 ST Chl 0.1 0 4 30													
													991.72 JN IN 53 164 CT 1 0 4 30													
													991.78 JN IN 45 168 ST 0.1 0 4 30													
													991.87 JN IN 52 168 CT 1 0 4 30													
													991.9 JN IN 58 166 SA 0.8 1 0 4 30													
													991.91 JN BR 51 162 PL SM ST Chl 0 0.5 1 1 19													
													992.11 JN 68 152													
													992.12 JN IN 68 152 PL SM IN Qtz 2 0 4 1 30													
													992.52 MB BR 62 10 PL ST Chl 0 0.5 1 1 19													
													992.62 SHRD 65 22													
													992.72 JN SHR 20 300 CT Ep 0.3 0 4 30													
													992.82 SHR 20 300 CT Ep 0.3 0 4 30													
													992.94 VN													
													992.98 JN													
													993.06 MB													
													993.14 MB IN 70 65 CT Qtz 0.5 0 4 30													
													993.33 JN													
													993.73 JN													
													993.94 MB													
996		Fsp-phyric Tonalite Massive, Igneous, Porphyritic,	A1	996.14		CR358							994.975 JN IN 60 70 IN Qtz 1 0 4 30													
													995.44 MB													
													996.14 MB													
													996.575 JN BR 85 285 CU SR CL 0.011 2 1 19													
													996.945 MB													
													997.125 MB													
													997.43 JN IN 50 0 SA Chl 0.1 0 4 30													
													997.69 JN IN 20 0 SA Chl 0.1 0 4 30													
													998.12 JN BR 71 330 PL RO CT Qtz 0.1 0.5 1.5 1 21													
													998.14 MB													
													998.33 MB													
													998.42 MB IN 20 0 SA Chl 0.1 0 4 30													
													998.45 JN MB													
													999.02 JN IN 30 0 SA Chl 0.1 0 4 30													
													999.14 MB													
													999.9 MB													

SHEET 100 of 101

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT

# RECORD OF BOREHOLE No. IG\_BH04

**wood.**

PROJECT No. : SCB1912026

CLIENT : Nuclear Waste Management Organisation  
NAME / : IG\_BH04  
LOCATION Ignace, ON

DRILLING LOCATION : E:556957.25 N:5486488.05 Elev:443.46

DRILLING DATE : Nov 19-2019 - Mar 14-2020

INCLINATION (Deg.) : 70.0  
AZIMUTH (Deg.) : 110.0

DATUM: NAD83 UTM Z15N

DEPTH SCALE (metres)	Core Date/Size	DESCRIPTION	ROCK TYPE	ALTERATION	ELEV. DEPTH (m)	SAMPLE ID	CORE RUN	RECOVERY			R.Q.D. %	5 FRAC TURE INDEX PER 1 m	10 ROCK STRENGTH INDEX	WEATHERING INDEX	DISCONTINUITY DATA								NOTES		
								TOTAL CORE %	40 60 80	40 60 80					V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15 V16 V17 V18 V19 V20	V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12 V13 V14 V15 V16 V17 V18 V19 V20	Type Broken/Intact	Alpha angle (deg.) Beta angle (deg.)	Shape Roughness	Infill Infill Type Infill Thickness (mm) Aperture (mm)	Jr Ja JCOND				
1002					1383.34																				
1004					1000.20																				
1006																									
1008																									

NOTE: ALL FEATURE DEPTHS MEASURED TO MIDPOINT



## **Appendix B**

## **Core Sample Log**

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SCB1912026 | August 2021 | SCB1912026-PLN-008 R1

