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ASSESSMENT REPORT

describing

GEOLOGICAL MAPPING, PROSPECTING, GEOCHEMICAL SAMPLING AND DIAMOND DRILLING

at the

HARTLESS JOE PROPERTY

Hart, Les, Joe and HJ Claims

NTS 105D/15
Latitude 60°55′N; Longitude 134°50′W

Field work performed from June 28 to July 4, July 13 to August 3, and August 28, 2019

located in the

Whitehorse Mining District
Yukon Territory

prepared by

Archer, Cathro & Associates (1981) Limited

for

STRATEGIC METALS LTD.

by

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INTRODUCTION

The Hartless Joe property covers high-grade gold-silver mineralization in southern Yukon. The mineral occurrences are predominantly characterized as low-sulphidation, epithermal-type; however, a number of geological and geochemical features suggest that the property is also highly prospective for submarine, exhalative-type mineralization. It is wholly owned by Strategic Metals Ltd.

This report describes a 2019 work program comprising geological mapping, prospecting, geochemical sampling and diamond drilling, which were performed during two separate periods: June 28 to July 4 and July 13 to August 3. An additional day of soil geochemical sampling was performed on August 28. Archer, Cathro & Associates (1981) Limited managed the program on behalf of Strategic Metals. The author supervised and participated in the exploration program and interpreted all resulting data. The author's Statement of Qualifications is provided in Appendix I, and a Statement of Expenditures is located in Appendix II.

PROPERTY LOCATION, CLAIM DATA AND ACCESS

The Hartless Joe property is located in south-central Yukon at latitude 60°55′ north and longitude 134°50′ west on NTS map sheet 105D/15 (Figure 1). The property comprises 584 claims covering an area of approximately 11,735 ha (117.35 km^2).

The claims are registered with the Whitehorse Mining Recorder in the name of Archer Cathro, which holds them in trust for Strategic Metals. Specifics concerning claim registration are tabulated below, while the locations of individual claims are shown on Figure 2.

Claim Name	Grant Number	Expiry Date*
Hart 1	YC26563	March 1, 2041
Hart 2-4	YC30012-YC30014	March 1, 2041
Hart 5-28	YC37057-YC37080	March 1, 2041
Hart 29-40	YD35289-YD35300	March 1, 2038
Hart 41-46	YD00305-YD00310	March 1, 2035
Hart 47-98	YF47807-YF47858	March 1, 2032
Hart 99-163	YF49119-YF49183	March 1, 2030
Joe 1-10	YC37091-YC37100	March 1, 2041
Joe 11-12	YC98499-YC98500	March 1, 2036
Joe 13-30	YE43243-YE43260	March 1, 2035
Joe 31-94	YF49391-YF49454	March 1, 2032
Joe 95-170	YF49875-YF49950	March 1, 2030
Les 1-10	YC37081-YC37090	March 1, 2041
Les 11-12	YC88019-YC88020	March 1, 2035
HJ 1-239	YE93801-YE94039	March 1, 2024

* Expiry dates include 2019 work, which has been filed for assessment credit but has not yet been accepted.

Field work in 2019 was conducted in three programs. The first program, comprising geological mapping, prospecting and drill pad construction, ran from late June to early July. This work was based out of a temporary fly camp located on the property. The second program involved diamond drilling, with daily flights for fuel, drill core and drill personnel, and was conducted from mid-July to early August. An additional day of soil geochemical sampling was performed on August 28 using helicopter set-outs and pick-ups from Whitehorse. Transport of camp gear, personnel and supplies was mostly provided by Bell 206B and Bell 407 helicopters, operated by Capital Helicopters (1995) Inc. One load of diesel fuel was transported to the property by an Airbus AS350, operated by Horizon Helicopters Ltd. The property is not directly road accessible. The closest ground access is along an old bulldozer trail, which terminates approximately 20 km south of the property.

The property is located within the traditional territories of the Kwanlin Dün First Nation and the Ta'an Kwäch'än Council. In July 2016, Ecofor Consulting Ltd. conducted a Heritage Resource Impact Assessment in order to determine the potential impacts of mineral exploration. Work areas in the north-central part of the property were found to have limited potential for heritage resources, and no further heritage resource work was recommended.

HISTORY AND PREVIOUS WORK

The earliest record of staking and exploration in the vicinity of the Hartless Joe property dates from the late 1960s. In 1967, J. Smith recorded the Ben 1 to 22 claims after discovering the Ace Showing, a low-sulphide quartz vein. Silicified material collected from a shallow hand trench dug across a northwest-trending shear zone within this showing reportedly returned 27.4 g/t gold, 78.9 g/t silver, 2.2% lead and 1.9% zinc over 10 cm (Deklerk and Traynor, 2017).

In 1968, Esansee Exploration Ltd. performed soil geochemical sampling and ground magnetic and electromagnetic surveys over part of the Ben claim block. Although the surveys suggested the presence of two possible gold-bearing fissure veins (Deklerk and Traynor, 2017), the claims expired without receiving additional work.

In 1985, the Geological Survey of Canada (GSC) conducted reconnaissance-scale stream sediment and water geochemical sampling across NTS map sheet 105D. Stream sediment samples collected in the vicinity of the Hartless Joe property yielded intermittent, strongly anomalous values for gold and some of its pathfinder elements. Peak values include 1810 ppb gold, 0.4 ppm silver, 120 ppm copper and 244 ppb mercury (Heon, 2003).

In 1989, Valor Ventures Ltd. staked one Joe claim to protect the Ace Showing (Deklerk and Traynor, 2017). No record of work is available for this claim, and it subsequently expired.

In 1997, C. Hart discovered two showings in the area of the current property, the Grumpy and Joe Creek showings, while conducting 1:50,000 scale geological mapping on behalf of the Yukon Geological Survey (YGS). The most significant discovery, the Grumpy Showing, is located about 2000 m southwest of the Ace Showing and consists of quartz stringer and vein material associated with a one-half to one metre wide siliceous felsic dyke within a north-trending fault zone. A specimen collected by the YGS yielded 10.6 g/t gold (Hart, 1997).

Later that year, G. Grant restaked the Ace Showing as the KC 1 to 6 claims, but no work was filed and the claims were allowed to expire (Deklerk and Traynor, 2017).

In February 2004, prospector R. Hamel staked one claim in order to cover the Grumpy Showing. ATAC Resources Ltd. purchased Hamel's claim in August 2004 and conducted a one day program of claim staking, cursory prospecting and soil geochemical sampling in the vicinity of the showing. This work identified talus fragments of quartz vein with modest amounts of galena, sphalerite, arsenopyrite and pyrite. Samples of mineralized vein material assayed from 1 to 251 g/t gold and 13.5 to 4540 g/t silver (Wengzynowski, 2006). Following this work, ATAC Resources expanded the Heartless Joe claim block by staking an additional 33 claims.

In July 2005, ATAC Resources performed contour and grid soil sampling, prospecting and mapping on the Hartless Joe property. This work better defined the mineralization at the Ace and Grumpy showings, and resulted in the discovery of two new showings: the Joe 4 and Les 2 (Wengzynowski, 2006).

In early 2006, ATAC Resources optioned the property to New Shoshoni Ventures Ltd., which conducted airborne geophysical surveys but did not report results. New Shoshoni terminated the option in spring 2007.

In 2007, ATAC Resources conducted a three-phase exploration program on the Hartless Joe property, consisting of: 1) rock and soil geochemical sampling; 2) helicopter-borne variable-time domain electromagnetic (VTEM) and magnetic surveys; and 3) reconnaissance-scale induced polarization (IP) and resistivity surveys. This work resulted in the discovery of a sixth mineralized showing, the Les 7, where a sample of quartz vein talus with clots of pyrite and galena yielded values of 73 g/t gold, 183 g/t silver, 2.95% lead and 0.22% zinc. This showing is now referred to as the King Showing. Magnetic surveys identified linear lows that correspond with known faults, and a small ovoid high southwest of the Grumpy Showing. IP and chargeability surveys identified a weak, shallow conductor 500 m northeast of the magnetic ovoid (D. Eaton, 2008).

In March 2008, Ferus Resources Ltd. signed an optional purchase agreement with ATAC Resources and, that summer, completed 612.2 m of diamond drilling in three holes. Diamond drilling attempted to test previously identified geochemical and geophysical anomalies, but returned disappointing results. A complete report pertaining to this work can be found in D. Eaton (2008) while results are summarized in the Diamond Drilling section below. In January 2009, the option was dropped.

In January 2010, Strategic Metals purchased the 42 claims comprising the Hartless Joe property from ATAC Resources. That fall, Strategic Metals staked an additional 12 claims in order to cover prospective ground to the southeast.

In 2012, Strategic Metals conducted a 5-day work program on the Hartless Joe property, consisting of rock and soil geochemical sampling and drill pad construction. A total of eight

rock samples were collected in conjunction with 153 contour soil samples, near the Joe 4 and King showings (Drechsler, 2013).

In August 2015, Strategic Metals performed contour soil sampling and prospecting on the property, and in October 2016 completed an airborne LIDAR survey. Prospecting identified a mineralized, quartz-rich vein or exhalative horizon at the King Showing, with an ambiguous, bedding-parallel orientation. Chip sampling across the horizon yielded an a weighted average grade of 60 g/t, 554 g/t silver, 5.01% lead and 0.35% copper over 1.2 m (Morton, 2016).

In 2016, Strategic Metals performed prospecting, hand trenching, geochemical sampling and 367.3 m of diamond drilling in six holes. Prospecting resulted in the discovery of a flat-lying, gold-bearing quartz vein at the Queen Showing, where a continuous chip sample returned 462 g/t gold, 79.6 g/ silver, 0.28% copper and 1% lead over 40 cm. A second prospecting discovery, the Jack Showing, was identified 350 m east of the Queen Showing, where a chip sample across another flat-lying quartz vein yielded 4.53 g/t gold. At the King Showing, hand trenching exposed the mineralized horizon along a strike length of 82 m. Five diamond drill holes were collared from a single pad in a fanned array designed to intersect the down-dip extension of the King horizon. Three of the holes, HJ-16-01, -03, and -05, returned elevated values for gold and silver, but failed reproduce the strong results obtained from surface samples. A sixth drill hole, targeting the Queen Showing, cut the footwall stratigraphy observed in outcrop but failed to intersect the gold-rich quartz vein. A complete report pertaining to this work can be found in Morton (2017), while results are summarized in the Diamond Drilling section below.

In 2017, Strategic Metals conducted a two-phase exploration program on the property, consisting of prospecting and soil sampling. This work resulted in the discovery of the MK and Gusano showings, where rock samples returned 37.5 g/t gold and 49.8 g/t gold, respectively. Both showings cover quartz veins associated with felsic dykes. Soil samples returned a number of high values for gold and copper in the vicinity of the MK Showing (Morton, 2018).

In 2018, Strategic Metals performed geological mapping, hand trenching, prospecting and geochemical sampling in the areas of the Grumpy and Gusano showings. Contour soil sampling returned clusters of moderately to very strongly anomalous gold and arsenic values south of the Grumpy Showing, while mapping and hand trenching identified gold mineralization hosted within a steeply-dipping fault and developed alongside narrow felsic dykes. A 29 m long trench at the Gusano Showing exposed an approximately 50 cm wide, dark orange weathering, banded quartz vein, adjacent to a quartz-eye rhyolite dyke. Continuous chip samples collected across the exposed bedrock averaged 1.31 g/t gold over 7 m. Another trench, excavated across a prominent topographic linear at the Grumpy Showing, 800 m to the north, failed to reach bedrock; however, a continuous sample of talus and subcrop along the floor of the trench returned 9.57 g/t gold over 2 m (Morton, 2019).

GEOMORPHOLOGY

The property is situated on and to the south of Joe Mountain within the Yukon Plateau. It is drained by Cap and Joe creeks, which flow southerly into the M'Clintock and Yukon rivers and,

ultimately, into the Pacific Ocean. There is abundant water for camp and diamond drilling purposes on the property.

