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OHS 550122

Mr. Jim Newton
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Dear Jim,

Re: Kudz Ze Kayah PFS – Geotechnical Site Characterization Summary

1 – INTRODUCTION

This letter presents a summary of the available information on geotechnical and permafrost conditions for the Kudz Ze Kayah Project. The Kudz Ze Kayah Project is a proposed copper-zinc-lead-gold mine that BMC Minerals (No.1) Ltd. (BMC) is currently developing to a Pre-Feasibility Study (PFS) level.

The majority of the available geotechnical information is from site investigations conducted by Cominco Ltd. (Cominco) and Golder Associates (Golder) in 1995 and 1996. The program included a total of 136 test pits and 43 drillholes to support the historic site layout which included a tailings storage facility location in Geona Creek. Additional geotechnical and hydrogeology information was collected by Tetra Tech EBA (Tetra Tech) and Knight Piésold Ltd. (KP) in 2015 and 2016 to support an updated mine plan. The current mine site general arrangement is shown on Drawing C210 in Appendix A. This letter presents a summary of the available information on geotechnical and permafrost conditions for the Kudz Ze Kayah Project for the updated 2016 General Arrangement.

2 – PREVIOUS WORK AND BACKGROUND INFORMATION

The following site investigations have been conducted in the project area since 1995:

- 1995 Golder Feasibility Level Geotechnical and Hydrogeological Site Investigation. The program included 75 geotechnical drillholes and 87 test pits, piezometer installation, temperature measurements, and laboratory testing of overburden samples (Golder, 1996a).
- 1996 Golder Geotechnical Site Investigations for the ABM Deposit. The program included 49 test pits and laboratory testing of overburden samples (Golder, 1996b).
- 2015 Tetra Tech Monitoring Well Installation Program. The program included installation of 11 monitoring wells.
- 2015 KP Geotechnical Site Investigation. The program included six geotechnical and hydrogeological drillholes with SPTs, hydraulic conductivity testing and thermistor installations (KP, 2016a).
- 2016 KP Geotechnical Site Investigation. The program included 16 geotechnical and hydrogeological drillholes with SPTs, hydraulic conductivity testing and thermistor installations, and 53 test pits, with laboratory testing of rock and soil samples (KP, 2016b).

Geotechnical data from all the site investigation programs listed above were utilized for the geotechnical site characterization summarized in this letter. The locations of all test pits and drillholes are shown on Figure 1. Appended Tables B.1 and B.2 present details of all available test pits and drillholes conducted at the project site to date.

3 – SITE DESCRIPTION

3.1 PHYSIOGRAPHY

The project is located in the Saint Cyr Range area of the Pelly Mountains approximately 250 km northeast of Whitehorse, Yukon Territory, Canada. The topography of the area consists of rolling hills, with lakes occupying valley bottoms. Elevations range from approximately 1,400 meters above sea level (masl) at the valley floor to approximately 1,700 masl at the hill tops in the immediate vicinity of the deposit. The valley floor is occupied by a small north flowing stream known as Geona Creek which connects shallow bedded lakes.

3.2 SURFICIAL GEOLOGY

Glacial, periglacial and fluvial processes are the main processes that have been involved in the creation of landforms and are the origin of surficial deposits in the project area. Alexco Environmental Group (AEG) summarized the available surficial geology (AEG, 2015). The main surficial deposits in the project area are as follows:

- Alluvial deposits – geologically recent and result from water processes reworking the sediments deposited during the last ice age.
- Glaciofluvial deposits – the result of water processes from the melting of glaciers and ice sheets. The valley bottoms are infilled generally with sand and gravel deposits from alluvial and glaciofluvial processes to depths of up to 20 m. There are some glaciofluvial deposits on the west side of Geona Creek near the confluence with Finlayson Creek where a deposit in excess of 40 m thick are present.
- Glacial till deposits – the result of the direct glacial action. These silty sand and gravel deposits overlie much of the area, ranging in thickness from less than 1 m to up to 10 m. The thickness of these deposits generally decreases with increasing elevation.
- Colluvium deposits – the result of frost loosening of bedrock which is then transported by debris and avalanche flows to the base of steep slopes. Colluvium is generally deposited above about 1,500 m elevation.
- Organic material – generally less than 0.5 m thick overlies colluvium and glacial till deposits.

A desk-top terrain analysis was completed by KP to develop geomorphic and geological models for the site, provide a preliminary overview of the geohazards at the site and aid the planning of future borrow area assessments. The findings of this study are summarized in KP Letter VA16-00636, dated November 18, 2016.

3.3 PERMAFROST CONDITIONS

The current understanding of the permafrost conditions within the Kudz Ze Kayah project area is derived primarily from geotechnical test pitting investigations and thermal monitoring of boreholes. The 1995 field program identified 35 test pits that reported permafrost, a further 40 test pits observed ice lenses and ice segregation which is interpreted as an active layer rather than permafrost.

The 2015 and 2016 KP site investigation programs included installation of thirteen 10-node thermistor cables in select drillholes to provide ground temperature profiles. A data logger was installed at each thermistor location to collect and record temperature measurements at regular intervals. No evidence of permafrost or frozen soils was encountered during the 2015 drilling site investigation (KP, 2016a). Thermistor K16-330, located on the eastern hillside of Geona Creek, is the only instrument that has shown sub-freezing temperatures at any point since its installation in February 2016. None of the thermistors installed during the 2016 site investigation program confirm the presence of frozen ground (KP, 2016b). It should be noted that the thermistors were installed during the summer of 2016 and a full year of data has not been recorded at this time of this assessment.

Test pit details are summarized in Table A.1, including any permafrost details noted in the test pit logs. Permafrost has previously reported as being present on north and west facing slopes, especially above 1,400 masl elevation, although permafrost had been observed as low as 1,250 masl (Golder, 1995). The locations of the referenced test pits with logged permafrost conditions from the Golder 1995 report are presented on Figures 2 and 3.

4 – GEOTECHNICAL SITE CHARACTERIZATION

This section provides specific information on the foundation characteristics and permafrost conditions for the following proposed mine infrastructure components, based on the December 2016 general arrangement:

- Lower Water Management Pond
- Class A Storage Facility
- Class B Storage Facility
- Class C Storage Facility
- Overburden Stockpile
- Mill Site, and
- Open Pit.

4.1 LOWER WATER MANAGEMENT POND EMBANKMENT AREA

The Lower Water Management Pond Embankment Area is located in the Geona Creek valley at the northern end of the project. 24 test pits (TP 101 to TP 109, TP 111, TP95B-11, TP-96-S1 to TP-96-S3, and TP-96-D1 to TP-96-D10) and 16 drillholes (BH95G-11, BH95G-12, BH95G-13D, BH95G-14D, BH95G-17D, BH95G-18D, BH95G-21D, MW15-08S/D, MW15-09S/D, MW15-10S/D, K15-330, K15-334, and K15-336) have been completed in the area of the Lower Water Management Pond embankment. All test pits and drillholes are summarized in Table 1.

The overburden in the area of the proposed Lower Water Management Pond Embankment Area consists of interlayered alluvial, glaciofluvial, and glaciolacustrine sediments ranging between 14 m to 20 m thick on the west slopes, 11 m to 16 m thick in the valley bottom, and 4 m to 7 m thick on the east slopes. Low density soils with potential for liquefaction were observed on the west slopes and valley bottom. Ground water level measurements indicated the water table was at or near surface in the valley bottom and increasingly depressed up the valley slopes with depths greater than 15 m below ground surface. The upper 6 m to 8 m of bedrock was generally highly weathered and fractured on the east and west slopes with measured hydraulic conductivities on the order of 10⁻⁷ m/s.

Frozen soils were observed ranging between 0.9 m to 5 m deep, with ice contents ranging between 5 to 40% (KP, 2015). The minimum ground temperature measurements within the drillholes were generally above freezing with the exception of one drillhole located on the west hillside with sub-zero temperatures between depths of 3 m to 14 m below ground surface.

4.2 UPPER WATER MANAGEMENT POND EMBANKMENT AREA

The Upper Water Management Pond Embankment Area is located to the south of the Lower Water Management Pond, in the Geona Creek valley. There have been no test pits or drillholes completed in the area of the Upper Water Management Pond.

4.3 CLASS A STORAGE FACILITY AND COLLECTION POND

The Class A Storage Facility and Collection Pond are located at the northern end of the western slope of the project valley. Thirty-one test pits (TP95-08 to TP95-10, TP95B-14, TP95B-17 to TP95B-19, TP-96-B3 to TP-96-B15, TP16-17 to TP16-24, and TP16-49 to TP16-53) and seven drillholes (BH95G-35, K16-387, KP16-389, K16-390, MW16-13, and MW16-14S/D) were completed in the vicinity of the proposed Class A Storage Facility and Collection Pond. Nine test pit logs (TPON-2 to TPON-9) were not located in reports provided and are not summarized. Test pits and drillholes in the vicinity of the Class A Storage Facility and Collection Pond are summarized in Table 2.

Test pits completed within the Class A Storage Facility footprint did not report permafrost. Monitoring well MW16-13 was discovered to be frozen at approximately 6 mbgs shortly after installation. A temperature probe inserted down the well confirmed near freezing temperatures at this location. None of the thermistors installed in

the Class A Facility indicate freezing conditions in their data records, however, these thermistors were all installed lower in the Geona Creek valley.

Measured groundwater levels within the footprint of the facility range from 0.4 to 5.0 m depth. Bedrock was intercepted at 0.2 m to 10.4 m. Bedrock was described as weathered and fractured interbedded argillite mudstone, mafic tuff, and chlorite calcite schist. The overburden was generally found to consist of glacial till described as loose to compact silty sandy gravel with cobbles, with occasional localized pockets of fine-grained silts and clays. Organic silt and moss were often noted at surface up to 0.5 m thick.

The Class A Collection Pond is located below the Class A Storage Facility. Five test pits (TP95B-19, TP-96-B3, and TP-96-B8 to TP-96-B10) and two drillholes (MW16-14S/D) were completed in the vicinity of the proposed Class A Collection Pond, and are summarized in Table 2. Test pit TP-96-B10 encountered ice inclusions and lenses from 0.5 to 1.15 m depth. Bedrock was intercepted from 1.15 to 4.8 m. The overburden consists of glaciofluvial deposits, typically compact to dense sand and some gravel.

4.4 CLASS B STORAGE FACILITY AND COLLECTION POND

The Class B Storage Facility is north of the Open Pit, along the west slope of the valley at the southern end. The Class B Storage Facility is located in the original location shown in the 1996 feasibility design, and also includes the Low Grade Ore (LGO) and Run of Mine (ROM) pad, as well as the Collection Pond downstream of the facility. Twenty test pits (TP95G-10 to TP95G-12, TP-96-G1 to TP-96-G5, TP16-11 to TP16-15, TP16-25 to TP16-27, TP16-32 to TP16-34, TP16-48), and five drillholes (BH95G-33, MW15-01, MW15-02, and MW16-12S/D) were completed in the vicinity of the proposed Class B Storage Facility, LGO and ROM pad, and Collection Pond. Test pits and drillholes in the vicinity of the Class B Storage Facility and Collection Pond are summarized in Table 3.

The overburden material consists of glaciofluvial, glaciolacustrine, and glacial till, typically compact to dense, varying from sand with some silt, to sandy gravel with some silt and trace cobbles. Frozen ground conditions were observed in test pits TP95G-10 and TP-96-G5, at 3.3 m and 1.7 m, respectively. Test pits TP-96-G2 and TP-96-G4 reported ice lenses between 0.4 and 0.8 m depth. Bedrock was intercepted from 0.1 to 10 m. Bedrock is described as weathered and fractured chlorite calcite schist with tuff fragments. Measured groundwater level ranged from artesian to 6.2 m below ground surface.

4.5 CLASS C STORAGE FACILITY AND COLLECTION POND

The Class C Storage Facility is located in a small valley along the eastern slopes of the project area. Two test pits (TP95-01C and TP95-02C) and six drillholes (MW15-03S/D, MW15-04S/D, K16-402, and K16-410 to K16-412) were completed in the vicinity of the proposed Class C Storage Facility. Test pits and drillholes at the Class C Storage Facility are summarized in Table 4.

The overburden within the proposed Class C Storage Facility consists of glaciofluvial and weathered colluvium deposits, typically compact to dense gravelly, silty, sands with trace clay. Drillhole K16-410 in the Class C Facility encountered frozen soil and ice in the SPT samples at approximately 1.5 and 5 m depth. Bedrock was intercepted at 4.7 m to 19.2 m. Bedrock was described as weathered and fractured interbedded argillite mudstone, mafic tuff, and chlorite calcite schist. Measured groundwater level ranged from 2.4 m to 13.3 m.

4.6 OVERBURDEN STOCKPILE AND COLLECTION POND

Overburden stripped from the Open Pit excavation is required for initial construction and for closure activities. Overburden material not required for initial construction will be placed in a stockpile along the valleys eastern slope, north of the Class C Storage Facility. Five test pits (TP95-03C, TP95-04C, TP95-05C, TP95-06C, and TP95-07C) and two monitoring wells (MW15-05S/D and MW16-16) were completed in the vicinity of the proposed Overburden Stockpile footprint. Test pits and the monitoring well at the Overburden Stockpile are summarized in Table 5. Permafrost was reported in three of the test pits (TP95-03C, TP95-04C, and TP95-06C) between 0.6 and 1.8 m depth. Bedrock was intercepted between 2.4 and 8.4 m depth. Bedrock was described

as weathered and fractured interbedded argillite mudstone, mafic tuff, and chlorite calcite schist. Test pits and monitoring well installations found the overburden was glacial till and glaciolacustrine sediments, comprised of compact to very dense sandy silt to silty sand and gravel with occasional cobbles and boulders. Measured groundwater levels ranged from 0.6 to 8.1 m below ground surface.

4.7 MILL SITE

The Mill Site is located on the western slopes of the project valley between the Class A and Class B Storage Facilities. Fourteen test pits (TP112, T95-06, TP95-07, TP95B-12, TP95B-13, TP95B-15, TP95B-16, TPT95B-20, TP-96-B17 to TP-96-B19, TP16-28, TP16-29, and TP16-31) and eight drillholes (BH95G-36, 37, BH95G-20M, K15-335, MW15-07D/S, K16-392, K16-395, and MW16-17) were completed in the vicinity of the proposed Mill Site. Test pits and drillholes at the Mill Site are summarized in Table 6.