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# IG\_BH4



## Chain of Custody Log

Sample ID	Sample From	Sample To (mbgs)	Sample Type (Abreviation)	Sample Type (Description)	Sampled as Planned (Y/N/Comments)	Sample Weight (Kg)	Archive Flag	Labs Samples Sent To	Sample Date	Sample Time	Sample By
IG_BH04_AR001	144.055	144.42	AR	Archive Sample	Y	2.844	Y	NWMO	20-Dec-19	3:56	SD
IG_BH04_AR002	248.21	248.62	AR	Archive Sample	Y	3.184	Y	NWMO	27-Dec-19	17:04	FG
IG_BH04_AR003	302.97	303.37	AR	Archive Sample	Y	2.802	Y	NWMO	30-Dec-19	4:25	SR
IG_BH04_AR004	356.21	356.69	AR	Archive Sample	Y	3.724	Y	NWMO	01-Jan-20	4:35	SR
IG_BH04_AR005	406.17	406.52	AR	Archive Sample	Y	2.762	Y	NWMO	13-Jan-20	17:03	cl
IG_BH04_AR006	436.07	436.42	AR	Archive Sample	Y	2.754	Y	NWMO	15-Jan-20	14:42	cl
IG_BH04_AR007	462.53	462.93	AR	Archive Sample	Y	3.222	Y	NWMO	17-Jan-20	11:39	cl
IG_BH04_AR008	462.93	463.29	AR	Archive Sample	Y	2.81	Y	NWMO	17-Jan-20	11:41	cl
IG_BH04_AR009	489.21	489.6	AR	Archive Sample	Y	2.932	Y	NWMO	18-Jan-20	14:15	cl
IG_BH04_AR010	489.6	489.98	AR	Archive Sample	Y	2.93	Y	NWMO	18-Jan-20	14:16	cl
IG_BH04_AR011	515.21	515.61	AR	Archive Sample	Y	3.072	Y	NWMO	19-Jan-20	22:30	SR
IG_BH04_AR012	515.61	516.03	AR	Archive Sample	Y	3.17	Y	NWMO	19-Jan-20	22:33	SR
IG_BH04_AR013	542.64	543.01	AR	Archive Sample	Y	2.838	Y	NWMO	20-Jan-20	16:43	cl
IG_BH04_AR014	543.01	543.38	AR	Archive Sample	Y	2.876	Y	NWMO	20-Jan-20	16:44	cl
IG_BH04_AR015	567.95	568.32	AR	Archive Sample	Y	2.878	Y	NWMO	21-Jan-20	14:22	cl
IG_BH04_AR016	567.95	568.32	AR	Archive Sample	Y	2.878	Y	NWMO	21-Jan-20	14:22	cl
IG_BH04_AR017	596.62	597.02	AR	Archive Sample	Y	3.122	Y	NWMO	16-Feb-20	23:32	FG
IG_BH04_AR018	597.02	597.42	AR	Archive Sample	Y	3.056	Y	NWMO	16-Feb-20	23:35	FG
IG_BH04_AR019	627.34	627.81	AR	Archive Sample	Y	3.682	Y	NWMO	17-Feb-20	23:04	SR
IG_BH04_AR020	628.52	628.95	AR	Archive Sample	Y	3.386	Y	NWMO	17-Feb-20	23:08	SR
IG_BH04_AR021	649.44	649.82	AR	Archive Sample	Y	2.954	Y	NWMO	18-Feb-20	13:20	KC
IG_BH04_AR022	674.97	675.37	AR	Archive Sample	Y	3.082	Y	NWMO	19-Feb-20	8:33	kc
IG_BH04_AR023	700.72	701.11	AR	Archive Sample	Y	3.066	Y	NWMO	20-Feb-20	3:47	SR
IG_BH04_AR024	728.61	729.01	AR	Archive Sample	Y	3.096	Y	NWMO	22-Feb-20	0:52	SR
IG_BH04_AR025	755.68	756.04	AR	Archive Sample	Y	2.776	Y	NWMO	1-Mar-20	13:45	cl
IG_BH04_AR026	782.2	782.58	AR	Archive Sample	Y	2.942	Y	NWMO	2-Mar-20	11:45	cl
IG_BH04_AR027	835.86	836.27	AR	Archive Sample	Y	3.182	Y	NWMO	5-Mar-20	9:27	cl
IG_BH04_AR028	898.88	899.28	AR	Archive Sample	Y	2.95	Y	NWMO	09-Mar-20	8:13	CL
IG_BH04_AR029	942.14	942.52	AR	Archive Sample	Y	3.06	Y	NWMO	11-Mar-20	23:12	SD
IG_BH04_AR030	966.47	966.84	AR	Archive Sample	Y	2.94	Y	NWMO	13-Mar-20	0:57	SD
IG_BH04_BR001	447.74	447.97	BR	Indirect Tensile Strength (Brazilian)	Y, Intact	1.74	N	WOOD/CANMET	16-Jan-20	14:49	cl
IG_BH04_BR002	480.93	481.18	BR	Indirect Tensile Strength (Brazilian)	Y, Intact	1.912	N	WOOD/CANMET	18-Jan-20	4:00	FG
IG_BH04_BR003	510.78	511.05	BR	Indirect Tensile Strength (Brazilian)	Y, Intact	2.006	N	WOOD/CANMET	19-Jan-20	17:30	cl
IG_BH04_BR004	553.19	553.45	BR	Indirect Tensile Strength (Brazilian)	Y, Intact	1.956	N	WOOD/CANMET	21-Jan-20	4:14	FG
IG_BH04_BR005	619.76	620.01	BR	Indirect Tensile Strength (Brazilian)	Y, first secondary layer	2.106	N	WOOD/CANMET	17-Feb-20	16:30	KC
IG_BH04_BR006	624.53	624.78	BR	Indirect Tensile Strength (Brazilian)	Y, Intact	1.878	N	WOOD/CANMET	18-Feb-20	1:13	FG
IG_BH04_BR007	691.72	691.96	BR	Indirect Tensile Strength (Brazilian)	Y, Intact	1.796	N	WOOD/CANMET	19-Feb-20	22:15	FG
IG_BH04_BR008	890.1	890.33	BR	Indirect Tensile Strength (Brazilian)	N, second secondary layer below 800m (in excess)	1.802	N	WOOD/CANMET	09-Mar-20	2:04	CL
IG_BH04_BR009	435.42	435.73	BR	Indirect Tensile Strength (Brazilian)	Samples collected post drilling by NWMO	n/a	N	CANMET	13-Aug-20	n/a	BM
IG_BH04_BR010	741.36	741.59	BR	Indirect Tensile Strength (Brazilian)	Samples collected post drilling by NWMO	n/a	N	CANMET	13-Aug-20	n/a	n/a