The property lies within subalpine and alpine terrain at elevations ranging from 1035 to 2010 m above sea level. Local topography consists of steep, unvegetated slopes separated by broad glacial valleys with marshy moss-covered floors. Outcrops are limited to higher elevations and are most common in north-facing cirques.

The climate at the Hartless Joe property is typical of northern continental regions with long, cold winters, truncated fall and spring seasons and short, mild summers. Although summers are relatively mild, snowfall can occur in any month. The property is mostly snow free from early June to late September.

REGIONAL GEOLOGY

The Hartless Joe property straddles the boundary between the Whitehorse Trough overlap assemblage and Cache Creek terrane – an accretionary complex made up of a mixture of ocean and arc volcanic rocks, pelagic sedimentary rocks, ultramafic bodies, and exotic limestone containing Early Permian fauna (Figure 3). In the southern Yukon, Cache Creek terrane is overthrust by Stikinia and Quesnellia terranes, which are interpreted to have originated as a single, continuous magmatic arc. In the early Mesozoic, the Stikinia-Quesnellia arc lay outboard of Laurentia and was separated from the continent by the intervening Cache Creek Ocean. Shallow water carbonates and syn-orogenic sedimentary rocks of Whitehorse Trough record the Late Triassic to Early Jurassic closure of the Cache Creek Ocean and the accretion of the Stikinia-Quesnellia arc onto the western Laurentian margin (Nelson et al., 2013).

In 1961, the Geological Survey of Canada (GSC) published a geological map of the Whitehorse area (NTS 105D) at 1:253,400 scale (Wheeler, 1961). In 1994, the YGS performed 1:50,000 scale mapping of the Joe Mountain region (Hart and Hunt, 1997 and Hart, 1997) and in 2003, it completed a Yukon-wide geological compilation, which update the lithological unit names in the Hartless Joe area (Gordey and Makepeace, 2003). In 2005, the YGS released a paper on reconnaissance geological and geochemical studies of the Joe Mountain Formation (Piercey 2005).

In 2015, the YGS initiated a mapping project east of Lake Laberge in the Teslin Mountain area (105E/2) at a 1:50,000 scale (Bordet, 2016). Mapping in 2016 and 2018 further refined the stratigraphic and structural relationships in the map area (Bordet, 2017; Bordet et al., 2019).

The main lithological units are described below in Table I, while regional geology is shown on Figure 4.

Table I – Lithological Units (*after Gordey and Makepeace, 2003 and Bordet, 2016*)

Map Suite	Age	Map Unit	Description
Mount Nansen	Mid-Cretaceous	mKN	Byng Creek Volcanics: light weathering, black to light orange, quartz-eye rhyolite and dacite flows,

Group			tuffs, breccias and assorted fragmental volcanics with tourmaline breccia.
Whitehorse Suite	Mid-Cretaceous	mKgW	Biotite-hornblende granodiorite, hornblende-quartz diorite and hornblende diorite; leucocratic, biotite-hornblende granodiorite with sparse grey-pink potassium feldspar phenocrysts.
		mKqW	Grey, medium to coarse grained, generally equigranular granitic rocks of felsic composition.
Teslin Suite	Lower Cretaceous	EKgT	White to pale grey weathering, recessive, leucocratic, fine to coarse grained equigranular hornblende-biotite granite, granodiorite, quartz monzonite and quartz monzodiorite, locally with sparse grey and pink potassium feldspar phenocrysts; associated aplitic phases and dykes.
Laberge Group	Lower to Middle Jurassic	JL	Poorly sorted, medium bedded to massive arkosic sandstone and minor shale with interbeds and thick members of resistant heterolithic pebble and boulder conglomerate; recessive, dark brown weathering, thin bedded, dark brown to greenish, silty shale.
		JL1	Richthofen Formation: dark weathering, massive to finely laminated, black mudstone, limey mudstone and hornfels, locally with wispy brown laminae or limestone horizons.
Aksala Formation	Upper Triassic	uTrAK1	Casca Member: Brown shale, black and minor red siltstone, greenish, calcareous greywacke and interbedded bioclastic, argillaceous limestone; igneous- or limestone-clast pebble and cobble conglomerate; lahaaric debris flows; rare feldspar-augite porphyry flows.
		uTrAK2	Hancock Member: Massive to thick bedded limestone; minor thin bedded argillaceous to sooty limestone; coarsely crystalline, massive dolostone; minor laminated chert; massive to poorly bedded, limestone conglomerate debris flows and fanglomerate.
Joe Mountain Formation	Middle Triassic	mTrJ1	Black weathering, fine grained, aphyric, pillowed basalt flows with calcite veining and weak but pervasive chloritic alteration. These pillows are under a package of gritty and limey sediments.
		mTrJ2	Chaotic assemblage of recessive weathering, volcanogenic sandstone, siltstone, shale and gritty sandstone. Includes limestone or limey beds, and resistant, dark weathering, chaotic and massive to poorly bedded, heterolithic, diamictite, conglomerate, and fragmental or gritty limestone.

		mTrJ3	Dark grey weathering, generally unaltered, fine-grained and feldspar and pyroxene-phyric, pillowed basalt flows and massive microdiorite. Locally interbedded with mTJM2.
		mTrJ4	Dark weathering, massive, variable textured, coarse-grained and locally pegmatitic, pyroxene gabbro and diorite.

Recent work by the YGS has led to a reassignment of Joe Mountain Formation from Stikina to Cache Creek terrane. The reassignment is based on lithological, geochronological and geochemical affinities with Cache Creek arc assemblages elsewhere in the cordillera. It is suggested that an intra-oceanic, volcanic arc system, represented by the Kutcho and Sitlika assemblages in northern British Coumbia and the Joe Mountain and Michie formation in southern Yukon, developed within the Cache Creek Ocean during Permian to Triassic time. This arc eventually became part of the Cache Creek composite terrane during amalgamation in the Late Triassic to Early Jurassic (Bordet et al., 2019).

Joe Mountain Formation volcaniclastic rocks form the lowest stratigraphic level in the Hartless Joe area. They comprise massive to flow-banded or pillowed, subalkaline to calc-alkaline basalt and basaltic andesite, poorly sorted volcanic conglomerate, mafic tuff, volcanic mudstone, sandstone and minor carbonates (Bordet, 2017). A 4 km diameter, gabbroic stock (mTrJ4) in the northern part of the property is thought to be a feeder to the volcanic rocks (Piercey, 2005).

Overlying this basement are sedimentary rocks of the Whitehorse Trough overlap assemblage. The trough was a fault-bounded, marginal basin that formed off the west coast of North America and filled with up to seven kilometres of largely arc-derived clastic rocks. Units comprising the assemblage extend over a strike length of 600 km, spanning the area between Carmacks, Yukon and Dease Lake, British Columbia. It is divided into two main stratigraphic components: Upper Triassic Aksala Formation (part of the Lewes River Group) and Upper Triassic to Middle Jurassic formations of the Laberge Group (Hart, 1997). Locally, the contact between Joe Mountain Formation and the overlying Aksala Formation may represent a stratigraphic disconformity (Bordet, 2017).

Three large Cretaceous aged plutons are located near the claim block: the Lower Cretaceous M'Clintock Lakes and Laurier Creek plutons, which are located immediately east and north of the property, respectively; and the mid-Cretaceous Cap Creek pluton, which is located immediately west of the property. The Laurier Creek, (formerly M'Clintock River), and M'Clintock Lakes plutons are part of the Teslin Suite, which is characterized as homogenous, coarse grained, biotite-hornblende granodiorite to quartz monzonite. The Cap Creek pluton is represented by several phases, but dominantly comprises medium to coarse grained, biotite-hornblende granodiorite and quartz-diorite. In the Hartless Joe area, three phases of dykes are recognized. The oldest phase consists of diabase dykes that cut solely rocks of the Joe Mountain Formation, while two other are felsic phases that appear to cut the entire stratigraphy (Bordet, 2017; Hart, 1997). Northwest of the property, age dating of the felsic dykes have returned dates of 138 to 136 Ma, representing a previously unrecognized magmatic suite, informally named the Goddard Suite (Bordet, 2019).

In the Hartless Joe area, the north- to northwest-trending Laurier Creek fault marks the western boundary of the Joe Mountain Formation. It forms a distinctive valley to the north of the property, and may have facilitated strike-slip motion and/or reactivation of a pre-existing structure (Bordet, 2017). In the immediate property area, an extensive system of imbricate faults and fault arrays appear to merge into the Laurier Creek fault (Hart, 1997). The Laurier Creek fault may be part of a larger northwest-trending set of dextral strike-slip faults, known as the Teslin fault system. Dextral displacement along faults of the Teslin system is associated with synkinematic emplacement of Early to mid-Cretaceous plutons throughout central Yukon (Nelson and Colpron, 2007). The fault array on Hartless Joe property is interpreted to be an asymmetric pull-apart basin, resulting from a deflection along the Laurier Creek fault (Figure 5).

PROPERTY GEOLOGY

Prior to 2018, no systematic geological mapping had been performed on the Hartless Joe property by Strategic Metals, or preceding exploration companies. Between 1992 and 1995, the area was subject to a regional mapping initiative by the YGS, which produced maps at 1:50,000 scale and an accompanying report (Hart, 1997). The property geology illustrated on Figure 6 is derived from this work.

In 2018 and 2019, Strategic Metals performed detailed geological mapping at 1:5000 scale, in the vicinity of the Grumpy and Gusano showings, in the west-central part of the property (Figure 7). The following is a summary based on YGS' mapping, Strategic Metals' work and observations made by other exploration geologists who have worked on the property at various times.

The Hartless Joe property is largely underlain by Joe Mountain Formation volcanics (mTrJ1 to mTrJ4), which are locally subdivided into four units: 1) a lower unit of dark basaltic flows; 2) a clastic and calcareous sedimentary unit; 3) a thick upper unit of basalt flows and microdiorite; and 4) associated gabbro and diabase intrusions.

Aksala Formation sediments are found within the southwestern portion of the claim block, comprising the Casca Member (uTrAK1) and the Hancock Member (uTrAK2), a distinctive limey sub-unit. Aksala Formation strata are lithologically variable and in this area include limey siltstone, siltstone, shale, sandstone, conglomerate, hornfels and diamictite, all locally with limestone. The Hancock Member of the Aksala Formation consists of: white weathering, resistant, massive to poorly bedded bioclastic and micritic limestone, marble and skarn; and recessive, flaggy, dark grey limestone and sandy limestone.

The youngest of the formational units found on the property is the Richthofen Formation (JL1), which was deposited by a southeast-prograding submarine fan (or fans) during the Early Jurassic. The Richthofen Formation is characterized as turbiditic mudstone and sandstone with local limestone horizons, and unconformably overlies Aksala Formation in the Hartless Joe map area (Lowey, 2005).

Bedding in the central part of the property is mapped as dipping moderately south to southeast; however, work by Strategic Metals in the area of the King and Queen showings has identified sub-horizontal bedding, which is exhibited as terraced volcanic flows. In the western part of the property, a series of east-trending antiforms and synforms occur within Aksala Formation and Joe Mountain Formation rocks.

The Grumpy-Gusano area is underlain by feldspar- and pyroxene-phyric basalt flows and massive microdiorite (mTrJ3), which are interbedded with volcanic conglomerate, sandstone and mudstone (mTrJ2). Clasts within the conglomerate are sub-angular, aligned, two to three centimetres long and composed of fine grained mafic rock and/or mudstone. In the detailed map area, a swarm of variably pyritic and flow-banded, quartz-phyric rhyolite (EKr) dykes are observed, with a dominantly west-northwest orientation. Age dating of one of the dykes, performed by the YGS, yielded a date of 126 Ma (Colpron, pers. comm.), which corresponds to the Teslin Suite.

All of the units described above are cut by a significant north-south fault, referred to as the GG fault, which juxtaposes mTrJ3 and mTrJ2. A second, unnamed, sub-parallel fault is located to the west, and appears to converge with the GG fault in the southern part of the map area. It forms the western boundary of a small, medium grained, pyroxene gabbro plug, which is thought to be equivalent with the mTrJ4 stock in the northern part of the property. A ridge-top exposure of mTrJ4 is also observed south of the Gusano Showing.