The overburden within the proposed Mill Site location consists of glacial till deposits, typically compact to dense silty sandy gravel. Test pits TP95-06, TP95B-13, TP-96-B15, TP-96-B16 and TP96B-18 observed ice lenses approximately 0.1 to 0.8 m. Bedrock was intercepted at 1.2 m to 13.9 m. Bedrock is described as weathered and fractured interbedded argillite mudstone, mafic volcanoclastic, and chlorite calcite schist. Measured groundwater levels ranged from 1 m to 9.9 m, with artesian conditions encountered in drillholes K16-392 and K16-395. A detailed geotechnical characterization of the Mill Site area is included in KP Letter VA16-01536 (KP, 2016e).

4.8 OPEN PIT

Thirty-seven test pits (TP95B-21 to TP95B-27, TP95G-01, TP95G-03, TP95P-01 to TP95P-06, TP-96-B20, TP-96-B21, TP16-01 to TP16-10, TP16-36 to TP16-38, and TP16-41 to TP16-47) and seventeen drillholes (BH95G-20 to BH95G-24, BH95G-25S/D, BH95G-26, BH95G-28, DDH95-129, DDH95-131, DDH95-135, DDH95-146, DDH95-148, DDH95-150, K16-379, and MW16-15D/S) were completed in the vicinity of the ultimate Open Pit footprint. Test pits and drillholes at the Open Pit are summarized in Table 7. A detailed characterization of the Open Pit area is included in KP letter VA16-00636, Findings of Terrain Analysis (KP, 2016d).

5 – SUMMARY

Site investigations completed to date at the Kudz Ze Kayah project include:

- 1995 Golder Feasibility Level Geotechnical and Hydrogeological Site Investigation
- 1996 Golder Geotechnical Site Investigations for the ABM Deposit
- 2015 Tetra Tech Monitoring Well Installation Program
- 2015 KP Geotechnical Site Investigation, and
- 2016 KP Geotechnical Site Investigation.

The following projects areas from the KP 2016 PFS general arrangement have been characterized based on the site investigation data collected to date:

- Lower Water Management Pond
- Class A Storage Facility
- Class B Storage Facility
- Class C Storage Facility
- Overburden Stockpile
- Mill Site, and
- Open Pit.

Discontinuous permafrost has been identified across the project area, with a high degree of variability. The majority of recorded permafrost conditions were identified during the 1995 and 1996 Golder site investigations. It is recommended the approximate permafrost line presented by Golder be re-assessed with a test pitting program scheduled in the late summer or early fall to better understand seasonal ice lenses and active permafrost layers.

The 2016 thermistor data was recorded and downloaded from July through September 2016. It is recommended the thermistors are downloaded during Q3 or Q4 2017 to provide a full year of data, to additionally support the characterization of potential seasonal active layers.

Please do not hesitate to contact the undersigned if you have any questions or require additional information.

Yours truly,
Knight Piésold Ltd.



Prepared:

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Reviewed:

Les Galbraith, P.Eng.
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Approval that this document adheres to Knight Piésold Quality Systems:

Attachments:

Table 1 Rev 0	Lower Water Management Pond
Table 2 Rev 0	Class A Storage Facility Drillhole and Test Pit Summary
Table 3 Rev 0	Class B Storage Facility Drillhole and Test Pit Summary
Table 4 Rev 0	Class C Storage Facility Drillhole and Test Pit Summary
Table 5 Rev 0	Overburden Stockpile Drillhole and Test Pit Summary
Table 6 Rev 0	Mill Site Drillhole and Test Pit Summary
Table 7 Rev 0	Open Pit Drillhole and Test Pit Summary
Figure 1 Rev 0	Site Investigation General Arrangement Plan
Figure 2 Rev 0	Site Investigations and Approximate Permafrost Boundary, Sheet 1 of 2
Figure 3 Rev 0	Site Investigations and Approximate Permafrost Boundary, Sheet 2 of 2
Appendix A	Drawing C210_r0 General Arrangement
Appendix B	Test Pit and Drillhole Summary

References:

- Alexco Environmental Group, 2015. Memorandum, KZK Project – DRAFT Summary of Available Surficial Geology and Permafrost Information. Theriault, J.
- Golder Associates., 1996a. Feasibility Level Geotechnical and Hydrogeological Site Investigation, Ref. No. 952-1523I, January 31, 1996.
- Golder Associates., 1996b. 1996 Geotechnical Site Investigations for the ABM Deposit, Kudz Ze Kayah Project, Ref. No. 952-1523I, October 18, 1996.
- Knight Piésold Ltd., 2015. Geotechnical Investigations Assessment - Kudz Ze Kayah Project Tailings Storage Facility, Ref. No. VA15-03193, Rev.0, September 29, 2015.
- Knight Piésold Ltd., 2016a. Geotechnical Site Investigation Data Report, Ref. No. VA101-640/2-1, Rev.0, October 5, 2016.

Knight Piésold Ltd., 2016b. Geotechnical Site Investigation Data Report, Ref. No. VA101-640/3-1, Rev.0, October 20, 2016.

Knight Piésold Ltd., 2016c. Prefeasibility Design Report, Ref. No. VA101-640/2-3, Rev.0, October 24, 2016.

Knight Piésold Ltd., 2016d. Findings of Terrain Analysis Letter, Ref. No. VA16-00636, Rev.0, November 18, 2016.

Knight Piésold Ltd., 2016e. Mill Site Area Geotechnical Characterization, Ref. No. VA16-01536, Rev.0, November 21, 2016.

TABLE 1

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
LOWER WATER MANAGEMENT POND**

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Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP 101	6,819,229	414,749	1,316	4.9	-	-	0.6	-	0 - 0.3 m SILT 0.3 - 0.6 m SAND 0.6 - 4.0 m silty SAND to gravelly SAND 4.0 - 4.9 m silty SAND and some GRAVEL	some ice at 0.6 m
TP 102	6,819,072	414,741	1,316	5.50	-	-	0.4	-	0 - 0.3 m SILT 0.3 - 5.5 m silty SAND	ice lenses
TP 103	6,819,048	414,686	1,328	5.6	-	0.5	-	-	0 - 0.5 m SILT 0.5 - 4.3 m SAND and GRAVEL 4.3 - 5.6 m SAND	permafrost at 0.5 m
TP 104	6,819,190	414,631	1,333	2.70	-	-	0.30	-	0 - 0.3 m SILT 0.3 - 1.0 m gravelly SAND 1.0 - 2.7 m silty to gravelly SAND	frozen at 0.3 m, ice lenses at 1.0 - 2.7 m
TP 105	6,819,250	414,732	1,315	4.00	-	3.60	0.40	1.7	0 - 0.2 m SILT 0.2 - 1.7 m fine SAND and SILT 1.7 - 4.0 m fine to silty SAND	refusal on permafrost, ice lenses at 1.7 m
TP 106	6,819,300	414,738	1,315	5.60	-	5.60	0.40	0.4	0 - 0.2 m SILT 0.2 - 0.4 m fine SAND 0.4 - 5.4 m SILT 5.4 - 5.6 m fine SAND	refusal on permafrost, ice lenses at 0.4 m
TP 107	6,819,452	414,729	1,311	3.80	-	3.80	0.40	0.40	0 - 0.2 m SILT 0.2 - 0.4 m silty SAND and some GRAVEL 0.4 - 3.8 m fine SAND and some GRAVEL	refusal on permafrost, ice lenses at 0.4 m
TP 108	6,819,012	414,713	1,319	5.4	-	-	-	-	0 - 0.3 m SILT 0.3 - 5.4 m silty SAND and some GRAVEL	
TP 109	6,818,950	414,631	1,349	4.6	-	-	-	4.3	0 - 0.5 m SILT 0.5 - 4.6 m SAND and GRAVEL	
TP 111	6,819,030	414,991	1,370	2.6	-	2.6	-	-	0 - 0.3 m SILT 0.3 - 2.6 m SAND and GRAVEL	refusal on permafrost
TP95B-11	6,819,124	414,800	1,318	4	-	-	-	-	0 - 0.2 m topsoil 0.2 - 4.0 m SILT to silty SAND	
BH95G-11	6,819,256	414,713	1,317	14.94	-	-	-	Unknown	0 - 0.61 m topsoil 0.61 - 14.94 m SAND and SILT	
BH95G-12	6,819,258	414,715	1,316	22.56	-	-	-	Unknown	0 - 0.30 m topsoil 0.30 - 3.50 m SAND 3.50 - 10.06 m SAND and sandy silt 10.06 - 22.56 m SILT and GRAVEL	
BH95G-13D	6,819,010	414,711	1,320	50.3	10.67	-	-	Unknown	0 - 0.30 m topsoil 0.30 - 5.80 m silty SAND and gravel 5.80 - 10.67 m GRAVEL and some sand 10.67 - 50.3 m bedrock	
BH95G-14D	6,818,998	414,651	1,340	28.65	19.35	-	-	Unknown	0 - 4.88 m silty SAND and GRAVEL 4.88 - 6.10 m sandy SILT and GRAVEL 6.10 - 12.34 m SILT to silty SAND 12.34 - 15.85 m SAND and sandy GRAVEL 15.85 - 19.35 m GRAVEL and some SILT 19.35 - 28.65 m bedrock	
BH95G-17D	6,819,049	414,913	1,345	16.46	7.62	-	-	Unknown	0 - 3.35 m fine SAND and GRAVEL 3.35 - 7.62 m sandy SILT and GRAVEL 7.62 - 16.46 m bedrock	
BH95G-18D	6,819,067	414,980	1,364	11.9	3.96	-	-	Unknown	0 - 3.96 m silty SAND and GRAVEL 3.96 - 11.9 m bedrock	
BH95G-21D	6,819,032	414,816	1,321	24.7	15.8	-	-	Unknown	0 - 0.30 m topsoil 0.30 - 15.80 m silty SAND and GRAVEL 15.8 - 24.7 m bedrock	
TP-96-S1	6,819,070	414,581	1,355	5.5	4.00	-	0.40	-	0 - 0.4 m topsoil 0.4 - 4 m silty SAND to SANDY silt	0.4 - 1.4 m frozen ice inclusions (Vx).
TP-96-S2	6,819,113	414,647	1,341	4.0	-	-	-	-	0 - 0.2 m topsoil 0.2 - 4 m SAND	
TP-96-S3	6,819,141	414,700	1,326	2.8	-	-	0.25	2.8	0 - 0.25 m topsoil 0.25 - 0.9 m silty SAND to sandy SILT 0.9 - 2.8 m fine SAND 2.8 - 5.5 m SILT to some CLAY	0.25 - 0.9 m frozen, ice lenses (Vs) up to 1 mm thick
TP-96-D1	6,819,035	414,650	1,342	6.0	-	-	1.20	-	0 - 0.25 m topsoil 0.25 - 1.2 m silty SAND 1.2 - 1.5 m SAND and GRAVEL 1.5 - 4.8 m SAND to silty SAND and GRAVEL 4.8 - 6.0 m clayey SILT	1.2 - 1.5 ice inclusions (Vx)
TP-96-D2	6,819,037	414,680	1,335	5.3	-	2.7	0.4	-	0 - 0.4 m topsoil 0.4 - 2.0 m SILT and some SAND 2.0 - 2.9 m frozen, silty SAND and some GRAVEL 2.9 - 4.0 m fine to medium SAND 4.0 - 5.3 m clayey SILT and some SAND	0.4 - 2 m ice coatings (Vc) and inclusions (Vx), 2 - 2.9 m ice lenses (Vr), 2.7 m no visible ice, well bonded, no excess ice (Nbn)
TP-96-D3	6,819,075	414,723	1,324	5	-	-	0.4	-	0 - 0.4 m topsoil (SILT) 0.4 - 1.0 m silty SAND 1.0 - 2.1 m SAND (frozen) 2.1 - 5.0 m SAND	0.4 - 1.0 m poorly bonded, friable ice (Nf) and coatings (Vc)
TP-96-D4	6,819,070	414,685	1,331	5.8	-	-	0.45	-	0 - 0.45 m topsoil (SILT) 0.45 - 2.7 m frozen SILT and pockets of SILT and SAND 2.7 - 3.5 m sandy SILT 3.5 - 5.0 m SAND and GRAVEL 5.0 - 5.8 m SILT	0.45 - 2.7 m no visible ice, well bounded, no excess ice (Nbn)

Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP-96-D5	6,818,960	414,710	1,329	6	-	-	0.4	-	0 - 0.4 m topsoil (SILT) 0.4 - 1.8 m frozen SAND 1.8 - 6.0 m SAND and GRAVEL	0.4 - 1.8 m ice coating (Vc) and inclusions (Vx)
TP-96-D6	6,819,080	414,825	1,328	5.8	-	-	0.35	-	0 - 0.35 m topsoil (SILT) 0.35 - 5.0 m frozen, silty SAND 5.0 - 5.8 m silty SAND	0.35 - 5.0 m ice lenses, below 3 m ice content reduces
TP-96-D7	6,819,040	414,875	1,338	5.6	-	-	0.35	-	0 - 0.35 m topsoil 0.35 - 2.4 m frozen silty SAND to sandy SILT 2.4 - 3.3 m SAND 3.3 - 3.6 m SAND and GRAVEL 3.6 - 4.2 m SILT 4.2 - 4.4 m SAND and GRAVEL 4.4 - 5.6 m SAND to sandy SILT	0.35 - 2.4 m poorly bonded to friable (Nf) to ice lenses (Vs) 1 - 2 mm thick
TP-96-D8	6,818,950	414,860	1,332	5.50	-	-	-	2 - 3 m	0 - 0.5 m silty SAND 0.5 - 1.7 m silty SAND and GRAVEL 1.7 - 5.5 m silty SAND to sandy SILT	rapid water seepage
TP-96-D9	6,819,000	414,856	1,332	5.5	-	-	-	3 - 3 m	0 - 0.5 m topsoil 0.5 - 3.0 m SAND to sandy SILT 3.0 - 5.5 m silty SAND	
TP-96-D10	6,819,020	414,950	1,360	3.70	-	3.70	-	-	0 - 0.3 m topsoil 0.3 - 1.4 m SAND 1.4 - 1.7 m SAND and GRAVEL 1.7 - 2.9 m frozen, silty SAND 2.9 - 3.7 m frozen, silty SAND and some GRAVEL	0.3 - 1.4 m ice inclusion (Vs), 1.7 - 2.9 m ice lenses. Refusal on frozen ground.
MW15-08S	6,818,520	414,902	N/A	11.63	-	-	-	Flowing	0 - 11.63 m SAND and GRAVEL	
MW15-08D	6,818,520	414,902	N/A	36	14.9	-	-	0.97	0 - 13.7 m SAND and GRAVEL 13.7 - 36 m interlayered CHLORITE and argillitic MUDSTONE	
MW15-09S	6,819,176	414,705	N/A	17.27	-	-	-	-0.4	0 - 17.27 m SAND and GRAVEL	
MW15-09D	6,819,176	414,705	N/A	42	21	-	-	Flowing	0 - 21.0 m SAND and GRAVEL 21.0 - 42.0 m interlayered CHLORITE and argillitic MUDSTONE	
MW15-10S	6,819,204	414,788	N/A	9.55	-	-	-	-0.84	0 - 9.55 m overburden	
MW15-10D	6,819,204	414,788	N/A	36	21	-	-	-0.88	0 - 21.0 m overburden 21.0 - 36.0 m interlayered CHLORITE and argillitic MUDSTONE	
K15-330	6,818,696	414,924	1,347	50.95	10.6	-	-	14.5	0 - 10.6 m GRAVEL 10.6 - 50.95 sedimentary mudstone schist	
K15-334	6,819,164	414,781	1,317	50.5	18.1	-	-	0.8	0 - 0.4 m organics, CLAY and SILT 0.4 - 18.1 m clayey SILT 18.1 - 50.5 m sedimentary mudstone schist	
K15-336	6,819,016	414,792	1,318	50.5	17.5	-	-	1.0	0 - 2.0 m organics, PEAT and SILT 2.0 - 16.0 m sandy SILT and some GRAVEL 16.0 - 17.5 m silty GRAVEL 17.5 - 50.5 m sedimentary mudstone schist	

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0	16DEC16	ISSUED WITH LETTER VA16-01820	JMS	LJS
REV	DATE	DESCRIPTION	PREP'D	RW'D

TABLE 2

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
CLASS A STORAGE FACILITY DRILLHOLE AND TEST PIT SUMMARY**

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Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP95-08	6,817,780	414,619	1,416	4.50	4.50	-	0.40	1.40	0 - 0.4 topsoil 0.4 - 1.4 SAND and GRAVEL 1.4 - 4.5 clayey SILT	frozen at 0.4 to 1.0 m in thin ice lenses
TP95-09	6,818,261	414,448	1,412	6.00	5.00	-	-	4.00	0 - 0.3 topsoil 0.3 - 5.0 silty SAND and GRAVEL 5.0 - 6.0 weak metasediments	
TP95-10	6,818,799	414,281	1,414	4.30	4.00	-	-	-	0 - 0.2 topsoil 0.2 - 1.5 SAND, some silt 1.5 - 4.3 weathered bedrock	
TP95B-14	6,817,711	414,651	1,410	4.70	-	-	-	-	0 - 0.8 SAND 0.8 - 4.5 SILT 4.5 - 4.7 SILT some sand	
TP95B-17	6,818,112	414,577	1,405	3.30	-	-	-	-	0 - 2.2 silty SAND some gravel 2.2 - 3.3 silty SAND to SAND some gravel	
TP95B-18	6,818,112	414,801	1,363	3.50	-	-	-	-	0 - 1.8 SAND some silt 1.8 - 3.5 SAND	
TP95B-19	6,818,499	414,599	1,373	3.30	-	-	-	-	0 - 0.2 topsoil 0.2 - 3.3 silty SAND, some gravel	
BH95G-35	6,817,696	414,572	1,422	16.15	6.1	-	-	-	0 - 6.1 SAND and GRAVEL 6.1 - 16.15 mafic volcanic (tuff) bedded chlorite-calcite schist and argillite	
TP-96-B3	6,818,430	414,690	1,358	3.80	-	-	-	2.1	0 - 0.3 organic SILT 0.3 - 2.1 silty SAND and GRAVEL 2.1 - 3.8 sandy SILT and GRAVEL	
TP-96-B4	6,818,020	414,840	1,365	4.20	-	-	0.20	1.50	0 - 1.5 silty SAND and GRAVEL 1.5 - 2.1 silty SAND 2.1 - 4.2 SILT with sand and gravel	0.2 - 1.5 m ice inclusions (Vx) and ice coatings.
TP-96-B6	6,817,842	414,729	1,395	2.50	2.50	-	0.20	-	0 - 2.5 silty SAND and GRAVEL 2.5 highly weathered bedrock	0.2 - 1.0 m ice coatings (Vc)
TP-96-B7	6,818,000	414,721	1,390	3.50	-	-	0.20	-	0 - 3.5 SILT and SAND some gravel	0.2 - 1.1 m ice not visible, well bonded, no excess Nbn)
TP-96-B8	6,818,230	414,650	1,385	4.50	-	-	-	-	0 - 0.5 SAND and GRAVEL 0.5 - 2.0 silty SAND 2.0 - 4.5 SAND some gravel	
TP-96-B9	6,818,300	414,565	1,390	4.10	-	-	-	1.9 and 4.0 m	0 - 0.9 silty SAND 0.9 - 2.5 SAND some silt 2.5 - 4.1 SILT and SAND	
TP-96-B10	6,818,443	414,565	1,390	1.15	-	0.50	-	-	0 - 0.4 organic silt 0.4 - 1.5 SAND some gravel 1.5 - 3.5 SILT and SAND	0.5 - 1.15 m ice inclusions (Vx) and random ice lenses (Vr). Refusal in frozen ground.
TP-96-B11	6,818,540	414,500	1,395	3.50	-	-	-	0.4 to 1.5 m	0 - 0.4 organic silt 0.4 - 1.5 fine SAND, some gravel	
TP-96-B12	6,818,680	414,576	1,378	4.00	-	-	-	-	0 - 0.4 organic silt 0.4 - 3.7 silty SAND, some gravel 3.7 boulders	Refusal on boulders.
TP-96-B14	6,818,630	414,306	1,420	1.80	0.6	-	-	-	0 - 0.2 organic SILT 0.2 - 0.6 silty SAND 0.6 - 1.8 weathered bedrock	
TP-96-B15	6,818,769	414,445	1,395	2.90	1.5	-	0.30	-	0 - 0.3 organic SILT 0.3 - 0.9 silty SAND, some gravel 0.9 - 1.5 sandy SILT, some gravel with lenses of organic silt 1.5 - 2.9 weathered bedrock	0.3 - 0.9 m frozen well bounded, ice inclusions (Vx to Nbe)
TP16-17	6,817,760	414,139	1,478	1.3	0.3	-	-	-	0 - 0.2 organics 0.2 - 0.3 SAND, some silt and gravel 0.3 - 1.3 weathered bedrock	
TP16-18	6,817,985	414,045	1,479	2.3	0.2	-	-	0.5	0 - 0.2 organics 0.2 - 2.3 SAND and GRAVEL, some clay	
TP16-19	6,818,170	414,021	1,470	2.8	2.8	-	-	-	0 - 0.1 organics 0.1 - 0.2 SILT 0.2 - 2.8 silty SAND, some gravel 2.8 weathered bedrock	
TP16-20	6,818,271	414,181	1,441	2	0.6	-	-	-	0 - 0.3 organics 0.3 - 0.6 sandy SILT, some gravel 0.6 - 2.0 weathered bedrock	
TP16-21	6,818,971	414,331	1,395	2.3	2.3	-	-	-	0 - 0.1 organics 0.1 - 2.4 silty SAND 2.4 weathered bedrock	
TP16-22	6,818,989	414,423	1,386	4.5	-	-	-	-	0 - 0.3 organics 0.3 - 4.5 gravelly SILT and SAND	
TP16-23	6,818,370	414,428	1,412	2.4	2.4	-	-	-	0 - 0.1 organics 0.1 - 2.4 silty SAND 2.4 weathered bedrock	
TP16-24	6,818,145	414,409	1,423	1.5	0.3	-	-	-	0 - 0.3 organics 0.3 - 1.5 weathered bedrock	

Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP16-49	6,818,821	414,317	1,407	4.2	0.7	-	-	-	0 - 0.1 organics 0.1 - 0.7 silty SAND and GRAVEL 0.7 - 4.2 weathered bedrock	
TP16-50	6,818,848	414,482	1,379	5	-	-	-	-	0 - 0.2 organics 0.2 - 0.4 SILT 0.4 - 3.0 SAND and GRAVEL, some silt 3.0 - 5.0 sandy SILT, some gravel	
TP16-51	6,818,617	414,346	1,409	1.7	0.3	-	-	-	0 - 0.2 organics 0.2 - 0.3 SILT 0.3 - 0.4 SILT and SAND 0.4 - 1.7 weathered bedrock	
TP16-52	6,818,631	414,474	1,390	2.5	2.5	-	-	-	0 - 0.2 organics 0.2 - 2.5 silty, gravelly SAND 2.5 weathered bedrock	
TP16-53	6,819,075	414,236	1,398	3.5	-	-	-	-	0 - 0.1 organics 0.1 - 0.3 SILT 0.3 - 3.5 silty, gravelly SAND	
K16-387	6,817,991	414,571	1,411	34	3.3	-	-	4.57	0 - 3.3 SILT and SAND, some gravel 3.3 34.0 interlayered carbonaceous mudstone and mafic volcanoclastics	
K16-389	6,818,334	414,361	1,421	42	10.4	-	-	3.48	0 - 10.4 sandy, gravelly SILT and CLAY 10.4 - 42.0 interlayered carbonaceous mudstone and mafic volcanoclastics	
K16-390	6,818,779	414,323	1,409	38.6	2.1	-	-	4.95	0 - 2.1 SILT and SAND, some clay 2.1 - 38.6 interlayered carbonaceous mudstone and mafic volcanoclastics	
MW16-13	6,817,774	414,011	1,503	27.9	1.1	-	-	1.68	0 - 1.1 silty SAND, some gravel 1.1 - 27.9 interlayered carbonaceous mudstone and mafic volcanoclastics	
MW16-14D	6,818,386	414,779	1,342	40.2	4.8	-	-	-0.73	0 - 0.2 organics 0.2 - 4.8 clayey, sandy SILT, some gravel 4.8 - 40.2 interlayered carbonaceous mudstone and mafic volcanoclastics	
MW16-14S	6,818,383	414,780	1,341	4.5	-	-	-	3.18	0 - 0.2 organics 0.2 - 4.5 clayey, sandy SILT, some gravel	

\\KPL\VA-Prj\$1\01\00640\02\A\Correspondence\VA16-01820 - Geotechnical Characterization with 2016 SI Data\Tables\Tables 1 to 6_Test Pit and Drillhole Summary.XLSX]Table 2_class A waste

0	16DEC16	ISSUED WITH LETTER VA16-01820	JAG	LJC
REV	DATE	DESCRIPTION	PREP'D	RW'D

TABLE 3

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
CLASS B STORAGE FACILITY DRILLHOLE AND TEST PIT SUMMARY**

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Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP95G-10	6,816,779	415,123	1,391	3.30	-	3.30	-	-	0 - 0.15 topsoil 0.15 - 3.3 silty SAND some gravel	frozen soil difficult to penetrate with excavator, no mention of permafrost term.
TP95G-11	6,816,579	415,101	1,391	1.30	1.30	-	-	-	0 - 0.15 topsoil 0.15 - 1.3 SAND 1.3 bedrock	refusal on bedrock
TP95G-12	6,816,332	415,053	1,391	1.30	1.30	-	-	-	0 - 0.1 topsoil 0.1 - 0.35 silty SAND 0.35 - 1.3 highly weathered bedrock	refusal on bedrock
TP-96-G1	6,816,824	414,955	1,410	3.90	3.50	-	-	-	0 - 0.5 SILT and SAND 0.5 - 1.35 SAND some gravel 1.35 - 3.9 gravelly SAND	
TP-96-G2	6,816,631	414,952	1,411	4.00	3.50	-	0.40	2.10	0 - 0.4 organic silt 0.4 - 0.8 silty SAND 0.8 - 2.1 SAND 2.1 - 3.0 silt SAND and GRAVEL	0.4 - 0.8 m frozen ice lenses (Vs) 2 - 4 mm thick
TP-96-G3	6,816,355	414,850	1,423	3.00	-	-	-	-	0 - 0.4 silty SAND 0.4 - 2.5 SAND 2.5 - 3.0 cobbles and boulders	
TP-96-G4	6,816,090	414,810	1,417	3.00	2.50	-	0.40	2.80	0 - 0.1 organics 0.1 - 0.4 SAND, some silt 0.4 - 2.5 gravelly SILT and SAND 2.5 - 3.0 weathered bedrock	0.4 - 0.55 m frozen ice inclusions (Vx)
TP-96-G5	6,817,000	414,640	1,440	5.30	-	1.70	0.00	-	0 - 1.7 silty SAND and GRAVEL 1.7 - 5.3 silty SAND and GRAVEL	frozen throughout pit
BH95G-33 S/D	6,816,742	415,133	1,390	13.1	7.32	-	-	-	0 - 1.52 silty SAND 1.52 - 7.32 SAND some gravel 7.32 - 13.1 chlorite calcite schist	
MW15-01	6,816,750	414,347	-	20.00	1.80	-	-	artesian	0 - 1.8 overburden 1.8 - 8.2 argillitic mudstone 8.2 - 8.5 siliceous rhyolite 8.5 - 14.8 schist	
MW15-02	6,816,270	414,808	-	32.00	6.50	-	-	5.42	0 - 6.5 overburden 6.5 - 10.5 mafic ash or volcanoclastic 10.5 - 19.8 argillitic mudstone 19.8 - 32.0 mafic ash or dyke	
TP16-11	6,816,429	414,690	1,447	3.50	0.80	-	-	2	0 - 0.4 organics 0.4 - 0.8 silty SAND 0.8 - 3.5 weathered bedrock	
TP16-12	6,816,591	414,480	1,485	1.60	0.10	-	-	-	0 - 0.1 organics 0.1 - 1.6 weathered bedrock	
TP16-13	6,816,764	414,546	1,452	2.00	0.20	-	-	-	0 - 0.2 organics 0.2 - 2.0 weathered bedrock	
TP16-14	6,816,917	414,472	1,457	2.00	0.50	-	-	-	0 - 0.3 organics 0.3 - 0.5 SILT and SAND 0.5 - 2.0 weathered bedrock	
TP16-15	6,817,229	414,310	1,466	4.80	-	-	-	-	0 - 0.3 organics 0.3 - 0.4 SAND and GRAVEL 0.4 - 4.8 SILT and SAND, some gravel	
TP16-25	6,816,453	414,805	1,425	1.90	1.60	-	-	-	0 - 0.2 organics 0.2 - 1.6 silty, gravelly SAND 1.6 - 1.9 weathered bedrock	
TP16-26	6,816,975	414,944	1,394	4.00	-	-	-	-	0 - 0.2 organics 0.2 - 4.0 silty, gravelly SAND	
TP16-27	6,816,889	414,896	1,413	2.90	-	-	-	-	0 - 0.3 organics 0.3 - 2.9 silty SAND and GRAVEL	
TP16-32	6,816,895	415,051	1,389	5.00	-	-	-	-	0 - 0.2 organics 0.2 - 5.0 silty, gravelly SAND	
TP16-33	6,816,478	415,010	1,395	3.40	-	-	-	-	0 - 0.4 organics 0.4 - 3.4 SILT and SAND, some gravel	
TP16-34	6,816,353	414,999	1,391	4.90	-	-	-	-	0 - 0.1 organics 0.1 - 0.3 SILT and COBBLES 0.3 - 4.9 silty, gravelly SAND	
TP16-48	6,816,478	415,140	1,375	4.00	-	-	-	-	0 - 0.1 organics 0.1 - 0.4 SILT 0.4 - 4.0 SILT and SAND, some gravel	
MW16-12D	6,816,530	415,278	1,369	28.20	7.20	-	-	artesian	0 - 0.1 organics 0.1 - 7.2 gravelly CLAY, some silt 7.2 - 28.2 interlayered carbonaceous mudstone and mafic volcanics	
MW16-12S	6,816,530	415,274	1,369	8.00	7.20	-	-	-0.01	0 - 0.1 organics 0.1 - 7.2 gravelly CLAY, some silt 7.2 - 8.0 interlayered carbonaceous mudstone and mafic volcanics	

Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
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\\KPL\VA-P\j\1101\00640\021A\Correspondence\VA16-01820 - Geotechnical Characterization with 2016 SI Data\Tables\Tables 1 to 6_Test Pit and Drillhole Summary.XLSX\Table 3_class B waste

0	16DEC16	ISSUED WITH LETTER VA16-01820	JAG	LIG
REV	DATE	DESCRIPTION	PREP'D	RVW'D

TABLE 4

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
CLASS C STORAGE FACILITY DRILLHOLE AND TEST PIT SUMMARY**

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Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP95-01C	6,816,397	415,895	1,442	3.05	3.05	-	-	-	0 - 3.05 silty SAND with gravel 3.05 carbonaceous argillite	refusal on bedrock
TP95-02C	6,816,458	415,867	1,445	4.60	4.60	-	-	2.40	0 - 4.6 silty SAND with gravel 4.6 carbonaceous mudstone	refusal on bedrock
MW15-03 S/D	6,816,049	416,314	-	18.51	10.4	-	-	3.27 (S) 7.89 (D)	0 - 6.5 overburden 6.5 - 32.0 interbedded mafic ash and argillitic mudstone	
MW15-04 S/D	6,816,158	415,782	-	18.51	4.5	-	-	dry (S) 7.88 m (D)	0 - 4.5 sand and gravel and cobbles 4.5 - 18.51 layered mudstone and chlorite, biotite and quartzite schist	
K16-402	6,816,485	415,844	1,443	70.60	6.30	-	-	13.25	0 - 6.3 SILT and SAND with gravel 6.3 - 70.5 interlayered carbonaceous mudstone and mafic volcanics	
K16-410	6,816,446	416,136	1,473	31.00	5.60	-	-	7.95	0 - 5.6 sandy, gravelly CLAY and SILT 5.6 - 18.7 carbonaceous mudstone 18.7 - 31.0 mafic volcanics	
K16-411	6,816,237	415,947	1,446	34.10	18.20	-	-	3.13	0 - 18.2 SILT and SAND with layers of clay and gravel 18.2 - 34.1 interlayered carbonaceous mudstone and mafic volcanics	
K16-412	6,816,061	416,070	1,464	38.70	19.20	-	-	6.8	0 - 19.2 SILT and SAND with clay 19.2 - 38.7 interlayered carbonaceous mudstone and mafic volcanics	

\\KPL\VA-P\j\S\1\01\00640\02\VA\Correspondence\VA16-01820 - Geotechnical Characterization with 2016 SI Data\Tables\Tables 1 to 6_Test Pit and Drillhole Summary.XLSX\Table 4_class C waste

0	16DEC16	ISSUED WITH LETTER VA16-01820	JAG	LJG
REV	DATE	DESCRIPTION	PREP'D	RVWD

TABLE 5

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
OVERBURDEN STOCKPILE DRILLHOLE AND TEST PIT SUMMARY**

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Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP95-03C	6,816,797	415,746	1,449	3.05	3.05	1.50	-	-	0 - 3.05 clayey SILT and SAND with gravel 3.05 felipatnic lapilli tuff with schistose character	permafrost at 1.5 m
TP95-04C	6,817,505	415,551	1,440	1.82	-	1.82	-	-	0 - 1.82 clayey SILT and SAND with gravel	refusal on permafrost
TP95-05C	6,817,560	415,597	1,447	2.40	2.40	-	-	-	0 - 2.4 clayey SILT and SAND with gravel 2.4 mudstone/ argillite	refusal on bedrock
TP95-06C	6,817,951	415,491	1,449	0.60	-	0.60	-	1.00	0.3 - 0.6 clayey silty SAND with gravel	refusal on permafrost
TP95-07C	6,818,012	415,402	1,432	3.65	3.65	-	-	-	0 - 2.13 clayey SILT and SAND with gravel 2.13 - 3.65 chlorite-amphibole calcite schist	refusal on bedrock
MW15-05 S/D	6,816,872	415,850	-	30.00	8.40	-	-	12.23 (S) 0 (D)	0 - 8.4 overburden 8.4 - 30.0 carbonaceous mudstone	
MW16-16	6,817,229	415,395	1,393	40.30	3.90	-	-	19.82	0 - 13.9 gravelly SILT and SAND 13.9 - 40.3 interlayered carbonaceous mudstone and mafic volcanoclastics	

\\KPL\VA-Pj\1010064002\A\Correspondence\VA16-01820 - Geotechnical Characterization with 2016 SI Data\Tables\Tables 1 to 6_Test Pit and Drillhole Summary.XLSX\Table 5_OVB stockpile

0	16DEC16	ISSUED WITH LETTER VA16-01820	JAG	LJG
REV	DATE	DESCRIPTION	PREP'D	RW'D

TABLE 6

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
MILL SITE DRILLHOLE AND TEST PIT SUMMARY**

Print Dec/16/16 9:35:55

Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP112	6,817,299	414,702	1,418	5.30	-	-	-	4	0 - 2.0 sandy SILT some gravel 2.0 - 4.6 sandy SILT and GRAVEL 4.6 - 5.3 weathered bedrock	
T95-06	6,817,261	414,773	1,410	4.00	4	-	0.1	1	0 - 4.0 silty SAND some gravel 4.0 weak metasediments	frozen at 0.1 to 0.15 m in thin ice lenses
TP95-07	6,817,540	414,680	1,414	2.80	1.2	-	-	2.3	0 - 0.6 topsoil 0.6 - 1.2 GRAVEL and SAND 1.2 - 2.8 weak metasediments	
TP95B-12	6,818,680	414,576	1,378	4.00	-	-	-	-	0 - 0.3 topsoil 0.3 - 1.8 silty SAND, some gravel 1.8 - 2.5 weathered bedrock	Refusal on boulders.
TP95B-13	6,818,620	414,450	1,404	3.70	3.4	-	0.5	-	0 - 0.5 topsoil 0.5 - 3.0 SAND, some silt, gravel	0.5 - 1.3 frozen no visible ice, well bonded, no excess ice (Nbn)
TP95B-15	6,818,769	414,445	1,395	2.90	1.5	-	0.3	-	0 - 0.3 topsoil 0.3 - 0.5 SAND 0.5 - 2.3 sandy SILT 2.3 - 4.2 gravelly SAND, some silt, cobbles	0.3 - 0.9 m frozen well bounded, ice inclusions (Vx to Nbe)
TP95B-16	6,818,680	414,660	1,360	4.70	-	-	0.65	-	0 - 0.3 topsoil 0.3 - 0.8 SAND and GRAVEL 0.8 - 1.8 gravelly SAND, some silt 1.8 - 3.0 silty SAND, some gravel 3.0 - 3.8 SILT, some sand, gravel	0.65 - 1.05 m frozen ice inclusions (Vx).
TP95B-20	6,817,199	414,848	1,404	2.90	-	-	-	-	0 - 2.9 silty SAND some gravel	
TP-96-B17	6,817,537	414,650	1,415	3.60	-	-	-	2.70	0 - 0.55 organic silt 0.55 - 0.8 SAND and GRAVEL 0.8 - 3.6 silty SAND some gravel	
TP-96-B18	6,817,610	414,800	1,393	5.00	-	-	0.80	-	0 - 0.5 organic silt 0.5 - 0.8 SAND and GRAVEL 0.8 - 5.0 silty SAND	0.8 - 1.0 m frozen ice lenses (Vs) 1 - 2 mm thick
TP-96-B19	6,817,690	414,890	1,375	2.60	-	-	-	1.0 and 2.5 m	0 - 0.5 organic gravelly SILT 0.5 - 1.0 fine SAND, some gravel 1.0 - 2.6 SILT and SAND, some gravel	
BH95G-36	6,817,449	414,628	1,418	10.08	3.35	-	-	-	0 - 3.35 silty SAND and GRAVEL 3.35 - 10.08 mafic volcanic (tuff) bedded chlorite-calcite schist with argillite	
BH95G-37	6,817,454	414,584	1,425	13.11	3.81	-	-	9.9	0 - 3.81 silty SAND and GRAVEL, cobbles 3.81 - 13.11 interbedded mafic tuff and argillite	
BH95G-20M	6,817,263	414,725	1,416	12.5	3.81	-	-	-	0 - 3.81 silty, sandy GRAVEL 3.81 - 5.64 bedrock quartz vein 5.64 - 12.5 chlorite carbonate schist	
K15-335	6,817,327	414,667	1,421	32.33	2.5	-	-	-	0 - 2.5 silty, sandy GRAVEL 2.5 - 32.33 chlorite carbonate schist	
MW15-07D/S	6,818,520	414,902	-	36	13.9	-	-	12.66 (S) 36.89 (D)	0 - 13.9 sand and gravel 13.9 - 36.0 chlorite, biotite and calcite schist with layered argillitic mudstone	
TP16-28	6,817,432	414,783	1,401	2.7	2.2	-	-	2.5	0 - 0.1 organics 0.1 - 0.2 SILT 0.2 - 0.4 SAND and GRAVEL, some silt 0.4 - 2.2 silty SAND, some gravel 2.2 - 2.7 weathered bedrock	
TP16-29	6,817,465	414,894	1,386	2.3	2.3	-	-	-	0 - 0.2 organics 0.2 - 0.5 GRAVEL, some sand 0.5 - 2.3 silty, gravelly SAND 2.3 weathered bedrock	
TP16-31	6,817,555	414,605	1,412	4.5	-	-	-	-	0 - 0.5 organics 0.5 - 0.8 silty SAND and GRAVEL 0.8 - 4.5 silty, gravelly SAND	
K16-392	6,817,471	414,852	1,390	46.2	5	-	-	artesian	0 - 5.0 Silty SAND, some clay 5.0 - 46.2 interlayered mafic volcanoclastics and carbonaceous mudstone	
K16-395	6,817,251	414,822	1,406	46.2	2.3	-	-	0	0 - 0.1 organics 0.1 - 2.3 silty SAND, some gravel 2.3 - 46.2 interlayered mafic volcanoclastics and carbonaceous mudstone	
MW16-17	6,817,489	414,634	1,418	31.1	1.6	-	-	2.61	0 - 0.1 organics 0.1 - 1.6 CLAY and SILT, some sand 1.6 - 31.1 interlayered mafic volcanoclastics and carbonaceous mudstone	

Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
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0	16DEC16	ISSUED WITH LETTER VA16-01820	JAG	LJG
REV	DATE	DESCRIPTION	PREP'D	RVW'D