# IG\_BH4



## Chain of Custody Log

Sample ID	Sample From	Sample To (mbgs)	Sample Type (Abreviation)	Sample Type (Description)	Sampled as Planned (Y/N/Comments)	Sample Weight (Kg)	Archive Flag	Labs Samples Sent To	Sample Date	Sample Time	Sample By
IG_BH04_ED001	239.94	240.35	ED	Effective Diffusion Coefficients	Y, Intact	3.136	N	NWMO	27-Dec-19	12:07	SR
IG_BH04_ED002	320.21	320.58	ED	Effective Diffusion Coefficients	Y, Intact	2.898	N	NWMO	31-Dec-19	2:33	SR
IG_BH04_ED003	398.47	398.71	ED	Effective Diffusion Coefficients	Y, Intact	1.812	N	NWMO	13-Jan-20	12:48	cl
IG_BH04_ED004	452.61	453.02	ED	Effective Diffusion Coefficients	Y, Intact	3.122	N	NWMO	16-Jan-20	9:03	FG
IG_BH04_ED005	507.19	507.41	ED	Effective Diffusion Coefficients	Y, Intact	1.732	N	NWMO	19-Jan-20	14:38	cl
IG_BH04_ED006	559.12	559.34	ED	Effective Diffusion Coefficients	Y, Intact	1.712	N	NWMO	21-Jan-20	7:25	cl
IG_BH04_ED007	622.08	622.29	ED	Effective Diffusion Coefficients	Y, Intact, depth change to accommodate for dyke	1.636	N	NWMO	17-Feb-20	17:43	KC
IG_BH04_ED008	714.53	714.75	ED	Effective Diffusion Coefficients	Y, Intact	2.506	N	NWMO	21-Feb-20	16:42	KC
IG_BH04_ED009	828.51	828.74	ED	Effective Diffusion Coefficients	Y, Intact	1.66	Y	NWMO	5-Mar-20	2:28	sd
IG_BH04_ED010	934.84	935.16	ED	Effective Diffusion Coefficients	Y, Intact	2.35	N	NWMO	11-Mar-20	11:00	kc
IG_BH04_MB001	110.903	111.155	MB	Microbiology	Y	1.814	N	NWMO	18-Dec-19	12:00	KC
IG_BH04_MB002	111.59	111.835	MB	Microbiology	Y	1.794	N	NWMO	18-Dec-19	12:00	KC
IG_BH04_MB003	211.55	211.77	MB	Microbiology	Y, OGW was done at approx 110m	1.74	N	NWMO	25-Dec-19	15:20	SR
IG_BH04_MB004	211.77	212.02	MB	Microbiology	Y, OGW was done at approx 110m - (requirement was below 213m)	1.958	N	NWMO	25-Dec-19	15:25	SR
IG_BH04_MB005	534.81	535.06	MB	Microbiology	Y, OGW was done at approx 110m - (requirement was below 213m)	1.95	N	NWMO	20-Jan-20	11:38	cl
IG_BH04_MB006	535.06	535.32	MB	Microbiology	Y, OGW was done at approx 575m	2.004	N	NWMO	20-Jan-20	11:38	cl
IG_BH04_MG001	163.83	164.09	MG	Mineralogy and Geochemistry	Y	2.38	N	Queen's University	22-Dec-19	23:34	SD
IG_BH04_MG002	210.5	210.75	MG	Mineralogy and Geochemistry	Y	1.9	N	Queen's University	25-Dec-19	15:15	SR
IG_BH04_MG003	240.58	240.83	MG	Mineralogy and Geochemistry	Y	1.946	N	Queen's University	27-Dec-19	12:20	SR
IG_BH04_MG004	268.11	268.37	MG	Mineralogy and Geochemistry	Y	2.042	N	Queen's University	28-Dec-19	15:15	FG
IG_BH04_MG005	292.97	293.22	MG	Mineralogy and Geochemistry	Y	1.974	N	Queen's University	29-Dec-19	10:40	FG
IG_BH04_MG006	319.86	320.12	MG	Mineralogy and Geochemistry	Y	2.08	N	Queen's University	31-Dec-19	2:30	FG
IG_BH04_MG007	345.2	345.46	MG	Mineralogy and Geochemistry	Y	2.026	N	Queen's University	31-Dec-19	23:25	FG
IG_BH04_MG008	372.4	372.61	MG	Mineralogy and Geochemistry	Y	1.662	N	Queen's University	01-Jan-20	14:47	SD
IG_BH04_MG009	396.81	397.04	MG	Mineralogy and Geochemistry	Y	1.826	N	Queen's University	13-Jan-20	10:15	cl