PROPERTY MINERALIZATION AND HAND TRENCHING

The main exploration target at the Hartless Joe property is gold- and silver-bearing epithermal-style mineralization that occurs within veins, silica- and carbonate- breccias, and as stratigraphically-controlled horizons. Nine showings of this type have been identified on the property and are referred to as the Grumpy, Gusano, Joe Creek, Les 2, MK, Ace, King, Queen and Jack. Many of the occurrences, where they are observed in outcrop, have an ambiguous, bedding-parallel orientation. As a result, most of the showings in this report are described as veins, but some may be exhalative in nature.

The nine occurrences are characterized by varying amounts of gold and silver, with trace to minor amounts of copper, lead and zinc. Mercury- and antimony-in-rock values are erratically distributed and not appreciably enriched in zones of mineralization. Arsenic is strongly associated with gold mineralization at the Grumpy Showing, where samples have yielded arsenic values of up to 5310 ppm. The remaining gold occurrences are characterized by low arsenic values. A tenth mineral occurrence, the Joe 5 Showing, covers quartz breccia that is characterized by high copper to gold ratios. All of the mineral occurrences are hosted in Joe Mountain Formation volcanics and volcaniclastics.

Algoma-type iron formations, comprising quartz-hematite-magnetite mineralization, have also been identified within Joe Mountain Formation. The first occurrence was noted by Piercy (2005) in the area of the Joe 4 Showing, and was interpreted as a hydrothermal-exhalative precipitate developed in association with a submarine vent. Algoma-type iron formations are commonly found in association with volcanogenic massive sulphide (VMS) mineralization and are usually

formed further from the heat source. Work by Strategic Metals has identified several other quartz-hematite occurrences on the property (Figure 6).

In 2019, Strategic Metals collected a total of 18 rock samples from the property. The 2019 rock sample locations are plotted on Figure 8. Results from all programs since 2005 are illustrated thematically for gold, silver and copper on Figures 9 to 11, respectively.

The 2019 rock geochemical sample sites on the property were marked with orange flagging tape labelled with the sample number. The location of each sample was determined using a handheld GPS unit. Rock sample preparation and multi-element analyses were carried out at ALS Minerals laboratories in Whitehorse, YT and North Vancouver, BC, respectively. Each sample was dried, fine crushed to better than 90% passing 2 mm and then a 1 kg split was pulverized to better than 95% passing 106 microns. For a selected 2 samples, >100 micron material remaining on the screen was then analyzed for coarse gold by fire assay with a gravimetric finish (Au-SCR21). The fine fraction was analyzed for 51 elements using an aqua regia digestion followed by inductively coupled plasma combined with mass spectroscopy and atomic emission spectroscopy (ME-MS41). An additional 30 g charge was further analysed for gold by fire assay and inductively coupled plasma-mass spectroscopy finish (Au-ICP21). Overlimit silver values were determined by four acid digestion with inductively coupled plasma and either atomic emission spectroscopy or atomic absorption spectroscopy (Ag-OG46). Rock Sample Descriptions and Certificates of Analysis for the 2019 samples are provided in Appendices III and IV, respectively.

Rock sampling in 2019 was performed in conjunction with geological mapping, in the area of the Grumpy and Gusano showings. Descriptions of all showings on the Hartless Joe property are provided in the following paragraphs.

The **Grumpy Showing** lies in the west-central part of the property, at the head of Cap Creek. It covers Joe Mountain Formation volcanics and volcaniclasics, on the eastern side of a major north-trending fault. The showing was discovered by Craig Hart and Julie Hunt (1997) during a YGS regional mapping program, and originally described as occupying a fault zone at the head of Cap Creek. A grab sample collected from a north-trending, siliceous, felsic dyke, containing quartz stringers, yielded 10.6 g/t gold (Hart, 1997). Subsequent work has delineated three separate areas of mineralization: 1) quartz-carbonate talus on a steep, west-facing slope, located immediately uphill from the fault zone (Area A); 2) a 30 cm wide, shallowly dipping quartz-rich horizon (Area B), located 180 m north of Area A; and 3) quartz float associated with the surface trace of the GG fault (Area C), located 300 m east of Area A. Float samples collected from all three areas have yielded high gold values. Many samples from areas A and B are enriched in arsenic, and some of the samples also have very high silver content. Table II compiles the most significant assay results from the Grumpy Showing.

Table II - Significant Results from the Grumpy Showing

Sample	Area	Au (g/t)	Ag (g/t)	As (ppm)	Sb (ppm)	Cu (%)	Pb (%)	Zn (%)
M011214	A	251	1270	413	148	0.02	0.93	0.13

W599126*	A	62.3	4380	1050	785	0.09	0.96	0.05
B395831	A	55.3	5010	143	1590	0.09	0.55	0.06
W591773	B?	36.3	54	712	3	0.00	0.27	0.00
C105714	B	27	466	190	76	0.01	0.1	0.34
B395832	A	18.5	2310	213	364	0.11	0.73	0.06
M011209	A	15.65	4540	139	1350	0.01	0.62	0.03
C105707	C	9.97	3.8	66	13	0.01	0.04	0.06
W599140*	B	8.39	14.45	407	4.55	0.01	0.03	0.02
W599128*	B	7.88	11.65	358	4.57	0.01	0.03	0.04
K283907*	B	7.26	3.08	5770	9.24	0	0	0.01
B395833	A	5.32	50	5310	17	0.01	0.02	0.01
M011211	A	3.54	82.7	51	16	0.01	0.05	0.12
C105716	B	3.03	4	3770	7	0	0	0
W599141	B	2.98	181	252	55.9	0.02	0.01	0.21
M011212	A	2.17	339	94	98	0.02	0.11	0.14
B395830	A	0.8	211	453	80	0.02	0	0.01

* Sample collected in 2019

Area A covers an approximately 100 m by 100 m zone of quartz-carbonate talus that occurs within a narrow gully and on an adjacent, steep west-facing slope. The talus typically exhibits a syntaxial or comb texture, and sulphide minerals appear as millimetre-scale bands and blebs. Sulphide minerals comprise pyrite, galena, minor chalcopyrite and an unidentified grey-black mineral. Microscopic examination of polished sections has identified the presence of grey-black tellurides or sulphosalts developed along the grain boundaries of known sulphides (Drechsler, 2013). Rocks from this area have yielded grades of up to 251 g/t gold and 5010 g/t silver.

Area B comprises a 30 cm thick, banded, quartz-rich vein or exhalative horizon, which has been traced along a 25 m strike length and is the source of a 200 m long float train of mineralized talus. It is hosted within a volcanic conglomerate (mTrJ1), located immediately above the contact with pillowed basalt (mTrJ1). Bedding measurements in overlying volcaniclastic rocks dip steeply to the south, and the horizon appears to be aligned sub-parallel with this orientation. Mineralization comprises ribbons of arsenopyrite, lesser pyrite and trace chalcopyrite, which is rimmed by malachite. Outcrop samples collected from the vein returned grades of up to 8.39 g/t gold and 181 g/t silver (Morton, 2019). In 2019, a float sample collected 60 m south-southwest of outcrop exposures of the horizon, returned 36.3 g/t gold and 53.5 g/t silver. This sample comprised scorodite-stained, rusty weathering quartz, hosting bands of pyrite, arsenopyrite and minor galena.

Area C covers the north-trending GG fault, which forms a prominent topographic linear. It cuts volcaniclastic rocks and a series of steeply-dipping, northwest-striking rhyolite dykes, which converge with the fault. Grab samples of quartz, collected from the topographic linear, have assayed up to 9.97 g/t gold. In 2018, a hand trench was excavated, perpendicular to the linear, in order to expose the source of the mineralized float. The trench failed to reach bedrock, but talus and subcrop along the floor of the trench was sampled continuously for 11 m. One sample,

across a section of abundant orange weathering quartz, hosting trace amounts of fine grained pyrite and galena, returned 9.57 g/t gold over 2 m (Morton, 2019).

The **Gusano Showing** lies 600 m south of the Grumpy Showing, immediately uphill from the surface trace of the fault that crosses Area C. It covers a 600 m by 200 m talus field of banded and mineralized quartz boulders in an area of recessive, thin-bedded, calcareous mudstone. Samples from milky quartz boulders (up to 40 cm in diameter), hosting bands and disseminations of pyrite, arsenopyrite and galena, have yielded values of up to 49.8 g/t gold and 365 g/t silver. In 2018, a 29 m long hand trench exposed a dark orange weathering, banded quartz vein. The vein is estimated to be 50 cm wide, and is immediately adjacent to a quartz-eye rhyolite dyke. Continuous chip samples taken across the vein and rhyolite wallrock returned a weighted average grade of 1.31 g/t gold over 7 m (Morton, 2019). A photograph of the showing, with the surface trace of the GG fault illustrated in red, is provided as Photo 1.

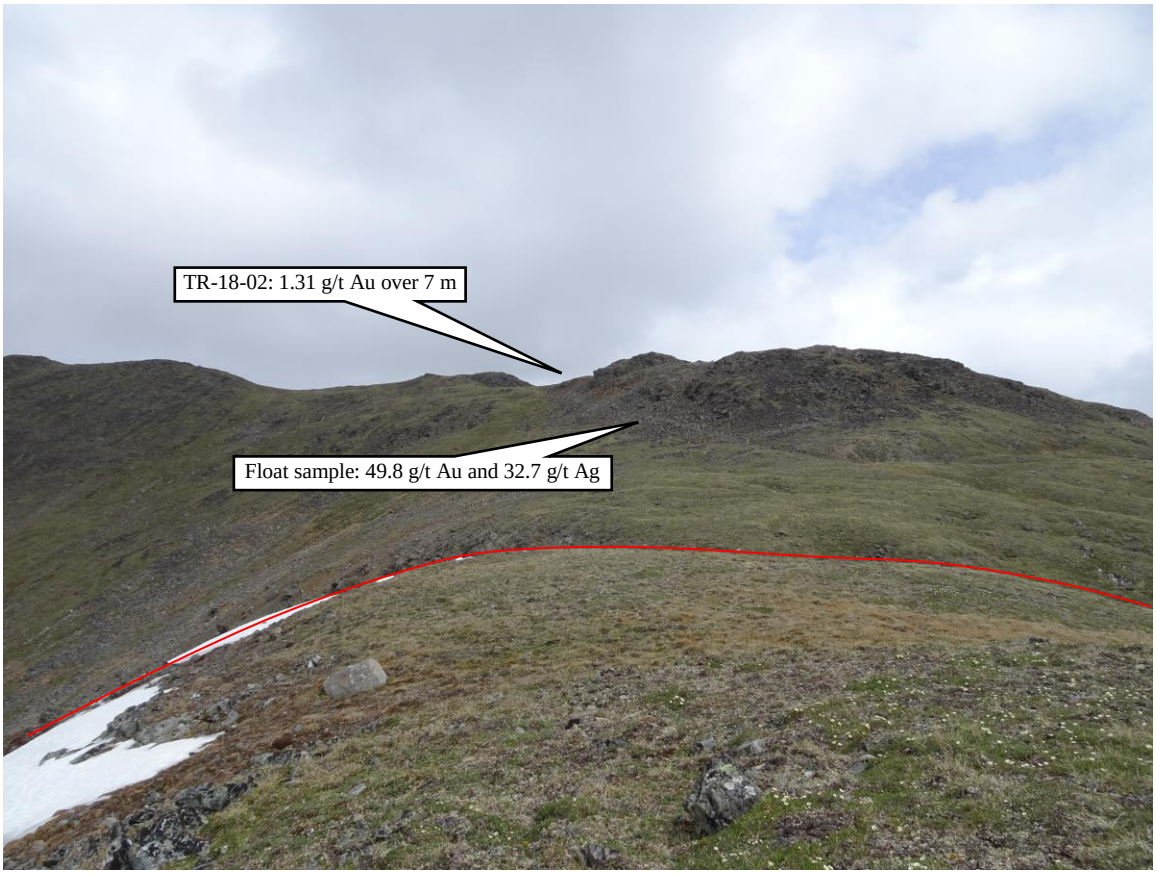


Photo 1 – Looking east at the Gusano Showing (fault illustrated in red)

The **Les 2 Showing** is located 430 m northeast of the Grumpy Showing, along a northwest-trending fault, and is associated with a recessive topographic linear. In 2005, two float samples of light orange weathering, milky white quartz vein and siliceous green wallrock, with abundant galena and pyrite, returned 117 and 76.1 g/t silver. Another sample, comprising mineralized jasperoid with moderate white to yellow quartz stockwork veinlets, minor magnetite, and orange limonitic pits, returned 0.99 g/t gold (Wengzynowski, 2006). In 2018, a float sample consisting

of a 5 cm wide quartz vein in basalt, with clots of galena and pyrite, returned 212 g/t silver (Morton, 2019). In 2019, follow-up prospecting failed to locate the source of the 2018 float, but resulted in the separate discovery of an approximately three centimetre wide, slightly rusty quartz vein, with pyrite and minor galena along selvages, which returned 76.9 g/t silver and 3100 ppm lead.