TABLE 7

**BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT**

**GEOTECHNICAL SITE CHARACTERIZATION
OPEN PIT DRILLHOLE AND TEST PIT SUMMARY**

Print Dec/16/16 9:35:55

Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
TP95B-21	6,815,095	414,941	1,383	2.2	-	-	-	0.3	0 - 0.3 gravelly SAND 0.3 - 1.0 silty SAND, some clay 1.0 - 2.2 silty SAND and GRAVEL	
TP95B-22	6,815,466	414,925	1,386	2.80	-	-	-	0.35	0 - 0.9 organics 0.9 - 1.8 SAND 1.8 - 2.8 silty SAND and GRAVEL	
TP95B-23	6,815,433	415,027	1,384	2.60	-	-	-	-	0 - 0.25 organics 0.25 - 2.6 sandy SILT	
TP95B-24	6,815,771	415,042	1,383	3.50	-	-	-	-	0 - 2.2 gravelly SAND 2.2 - 3.5 SILT and GRAVEL	
TP95B-25	6,815,756	414,950	1,382	3.00	-	-	-	0.30	0 - 0.3 organics 0.23 - 0.45 SILT 0.45 - 3.0 gravelly SAND	
TP95B-26	6,814,869	415,041	1,391	3.30	-	-	-	1.30	0 - 0.9 gravelly SAND 0.9 - 2.0 silty SAND 2.0 - 3.3 SILT same sand layered	
TP95B-27	6,815,080	414,983	1,383	1.80	-	-	-	0.30	0 - 0.2 organic SILT 0.2 - 1.8 gravelly SAND, some silt	
TP95G-01	6,814,899	415,141	1,388	5.00	-	1.5	-	1.50	0 - 0.5 topsoil 0.5 - 1.5 SAND, some silt, some gravel 1.5 - 2.0 gravelly SAND 2.0 - 5.0 silty SAND, some gravel	reach of excavator, ice lenses throughout
TP95G-03	6,814,800	415,198	1,394	4.50	-	2.2	-	-	0 - 0.5 topsoil 0.5 - 1.3 fine SAND, some silt, some gravel and cobbles 1.3 - 2.2 SAND, some silt, gravel 2.2 - 4.5 silty SAND, some gravel	no visible ice, poorly bonded
TP95P-01	6,815,498	414,777	1,403	2.50	2.50	-	0	-	0 - 0.4 organics 0.4 - 0.7 SAND 0.7 - 2.5 silty SAND layered 2.5 bedrock	frozen at surface no other mention of permafrost
TP95P-02	6,815,497	414,875	1,393	0.20	0.20	-	-	-	0 - 0.2 SAND 0.2 bedrock	
TP95P-03	6,815,501	414,916	1,387	2.00	1.50	-	0	-	0 - 0.25 organics 0.25 - 1.5 SAND some silt layered 1.5 - 2.0 quartz sericite schist	frozen at surface no other mention of permafrost
TP95P-04	6,815,422	414,950	1,383	3.50	-	-	0.70	1.10	0 - 0.2 organics 0.2 - 1.1 SILT and SAND 1.1 - 1.9 SAND and GRAVEL 1.9 - 3.5 SILT and SAND	frozen at surface, ice segregation at 0.7 m
TP95P-05	6,815,377	414,849	1,393	4.00	-	-	-	-	0 - 0.8 organics 0.8 - 4.0 SAND	
TP95P-06	6,815,336	415,027	1,385	1.50	-	-	0	1.10	0 - 0.5 organics 0.5 - 1.1 clayey SILT 1.1 - 1.5 silty SAND and GRAVEL	frozen at surface no other mention of permafrost
TP-96-B20	6,815,480	414,955	1,410	2.50	-	-	0.10	1.50	0 - 1.5 SILT 1.5 - 2.5 SAND	0.1 - 1.5 m frozen no visible ice, well bonded, no excess (Nbn)
TP-96-B21	6,815,550	414,930	1,411	2.60	2.50	-	-	2.50	0 - 2.6 silty SAND 2.6 cobbles	
BH95G-20	6,815,497	414,845	1,396	10.06	1.52	-	-	-	0 - 1.5 GRAVEL and SAND 1.5 - 10.06 felsic tuffs and quartz sericite schist	
BH95G-21	6,815,640	414,801	1,402	10.08	2.00	-	-	-	0 - 2.0 SAND 2.0 - 10.06 schist	
BH95G-22	6,815,731	414,930	1,385	7.47	4.57	-	-	1.26	0 - 2.6 sand SILT 2.6 - 4.6 gravelly SAND 4.6 - 7.5 schist	
BH95G-23	6,815,275	414,906	1,386	14.63	14.17	-	-	0.44	0 - 10.1 SAND some silt 10.1 - 14.2 silty SAND and GRAVEL 14.2 - 14.6 chlorite calcite schist	
BH95G-24	6,815,259	415,039	1,384	9.75	8.53	-	-	5.05	0 - SAND some silt 5.0 - 6.9 silty SAND some gravel 6.9 - 8.5 SAND 8.5 - 9.75 weathered schist	
BH95G-25 S/D	6,815,526	415,062	1,383	22.25	17.07	-	-	2.79 (S) - (D)	0 - 1.5 sandy SILT 1.5 - 4.3 SAND and GRAVEL 4.3 - 17.1 SAND some silt and gravel 17.1 - 22.25 sericite quartz schist	
BH95G-26	6,815,664	415,061	1,382	14.63	13.40	-	-	-	0 - 1.8 silty SAND 1.5 - 5.5 gravelly SAND 5.5 - 14.6 felsic lapilli tuff and chlorite schist	
BH95G-28	6,814,946	415,143	1,389	17.68	17.07	-	-	-	0 - 0.4 topsoil 0.4 - 7.0 SAND, some silt, gravel 7.0 - 14.3 silty SAND and GRAVEL 14.3 - 17.1 GRAVEL, some silt, sand 17.1 - 17.7 weathered chlorite-calcite-biotite schist	

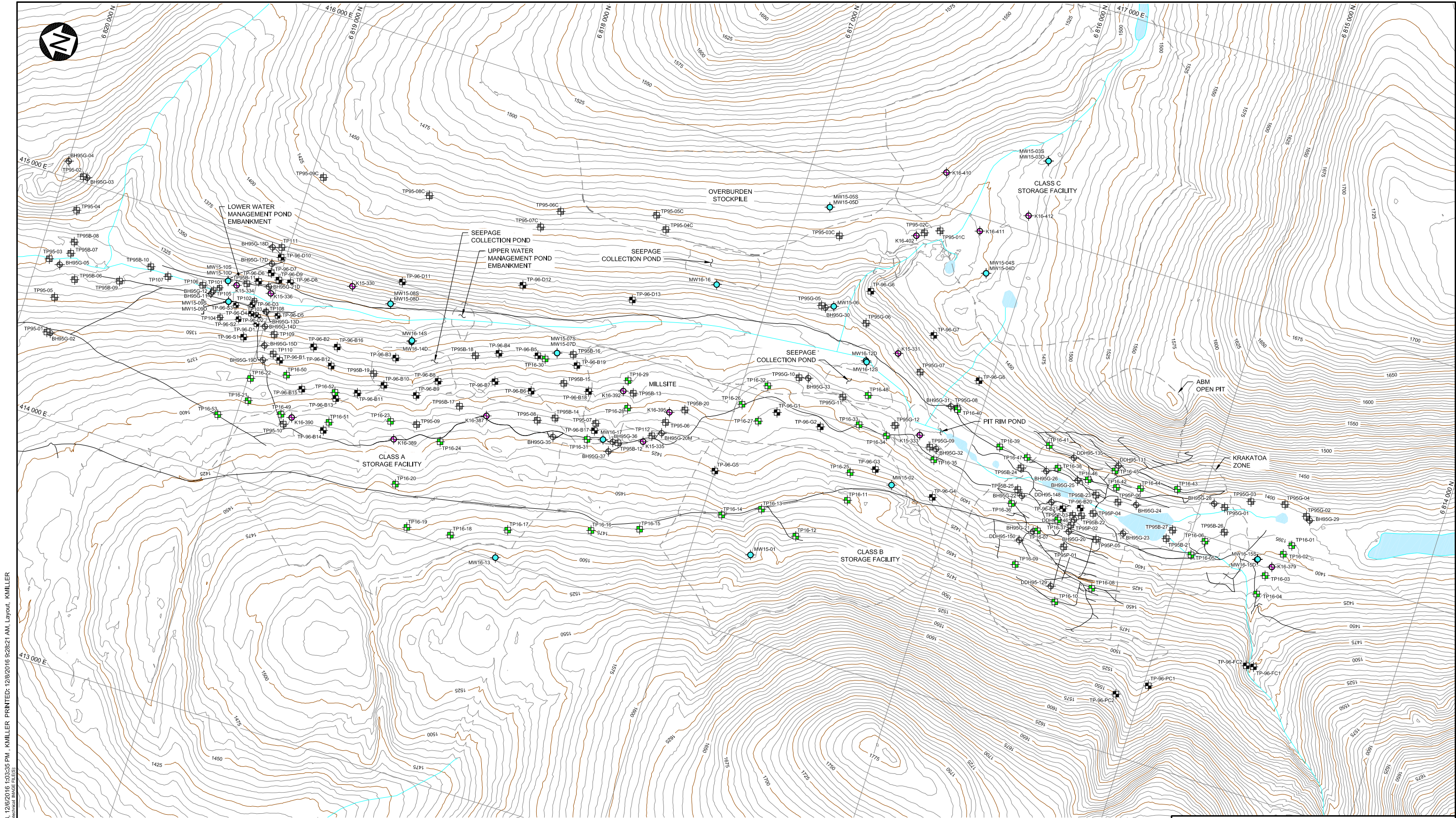
Drillhole / Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	End of Test Pit / Drillhole (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Depth (m)	Geotechnical Description	Permafrost Description
DDH95-129	6,815,500	414,603	1,444	-	-	-	-	-	see Note 1	
DDH95-131	6,815,380	415,175	1,415	-	-	-	-	-	see Note 1	
DDH95-135	6,815,570	415,150	1,403	-	-	-	-	-	see Note 1	
DDH95-146	6,815,490	414,900	1,388	-	-	-	-	-	see Note 1	
DDH95-148	6,815,604	414,942	1,383	-	-	-	-	-	see Note 1	
DDH95-150	6,815,686	414,748	1,413	-	-	-	-	-	see Note 1	
TP16-01	6,814,580	415,073	1,398	4.5	-	-	-	-	0 - 0.2 organics 0.2 - 0.5 SAND and GRAVEL 0.5 - 4.5 gravelly SILT and SAND	
TP16-02	6,814,603	415,027	1,397	4.3	1.50	-	-	-	0 - 0.2 organics 0.2 - 0.4 sandy GRAVEL and COBBLES 0.4 - 1.5 gravelly SILT and SAND 1.5 - 4.3 silty SAND and GRAVEL	
TP16-03	6,814,649	414,918	1,409	3.2	2.10	-	-	-	0 - 0.3 organics 0.3 - 2.1 SAND 2.1 - 3.2 silty SAND and GRAVEL	
TP16-04	6,814,660	414,833	1,413	2.2	2.20	-	-	2.2	0 - 0.3 organics 0.3 - 2.2 SAND and GRAVEL 2.2 - 2.2 weathered bedrock	
TP16-05	6,814,974	414,907	1,380	3.3	-	-	-	0.5	0 - 0.5 organics 0.5 - 3.3 silty, sandy GRAVEL	
TP16-06	6,814,935	414,979	1,382	1.6	-	-	-	1.3	0 - 0.2 organics 0.2 - 1.6 SAND and GRAVEL	
TP16-07	6,815,624	414,809	1,398	2.4	0.50	-	-	-	0 - 0.3 organics 0.3 - 0.5 silty SAND 0.5 - 2.4 SAND and GRAVEL	
TP16-08	6,815,332	414,646	1,432	4.2	1.30	-	-	2	0 - 0.1 organics 0.1 - 1.3 gravelly SILT and SAND 1.3 - 4.2 weathered bedrock	
TP16-09	6,815,671	414,645	1,426	3.9	-	-	-	3.9	0 - 0.3 organics 0.3 - 0.7 organic SILT 0.7 - 3.9 silty, gravelly SAND	
TP16-10	6,815,463	414,544	1,453	3	0.60	0.30	-	-	0 - 0.3 organics 0.3 - 0.6 silty SAND and GRAVEL 0.6 - 3.0 weathered bedrock	
TP16-36	6,815,763	414,886	1,388	5.1	-	-	-	-	0 - 0.1 organics 0.1 - 0.5 SILT 0.5 - 5 SILT and SAND 5 - 5.1 sandy SILT	
TP16-37	6,815,556	414,878	1,391	2.3	0.30	-	-	-	0 - 0.1 organics 0.1 - 0.3 silty SAND 0.3 - 2.3 silty SAND	
TP16-38	6,815,621	415,088	1,381	5	-	-	-	-	0 - 0.2 organics 0.2 - 5.0 silty SAND	
TP16-41	6,815,684	415,168	1,402	3	-	0.50	-	-	0 - 0.2 organics 0.2 - 0.5 SILT, some sand 0.5 - 3.0 silty, gravelly SAND	
TP16-42	6,815,361	415,084	1,388	4.9	-	-	-	-	0 - 0.4 organics 0.4 - 4.9 SAND, some silt	
TP16-43	6,815,112	415,154	1,403	1.8	1.00	-	-	-	0 - 0.3 organics 0.3 - 1.0 silty GRAVEL, some sand 1.0 - 1.8 weathered bedrock	
TP16-44	6,815,262	415,110	1,386	4	-	-	-	-	0 - 0.3 organics 0.3 - 4.0 silty, gravelly SAND	
TP16-45	6,815,387	415,149	1,408	3.5	3.30	-	-	-	0 - 0.2 organics 0.2 - 1.1 SILT and COBBLES 1.1 - 3.3 silty, gravelly SAND 3.3 - 3.5 weathered bedrock	
TP16-46	6,815,484	415,079	1,383	4.1	-	-	-	-	0 - 0.2 organics 0.2 - 0.4 SILT, some gravel 0.4 - 4.1 silty, gravelly SAND	
TP16-47	6,815,758	415,091	1,382	4.5	-	-	-	-	0 - 0.5 organics 0.5 - 4.5 silty SAND, some clay	
K16-379	6,814,627	414,964	1,405	39.7	5.90	-	-	1.97	0 - 5.9 gravelly SILT and SAND 5.9 - 39.7 interlayered coherent and volcanoclastic rhyolite	
MW16-15D	6,814,702	414,976	1,402	42.2	5.70	-	-	8.64	0 - 5.7 SILT and SAND with gravel 5.7 - 42.2 interlayered volcanoclastic and coherent rhyolite	
MW16-15S	6,814,699	414,977	1,401	6	5.70	-	-	3.93	0 - 5.7 SILT and SAND with gravel 5.7 - 6.1 stringer and disseminated sulphide	

\\KPL\VA-Prj\$1\10100640\02\A\Correspondence\VA16-01820 - Geotechnical Characterization with 2016 SI Data\Tables\Tables 1 to 6_Test Pit and Drillhole Summary.XLSX\Table 7_Open Pit

NOTES:

1. "DDH95" SERIES DRILLHOLE DATA WAS NOT FOUND.