# IG\_BH4



## Chain of Custody Log

Sample ID	Sample From	Sample To (mbgs)	Sample Type (Abreviation)	Sample Type (Description)	Sampled as Planned (Y/N/Comments)	Sample Weight (Kg)	Archive Flag	Labs Samples Sent To	Sample Date	Sample Time	Sample By
IG_BH04_MG010	424.32	424.54	MG	Mineralogy and Geochemistry	Y	1.728	N	Queen's University	14-Jan-20	13:36	cl
IG_BH04_MG011	450.46	450.69	MG	Mineralogy and Geochemistry	Y	1.708	N	Queen's University	16-Jan-20	17:29	cl
IG_BH04_MG012	478.95	479.23	MG	Mineralogy and Geochemistry	Y	2.14	N	Queen's University	18-Jan-20	0:10	FG
IG_BH04_MG013	505.81	506.03	MG	Mineralogy and Geochemistry	Y	1.686	N	Queen's University	19-Jan-20	9:12	cl
IG_BH04_MG014	532.61	532.83	MG	Mineralogy and Geochemistry	Y	1.666	N	Queen's University	20-Jan-20	10:11	cl
IG_BH04_MG015	558.87	559.12	MG	Mineralogy and Geochemistry	Y	1.93	N	Queen's University	21-Jan-20	8:15	cl
IG_BH04_MG016	587.3	587.51	MG	Mineralogy and Geochemistry	Y	1.672	N	OOD/Queen's Univers	14-Feb-20	5:24	FG
IG_BH04_MG017	623.21	623.46	MG	Mineralogy and Geochemistry	Y, with slight depth change because of dyke (623m instead of 617m)	1.904	N	OOD/Queen's Univers	18-Feb-20	1:16	FG
IG_BH04_MG018	637.58	637.83	MG	Mineralogy and Geochemistry	Y	1.928	N	OOD/Queen's Univers	18-Feb-20	3:50	sr
IG_BH04_MG019	664.96	665.2	MG	Mineralogy and Geochemistry	Y	1.89	N	OOD/Queen's Univers	19-Feb-20	1:07	FG
IG_BH04_MG020	691.96	692.21	MG	Mineralogy and Geochemistry	Y	1.956	N	OOD/Queen's Univers	19-Feb-20	22:19	FG
IG_BH04_MG021	719.74	719.98	MG	Mineralogy and Geochemistry	Y	1.87	N	OOD/Queen's Univers	21-Feb-20	20:45	FG
IG_BH04_MG022	740.7	740.96	MG	Mineralogy and Geochemistry	Y	1.992	N	OOD/Queen's Univers	1-Mar-20	3:50	FG
IG_BH04_MG023	770.87	771.14	MG	Mineralogy and Geochemistry	Y	2.086	N	OOD/Queen's Univers	2-Mar-20	1:47	FG
IG_BH04_MG024	797.28	797.49	MG	Mineralogy and Geochemistry	Y	1.554	N	OOD/Queen's Univers	4-Mar-20	0:06	SD
IG_BH04_MG025	826.21	826.42	MG	Mineralogy and Geochemistry	Y	1.638	N	OOD/Queen's Univers	5-Mar-20	0:30	SD
IG_BH04_MG026	850.19	850.39	MG	Mineralogy and Geochemistry	Y	1.53	N	OOD/Queen's Univers	6-Mar-20	6:01	SD
IG_BH04_MG027	878.52	878.79	MG	Mineralogy and Geochemistry	Y	2.56	N	OOD/Queen's Univers	7-Mar-20	21:11	SD
IG_BH04_MG028	903.54	903.76	MG	Mineralogy and Geochemistry	Y	1.704	N	OOD/Queen's Univers	9-Mar-20	16:19	CL
IG_BH04_MG029	936.28	936.545	MG	Mineralogy and Geochemistry	Y	2.012	N	OOD/Queen's Univers	11-Mar-20	14:20	kc
IG_BH04_MG030	957.15	957.4	MG	Mineralogy and Geochemistry	Y	2.05	N	OOD/Queen's Univers	12-Mar-20	14:30	kc
IG_BH04_PS001	239.21	239.6	PS	Petrophysics	Y, intact	3.28	N	NWMO	27-Dec-19	12:05	SR
IG_BH04_PS002	320.58	320.95	PS	Petrophysics	Y, intact	2.896	N	NWMO	31-Dec-19	2:35	SR
IG_BH04_PS003	398.71	399.08	PS	Petrophysics	Y, intact	2.962	N	NWMO	13-Jan-20	12:50	cl
IG_BH04_PS004	452.21	452.61	PS	Petrophysics	Y, intact	3.092	N	NWMO	16-Jan-20	9:00	FG
IG_BH04_PS005	506.81	507.19	PS	Petrophysics	Y, intact	2.96	N	NWMO	19-Jan-20	14:42	cl
IG_BH04_PS006	559.34	559.7	PS	Petrophysics	Y, intact	2.778	N	NWMO	21-Jan-20	7:27	cl