Table III compiles the significant assay results from the Les 2 Showing.

Table III - Significant Results from the Les 2 Showing

Sample	Au (g/t)	Ag (g/t)	As (ppm)	Sb (ppm)	Cu (%)	Pb (%)	Zn (%)
B395834	0.99	9.4	25	4	0.00	0.00	0.00
B395846	0.02	31.4	10	1	0.00	0.09	0.00
B395847	0.02	37.9	26	1	0.10	0.08	0.01
B395902	0.02	117	1	1	0.00	0.25	0.00
B395903	0.07	76.1	11	1	0.02	0.66	0.00
W599146	0.27	212	2	1	0.02	0.08	0.02
W591776*	0.12	76.9	4	4	0.00	0.31	0.00

* Sample collected in 2019

The **King Showing,** which was previously referred to as the Les 7 Showing, lies 900 m northeast of the Les 2 Showing. The showing comprises a mineralized quartz-rich band in outcrop, which has been traced along an 82 m strike length, and is approximately 50 to 60 cm wide. The quartz band is hosted in a recessive, limey and chloritic, volcanic mudstone, which forms the top of a volcanic flow. The mudstone is approximately two to four metres thick. Sulphide minerals within the quartz-rich band, which is either a flat-lying vein or an exhalative horizon, include galena, pyrite and chalcopyrite. Enveloping mineralization in the mudstone unit comprises malachite, azurite, plumbo-jarosite(?) and disseminated pyrite.

In 2015, a continuous chip sample collected across the mineralized band yielded 60 g/t gold, 554 g/t silver, 5.01% lead and 0.35% copper over 1.2 m (Morton, 2016). In 2016, hand trenching better exposed the mineralized band at this location, and chip samples returned 22.3 g/t gold, 195 g/t silver, 4.5% zinc, 2.0% lead and 0.22% copper over 0.5 m. The band was also exposed in a hand trench dug 82 m to the east, where it yielded 43.0 g/t gold, 376 g/t silver, 1.3% zinc, 2.0% lead and 0.1% copper over 2.1 m. A third hand trench, located 34 m southwest of the first trenches, intersected the favourable mudstone unit but failed to expose the mineralized band (Morton, 2017). Table IV compiles significant assay results from the King Showing.

Table IV - Significant Results from the King Showing

Type	Sample	Au (g/t)	Ag (g/t)	As (ppm)	Sb (ppm)	Cu (%)	Pb (%)	Zn (%)
Float	C105732	73.0	183	111	68	0.10	2.95	0.22
Float	M652141	0.058	20.8	5.1	1.11	3.31	0.00	0.01
Chip sample – 1.2 m	R608488	60.0	554	555	56.3	0.35	5.01	2.32
Chip sample – 0.5 m	K288995	23.2	195	146	38.1	0.22	2.02	4.45

Chip sample – 2.1 m	K288999-K289000	43.0	376	43.5	86.0	0.14	2.04	1.31

The **Ace Showing** is located 420 m southeast of the King Showing, and covers a 10 cm wide, flat-lying, quartz-carbonate vein or exhalative horizon, which has been traced along a 95 m strike length. It sits above a pale, feldspar-phyric latite(?) dyke, and below a thin-bedded volcanic mudstone, which is overlain by pillowed basalt. Sulphides comprise less than 10% of the mineralized vein, and include pyrite, galena, sphalerite and rare tetrahedrite. Malachite and limonite are also present.

This showing was discovered in 1967, and a historical channel sample reportedly assayed 27.4 g/t gold, 78.9 g.t silver, 2.2% lead and 1.9% zinc over 10 cm (Deklerk and Traynor, 2017). Sampling of mineralized talus in the area has returned up to 190.5 g/t gold and 5780 g/t silver (Wengzynowski, 2006). In 2016, four outcrop samples of the vein, collected over a 95 m strike length, returned an average grade of 7.4 g/t gold and 462.5 g/t silver (Morton, 2017). Table V lists significant assay results from the Ace Showing.

Table V - Significant Results from the Ace Showing

Sample	Au (g/t)	Ag (g/t)	As (ppm)	Sb (ppm)	Cu (%)	Pb (%)	Zn (%)
P396841	149.0	53.8	2	3	0.05	0.60	0.04
B395837	190.5	5780	167	1350	0.13	5.58	0.06
K288977	16.85	1420	53.7	123	0.20	0.44	0.50
K288978	3.80	82.8	11.7	5.53	0.02	0.09	<0.01
K288979	3.69	180	170.5	15.1	0.04	0.27	0.13
K288980	5.26	167	204.0	17.85	0.03	0.17	0.07

The **Queen Showing** was discovered in 2016, and lies 120 m south of the Ace Showing. It consists of a 50 cm wide, flat-lying, rusty weathering, coarse crystalline quartz vein, exposed along a strike length of approximately 25 m. The vein is hosted in a narrow volcanic mudstone bed at the margin of a 1.1 m wide, plagioclase-phyric, latite dyke. Sulphide minerals are scarce in the vein, but fine grained native gold is observed in illite-filled fractures, with rare chalcopyrite and galena. In 2016, continuous chip sampling across the vein yielded 462 g/t gold, 79.6 g/t silver, 0.28% copper and 1% lead over 40 cm (Morton, 2017).

The **Jack Showing** was also discovered in 2016. It is located 350 m east of the Queen Showing, and comprises a 25 cm wide, flat-lying, rusty weathering, coarse crystalline quartz vein. The vein is hosted in a narrow horizon of volcanic mudstone, and contains rare clots of pyrite, chalcopyrite and goethite. In 2016, an outcrop sample returned 4.53 g/t gold (Morton, 2017).

The **Joe Creek Showing** lies 1320 m northwest of the King Showing, along a northwest-trending fault, that is marked by a recessive topographic linear. This showing was discovered by Craig Hart and Julie Hunt (1997) and covers banded and massive quartz talus with sparsely disseminated pyrite and arsenopyrite. In 2005, a sample collected from the showing yielded 46.5 g/t silver (Wengzynowski, 2006).

The **MK Showing** was discovered in 2017, and is located 1920 m north-northeast of the Joe Creek Showing. It covers a shallowly dipping quartz vein that occupies the margin of an approximately four metre wide, stratigraphy-parallel, leucocratic dyke. Five rock samples of the vein, each hosting varying amounts of galena, arsenopyrite, pyrite and minor chalcopyrite, returned an average grade of 23.8 g/t gold and 56.8 g/t silver, with peak values of 37.5 g/t gold and 91.7 g/t silver. Copper values were generally low (Morton, 2018).

The **Joe 4 Showing** lies 880 m northeast of the Joe Creek Showing and covers mineralized quartz vein and quartz-healed breccia talus in a northwest-trending gully. It is located near a boulder field of Algoma-type quartz-hematite boulders (Figure 6). In 2005, a sample of quartz-cemented andesite breccia returned 16.4 g/t silver and 1.81% copper. Sulphide minerals in this sample included pyrite, chalcopyrite, pyrrhotite, and an unknown blue mineral (covellite?) hosted within both the quartz matrix and andesite clasts. Another more weakly mineralized sample of breccia returned 22.4 g/t silver (Wengzynowski, 2006). In 2018, a sample of rusty weathering and malachite-stained, quartz-after-calcite breccia, with abundant fine grained pyrite and chalcopyrite, yielded 2.27% copper. The source of the float has not been identified (Morton, 2019). Table VI compiles the significant assay results from the Joe 4 Showing.

Table VI - Significant Results from the Joe 4 Showing

Sample	Au (g/t)	Ag (g/t)	As (ppm)	Sb (ppm)	Cu (%)	Pb (%)	Zn (%)
B395828	0.02	4.8	8	1	1.91	0.00	0.02
B395839	0.58	22.4	5	8	0.01	0.03	0.00
B395841	0.17	16.4	10	5	1.81	0.01	0.01
B395839	0.58	22.4	5	8	0.01	0.03	trace
K293599	0.01	11.7	7	0	2.27	0.00	0.34

In 2019, prospecting 650 m southwest of the Gusano Showing, about half-way down a steep west-facing slope, identified mineralized float comprising light to dark grey, banded quartz, with bands of hematite as well as unidentified, very fine grained sulphides. This material returned 12.55 g/t gold and 494 g/t silver, and has not been followed-up. Another sample, collected 650 m northwest of the Gusano Showing, consisting of rusty weathering, pitted rhyolite, hosting blebs of pyrite and lesser arsenopyrite, yielded 1360 ppm copper.

SOIL GEOCHEMISTRY

Most soil geochemical sampling performed between 2005 and 2019 has been conducted on widely spaced, reconnaissance traverses across the core of the Hartless Joe property. Tighter-spaced, grid sampling has only been done in the vicinity of the Grumpy and Ace showings.

In 2019, Strategic Metals collected 72 contour soil samples in the northwestern part of the property. The 2019 sample locations are shown on Figure 12, while results from all programs for gold, silver, copper, arsenic, lead and zinc are illustrated thematically on Figures 13 to 18, respectively. Certificates of Analysis for the 2019 samples are provided in Appendix IV.

Soil sample locations were recorded using hand-held GPS units. Sample sites are marked by aluminum tags inscribed with the sample numbers and affixed to 0.5 m wooden lath that were driven into the ground. Soil samples were collected from 15 to 50 cm deep holes dug by handheld auger. The soil samples were sent to ALS Minerals in Whitehorse, where they were dried and screened to -180 microns. The fine fractions were then shipped to ALS Minerals in North Vancouver where they were analyzed for 51 elements using an aqua regia digestion followed by inductively coupled plasma combined with mass spectroscopy and atomic emission spectroscopy (ME-MS41). An additional 30 g charge was further analyzed for gold by fire assay with inductively coupled plasma and atomic emission spectroscopy finish (Au-ICP21).

Soil development on the property is variable and includes glacial overburden, especially in low lying areas, and talus fines on upper slopes. The largest cluster of anomalous values occurs in the vicinity of the Grumpy Showing, where numerous samples taken in a 1200 by 600 m area exceed 100 ppb gold. The highest gold value at the Grumpy Showing is 1370 ppb. Samples from the Ace Showing were lower but still anomalous, with most samples in a 450 by 200 m area returning between 20 and 100 ppb gold. A 450 by 300 m cluster of strongly elevated, coincident gold, silver and copper values is centred on the King Showing. Soil samples collected in this area yielded values of up to 1440 ppb gold, 8.19 ppm silver and 985 ppm copper. A string of contour soil samples in the area of the MK Showing returned the highest copper value on the property (1955 ppm), as well as very strongly elevated gold (798 ppb) and strongly elevated silver (3.12 ppm) values. The highest gold value on the Hartless Joe property (2230 ppb) came from a reconnaissance sample taken near the Joe Creek Showing.

Moderate to strong gold, silver and lead values have also been identified in a number of other areas on the property, forming clusters up to 300 m long near some of the showings. Arsenic and antimony are sporadically elevated (up to 1440 ppm arsenic and 16 ppm antimony) in the vicinity of the Grumpy and Les 2 showings. Zinc is subdued across most of the property; however, a string of six contour soil samples collected from the area of the MK Showing are notably enriched in zinc. Contour soil sampling south of the Gusano Showing has returned clusters of moderately to very strongly anomalous gold and arsenic values, which have no received follow-up work. The 2019 soil sampling was all done in the vicinity of the gabbroic stock in the northern part of the property, and yielded low values for all elements of interest.