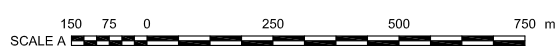
0	16DEC'16	ISSUED WITH LETTER VA16-01820	JAG	LJG
REV	DATE	DESCRIPTION	PREPD	RWD



- NOTES:**
1. COORDINATE GRID IS UTM NAD 83 9N.
 2. TOPOGRAPHIC DETAIL BASED ON INFORMATION PROVIDED BY BMC FEBRUARY 02, 2016.
 3. CONTOUR INTERVAL IS 5 METRES.
 4. ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

- LEGEND:**
- GROUNDWATER MONITORING WELL (TETRA TECH)
 - GEOTECHNICAL DRILLHOLE (KNIGHT PIESOLD)
 - PREVIOUS DRILLHOLE (GOLDER)
 - TEST PIT (KNIGHT PIESOLD)
 - PREVIOUS TEST PIT (GOLDER)
 - PREVIOUS TEST PIT (GOLDER 1995)
 - TRAIL

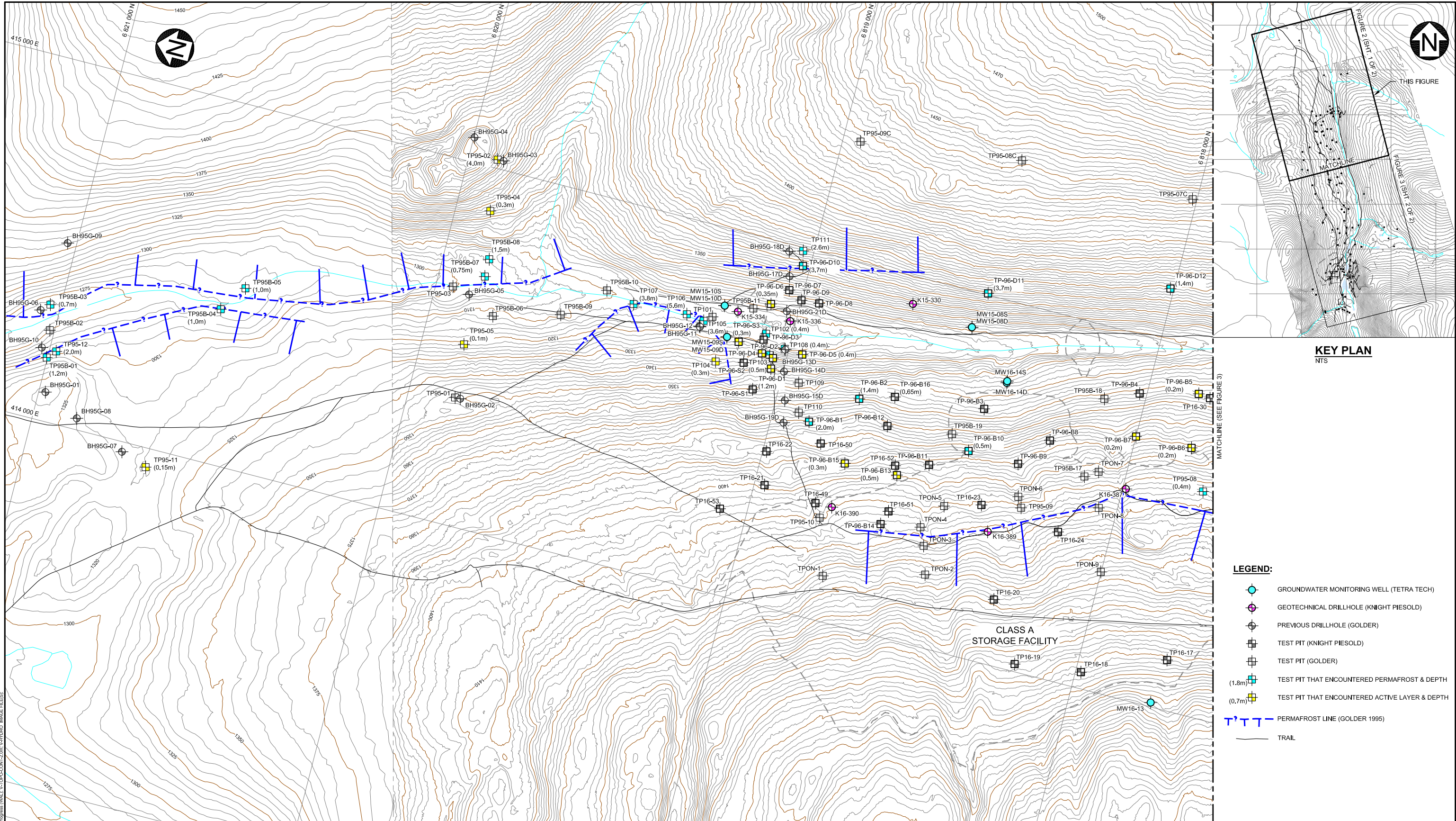
PLAN
SCALE A



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REV	DATE	DESCRIPTION	JAS DESIGNED	KJM DRAWN	LJG REVIEWED
0	08DEC'16	ISSUED WITH LETTER			

BMC MINERALS (NO.1) LTD.			
KUDZ ZE KAYAH PROJECT			
SITE INVESTIGATIONS GENERAL ARRANGEMENT PLAN			
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PIA NO. VA101-640/2	REF NO. VA16-01820		
FIGURE 1			
REV 0			

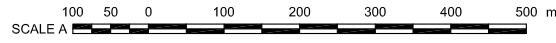


KEY PLAN
NTS

- LEGEND:**
- GROUNDWATER MONITORING WELL (TETRA TECH)
 - GEOTECHNICAL DRILLHOLE (KNIGHT PIESOLD)
 - PREVIOUS DRILLHOLE (GOLDER)
 - TEST PIT (KNIGHT PIESOLD)
 - TEST PIT (GOLDER)
 - TEST PIT THAT ENCOUNTERED PERMAFROST & DEPTH (1.8m)
 - TEST PIT THAT ENCOUNTERED ACTIVE LAYER & DEPTH (0.7m)
 - PERMAFROST LINE (GOLDER 1995)
 - TRAIL

- NOTES:**
1. COORDINATE GRID IS UTM NAD 83 9N.
 2. TOPOGRAPHIC DETAIL BASED ON INFORMATION PROVIDED BY BMC FEBRUARY 02, 2016.
 3. CONTOUR INTERVAL IS 2 METRES.
 4. ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

PLAN
SCALE A



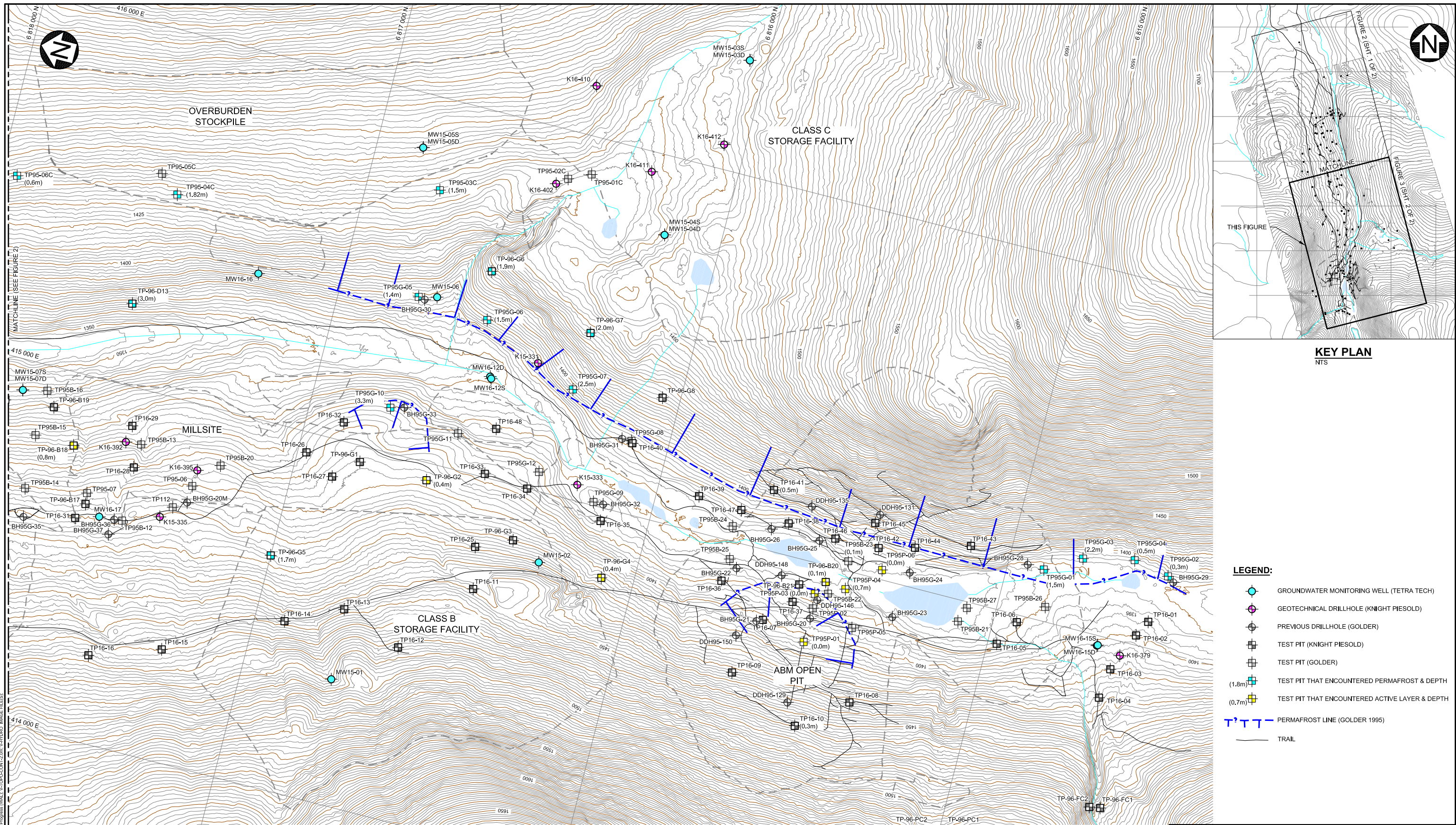
SAVED: M:\101\00640\02\A\Aca8\FIGS\Fig2_1 KMILLER PRINTED: 12/8/2016 9:36:09 AM, FIG.2, KMILLER
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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	08DEC'16	ISSUED WITH LETTER	JAS	KJM	LJG

BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT
SITE INVESTIGATIONS AND
APPROXIMATE PERMAFROST BOUNDARY
SHEET 1 OF 2

<i>Knights</i> CONSULTING	PIA NO. VA101-640/2	REF NO. VA16-01820
	FIGURE 2	

REV 0

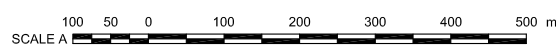


KEY PLAN
NTS

- LEGEND:**
- GROUNDWATER MONITORING WELL (TETRA TECH)
 - GEOTECHNICAL DRILLHOLE (KNIGHT PIESOLD)
 - PREVIOUS DRILLHOLE (GOLDER)
 - TEST PIT (KNIGHT PIESOLD)
 - TEST PIT (GOLDER)
 - TEST PIT THAT ENCOUNTERED PERMAFROST & DEPTH (1.8m)
 - TEST PIT THAT ENCOUNTERED ACTIVE LAYER & DEPTH (0.7m)
 - PERMAFROST LINE (GOLDER 1995)
 - TRAIL

- NOTES:**
1. COORDINATE GRID IS UTM NAD 83 9N.
 2. TOPOGRAPHIC DETAIL BASED ON INFORMATION PROVIDED BY BMC FEBRUARY 02, 2016.
 3. CONTOUR INTERVAL IS 2 METRES.
 4. ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

PLAN
SCALE A



BMC MINERALS (NO.1) LTD.							
KUDZE KAYAH PROJECT							
SITE INVESTIGATIONS AND APPROXIMATE PERMAFROST BOUNDARY							
SHEET 2 OF 2							
<i>Knight Piésold</i> CONSULTING	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">PIA NO. VA101-640/2</td> <td style="font-size: small;">REF NO. VA16-01820</td> </tr> <tr> <td colspan="2" style="text-align: center;">FIGURE 3</td> </tr> <tr> <td style="font-size: x-small;">REV</td> <td style="font-size: x-small;">0</td> </tr> </table>	PIA NO. VA101-640/2	REF NO. VA16-01820	FIGURE 3		REV	0
PIA NO. VA101-640/2	REF NO. VA16-01820						
FIGURE 3							
REV	0						

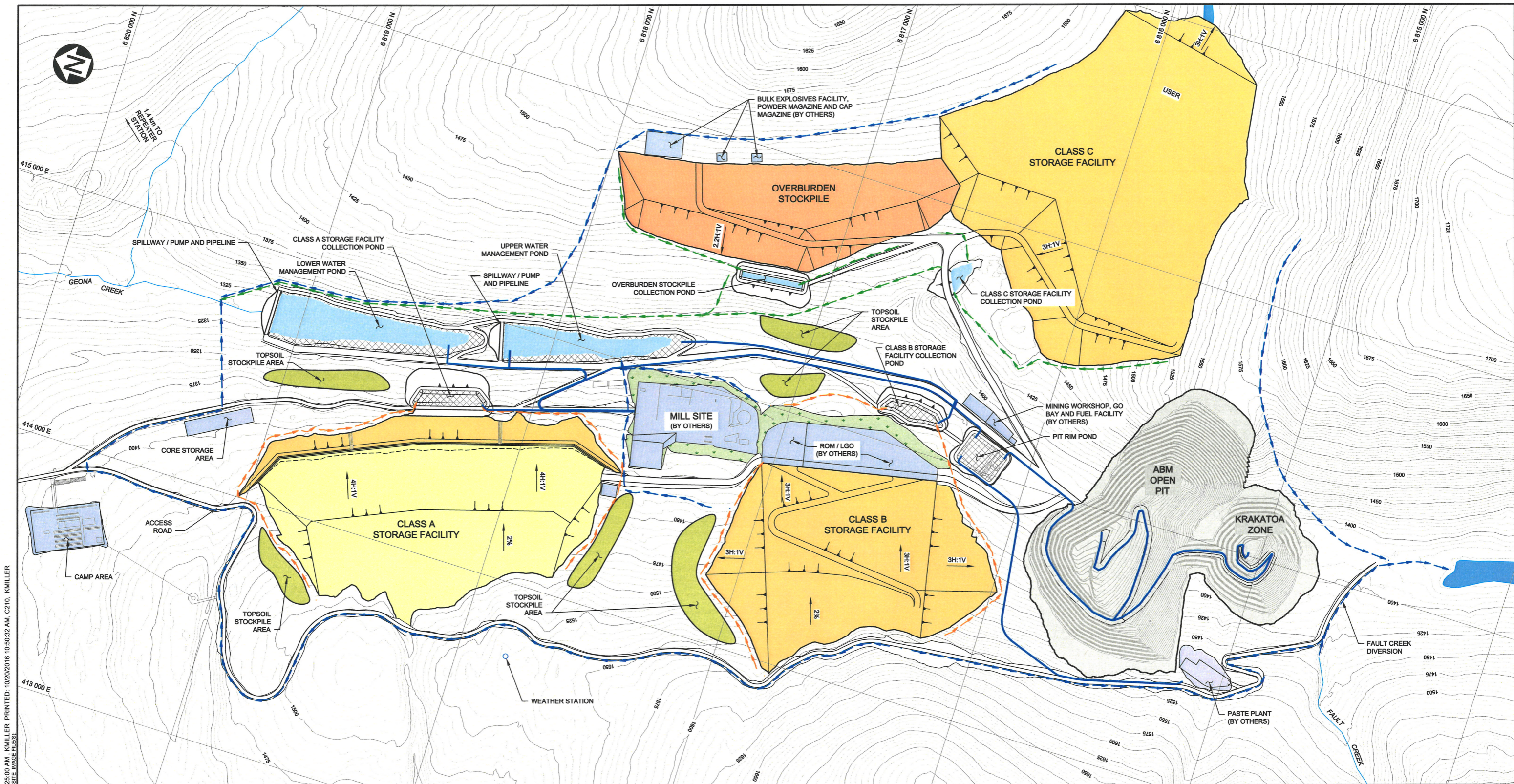
SAV: M:\101\00640\02\VA16-01820\FIGURE3.dwg, 12/8/2016 9:26:16 AM, KMILLER, PRINTED: 12/8/2016 9:36:52 AM, FIG.3, KMILLER
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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	08DEC'16	ISSUED WITH LETTER	JAS	KJM	LJG