# IG\_BH4

## Chain of Custody Log



Sample ID	Sample From	Sample To (mbgs)	Sample Type (Abreviation)	Sample Type (Description)	Sampled as Planned (Y/N/Comments)	Sample Weight (Kg)	Archive Flag	Labs Samples Sent To	Sample Date	Sample Time	Sample By
IG_BH04_PS007	621.64	622	PS	Petrophysics	Y, intact with slight depth change because of dyke (621m instead of 612m)	2.786	N	NWMO	17-Feb-20	17:43	KC
IG_BH04_PS008	714.14	714.53	PS	Petrophysics	Y, intact	3.258	N	NWMO	21-Feb-20	16:40	KC
IG_BH04_PS009	828.14	828.51	PS	Petrophysics	Y, intact	2.666	Y	NWMO	5-Mar-20	2:26	sd
IG_BH04_PS010	888.64	889.01	PS	Petrophysics	N, second secondary layer below 800m (in excess)	2.892		NWMO	08-Mar-20	23:40	SD
IG_BH04_PS011	934.39	934.84	PS	Petrophysics	Y, intact	3.456	N	NWMO	11-Mar-20	10:58	kc
IG_BH04_PS012	n/a	n/a	PS	Petrophysics	N, not sampled, geology / depth requirements not met (in loss)	n/a	n/a	n/a	n/a	n/a	n/a
IG_BH04_PS013	n/a	n/a	PS	Petrophysics	N, not sampled, geology / depth requirements not met (in loss)	n/a	n/a	n/a	n/a	n/a	n/a
IG_BH04_PW001	162.2	162.7	PW	Pore Water	Y	3.52	N	Hydroisotop	22-Dec-19	18:35	KC
IG_BH04_PW002	162.81	163.26	PW	Pore Water	Y	3.744	N	Hydroisotop	22-Dec-19	18:37	KC
IG_BH04_PW003	163.58	163.83	AQ	Aqueous Extraction	Y	1.88	N	Hydroisotop	22-Dec-19	18:40	KC
IG_BH04_PW004	167.21	167.57	PW	Pore Water	N, RETAKE (in excess)	2.818	N	Hydroisotop	23-Dec-19	9:24	FG
IG_BH04_PW005	167.57	167.94	PW	Pore Water	N, RETAKE (in excess)	2.862	N	Hydroisotop	23-Dec-19	9:22	FG
IG_BH04_PW006	167.94	168.21	AQ	Aqueous Extraction	N, RETAKE (in excess)	2.12	N	Hydroisotop	23-Dec-19	9:20	FG
IG_BH04_PW007	213	213.38	PW	Pore Water	Y	2.934	N	Hydroisotop	25-Dec-19	16:21	SR
IG_BH04_PW008	213.38	213.79	PW	Pore Water	Y	3.078	N	Hydroisotop	25-Dec-19	16:23	SR
IG_BH04_PW009	213.79	214.02	AQ	Aqueous Extraction	Y	1.778	N	Hydroisotop	25-Dec-19	16:25	SR
IG_BH04_PW010	236.21	236.65	PW	Pore Water	Y	3.47	N	Hydroisotop	27-Dec-19	9:00	SR
IG_BH04_PW011	237.87	238.08	PW	Pore Water	Y	1.73	N	Hydroisotop	27-Dec-19	9:03	SR
IG_BH04_PW012	238.15	238.55	AQ	Aqueous Extraction	Y	3.4	N	Hydroisotop	27-Dec-19	9:06	FG
IG_BH04_PW013	267.06	267.48	PW	Pore Water	Y	3.302	N	Hydroisotop	28-Dec-19	14:20	FG
IG_BH04_PW014	267.48	267.88	PW	Pore Water	Y	3.98	N	Hydroisotop	28-Dec-19	14:15	FG
IG_BH04_PW015	267.88	268.11	AQ	Aqueous Extraction	Y	1.796	N	Hydroisotop	28-Dec-19	14:17	FG
IG_BH04_PW016	293.21	293.62	PW	Pore Water	Y	3.228	N	Hydroisotop	29-Dec-19	23:18	FG
IG_BH04_PW017	293.62	294.03	PW	Pore Water	Y	3.136	N	Hydroisotop	29-Dec-19	23:20	FG
IG_BH04_PW018	294.39	294.59	AQ	Aqueous Extraction	Y	1.564	N	Hydroisotop	29-Dec-19	23:24	FG
IG_BH04_PW019	317.21	317.59	PW	Pore Water	Y	3.016	N	Hydroisotop	31-Dec-19	0:33	SR
IG_BH04_PW020	317.59	318	PW	Pore Water	Y	3.19	N	Hydroisotop	31-Dec-19	0:35	SR
IG_BH04_PW021	318	318.24	AQ	Aqueous Extraction	Y	1.862	N	Hydroisotop	31-Dec-19	0:39	SR
IG_BH04_PW022	347.21	347.62	PW	Pore Water	Y	3.192	N	Hydroisotop	01-Jan-20	1:03	SR
IG_BH04_PW023	347.62	348.01	PW	Pore Water	Y	3.098	N	Hydroisotop	01-Jan-20	1:05	SR
IG_BH04_PW024	348.01	348.34	AQ	Aqueous Extraction	Y	2.52	N	Hydroisotop	01-Jan-20	1:08	SR
IG_BH04_PW025	371.52	371.87	PW	Pore Water	Y	2.692	N	Hydroisotop	01-Jan-20	13:38	SD
IG_BH04_PW026	371.87	372.04	AQ	Aqueous Extraction	Y	1.32	N	Hydroisotop	01-Jan-20	13:37	SD
IG_BH04_PW027	372.04	372.4	PW	Pore Water	Y	2.9	N	Hydroisotop	01-Jan-20	13:34	SD
IG_BH04_PW028	397.64	398.03	PW	Pore Water	Y	3.2	N	Hydroisotop	13-Jan-20	9:41	cl
IG_BH04_PW029	397.24	397.64	PW	Pore Water	Y	3.088	N	Hydroisotop	13-Jan-20	9:42	cl
IG_BH04_PW030	397.04	397.24	AQ	Aqueous Extraction	Y	1.382	N	Hydroisotop	13-Jan-20	9:44	cl
IG_BH04_PW031	423.43	423.8	PW	Pore Water	Y	2.942	N	Hydroisotop	14-Jan-20	12:56	cl
IG_BH04_PW032	423.8	424.17	PW	Pore Water	Y	2.82	N	Hydroisotop	14-Jan-20	12:57	cl
IG_BH04_PW033	424.17	424.32	AQ	Aqueous Extraction	Y	1.248	N	Hydroisotop	14-Jan-20	12:58	cl
IG_BH04_PW034	450.69	451.06	PW	Pore Water	Y	2.9	N	Hydroisotop	16-Jan-20	17:06	cl
IG_BH04_PW035	451.06	451.44	PW	Pore Water	Y	2.976	N	Hydroisotop	16-Jan-20	17:07	cl
IG_BH04_PW036	451.44	451.62	AQ	Aqueous Extraction	Y	1.364	N	Hydroisotop	16-Jan-20	17:08	cl
IG_BH04_PW037	477.91	478.31	PW	Pore Water	Y	3.054	N	Hydroisotop	18-Jan-20	0:03	FG