Soil geochemistry on the property exhibits a marked north-south metal zonation. Samples collected in the vicinity of the MK and King showings are notably enriched in copper and zinc, while samples collected in the Grumpy area are strongly enriched in arsenic. This lateral zonation may represent a hydrothermal fluid temperature gradient, or overprinting phases of mineralization.

GEOPHYSICAL AND LIDAR SURVEYS

In 2007, ATAC Resources commissioned Geotech Ltd. of Aurora, Ontario to fly a helicopter-borne VTEM and magnetic survey across the property. That same year, ATAC Resources also contracted Aurora Geosciences Ltd. to perform an induced polarization (IP) and resistivity survey on two lines located 520 m apart in the vicinity of Grumpy Showing (S. Eaton, 2008).

The total field magnetic readings on the Hartless Joe property range from 56900 nT to 58400 nT, which is characterized as high contrast (S. Eaton, 2008). Most of the highest readings are in areas underlain by mafic volcanic units in the northern and eastern parts of the block. Figure 19 illustrates the vertical magnetic gradient of the property. The following observations can be made based on this data. An isolated ovoid magnetic high in the southwestern corner of the block could represent a buried mafic pluton. There is a general north- to northwest-trending fabric to the data, and some of the magnetic lows correspond with known fault structures.

The VTEM response is quiet except for an anomaly in the southwestern part of the block, which is mostly underlain by sediments (Figure 20). The anomaly is about 500 m long and 200 m wide and is weakly conductive. It is located in a fault-bound block about 500 m southwest of the Grumpy Showing and 500 m northeast of the isolated ovoid magnetic high that is interpreted as a buried mafic pluton. The conductor is about 150 m below surface and was interpreted as possibly representing a shallowly dipping horizon containing disseminated sulphide minerals (S. Eaton, 2008). This target was tested by diamond drilling in summer 2008. Only minor amounts of sulphide minerals were intersected and the conductor appears to have been caused by graphite on fractures (D. Eaton, 2008).

Chargeability data for both reconnaissance IP lines are shown on Figure 21. The northwesterly IP line features a large anomaly with low chargeability that is suggestive of dominantly pyritic, stratigraphically controlled mineralization (S. Eaton, 2008). The highest chargeability reading was obtained at the south end of the line where well mineralized vein float has been discovered. The southeasterly line appears to delineate the GG fault as a boundary between conductive rocks, in the northeastern half of the line, with inert rocks, in the southwestern half. The near-surface conductors are interpreted to represent the northwest-trending, pyrite-bearing, rhyolite dykes; however, a deeper zone of conductivity remains unexplained. Three chargeability features are modelled to come to surface in areas where strong gold-in-soil geochemical anomalies have been outlined.

In October 2015, airborne LIDAR surveys were completed across much of the current property (Morton, 2016). The surveys highlighted a number of curvi-linear and linear geomorphological features in the central part of the property, which are interpreted as shallowly dipping bedding planes and steeply dipping, north- to northwest-trending faults. Sediment deposits, such as debris cones and alluvial fans, are also visible in the LIDAR imagery.

DIAMOND DRILLING

In 2008, a total of 612.2 m of diamond drilling was completed in three holes on the Hartless Joe property (D. Eaton, 2008). The holes tested a VTEM anomaly and part of the Grumpy Showing at depth.

Hole HJ08-01 targeted a VTEM anomaly identified by ATAC Resources in 2007. It intersected mostly dark grey, fetid limestone, which is cut by numerous narrow dykes and sills comprised of feldspar±quartz porphyry and diorite in composition. Neither type of intrusion significantly altered the adjacent wallrocks, but pyrite is locally developed. Samples of the pyritic limestone and feldspar porphyry returned low values for gold, silver and associated pathfinder metals.

Holes HJ08-02 and HJ08-03 were drilled in opposite directions from the same drill pad at the Grumpy Showing. A number of felsic dykes, up to 30 m wide, were intersected near the collars of each hole. The holes also cut numerous, 1 to 10 cm wide, quartz±carbonate veinlets. Sedimentary rocks were most abundant in the lower part of the westerly directed hole (HJ08-02), while volcanic rocks dominate the bottom half of the easterly directed hole (HJ08-03), beneath a strong gouge-filled fault. Although pyrite was widely dispersed and locally abundant in the holes, only low gold and silver values were obtained. Key pathfinder minerals observed in mineralized float, such as arsenopyrite and galena, were absent. Hole HJ08-03 was terminated in a gougy fault zone about 50 m above its target depth. This hole does not appear to have reached the down-dip projection of gold- and silver-rich vein float in the overlying talus.

In 2012, Strategic Metals constructed a drill pad near the centre of the Grumpy Showing, about 400 m east of the collars of holes HJ08-02 and -03. This pad was positioned to test across strong soil geochemical trends and mineralized float trains, but no drilling was performed that year.

In 2016, Strategic Metals completed a total of 367.3 m of diamond drilling in six holes. Holes HJ-16-01 to HJ-16-05 were all drilled from the same pad at the King Showing, in a radial pattern designed to test 22 m to 53 m down-dip of the flat-lying mineralized horizon. Every hole but HJ-16-04 intersected the favourable volcanic mudstone unit, which is divided into two distinct sub-units: an upper, black, pyritic and bioturbated mudstone with rare, mm-scale, trace fossil burrows; and a lower, tan to medium grey, brecciated mudstone with deformed, elongate rip-up(?) clasts in a dark mud matrix. Patches, bands and ribbons of quartz and quartz-carbonate occur throughout the horizon, but are most concentrated at the contact between the two sub-units, and are associated with strong silica- and hematite-alteration. The quartz is often banded and is locally colloform, brecciated and undulatory. Moderate, very fine grained pyrite occurs with quartz and both mudstone units: as disseminations, round clots in mudstone, and along selvages of quartz-carbonate ribbons. Rare, very fine grained sphalerite, chalcopyrite and trace galena is associated with the most intense alteration. Three of the holes, HJ-16-01, -03, and -05, returned elevated values for gold and silver, but failed reproduce the strong results obtained from surface samples. Table VII summarizes the results below.

Table VII – 2016 Diamond Drilling Assay Highlights

Hole	From (m)	To (m)	Interval (m)	Au (g/t)	Ag (g/t)
HJ-16-01	4.98	5.22	0.66	0.73	4.98
	22.42	25.20	2.78	1.57	44.7
HJ-16-03	30.12	31.73	1.61	0.97	3.92
HJ-16-05	29.77	30.63	0.86	0.32	14.95

One hole, HJ-16-06, targeted the Queen Showing, approximately 20 m down-dip from the surface exposure. This hole cut a 0.21 m wide, plagioclase-phyric, latite dyke, which was hosted in a 6.86 m wide interval of dark, calcareous mudstone. One unmineralized, five centimetre wide, quartz-sericite vein was intersected near the bottom of the mudstone interval. The geochemical response for all elements of interest was low.

In 2019, Strategic Metals drilled a total of 854.1 m in five diamond drill holes, which were directed toward the Grumpy and Gusano showings. At the Grumpy Showing, two holes (HJ-19-01 and -05) targeted the down-dip extension of the GG fault, while a third hole (HJ-19-02) targeted a float train of gold-bearing quartz at Area A. At the Gusano Showing, hole HJ-19-03 targeted a quartz vein exposed in a 2018 hand trench, while hole HJ-19-04, collared from the same drill pad, was directed toward gold-bearing float and the southern extension of the GG fault. Certificates of Analyses are provided in Appendix IV, while Geological and Geotechnical Logs are given in Appendix V. Key data concerning the 2008, 2016 and 2019 drill holes are shown on Table VIII.

Table VIII – Diamond Drill Hole Data

Hole	Easting (m)	Northing (m)	Elevation (m)	Azimuth	Dip	Depth (m)
HJ08-01	514903	6751989	1615	270°	-45°	246.89
HJ08-02	515127	6752234	1707	290°	-45°	197.81
HJ08-03	515127	6752234	1707	110°	-45°	167.34
HJ-16-01	516567	6753488	1553	020°	-60°	67.0
HJ-16-02	516567	6753488	1553	000°	-90°	70.1
HJ-16-03	516567	6753488	1553	070°	-45°	56.4
HJ-16-04	516567	6753488	1553	200°	-45°	48.8
HJ-16-05	516567	6753488	1553	305°	-60°	50.3
HJ-16-06	517168	6752812	1734	350°	-65°	74.7
HJ-19-01	515621	6752154	1830	228°	-50°	105.2
HJ-19-02	515363	6752222	1810	254°	-51°	207.3
HJ-19-03	515800	6751379	1815	341°	-44°	146.3
HJ-19-04	515800	6751379	1815	267°	-51°	208.8
HJ-19-05	515690	6752162	1810	209°	-48°	187.5

Drill core was flown by helicopter to Whitehorse, where it was logged and processed, and is currently stored. The holes were selectively sampled and intervals chosen for analysis were split, with one-half bagged and sent for analysis and the other half returned to the core boxes. Drill core samples were processed in batches of up to 40 samples with each batch including two standard, two blank, one duplicate and one coarse reject duplicate samples. All core samples were sent to the ALS Mineral laboratory in Whitehorse, where they were crushed to 90% passing 2 mm before a 1 kg split was pulverized to better than 95% passing 106 microns. Splits of the pulverized fractions were then sent to ALS Minerals in North Vancouver, where they were dissolved in a four acid solution and analyzed for analyzed for 51 elements using an aqua regia digestion followed by inductively coupled plasma combined with mass spectroscopy and atomic emission spectroscopy (ME-MS41). An additional 30 g charge was further analysed for gold by fire assay and inductively coupled plasma-mass spectroscopy finish (Au-ICP21).

Hole HJ-19-01 was designed to test the down-dip extension of the GG fault, where mineralized quartz within the fault zone was exposed in a 2018 hand trench. In drill core, the fault is marked by a 2.88 m wide zone of fault gouge and crackle breccia, developed within volcaniclastic wallrocks. A 5.91 m wide interval of banded, quartz-carbonate-sericite-pyrite veins and quartz latite dykes, in the immediate hanging wall of the fault, returned elevated values for gold, including a sub-interval that assayed 0.512 g/t gold over 1.17 m. Feldspars in the hanging wall

rocks are altered first to sericite, followed by pyrite and hematite, with increasing proximity to the fault. Breciation is strongest in the footwall, where angular clasts of volcaniclastic rock are healed within a quartz-carbonate matrix.

Hole HJ-19-02 targeted the source of a mineralized float train, which is observed in Area A of the Grumpy Showing. It was collared from a rehabilitated drill pad, which was constructed, but not used, in 2012. The hole intersected a thick package of volcaniclastic rock, cut by multiple quartz porphyry dykes and quartz veins, and terminated in an underlying pillow basalt. The majority of the veins were weakly mineralized with fine grained pyrite, and the hole returned low values for gold and silver.

Hole HJ-19-03 was located 800 m south of HJ-19-01, in the area of the Gusano Showing. It was directed north, toward a 2018 hand trench, which exposed a mineralized quartz vein adjacent to a quartz-eye rhyolite dyke. Near the top of the drill hole, an interval of strongly clay-altered volcanic sandstone, cut by a vuggy, oxidized quartz vein and several subordinate veinlets, yielded a weighted average grade of 2.68 g/t gold over 1.7 m, including 5.8 g/t gold over 0.61 m. No sulphide minerals were observed in this interval. A second interval, near the bottom of the drill hole, comprised a variably brecciated, sericite-pyrite altered rhyolite dyke, with pyrite and arsenopyrite encapsulated in clasts as well as in <1cm wide veinlets. This interval assayed 0.85 g/t gold over 0.67m.