APPENDIX A

GENERAL ARRANGEMENT DRAWING C210

(Page A-1)



- NOTES:**
- COORDINATE GRID IS UTM NAD 83 9N.
 - TOPOGRAPHIC DETAIL BASED ON INFORMATION PROVIDED BY BMC FEBRUARY 02, 2016.
 - PIT SHELLS PROVIDED BY BMC MINERALS (NO.1) LTD. APRIL 8, 2016.
 - CONTOUR INTERVAL IS 5 METRES.
 - ALL ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
 - CONCURRENT RECLAMATION OF CLASS A STORAGE FACILITY NOT SHOWN.
 - CULVERTS ARE REQUIRED WHERE DITCHES CROSS ROADS.

LEGEND:

- WATER
- CLASS A STORAGE FACILITY
- CLASS B & C STORAGE FACILITIES
- OVERBURDEN STOCKPILE
- TOPSOIL STOCKPILE AREA
- OPEN PIT
- RECLAIMED / PROGRESSIVE CLOSURE
- FACILITIES BY OTHERS

PLAN SCALE A

- RIVER / STREAM / DRAINAGE
- PROPOSED ROAD
- DIVERSION DITCH (NON CONTACT)
- DIVERSION DITCH (CONTACT CLASS A & B)
- DIVERSION DITCH (CONTACT CLASS C & OVERBURDEN)
- WATER PIPELINE



FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

- DISCLAIMER -

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Knight Piésold
CONSULTING

BMC MINERALS (NO. 1) LTD.

KUDZE KAYAH PROJECT

**GENERAL ARRANGEMENT
ULTIMATE LAYOUT**

J. Galbraith
L.J. GALBRAITH
TERRITORY
ENGINEER
20/16

DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
	REFERENCE DRAWINGS			REVISIONS				

0	21OCT'16	ISSUED WITH REPORT	MAP	KJM	<i>J. Galbraith</i>	APPROVED
		REVISIONS	DESIGNED	DRAWN	REVIEWED	APPROVED

DRAWING NO. **VA101-640/2** **C210** REVISION **0**

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APPENDIX B
TEST PIT AND DRILL HOLE SUMMARY
(Pages B-1 to B-5)

TABLE B.1
BMC MINERALS (NO.1) LTD.
KUDZ ZE KAYAH PROJECT

TEST PIT SUMMARY

Print Dec/16/16 9:32:50

Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	Depth of Test Pit (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Seepage Depth (m)	Comments
TP 101	6819229.28	414749.29	1315.54	4.90	-	-	0.6	-	some frost at 0.6 m
TP 102	6819072.49	414741.00	1315.92	5.50	-	-	0.40	-	permafrost and ice lenses
TP 103	6819047.76	414685.89	1327.85	5.60	-	0.50	-	-	permafrost at 0.5 m
TP 104	6819189.75	414630.66	1332.57	2.70	-	-	0.30	-	frozen at 0.3 m, ice lenses at 1.0 - 2.7 m
TP 105	6819250.43	414732.28	1315.26	4.00	-	3.60	0.40	1.70	refusal on permafrost, ice lenses at 1.7 m
TP 106	6819300.49	414738.28	1314.99	5.60	-	5.60	0.40	0.40	refusal on permafrost, ice lenses at 0.4 m
TP 107	6819451.57	414728.76	1311.45	3.80	-	3.80	0.40	0.40	refusal on permafrost, ice lenses at 0.4 m
TP 108	6819011.69	414712.84	1319.21	5.40	-	-	-	-	
TP 109	6818949.87	414630.59	1348.56	4.60	-	-	-	4.30	
TP 110	6818929.20	414550.39	1370.30	5.60	-	-	-	0.3 and 3.4	
TP 111	6819029.75	414990.87	1370.02	2.60	-	2.60	-	-	refusal on permafrost
TP 112	6817298.66	414701.99	1418.46	5.30	-	-	-	4.0	
TP95-01	6819869.47	414351.61	1348.68	4.00	0.40	-	-	-	
TP95-02	6819919.91	415024.34	1362.86	4.00	-	-	4.00	-	small boulders at bottom of test pit frozen
TP95-03	6819952.54	414650.18	1299.91	5.00	-	-	-	3.0	
TP95-04	6819904.07	414880.33	1337.42	4.00	-	-	0.30	-	frozen at 0.3 m in thin ice lenses
TP95-05	6819882.39	414501.52	1321.77	2.00	-	-	0.10	-	frozen at 0.3 m in thin ice lenses
TP95-06	6817260.63	414773.11	1410.32	4.00	4.00	-	0.10	1.00	frozen at 0.1 to 0.15 m in thin ice lenses
TP95-07	6817540.48	414680.48	1413.72	2.80	1.20	-	-	2.30	
TP95-08	6817780.45	414619.00	1416.03	4.50	4.50	-	0.40	1.40	frozen at 0.4 to 1.0 m in thin ice lenses
TP95-09	6818261.24	414448.28	1412.10	6.00	5.00	-	-	4.00	
TP95-10	6818799.32	414280.94	1413.81	4.30	4.00	-	-	-	
TP95-11	6820658.17	413947.46	1305.00	5.00	-	-	0.15	-	frozen at 0.15 to 0.3 m in thin ice lenses
TP95-12	6820980.54	414198.07	1270.00	2.00	-	2.00	0.10	-	frozen at 0.1 to 0.3 m and 1.4 to 2.0 m in thin ice lenses
TP95B-01	6821002.19	414174.79	1270.00	2.00	-	1.20	-	-	refusal on permafrost
TP95B-02	6821012.65	414250.85	1255.00	3.00	-	-	-	0.7 and 1.5	
TP95B-03	6821028.98	414320.44	1259.00	1.00	-	0.70	-	-	refusal on permafrost
TP95B-04	6820564.91	414426.73	1270.00	1.30	-	1.00	-	-	refusal on permafrost
TP95B-05	6820512.55	414500.67	1270.00	1.60	-	1.00	-	-	refusal on permafrost
TP95B-06	6819824.10	414598.08	1311.10	4.50	-	-	-	-	
TP95B-07	6819873.10	414699.39	1302.38	1.20	-	0.75	-	0.70	refusal on permafrost
TP95B-08	6819873.33	414749.13	1304.43	2.50	-	1.50	-	1.50	permafrost at 1.5 m no visible ice
TP95B-09	6819641.33	414648.97	1308.85	4.50	-	-	-	-	
TP95B-10	6819533.22	414747.12	1309.68	3.80	-	-	-	0.30	
TP95B-11	6819124.49	414800.34	1318.01	4.00	-	-	-	-	
TP95B-12	6817426.50	414630.50	1419.25	2.50	1.80	-	-	-	
TP95B-13	6817427.81	414849.90	1390.04	3.00	-	-	-	-	
TP95B-14	6817711.49	414650.58	1410.34	4.70	-	-	-	-	
TP95B-15	6817720.31	414801.57	1393.61	4.20	-	-	-	-	
TP95B-16	6817719.10	414929.84	1361.52	3.80	-	-	-	-	
TP95B-17	6818111.71	414576.85	1404.71	3.30	-	-	-	-	
TP95B-18	6818111.76	414800.80	1362.55	3.50	-	-	-	-	
TP95B-19	6818499.30	414599.18	1373.29	3.30	-	-	-	-	
TP95B-20	6817198.55	414848.08	1403.51	2.90	-	-	-	-	
TP95B-21	6815094.85	414940.73	1382.69	2.20	-	-	-	0.30	
TP95B-22	6815465.65	414925.13	1385.69	2.80	-	-	-	0.35	
TP95B-23	6815433.32	415027.07	1383.73	2.60	-	-	-	-	
TP95B-24	6815770.54	415041.55	1383.16	3.50	-	-	-	-	
TP95B-25	6815755.70	414950.23	1382.45	3.00	-	-	-	0.30	
TP95B-26	6814868.91	415040.67	1390.82	3.30	-	-	-	1.30	
TP95B-27	6815080.06	414983.14	1382.68	1.80	-	-	-	0.30	
TP95-01C	6816397.45	415894.76	1441.70	3.05	3.05	-	-	-	refusal on bedrock
TP95-02C	6816458.11	415866.60	1444.54	4.60	4.60	-	-	2.40	refusal on bedrock
TP95-03C	6816797.15	415746.38	1448.54	3.05	3.05	1.50	-	-	permafrost at 1.5 m
TP95-04C	6817504.56	415551.34	1440.39	1.82	-	1.82	-	-	refusal on permafrost
TP95-05C	6817560.17	415597.27	1447.48	2.40	2.40	-	-	-	refusal on bedrock
TP95-06C	6817951.01	415490.58	1449.10	0.60	-	0.60	-	-	refusal on permafrost
TP95-07C	6818012.39	415401.97	1432.39	3.65	3.65	-	-	-	refusal on bedrock
TP95-08C	6818500.94	415387.74	1442.38	3.65	3.65	-	0.90	-	ice lenses in upper 0.9 m, refusal on bedrock
TP95-09C	6818950.85	415326.17	1427.37	0.60	0.60	-	-	-	
TP95G-01	N/A	N/A	N/A	5.00	-	1.50	-	1.50	reach of excavator, ice lenses throughout
TP95G-02	6814557.86	415209.26	1393.86	5.50	-	0.30	-	5.00	mentions frozen, but no permafrost term used
TP95G-03	6814800.23	415197.95	1394.31	4.50	-	2.20	-	-	mentions no visible ice and poorly bonded, but no permafrost term used.
TP95G-04	6814659.26	415229.61	1397.15	4.70	-	0.50	-	4.70	mentions no visible ice and poorly bonded, but no permafrost term used.
TP95G-05	6816780.05	415442.89	1388.00	3.50	-	1.40	-	-	permafrost at 1.4 m with visible ice crystals
TP95G-06	6816578.45	415428.13	1388.67	1.50	-	1.50	-	-	mentions no visible ice and poorly bonded. Ended test pit due to melting permafrost.
TP95G-07	6816298.37	415299.85	1395.87	4.20	-	2.50	-	3.80	permafrost at 2.5 m with no visible ice crystals, poorly bonded.

Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	Depth of Test Pit (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Seepage Depth (m)	Comments
TP95G-08	6816103.82	415201.58	1391.92	3.90	-	-	-	3.00	
TP95G-09	6816164.14	415009.56	1385.57	5.00	-	0.15	-	4.90	mentions no visible ice and poorly bonded, but no permafrost term used. Soil frozen and difficult to excavate.
TP95G-10	6816779.28	415123.26	1391.13	3.30	-	0.15	-	-	frozen soil difficult to penetrate with excavator, no mention of permafrost term.
TP95G-11	6816578.54	415100.93	1391.44	1.30	1.30	-	-	-	refusal on bedrock
TP95G-12	6816332.36	415052.72	1391.47	1.30	1.30	-	-	-	refusal on bedrock
TP95P-01	6815497.89	414777.31	1403.42	2.50	2.50	-	0	-	frozen at surface no other mention of permafrost
TP95P-02	6815496.57	414874.83	1393.03	0.20	0.20	-	-	-	
TP95P-03	6815501.37	414915.88	1387.41	2.00	1.50	-	0	-	frozen at surface no other mention of permafrost
TP95P-04	6815421.94	414949.53	1383.33	3.50	-	-	0.70	1.10	frozen at surface, ice segregation at 0.7 m
TP95P-05	6815376.88	414848.59	1392.81	4.00	-	-	-	-	
TP95P-06	6815335.90	415026.94	1384.60	1.50	-	-	0	1.10	frozen at surface no other mention of permafrost
TP-96-B1	6818895.00	414533.00	1376.00	2.00	-	2.00	-	1.80	0.2 - 2.0 m ice coatings (Vc) and ice crystals (Vx) . Refusal on frozen ground.
TP-96-B2	6818775.00	414630.00	1364.00	2.40	-	1.40	-	0.40	1.4 m ice lenses (Vs). Refusal on frozen ground.
TP-96-B3	6818430.00	414690.00	1358.00	3.80	-	-	-	2.10	
TP-96-B4	6818020.00	414840.00	1365.00	4.20	-	-	0.20	1.50	0.2 - 1.5 m ice inclusions (Vx) and ice coatings.
TP-96-B5	6817860.00	414880.00	1365.00	2.60	2.60	-	-	2.40	
TP-96-B6	6817842.00	414729.00	1395.00	2.50	2.50	-	0.20	-	0.2 - 1.0 m ice coatings (Vc)
TP-96-B7	6818000.00	414721.00	1390.00	3.50	-	-	0.20	-	0.2 - 1.1 m ice not visible, well bonded, no excess Nbn)
TP-96-B8	6818230.00	414650.00	1385.00	4.50	-	-	-	-	
TP-96-B9	6818300.00	414565.00	1390.00	4.10	-	-	-	1.9 and 4.0 m	
TP-96-B10	6818443.00	414565.00	1390.00	1.15	-	0.50	-	-	0.5 - 1.15 m ice inclusions (Vx) and random ice lenses (Vr). Refusal in frozen ground.
TP-96-B11	6818540.00	414500.00	1395.00	3.50	-	-	-	0.40	
TP-96-B12	6818680.00	414576.00	1378.00	4.00	-	-	-	-	Refusal on boulders.
TP-96-B13	6818620.00	414450.00	1404.00	3.70	3.40	-	0.50	-	0.5 - 1.3 frozen no visible ice, well bonded, no excess ice (Nbn)
TP-96-B14	6818630.00	414306.00	1420.00	1.80	0.60	-	-	-	
TP-96-B15	6818769.00	414445.00	1395.00	2.90	1.50	-	0.30	-	0.3 - 0.9 m frozen well bounded, ice inclusions (Vx to Nbe)
TP-96-B16	6818680.00	414660.00	1360.00	4.70	-	-	0.65	-	0.65 - 1.05 m frozen ice inclusions (Vx).
TP-96-B17	6817537.00	414650.00	1415.00	3.60	-	-	-	2.70	
TP-96-B18	6817610.00	414800.00	1393.00	5.00	-	-	0.80	-	0.8 - 1.0 m frozen ice lenses (Vs) 1 - 2 mm thick
TP-96-B19	6817690.00	414890.00	1375.00	2.60	-	-	-	1.0 and 2.5 m	
TP-96-B20	6815480.00	414955.00	1410.00	2.50	-	-	0.10	1.50	0.1 - 1.5 m frozen no visible ice, well bonded, no excess (Nbn)
TP-96-B21	6815550.00	414930.00	1411.00	2.60	2.50	-	-	2.50	
TP-96-S1	6819070.00	414581.00	1355.00	5.50	4.00	-	0.40	-	0.4 - 1.4 m frozen ice inclusions (Vx).
TP-96-S2	6819113.00	414647.00	1341.00	4.00	-	-	-	-	
TP-96-S3	6819141.00	414700.00	1326.00	2.80	-	-	0.25	2.80	0.25 - 0.9 m frozen, ice lenses (Vs) up to 1 mm thick
TP-96-D1	6819035.00	414650.00	1342.00	6.00	-	-	1.20	-	1.2 - 1.5 ice inclusions (Vx)
TP-96-D2	6819037.00	414680.00	1335.00	5.30	-	2.70	0.40	-	0.4 - 2 m ice coatings (Vc) and inclusions (Vx), 2 - 2.9 m ice lenses (Vr), 2.7 m no visible ice, well bonded, no excess ice (Nbn)
TP-96-D3	6819075.00	414723.00	1324.00	5.00	-	-	0.40	-	0.4 - 1.0 m poorly bonded, friable ice (Nf) and coatings (Vc)
TP-96-D4	6819070.00	414685.00	1331.00	5.80	-	-	0.45	-	0.45 - 2.7 m no visible ice, well bounded, no excess ice (Nbn)
TP-96-D5	6818960.00	414710.00	1329.00	6.00	-	-	0.40	-	0.4 - 1.8 m ice coating (Vc) and inclusions (Vx)
TP-96-D6	6819080.00	414825.00	1328.00	5.80	-	-	0.35	-	0.35 - 5.0 m ice lenses, below 3 m ice content reduces
TP-96-D7	6819040.00	414875.00	1338.00	5.60	-	-	0.35	-	0.35 - 2.4 m poorly bonded to friable (Nf) to ice lenses (Vs) 1 - 2 mm thick
TP-96-D8	6818950.00	414860.00	1332.00	5.50	-	-	-	2 - 3 m	rapid water seepage
TP-96-D9	6819000.00	414856.00	1332.00	5.50	-	-	-	3 - 3 m	
TP-96-D10	6819020.00	414950.00	1360.00	3.70	-	3.70	-	-	0.3 - 1.4 m ice inclusion (Vs), 1.7 - 2.9 m ice lenses. Refusal on frozen ground.
TP-96-D11	6818500.00	415005.00	1368.00	4.50	-	3.70	0.20	-	0.2 - 1.3 m ice lenses (Vs) friable ice (Nf), 1.7 - 2.9 m ice lenses (Vs) 2.9 - 3.7 m ice inclusions (Vx) and ice lenses (Vs). Refusal on frozen ground.
TP-96-D12	6818010.00	415145.00	1374.00	1.50	-	1.40	0.45	-	0.45 - 1.5 m no visible ice, well bonded, excess ice (Nbn) 1.4 m ice inclusions (Vx). Refusal on frozen ground.
TP-96-D13	6817550.00	415225.00	1368.00	3.70	-	3.00	0.40	-	0.4 - 0.8 m ice inclusions (Vx) and ice coatings (Vc), 0.8 - 3.7 m ice inclusions (Vx) ice coatings (Vc) and ice lenses (Vs). Refusal on frozen ground.
TP-96-G1	6816824.00	414955.00	1410.00	3.90	3.50	-	-	-	
TP-96-G2	6816631.00	414952.00	1411.00	4.00	3.50	-	0.40	2.10	0.4 - 0.8 m frozen ice lenses (Vs) 2 - 4 mm thick
TP-96-G3	6816355.00	414850.00	1423.00	3.00	-	-	-	-	
TP-96-G4	6816090.00	414810.00	1417.00	3.00	2.50	-	0.40	2.80	0.4 - 0.55 m frozen ice inclusions (Vx)
TP-96-G5	6817000.00	414640.00	1440.00	5.30	-	1.70	0.00	-	frozen throughout pit
TP-96-G6	6816600.00	415563.00	1420.00	2.30	-	1.90	0.50	-	0.5 - 0.8 m ice coatings (Vc), 0.8 - 1.9 m no visible ice (Nf), 1.9 - 2.3 m ice inclusions (Vx) and coatings (Vc). Refusal on frozen ground.
TP-96-G7	6816290.00	415465.00	1440.00	2.00	-	2.00	0.10	-	0.1 - 0.4 m no visible ice, well bonded, no excess (Nbn), 1.5 - 2.0 m ice lenses (Vs)
TP-96-G8	6816050.00	415340.00	1426.00	3.30	-	-	-	-	
TP-96-FC1	6814580.00	414535.00	1454.00	0.40	-	-	-	-	
TP-96-FC2	6814610.00	414530.00	1454.00	0.10	0.00	-	-	-	
TP-96-PC1	6814980.00	414325.00	1535.00	0.20	-	-	-	-	
TP-96-PC2	6815100.00	414250.00	1525.00	0.10	0.10	-	-	-	
TP16-01	6814580.00	415073.00	1398.00	4.50	-	-	-	-	
TP16-02	6814603.00	415027.00	1397.00	4.30	1.50	-	-	-	
TP16-03	6814649.00	414918.00	1409.00	3.20	2.10	-	-	-	

Test Pit ID	Northing (m)	Easting (m)	Elevation (m)	Depth of Test Pit (m)	Bedrock Depth (m)	Permafrost Depth (m)	Active Layer / Seasonal Permafrost (m)	Groundwater Seepage Depth (m)	Comments
TP16-04	6814660.00	414833.00	1413.00	2.20	2.20	-	-	2.20	
TP16-05	6814974.00	414907.00	1380.00	3.30	-	-	-	0.50	
TP16-06	6814935.00	414979.00	1382.00	1.60	-	-	-	1.30	
TP16-07	6815624.00	414809.00	1398.00	2.40	0.50	-	-	-	
TP16-08	6815332.00	414646.00	1432.00	4.20	1.30	-	-	2.00	
TP16-09	6815671.00	414645.00	1426.00	3.90	-	-	-	3.90	
TP16-10	6815463.00	414544.00	1453.00	3.00	0.60	0.30	-	-	
TP16-11	6816429.00	414690.00	1447.00	3.50	0.80	-	-	2.00	
TP16-12	6816591.00	414480.00	1485.00	1.60	0.10	-	-	-	
TP16-13	6816764.00	414546.00	1452.00	n/a	0.20	-	-	-	Logged cut slope of Tote Road
TP16-14	6816917.00	414472.00	1457.00	n/a	0.50	-	-	-	Logged cut slope of Tote Road
TP16-15	6817229.00	414310.00	1466.00	4.80	-	-	-	-	
TP16-16	6817424.00	414243.00	1472.00	1.50	0.20	-	-	-	
TP16-17	6817760.00	414139.00	1478.00	1.30	0.30	-	-	-	
TP16-18	6817985.00	414045.00	1479.00	2.30	0.20	-	-	0.50	
TP16-19	6818170.00	414021.00	1470.00	2.80	2.80	-	-	-	
TP16-20	6818271.00	414181.00	1441.00	2.00	0.60	-	-	-	
TP16-21	6818971.00	414331.00	1395.00	2.30	2.30	-	-	-	
TP16-22	6818989.00	414423.00	1386.00	4.50	-	-	-	-	
TP16-23	6818370.00	414428.00	1412.00	2.40	2.40	-	-	-	
TP16-24	6818145.00	414409.00	1423.00	1.50	0.30	-	-	-	
TP16-25	6816453.00	414805.00	1425.00	1.90	1.60	-	-	-	
TP16-26	6816975.00	414944.00	1394.00	4.00	-	-	-	-	
TP16-27	6816889.00	414896.00	1413.00	2.90	-	-	-	-	
TP16-28	6817432.00	414783.00	1401.00	2.70	2.20	-	-	2.50	
TP16-29	6817465.00	414894.00	1386.00	2.30	2.30	-	-	-	Water seeping in at 0.5m from upper layer, but lower zone not saturated, possible barrier or seep from melting ice
TP16-30	6817827.00	414876.00	1368.00	3.80	-	-	-	-	
TP16-31	6817555.00	414605.00	1412.00	4.50	-	-	-	-	
TP16-32	6816895.00	415051.00	1389.00	5.00	-	-	-	-	
TP16-33	6816478.00	415010.00	1395.00	3.40	-	-	-	-	
TP16-34	6816353.00	414999.00	1391.00	4.90	-	-	-	-	
TP16-35	6816132.00	414963.00	1381.00	4.50	4.50	-	-	4.00	
TP16-36	6815763.00	414886.00	1388.00	5.10	-	-	-	-	
TP16-37	6815556.00	414878.00	1391.00	2.30	0.30	-	-	-	
TP16-38	6815621.00	415088.00	1381.00	5.00	-	-	-	-	
TP16-39	6815883.00	415099.00	1381.00	4.00	-	-	-	2.00	
TP16-40	6816100.00	415196.00	1384.00	4.50	-	-	-	4.00	
TP16-41	6815684.00	415168.00	1402.00	3.00	-	0.50	-	-	
TP16-42	6815361.00	415084.00	1388.00	4.90	-	-	-	-	
TP16-43	6815112.00	415154.00	1403.00	1.80	1.00	-	-	-	
TP16-44	6815262.00	415110.00	1386.00	4.00	-	-	-	-	
TP16-45	6815387.00	415149.00	1408.00	3.50	3.30	-	-	-	
TP16-46	6815484.00	415079.00	1383.00	4.10	-	-	-	-	
TP16-47	6815758.00	415091.00	1382.00	4.50	-	-	-	-	
TP16-48	6816478.00	415140.00	1375.00	4.00	-	-	-	-	Water seeping in at 0.5m from upper layer, lower zone not saturated
TP16-49	6818821.00	414317.00	1407.00	4.20	0.70	-	-	-	
TP16-50	6818848.00	414482.00	1379.00	5.00	-	-	-	-	
TP16-51	6818617.00	414346.00	1409.00	1.70	0.30	-	-	-	
TP16-52	6818631.00	414474.00	1390.00	2.50	2.50	-	-	-	
TP16-53	6819075.00	414236.00	1398.00	3.50	-	-	-	-	

\\KPL\VA-Prj\1101\00640\02\A\Correspondence\VA16-01820 - Geotechnical Characterization with 2016 SI Data\Appendix B\([Tables B.1 and B.2_Test Pit and Drillhole Summary.xlsx])Table B1 _test pits

0	16DEC16	ISSUED WITH LETTER VA16-01820	JAG	LJG
REV	DATE	DESCRIPTION	PREP'D	RW'D

Drillhole ID	Northing	Easting	Elevation	End of Drillhole	Bedrock Depth	Measured Water Level	Date of Water Level Measurement	Installations	Completion Zone		Instrumentation/Well Status
	(m)	(m)	(m)	(m)	(m)	(m)	(m)		(m)	(m)	
K16-411	6,816,237.00	415,947.00	1,446.00	34.10	18.20	3.13	July 2016	thermistor	-	-	Functional
K16-412	6,816,061.00	416,070.00	1,464.00	38.70	19.20	6.80	July 2016	thermistor	-	-	Functional
MW16-12D	6,816,530.00	415,278.00	1,369.00	28.20	7.20	Flowing	July 2016	monitoring well	20.50	27.60	Functional
MW16-12S	6,816,530.00	415,274.00	1,369.00	8.00	7.20	-0.01	July 2016	monitoring well	2.60	4.30	Functional
MW16-13	6,817,774.00	414,011.00	1,503.00	27.90	1.10	Frozen	July 2016	monitoring well	19.10	27.00	Frozen
MW16-14D	6,818,386.00	414,779.00	1,342.00	40.20	4.80	-0.73	July 2016	monitoring well	30.80	38.80	Functional
MW16-14S	6,818,383.00	414,780.00	1,341.00	4.50	-	3.18	July 2016	monitoring well	2.30	4.60	Functional
MW16-15D	6,814,702.00	414,976.00	1,402.00	42.20	5.70	8.64	July 2016	monitoring well	28.80	36.60	Functional
MW16-15S	6,814,699.00	414,977.00	1,401.00	6.00	5.70	3.93	July 2016	monitoring well	3.10	5.30	Functional
MW16-16	6,817,229.00	415,395.00	1,393.00	40.30	3.90	19.82	July 2016	monitoring well	31.50	38.80	Functional
MW16-17	6,817,469.00	414,634.00	1,418.00	31.10	1.60	2.61	July 2016	monitoring well	20.30	27.70	Functional

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0	16DEC'16	ISSUED WITH LETTER VA16-01820	JAG	LIG
REV	DATE	DESCRIPTION	PREP'D	RW'D