# IG\_BH4



## Chain of Custody Log

Sample ID	Sample From	Sample To (mbgs)	Sample Type (Abreviation)	Sample Type (Description)	Sampled as Planned (Y/N/Comments)	Sample Weight (Kg)	Archive Flag	Labs Samples Sent To	Sample Date	Sample Time	Sample By
IG_BH04_PW038	478.31	478.71	PW	Pore Water	Y	3.036	N	Hydroisotop	18-Jan-20	0:05	FG
IG_BH04_PW039	478.71	478.95	AQ	Aqueous Extraction	Y	1.834	N	Hydroisotop	18-Jan-20	0:07	FG
IG_BH04_PW040	504.9	505.28	PW	Pore Water	Y	2.898	N	Hydroisotop	19-Jan-20	8:50	cl
IG_BH04_PW041	505.28	505.64	PW	Pore Water	Y	2.794	N	Hydroisotop	19-Jan-20	8:51	cl
IG_BH04_PW042	505.64	505.81	AQ	Aqueous Extraction	Y	1.336	N	Hydroisotop	19-Jan-20	8:52	cl
IG_BH04_PW043	532.04	532.42	PW	Pore Water	Y	2.894	N	Hydroisotop	20-Jan-20	9:27	cl
IG_BH04_PW044	531.66	532.04	PW	Pore Water	Y	2.854	N	Hydroisotop	20-Jan-20	9:24	cl
IG_BH04_PW045	532.42	532.61	AQ	Aqueous Extraction	Y	1.448	N	Hydroisotop	20-Jan-20	9:25	cl
IG_BH04_PW046	561.08	561.45	PW	Pore Water	Y	2.888	N	Hydroisotop	21-Jan-20	9:07	cl
IG_BH04_PW047	561.45	561.81	PW	Pore Water	Y	2.798	N	Hydroisotop	21-Jan-20	9:11	cl
IG_BH04_PW048	561.81	561.98	AQ	Aqueous Extraction	Y	1.35	N	Hydroisotop	21-Jan-20	9:09	cl
IG_BH04_PW049	586.01	586.4	PW	Pore Water	Y	3.038	N	Hydroisotop	14-Feb-20	1:07	FG
IG_BH04_PW050	586.4	586.8	PW	Pore Water	Y	3.142	N	Hydroisotop	14-Feb-20	1:09	FG
IG_BH04_PW051	585.79	586.01	AQ	Aqueous Extraction	Y	1.686	N	Hydroisotop	14-Feb-20	1:12	FG
IG_BH04_PW052	614.21	614.61	PW	Pore Water	Y	3.05	N	Hydroisotop	17-Feb-20	13:25	KC
IG_BH04_PW053	614.65	615.06	PW	Pore Water	Y	2.87	N	Hydroisotop	17-Feb-20	13:25	KC
IG_BH04_PW054	615.26	615.51	AQ	Aqueous Extraction	Y	1.938	N	Hydroisotop	17-Feb-20	13:25	KC
IG_BH04_PW055	636.62	637.03	PW	Pore Water	Y	3.188	N	Hydroisotop	18-Feb-20	3:08	sr
IG_BH04_PW056	637.03	637.43	PW	Pore Water	Y	3.088	N	Hydroisotop	18-Feb-20	3:10	sr
IG_BH04_PW057	637.43	637.58	AQ	Aqueous Extraction	Y	1.152	N	Hydroisotop	18-Feb-20	3:12	sr
IG_BH04_PW058	665.21	665.61	PW	Pore Water	Y	3.08	N	Hydroisotop	19-Feb-20	2:03	SR
IG_BH04_PW059	665.61	666.02	PW	Pore Water	Y	3.216	N	Hydroisotop	19-Feb-20	2:06	SR
IG_BH04_PW060	666.02	666.2	AQ	Aqueous Extraction	Y	1.394	N	Hydroisotop	19-Feb-20	2:09	FG
IG_BH04_PW061	692.21	692.6	PW	Pore Water	Y	3.104	N	Hydroisotop	20-Feb-20	0:04	SR