Hole HJ-19-04 was collared from the same pad as HJ-19-03, and was directed west toward samples of gold-bearing quartz float and the GG fault. This hole intersected a zone of clay- and sericite-altered volcanic sandstone, near the top of the hole, which hosted a number of <5cm wide, oxidized quartz veins and veinlets. A sample from this interval returned 0.76 g/t gold over 1.2 m. Further down-hole, the GG fault zone is defined by an area of rubble, gouge and several milk-white quartz veins, containing pyrite within an array of ribbon-like fractures. Rocks in the hanging wall comprise strongly oxidized and clay-altered, brecciated and silica-healed, volcaniclastics, while rocks in the footwall comprise dark grey-green, fine grained volcanics, cut by carbonate gashes and veinlets. Samples from the fault zone returned a weighted average grade of 1.86 g/t gold over 4.78 m, including 3.88 g/t gold over 1.6 m.

Hole HJ-19-05 was located 70 m east of HJ-19-01, and was intended to intersect the GG fault down-dip and along strike from HJ-19-01. This hole does not appear to have reached the fault, which has a much steeper dip than had been interpreted from the 2007 IP data and geological mapping.

Table IX summarizes the 2019 drill results, while Figure 7 illustrates the drill hole locations. Two cross sections of the 2019 diamond drill holes, along with the modeled GG fault surface, are illustrated on Figure 22.

Table IX – 2019 Diamond Drilling Assay Highlights

Hole	From (m)	To (m)	Interval (m)	Au (g/t)	Ag (g/t)
HJ-19-01	39.09	40.26	1.17	0.51	1.59
HJ-19-03	28.45	30.15	1.70	2.80	2.19
including	28.45	29.06	0.61	5.80	2.61
HJ-19-03	103.88	104.55	0.67	0.85	3.05
HJ-19-04	38.85	40.05	1.20	0.76	0.89
HJ-19-04	163.52	164.39	4.78	1.86	5.45
including	164.39	166.00	1.22	3.88	8.85

DISCUSSION AND CONCLUSIONS

The Hartless Joe property covers several high-grade gold and silver prospects. They are hosted within a package of volcanic and sedimentary rocks that are cut by numerous large-scale and complex faults. Most of the known mineral occurrences are characterized as low-sulphidation, epithermal-type; however, strong copper and zinc geochemical values in the northern part of the property, as well as the presence of Algoma-type iron occurrences, suggest that the property is also prospective for VMS-type mineralization. Occurrences of flat-lying, banded, mineralized quartz may be flat-lying veins developed preferentially in intra-volcanic mudstones, or sub-aqueous exhalative horizons.

In 2018, hand trenching at the Grumpy Showing exposed mineralized quartz in association with a steeply-dipping, north-trending structure, which is now referred to as the GG fault. Recent geological mapping has traced the GG fault, which links the Grumpy Showing with the Gusano Showing, over a two kilometre strike length. Diamond drilling in 2019 confirmed the presence of gold-bearing quartz veins and breccias within the fault zone, and in near-surface quartz veins associated with altered rhyolite dykes. The elevated gold-, silver- and arsenic-in-soil geochemistry at the Grumpy and Gusano showings, combined with the geological setting, demonstrates a strong potential for a buried, low-sulphidation epithermal deposit.

Further work on the Hartless Joe property is strongly recommended. Hand trenching should be performed at several sites along the GG fault, and a high-resolution, magnetotelluric (MT) or IP geophysical survey should be performed over the Grumpy and Gusano showings. Low-sulphidation, epithermal-type mineralization typically exhibits a characteristic zonation of metal and clay minerals, so short-wave infrared (SWIR) clay analysis should be performed on the 2019 drill core. Following this work, gold-silver targets should be prioritized and diamond drilling should be performed. In addition, work at the MK Showing should be carried out to assess the tenor and geometry of the gold-bearing quartz vein. Reconnaissance-scale soil geochemical coverage should be extended to cover the entire property, and detailed geological mapping in conjunction with prospecting should be performed in the vicinity of all known showings and geochemical anomalies.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED



J. Morton, B.Sc., P.Geo.

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APPENDIX I

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Jack Morton, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia and residential address in Vancouver, British Columbia, hereby certify that:

1. I graduated from Simon Fraser University in 2013 with a B.Sc. in Earth Science.

2. From 2007 to present, I have been actively engaged in mineral exploration in Nevada, Yukon Territory, British Columbia, and Northwest Territories.

3. I am a Professional Geologist (P.Geo.) with the Association of Professional Engineers and Geoscientists of British Columbia (License Number 45807).

4. I supervised the field program and have interpreted all data resulting from this work.



J. Morton, B.Sc., P.Geo.

APPENDIX II

STATEMENT OF EXPENDITURES

Claim Renewal List
Hartless Joe Property
January 17, 2020

Grant Number		Claim Name			Current Expiry	Number of Claims	Claim Years	Total Claim Years	New Expiry Date
YC26563		HART	1		Mar 01, 2037	1	4	4	Mar 01, 2041
YC30012	YC30014	HART	2	4	Mar 01, 2037	3	4	12	Mar 01, 2041
YC37057	YC37080	HART	5	28	Mar 01, 2037	24	4	96	Mar 01, 2041
YD35289	YD35300	HART	29	40	Mar 01, 2034	12	4	48	Mar 01, 2038
YD00305	YD00310	HART	41	46	Mar 01, 2035	6	0	0	
YF47807	YF47858	HART	47	98	Mar 01, 2032	52	0	0	
YF49119	YF49183	HART	99	163	Mar 01, 2030	65	0	0	
YE93801	YE94039	HJ	1	239	Mar 01, 2024	239	0	0	
YC37091	YC37100	JOE	1	10	Mar 01, 2037	10	4	40	Mar 01, 2041
YC98499	YC98500	JOE	11	12	Mar 01, 2036	2	0	0	
YE43243	YE43260	JOE	13	30	Mar 01, 2035	18	0	0	
YF49391	YF49454	JOE	31	94	Mar 01, 2032	64	0	0	
YF49875	YF49950	JOE	95	170	Mar 01, 2030	76	0	0	
YC37081	YC37090	LES	1	10	Mar 01, 2037	10	4	40	Mar 01, 2041
YC88019	YC88020	LES	11	12	Mar 01, 2035	2	0	0	
						584		240	

Required Expenditures	$	24,000.00
Filing Fee	$	1,200.00
Regrouping Fee		
Total Filing Fees	$	1,200.00

Statement of Expenditures
Hartless Joe
September 20, 2019

Labour

Employee	Job Description	Hours	Time Period	Rate/hr	Total
Doug Eaton	Sr. Geologist	13	April 2019 - August 2019	$ 120.00	$ 1,560.00
Evan Hall	Student Geo, Labour	88	April 2019 - August 2019	$ 64.00	$ 5,632.00
Hugh Fortune-Fordyce	Labour	72	April 2019 - August 2019	$ 49.00	$ 3,528.00
Jack Morton	Sr. Geologist	143	April 2019 - August 2019	$ 98.00	$ 14,014.00
Manuelle Racine	Geologist	8	April 2019 - August 2019	$ 62.00	$ 496.00
Matthew Van Loon	Labour	80	April 2019 - August 2019	$ 80.00	$ 6,400.00
Sarah Shoniker	Geologist	56	April 2019 - August 2019	$ 53.00	$ 2,968.00
Scott Newman	Mapping, admin support	22	April 2019 - August 2019	$ 71.00	$ 1,562.00
Steve Israel	Sr. Geologist	64	April 2019 - August 2019	$ 113.00	$ 7,232.00
Thomas Rozsypalek	Labour	48	April 2019 - August 2019	$ 49.00	$ 2,352.00
Virginia Cobbett	Admin Support	22	April 2019 - August 2019	$ 70.00	$ 1,540.00
Wayne Schneider	Logistics, expediting	8	April 2019 - August 2019	$ 99.00	$ 792.00
					$ 48,076.00

Expenses

Field room and board	62 mandays	$ 100.00	/per day	$ 6,200.00
Whitehorse room and board	41 mandays	$ 180.00	/ per day	$ 7,380.00
Driller Accommodation				$ 9,056.29
Platinum Diamond Drilling - Invoice 555, 556				$ 58,780.67
Helicopters, as attached				$ 80,728.38
ALS Chemex, as attached				$ 3,840.08
Jet - AC Provided				$ 4,155.48
Diesel - AC Provided				$ 3,993.60
XRF Rental				$ 50.00
Spectrak Analyzer				$ 500.00
Drone				$ 40.00
KT-20 Magsus + Conduct				$ 280.00
AC Vechicle and Trailer Rental				$ 900.00
				$ 175,904.50

Total 2019 expenditures $ 223,980.50

APPENDIX III

ROCK SAMPLE DESCRIPTIONS

Rock Sample Descriptions Property: Hartless Joe

Sample Number:	W591773	Date Collected:	2019-06-13	UTM:	515175	mE	Nad83, Zone 8
Elevation:	1696 m	Sampler:	Steve Israel	UTM:	6752316	mN	

Comments: Float sample of rusty weathered quartz vein; layers of disseminated py, aspy define bands in quartz vein; small dark silvery sulphide found occassionally (likely galena); scorodite on and near fractures

Sample Number:	W591774	Date Collected:	2019-06-13	UTM:	514739	mE	Nad83, Zone 8
Elevation:	1764 m	Sampler:	Steve Israel	UTM:	6752220	mN	

Comments: Float of rusty weathered purplish/grey very hard, very fine-grained rock; looks skarned, possibly calc-silicate; few percent sulphides (py +/- aspy)

Sample Number:	W591775	Date Collected:	2019-06-13	UTM:	516324	mE	Nad83, Zone 8
Elevation:	1623 m	Sampler:	Steve Israel	UTM:	6752692	mN	

Comments: Two large (1m) boulders of slightlly rusty weathered quartz vein within altered volcanic; lots of rhyolite float; quartz vein has abundant limonitic alteration

Sample Number:	W591776	Date Collected:	2019-06-13	UTM:	516112	mE	Nad83, Zone 8
Elevation:	1615 m	Sampler:	Steve Israel	UTM:	6752562	mN	

Comments: 2-4 cm wide quart vein within massive to pillowed volcanic; slight rusty weathering; coarse-grained white quartz; pyrite with minor galean found at edges of vein;

Sample Number:	W591777	Date Collected:	2019-06-13	UTM:	516067	mE	Nad83, Zone 8
Elevation:	1606 m	Sampler:	Steve Israel	UTM:	6752508	mN	

Comments: Float of rusty boulders of quartz vein cutting through and brecciating fine-grained altered volcanic rock; disseminated pyrite; patches of sulphide (0.5 cm) found within volcanic as well

Sample Number:	W591778	Date Collected:	2019-06-13	UTM:	516075	mE	Nad83, Zone 8
Elevation:	1603 m	Sampler:	Steve Israel	UTM:	6752504	mN	

Comments: Float of rusty weathered volcanic with stringers and patches of semi-massive py +/- po; moderately magnetic

Rock Sample Descriptions Property: Hartless Joe

Sample Number:	W591779	Date Collected:	2019-06-13	UTM:	516077 mE	Nad83, Zone 8
Elevation:	1603 m	Sampler:	Steve Israel	UTM:	6752504 mN	

Comments: Float of rusty boulder of altered volcanic with disseminated to semi-massive sulphide (mainly py); also cut by sulpide veinlets and stringers

Sample Number:	W591780	Date Collected:	2019-06-13	UTM:	516040 mE	Nad83, Zone 8
Elevation:	1667 m	Sampler:	Steve Israel	UTM:	6752435 mN	

Comments: Float sample of slightly banded grey and white quartz vein; brecciated and vuggy; disseminated sulphides (py +/- aspy) with zones of oxidized wall rock containing stringers of sulphide

Sample Number:	W591781	Date Collected:	2019-06-13	UTM:	516042 mE	Nad83, Zone 8
Elevation:	1671 m	Sampler:	Steve Israel	UTM:	6752421 mN	

Comments: Outcrop sample of rusty weathered, altered volcanics with zones of abundant disseminated to semi-massive po, py

Sample Number:	W591782	Date Collected:	2019-06-13	UTM:	516365 mE	Nad83, Zone 8
Elevation:	1591 m	Sampler:	Steve Israel	UTM:	6751785 mN	

Comments: Float sample of altered to slightly pitted, rusty weathered rhyolite; blebs of py +/- aspy throughout

Sample Number:	W591783	Date Collected:	2019-06-13	UTM:	516338 mE	Nad83, Zone 8
Elevation:	1606 m	Sampler:	Steve Israel	UTM:	6751763 mN	

Comments: Float sample of large boulder of quartz vein; angular fragments of altered volcanic within quartz vein; pyrite found disseminated throughout vein

Sample Number:	W591784	Date Collected:	2019-06-13	UTM:	516306 mE	Nad83, Zone 8
Elevation:	1603 m	Sampler:	Steve Israel	UTM:	6751795 mN	

Comments: Outcrop, 70 cm chip sample across quartz vein with breicciated edges developed in mafic volcanics; blebby pyrite found throughout; quite vuggy in places

Rock Sample Descriptions Property: Hartless Joe

Sample Number:	W591785	Date Collected:	2019-06-13	UTM:	516263	mE	Nad83, Zone 8
Elevation:	1616 m	Sampler:	Steve Israel	UTM:	6751800	mN	

Comments: Float sample of boulder of strongely altered volcanic; epidote, chlorite and sericite alteration completely replacing volcanic rock

Sample Number:	W591786	Date Collected:	2019-06-13	UTM:	515839	mE	Nad83, Zone 8
Elevation:	1823 m	Sampler:	Steve Israel	UTM:	6751540	mN	

Comments: Outcrop sample of slightly altered and rusty rhyolite dyke within large fault zone

Sample Number:	W591787	Date Collected:	2019-06-13	UTM:	515862	mE	Nad83, Zone 8
Elevation:	1761 m	Sampler:	Steve Israel	UTM:	6751074	mN	

Comments: Float sample of banded quartz vein near contact with rhyolite dyke; limonitic coating on fractures; greenish/yellow alteration, possibly scorodite; locally vuggy

Sample Number:	W591788	Date Collected:	2019-06-13	UTM:	515336	mE	Nad83, Zone 8
Elevation:	1505 m	Sampler:	Steve Israel	UTM:	6750655	mN	

Comments: Float sample of banded quartz vein; maybe near fault zone; quartz vein is light and dark grey quartz with other bands of brownish, altered rock (likely wall rock volcs); very fine-grained sulphides; bright orange and redish alteration along some bands

Sample Number:	W591789	Date Collected:	2019-06-13	UTM:	515557	mE	Nad83, Zone 8
Elevation:	1576 m	Sampler:	Steve Israel	UTM:	6751084	mN	

Comments: Float, 30cm boulder of quartz vein near creek bed; rusty weathered with limonite; seams of scorodite within a dark grey quartz vein that cuts the mainly white quartz vein; some vugs

Sample Number:	W591790	Date Collected:	2019-06-13	UTM:	516376	mE	Nad83, Zone 8
Elevation:	1527 m	Sampler:	Steve Israel	UTM:	6751946	mN	

Comments: Float of altered and veined red jasper hem/mag boulder; purite cubes found throughout; cut by thin quartz veins

APPENDIX IV

CERTIFICATES OF ANALYSIS

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com/geochemistry

To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE WH19295858

Project: Hartless Joe

P.O. No.: HJ-19-001

This report is for 40 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 21-NOV-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-32d	Pulverize Split -Dup 85% <75um
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21d	Sample logging - ClientBarCode Dup
SPL-21d	Split sample - duplicate

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
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Project: Hartless Joe

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295858

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
W596522		6.90	0.20	1.86	24.5	<0.02	<10	40	0.17	0.06	3.60	0.98	5.85	20.0	100	5.72
W596523		3.30	0.13	2.06	102.5	<0.02	<10	30	0.17	0.02	3.87	0.34	6.40	16.8	86	4.30
W596524		3.01	0.19	2.42	1.8	<0.02	<10	30	0.15	0.03	5.97	0.64	5.10	16.0	82	2.84
W596525		5.58	0.23	4.45	16.1	<0.02	<10	50	0.09	0.02	3.73	0.09	2.84	30.2	340	4.02
W596526		4.36	0.13	4.33	6.8	<0.02	<10	40	0.14	0.05	3.06	0.10	3.64	26.8	264	3.65
W596527		6.91	0.18	0.51	2.4	<0.02	<10	100	0.16	0.33	1.92	0.04	21.5	1.8	4	2.96
W596528		4.89	<0.01	0.03	<0.1	<0.02	<10	10	<0.05	0.01	>25.0	0.01	0.87	0.5	2	<0.05
W596529		5.19	0.06	0.30	3.6	<0.02	<10	80	0.14	0.12	1.71	0.03	21.7	1.6	4	3.26
W596530		4.38	0.02	0.27	1.6	<0.02	<10	80	0.16	0.03	1.74	0.02	20.6	1.6	3	3.15
W596531		6.35	0.02	0.33	1.5	<0.02	<10	70	0.17	0.03	1.64	0.04	21.3	1.5	5	3.02
W596532		6.48	0.03	0.38	1.5	<0.02	<10	110	0.15	0.04	1.64	0.06	20.8	1.7	3	2.59
W596533		6.45	0.03	0.23	1.8	<0.02	<10	80	0.15	0.05	1.81	0.03	21.5	1.8	5	3.09
W596534		4.61	0.02	0.31	1.8	<0.02	<10	80	0.16	0.02	1.93	0.05	19.60	1.8	3	2.74
W596535		2.41	0.02	0.32	1.6	<0.02	<10	80	0.15	0.02	1.69	0.05	20.0	1.9	3	2.71
W596536		6.28	0.02	0.38	1.2	<0.02	<10	70	0.16	0.02	1.65	0.05	19.65	1.8	4	3.07
W596537		6.48	0.02	0.48	1.4	<0.02	<10	90	0.19	0.03	1.67	0.03	22.7	1.8	4	3.37
W596538		6.75	0.07	0.43	2.1	<0.02	<10	80	0.15	0.12	1.61	0.02	21.1	1.9	5	3.01
W596539		4.86	0.11	0.48	3.0	<0.02	<10	90	0.14	0.19	2.31	0.03	17.70	1.6	5	2.66
W596540		4.00	0.19	4.30	10.6	<0.02	<10	30	0.21	0.18	3.61	0.10	4.85	30.4	305	2.45
W596541		3.90	0.07	4.37	4.0	<0.02	<10	40	0.11	0.02	3.08	0.08	3.95	32.2	300	5.38
W596542		<0.02	0.07	4.43	3.7	<0.02	<10	40	0.12	0.03	3.03	0.09	3.87	32.2	306	5.32
W596543		5.22	0.08	2.83	14.8	<0.02	<10	40	0.12	0.02	5.57	0.08	4.11	31.4	270	7.39
W596544		3.91	0.09	1.04	392	<0.02	<10	140	0.26	0.02	6.61	0.33	3.64	26.3	110	18.05
W596545		6.27	0.10	3.79	7.0	<0.02	<10	30	0.18	0.05	5.51	0.09	5.05	29.9	257	2.84
W596546		6.36	0.03	0.57	2.7	<0.02	<10	110	0.20	0.03	2.31	0.05	22.1	2.1	5	3.25
W596547		7.93	0.02	0.45	2.1	<0.02	<10	90	0.18	0.03	1.62	0.03	22.7	1.9	7	3.26
W596548		6.69	0.03	0.39	5.4	<0.02	<10	100	0.18	0.04	1.42	0.04	22.3	1.9	4	3.08
W596549		0.13	31.8	4.65	146.0	1.16	<10	40	0.22	10.25	4.60	35.6	12.45	92.7	56	0.99
W596550		6.79	0.03	0.29	2.7	<0.02	<10	90	0.18	0.02	1.60	0.05	22.7	1.5	4	3.00
W596551		8.92	0.02	0.36	13.7	<0.02	<10	110	0.21	0.03	1.61	0.03	22.0	1.9	3	3.18
W596552		6.94	0.05	0.32	22.1	<0.02	<10	100	0.17	0.06	1.41	0.06	21.1	2.1	4	2.99
W596553		3.49	0.31	2.63	16.1	<0.02	<10	50	0.23	0.10	7.37	1.21	6.07	23.1	161	3.33
W596554		6.02	0.15	4.00	4.3	<0.02	<10	20	0.22	0.06	4.02	0.10	2.02	29.7	309	4.09
W596555		0.13	32.0	4.53	140.5	0.87	<10	40	0.25	9.33	4.48	34.3	13.05	89.6	55	1.00
W596556		7.17	0.15	3.45	4.9	<0.02	<10	50	0.18	0.02	5.58	0.13	3.68	31.1	263	5.82
W596557		4.90	0.09	0.77	0.9	<0.02	<10	90	0.22	0.14	1.62	0.06	35.3	2.8	8	5.43
W596558		3.03	0.14	2.76	10.2	<0.02	<10	20	0.36	0.14	5.75	0.21	4.96	29.1	183	1.42
W596559		6.77	0.07	1.21	1.0	<0.02	<10	50	0.37	0.13	1.43	0.09	60.0	6.4	9	1.17
W596560		7.74	0.14	2.46	2.9	<0.02	<10	20	0.22	0.03	2.78	0.15	5.32	21.4	135	2.79
W596561		5.97	0.07	3.20	1.0	<0.02	<10	50	0.14	0.01	6.40	0.09	3.13	28.1	158	4.18

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
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VANCOUVER BC V6B 1L8