IG_BH04_PW062	692.6	692.99	PW	Pore Water	Y	3.054	N	Hydroisotop	20-Feb-20	0:07	SR
IG_BH04_PW063	692.99	693.2	AQ	Aqueous Extraction	Y	1.618	N	Hydroisotop	20-Feb-20	0:10	SR
IG_BH04_PW064	711.14	711.55	PW	Pore Water	Y	3.19	N	Hydroisotop	21-Feb-20	14:32	KC
IG_BH04_PW065	711.55	711.94	PW	Pore Water	Y	2.946	N	Hydroisotop	21-Feb-20	14:32	KC
IG_BH04_PW066	711.94	712.28	AQ	Aqueous Extraction	Y	2.71	N	Hydroisotop	21-Feb-20	14:32	KC
IG_BH04_PW067	746.14	746.54	PW	Pore Water	Y	3.178	N	Hydroisotop	1-Mar-20	5:34	FG
IG_BH04_PW068	746.54	746.94	PW	Pore Water	Y	3.146	N	Hydroisotop	1-Mar-20	5:36	FG
IG_BH04_PW069	746.94	747.14	AQ	Aqueous Extraction	Y	1.562	N	Hydroisotop	1-Mar-20	5:40	FG
IG_BH04_PW070	771.42	771.82	PW	Pore Water	Y	3.048	N	Hydroisotop	2-Mar-20	3:17	FG
IG_BH04_PW071	771.82	772.24	PW	Pore Water	Y	3.24	N	Hydroisotop	2-Mar-20	3:20	FG
IG_BH04_PW072	772.24	772.44	AQ	Aqueous Extraction	Y	1.544	N	Hydroisotop	2-Mar-20	3:25	FG
IG_BH04_PW073	795.14	795.5	PW	Pore Water	Y	2.66	N	Hydroisotop	3-Mar-20	21:21	SD
IG_BH04_PW074	795.5	795.87	PW	Pore Water	Y	2.65	N	Hydroisotop	3-Mar-20	21:30	SD
IG_BH04_PW075	795.87	796.03	AQ	Aqueous Extraction	Y	1.174	N	Hydroisotop	3-Mar-20	21:28	SD
IG_BH04_PW076	825.14	825.5	PW	Pore Water	Y	2.608	N	Hydroisotop	4-Mar-20	23:43	SD
IG_BH04_PW077	825.5	825.86	PW	Pore Water	Y	2.596	N	Hydroisotop	4-Mar-20	23:56	SD
IG_BH04_PW078	825.86	826.02	AQ	Aqueous Extraction	Y	1.15	N	Hydroisotop	4-Mar-20	23:57	SD
IG_BH04_PW079	849.14	849.49	PW	Pore Water	Y	2.638	N	Hydroisotop	6-Mar-20	0:49	SD
IG_BH04_PW080	849.49	849.87	PW	Pore Water	Y	2.898	N	Hydroisotop	6-Mar-20	0:51	SD
IG_BH04_PW081	850.01	850.19	AQ	Aqueous Extraction	Y	1.412	N	Hydroisotop	6-Mar-20	0:54	SD
IG_BH04_PW082	877.56	877.94	PW	Pore Water	Y	2.908	N	Hydroisotop	7-Mar-20	18:39	cl
IG_BH04_PW083	877.94	878.32	PW	Pore Water	Y	2.91	N	Hydroisotop	7-Mar-20	18:38	cl
IG_BH04_PW084	878.32	878.52	AQ	Aqueous Extraction	Y	1.534	N	Hydroisotop	7-Mar-20	18:37	cl
IG_BH04_PW085	903.76	904.17	PW	Pore Water	Y	3.186	N	Hydroisotop	09-Mar-20	13:24	cl
IG_BH04_PW086	904.17	904.56	PW	Pore Water	Y	3.302	N	Hydroisotop	09-Mar-20	13:20	cl
IG_BH04_PW087	904.56	904.74	AQ	Aqueous Extraction	Y	1.408	N	Hydroisotop	09-Mar-20	13:19	CL
IG_BH04_PW088	930.855	931.34	PW	Pore Water	Y	3.674	N	Hydroisotop	11-Mar-20	7:53	kc

**IG\_BH4**
**Chain of Custody Log**


Sample ID	Sample From	Sample To (mbgs)	Sample Type (Abreviation)	Sample Type (Description)	Sampled as Planned (Y/N/Comments)	Sample Weight (Kg)	Archive Flag	Labs Samples Sent To	Sample Date	Sample Time	Sample By
IG_BH04_PW089	931.34	931.8	PW	Pore Water	Y	3.484	N	Hydroisotop	11-Mar-20	7:55	kc
IG_BH04_PW090	931.9	932.23	AQ	Aqueous Extraction	Y	2.478	N	Hydroisotop	11-Mar-20	7:57	kc
IG_BH04_PW091	958.39	958.74	PW	Pore Water	Y	2.67	N	Hydroisotop	12-Mar-20	14:04	kc
IG_BH04_PW092	958.74	959.17	PW	Pore Water	Y	3.32	N	Hydroisotop	12-Mar-20	14:06	kc
IG_BH04_PW093	959.17	959.41	AQ	Aqueous Extraction	Y	1.91	N	Hydroisotop	12-Mar-20	14:08	kc
IG_BH04_SA001	565.18	565.54	SA	Specific Surface area and cation exchange capacity	Y	2.786	N	Hydroisotop	21-Jan-20	12:27	cl
IG_BH04_SO001	563.91	564.39	SO	Sorption	Y	3.754	N	Hydroisotop	21-Jan-20	12:28	cl
IG_BH04_SO002	565.54	566.02	SO	Sorption	Y	3.734	N	Hydroisotop	21-Jan-20	12:29	cl
IG_BH04_TH001	322.25	322.53	TH	Thermal Properties	Y, Intact	2.23	N	RESPEC	31-Dec-19	5:05	FG
IG_BH04_TH002	372.61	372.88	TH	Thermal Properties	Y, Intact	2.92	N	RESPEC	01-Jan-20	14:56	SD
IG_BH04_TH003	447.97	448.19	TH	Thermal Properties	Y, Intact	1.724	N	RESPEC	16-Jan-20	14:54	cl
IG_BH04_TH004	481.18	481.49	TH	Thermal Properties	Y, Intact	2.362	N	RESPEC	18-Jan-20	4:05	FG
IG_BH04_TH005	511.31	511.54	TH	Thermal Properties	Y, Intact	1.774	N	RESPEC	19-Jan-20	17:38	cl
IG_BH04_TH006	553.45	553.76	TH	Thermal Properties	Y, Intact	2.246	N	RESPEC	21-Jan-20	4:16	FG
IG_BH04_TH007	617.81	618.09	TH	Thermal Properties	Y, first secondary layer	2.352	N	RESPEC	17-Feb-20	16:30	KC
IG_BH04_TH008	624.78	625.07	TH	Thermal Properties	Y, Intact	2.236	N	RESPEC	18-Feb-20	1:14	FG
IG_BH04_TH009	850.39	850.65	TH	Thermal Properties	Y, Intact	2.5	N	RESPEC	6-Mar-20	2:35	SD
IG_BH04_TH010	889.62	889.9	TH	Thermal Properties	N, second secondary layer below 800m (in excess)	2.252	N	RESPEC	09-Mar-20	1:55	CL
IG_BH04_TS001	447.53	447.74	TS	Triaxial Compressive Strength	Y, Intact	1.598	N	WOOD/CANMET	16-Jan-20	14:43	cl
IG_BH04_TS002	511.05	511.31	TS	Triaxial Compressive Strength	Y, Intact	2.008	N	WOOD/CANMET	19-Jan-20	17:35	cl
IG_BH04_TS003	624.27	624.53	TS	Triaxial Compressive Strength	Y, Intact	2.014	N	WOOD/CANMET	18-Feb-20	1:11	FG
IG_BH04_UC001	447.31	447.53	UC	Uniaxial Compressive Strength	Y, Intact	1.744	N	WOOD/CANMET	16-Jan-20	14:38	cl
IG_BH04_UC002	480.68	480.93	UC	Uniaxial Compressive Strength	Y, Intact	1.93	N	WOOD/CANMET	18-Jan-20	3:57	FG
IG_BH04_UC003	510.51	510.78	UC	Uniaxial Compressive Strength	Y, Intact	2.114	N	WOOD/CANMET	19-Jan-20	17:26	cl
IG_BH04_UC004	552.93	553.19	UC	Uniaxial Compressive Strength	Y, Intact	2.056	N	WOOD/CANMET	21-Jan-20	4:12	FG
IG_BH04_UC005	617.42	617.63	UC	Uniaxial Compressive Strength	Y, first secondary layer	1.766	N	WOOD/CANMET	17-Feb-20	16:30	KC
IG_BH04_UC006	624.01	624.27	UC	Uniaxial Compressive Strength	Y, Intact	1.958	N	WOOD/CANMET	18-Feb-20	1:07	FG
IG_BH04_UC007	691.47	691.72	UC	Uniaxial Compressive Strength	Y, Intact	2.022	N	WOOD/CANMET	19-Feb-20	22:14	FG
IG_BH04_UC008	889.9	890.1	UC	Uniaxial Compressive Strength	N, second secondary layer below 800m (in excess)	1.57	N	WOOD/CANMET	09-Mar-20	1:51	SD
IG_BH04_UC009	435.14	435.42	UC	Indirect Tensile Strength (Brazilian)	Samples collected post drilling by NWMO	n/a	N	CANMET	13-Aug-20	n/a	BM
IG_BH04_UC010	741.14	741.59	UC	Indirect Tensile Strength (Brazilian)	Samples collected post drilling by NWMO	n/a	N	CANMET	13-Aug-20	n/a	BM