Finalized Date: 9-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295858

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
W596522		77.9	4.62	7.31	0.10	0.18	0.01	0.048	0.12	3.3	13.3	2.30	782	8.93	0.05	<0.05
W596523		50.2	4.47	8.06	0.08	0.18	<0.01	0.073	0.14	2.5	14.4	2.83	874	3.59	0.06	<0.05
W596524		63.7	4.30	10.15	0.22	0.28	<0.01	0.044	0.14	2.8	16.5	2.30	1110	1.46	0.06	0.05
W596525		86.0	5.79	11.75	0.15	0.05	<0.01	0.043	0.21	1.1	36.0	5.27	887	0.13	0.03	<0.05
W596526		82.9	5.71	11.90	0.12	0.03	<0.01	0.046	0.08	1.5	37.1	4.94	837	0.14	0.04	<0.05
W596527		19.8	0.63	1.62	<0.05	0.39	<0.01	<0.005	0.24	12.9	1.9	0.12	234	0.11	0.06	<0.05
W596528		1.4	0.12	0.11	<0.05	<0.02	<0.01	<0.005	<0.01	1.0	0.6	1.01	115	0.06	0.01	<0.05
W596529		1.9	0.70	0.90	<0.05	0.42	<0.01	<0.005	0.16	13.2	0.9	0.05	202	0.24	0.04	<0.05
W596530		1.8	0.71	0.88	<0.05	0.42	<0.01	<0.005	0.18	11.8	0.4	0.10	211	0.10	0.05	<0.05
W596531		1.1	0.78	1.23	<0.05	0.45	<0.01	<0.005	0.16	13.1	1.3	0.14	202	0.28	0.04	<0.05
W596532		3.8	0.65	1.22	<0.05	0.43	<0.01	<0.005	0.23	12.6	0.5	0.10	181	0.06	0.06	<0.05
W596533		1.3	0.77	0.81	<0.05	0.44	<0.01	<0.005	0.17	12.9	0.4	0.13	229	0.25	0.04	<0.05
W596534		4.0	0.84	1.00	<0.05	0.42	<0.01	<0.005	0.19	11.7	0.5	0.08	235	0.12	0.05	<0.05
W596535		3.3	0.82	1.00	<0.05	0.43	<0.01	<0.005	0.19	12.3	0.6	0.08	210	0.11	0.05	<0.05
W596536		1.5	0.70	1.38	<0.05	0.46	<0.01	<0.005	0.16	11.7	1.7	0.14	202	0.31	0.04	<0.05
W596537		0.9	0.81	1.81	<0.05	0.48	<0.01	<0.005	0.19	13.7	2.2	0.15	213	0.18	0.05	<0.05
W596538		3.3	0.73	1.53	<0.05	0.47	<0.01	<0.005	0.17	12.9	2.2	0.14	195	0.25	0.04	<0.05
W596539		14.0	0.81	1.68	<0.05	0.40	<0.01	<0.005	0.20	10.7	2.3	0.16	239	0.19	0.05	<0.05
W596540		94.8	5.89	13.05	0.11	0.02	<0.01	0.050	0.05	2.3	48.6	5.34	939	1.72	0.04	<0.05
W596541		90.5	6.08	13.05	0.13	0.04	<0.01	0.047	0.22	1.7	49.3	5.66	891	0.50	0.05	<0.05
W596542		91.3	6.16	12.95	0.13	0.04	<0.01	0.045	0.22	1.7	48.9	5.71	889	0.58	0.05	<0.05
W596543		88.5	5.15	8.78	0.05	0.02	0.01	0.046	0.11	1.8	32.9	4.44	1240	2.01	0.05	<0.05
W596544		75.0	4.88	2.95	<0.05	<0.02	0.01	0.041	0.21	1.8	15.0	3.64	1040	2.81	0.04	<0.05
W596545		90.7	5.54	11.50	0.12	0.07	<0.01	0.046	0.02	2.3	37.5	4.53	960	0.68	0.06	<0.05
W596546		4.6	0.80	2.30	<0.05	0.43	<0.01	0.005	0.24	13.6	3.1	0.18	240	0.08	0.06	<0.05
W596547		1.5	0.77	1.92	<0.05	0.52	<0.01	<0.005	0.18	13.7	2.6	0.17	204	0.20	0.04	<0.05
W596548		1.9	0.82	1.33	<0.05	0.44	<0.01	<0.005	0.20	13.6	1.3	0.08	163	0.13	0.07	<0.05
W596549		7340	8.75	7.02	0.09	0.12	0.43	2.47	0.23	6.8	5.7	1.12	610	52.1	0.33	0.11
W596550		3.2	0.71	1.03	<0.05	0.45	<0.01	<0.005	0.18	13.8	0.7	0.12	186	0.21	0.04	<0.05
W596551		1.5	0.79	1.40	<0.05	0.43	<0.01	<0.005	0.22	13.8	0.7	0.17	215	0.07	0.06	<0.05
W596552		7.0	0.75	1.13	<0.05	0.39	<0.01	0.005	0.22	12.9	0.6	0.22	206	0.21	0.05	<0.05
W596553		73.9	4.48	9.23	0.13	0.10	<0.01	0.044	0.09	3.9	25.0	2.76	1080	6.19	0.08	<0.05
W596554		110.5	6.06	12.35	0.15	0.04	<0.01	0.051	0.02	0.9	33.1	4.96	1000	0.16	0.06	<0.05
W596555		7110	8.50	6.93	0.10	0.10	0.41	2.50	0.22	7.2	5.7	1.09	596	55.0	0.32	0.12
W596556		117.0	5.68	11.25	0.14	0.09	<0.01	0.048	0.21	1.8	29.9	4.17	1680	0.41	0.07	<0.05
W596557		21.0	1.21	3.71	<0.05	0.60	<0.01	0.010	0.22	23.6	6.1	0.31	312	0.22	0.08	<0.05
W596558		101.0	4.92	10.40	0.15	0.15	<0.01	0.038	0.02	2.7	19.3	2.73	1620	0.95	0.05	<0.05
W596559		10.5	2.91	9.75	0.09	0.36	0.01	0.033	0.11	34.4	7.9	0.63	548	1.02	0.08	0.08
W596560		109.5	4.67	10.95	0.10	0.05	<0.01	0.045	0.07	2.6	22.6	2.74	839	0.76	0.07	<0.05
W596561		78.7	5.48	10.80	0.19	0.08	<0.01	0.044	0.19	1.3	23.5	3.86	987	2.24	0.05	<0.05

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To: **STRATEGIC METALS LTD.**
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Project: Hartless Joe

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295858

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
W596522		51.0	400	4.3	4.0	0.004	0.24	2.61	20.4	2.2	0.5	129.5	<0.01	0.04	0.4	0.083
W596523		43.1	230	1.5	4.1	0.002	0.17	5.86	18.7	0.9	0.3	158.5	<0.01	0.03	0.2	0.077
W596524		38.9	430	2.3	4.3	0.006	0.53	0.48	13.8	3.5	0.5	121.0	<0.01	0.05	0.4	0.209
W596525		96.6	160	0.9	4.7	0.001	0.02	0.17	31.3	0.4	<0.2	114.5	<0.01	0.02	<0.2	0.051
W596526		76.6	160	1.1	2.1	<0.001	<0.01	0.08	29.7	<0.2	<0.2	117.0	<0.01	0.01	0.2	0.026
W596527		1.9	250	13.4	6.5	<0.001	0.01	0.12	0.6	<0.2	<0.2	104.5	<0.01	0.01	4.4	<0.005
W596528		0.6	60	0.7	0.2	<0.001	0.01	<0.05	0.3	<0.2	<0.2	74.3	<0.01	0.01	<0.2	<0.005
W596529		1.4	250	12.3	4.6	<0.001	<0.01	0.11	0.5	<0.2	<0.2	80.9	<0.01	0.01	4.6	<0.005
W596530		1.5	250	9.4	5.0	<0.001	0.03	0.09	0.5	<0.2	<0.2	109.0	<0.01	0.01	4.5	<0.005
W596531		1.6	240	10.3	4.4	0.001	0.03	0.09	0.5	<0.2	<0.2	105.5	<0.01	<0.01	4.4	<0.005
W596532		1.5	250	10.6	5.9	<0.001	0.05	0.11	0.6	<0.2	<0.2	100.5	<0.01	0.01	4.5	<0.005
W596533		1.6	240	10.1	5.0	0.001	0.05	0.13	0.5	<0.2	<0.2	108.0	<0.01	<0.01	4.5	<0.005
W596534		1.7	250	4.5	5.2	<0.001	0.06	0.15	0.5	<0.2	<0.2	113.0	<0.01	<0.01	4.5	<0.005
W596535		1.7	250	4.4	5.3	<0.001	0.06	0.20	0.5	<0.2	<0.2	93.4	<0.01	<0.01	4.4	<0.005
W596536		1.7	250	9.9	4.6	0.001	0.06	0.07	0.5	<0.2	<0.2	102.5	<0.01	0.01	4.5	<0.005
W596537		2.0	250	11.0	5.4	<0.001	0.03	0.06	0.5	<0.2	<0.2	84.0	<0.01	<0.01	4.8	<0.005
W596538		1.5	250	13.2	4.9	<0.001	0.01	0.06	0.5	<0.2	<0.2	76.7	<0.01	0.01	4.6	<0.005
W596539		1.9	250	12.9	5.5	<0.001	0.04	0.09	0.5	<0.2	<0.2	136.5	<0.01	0.02	4.4	<0.005
W596540		85.2	170	2.1	1.5	<0.001	0.02	0.09	31.3	0.3	<0.2	209	<0.01	0.06	0.2	0.012
W596541		82.9	150	0.9	5.9	<0.001	0.04	0.37	34.2	<0.2	<0.2	158.5	<0.01	0.05	0.2	0.040
W596542		81.7	140	1.0	6.0	<0.001	0.04	0.32	34.1	0.4	0.2	155.0	<0.01	0.05	0.2	0.041
W596543		86.2	210	1.0	3.6	0.001	0.06	1.62	28.2	0.4	<0.2	248	<0.01	0.03	<0.2	0.006
W596544		78.5	190	1.3	6.5	0.002	0.05	2.81	25.0	0.7	<0.2	420	<0.01	0.05	0.2	<0.005
W596545		76.7	190	1.5	0.8	<0.001	0.08	0.09	29.3	0.2	0.2	207	<0.01	0.05	0.2	0.061
W596546		2.2	250	11.4	6.6	<0.001	0.01	0.06	0.7	<0.2	<0.2	168.0	<0.01	0.01	4.6	<0.005
W596547		1.9	250	13.2	5.3	<0.001	0.01	0.05	0.7	0.2	<0.2	96.3	<0.01	<0.01	5.0	<0.005
W596548		1.7	240	8.7	5.7	<0.001	<0.01	0.21	0.6	<0.2	<0.2	77.3	<0.01	0.02	4.6	<0.005
W596549		362	660	8810	15.4	0.013	6.86	20.8	4.6	13.3	5.7	72.4	<0.01	0.61	2.1	0.053
W596550		1.3	260	13.1	5.5	<0.001	0.02	0.42	0.6	0.2	<0.2	104.5	<0.01	0.01	4.9	<0.005
W596551		1.6	260	12.6	6.5	<0.001	0.01	0.48	0.7	<0.2	<0.2	96.6	<0.01	<0.01	5.0	<0.005
W596552		1.8	270	12.2	6.2	<0.001	<0.01	0.39	0.6	<0.2	<0.2	70.2	<0.01	0.01	4.8	<0.005
W596553		66.2	370	3.6	2.7	0.005	0.16	0.30	24.3	1.9	0.2	309	<0.01	0.11	0.3	0.047
W596554		81.0	120	1.1	0.9	0.001	0.02	0.05	36.6	0.3	<0.2	196.5	<0.01	0.03	<0.2	0.042
W596555		344	650	8560	14.7	0.015	6.67	20.8	4.7	13.7	5.6	72.0	<0.01	0.65	2.1	0.051
W596556		83.9	210	4.4	6.4	0.002	0.12	0.09	33.5	0.5	0.2	200	<0.01	0.03	<0.2	0.123
W596557		2.8	350	14.3	8.0	<0.001	<0.01	0.11	1.5	<0.2	0.2	97.8	<0.01	0.01	8.9	<0.005
W596558		79.1	300	3.7	0.6	0.003	0.05	0.40	25.5	1.4	0.2	164.5	<0.01	0.02	0.2	0.045
W596559		3.6	920	14.1	3.6	<0.001	0.01	0.19	2.9	<0.2	0.4	47.0	<0.01	0.01	4.1	0.021
W596560		46.9	280	2.1	1.9	0.003	0.29	0.35	23.5	1.2	0.2	121.0	<0.01	0.04	0.2	0.019
W596561		49.9	180	1.7	4.7	0.006	0.54	0.14	33.0	0.7	0.3	150.0	<0.01	0.02	<0.2	0.136

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 9-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295858

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Au-ICP21
	Analyte	Tl	U	V	W	Y	Zn	Zr	Au
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.001
W596522		0.09	0.34	181	0.11	12.35	102	4.1	0.008
W596523		0.07	0.21	111	0.05	13.00	84	3.4	0.002
W596524		0.08	0.37	167	0.09	17.05	100	7.3	0.003
W596525		0.06	<0.05	213	<0.05	6.27	58	1.0	<0.001
W596526		0.03	0.12	212	<0.05	5.75	59	0.6	<0.001
W596527		0.07	0.89	3	<0.05	3.71	25	13.1	0.001
W596528		<0.02	0.08	1	<0.05	2.13	<2	<0.5	<0.001
W596529		0.04	0.95	2	<0.05	3.82	26	14.0	0.001
W596530		0.05	1.61	1	<0.05	3.64	25	12.8	0.001
W596531		0.04	2.11	2	<0.05	3.60	24	14.6	0.001
W596532		0.05	1.85	1	<0.05	3.43	24	13.3	0.001
W596533		0.04	3.50	1	<0.05	3.71	24	13.4	0.002
W596534		0.04	2.01	1	<0.05	3.72	20	13.9	0.002
W596535		0.05	1.92	1	<0.05	3.59	21	13.9	0.002
W596536		0.04	3.19	2	<0.05	3.54	25	12.8	0.002
W596537		0.03	2.36	2	<0.05	3.84	25	15.5	<0.001
W596538		0.04	0.86	2	<0.05	3.77	24	14.5	0.002
W596539		0.05	1.12	3	<0.05	3.82	20	13.6	0.002
W596540		0.02	0.35	230	<0.05	4.16	67	<0.5	<0.001
W596541		0.07	0.11	227	<0.05	6.59	65	1.1	<0.001
W596542		0.06	0.11	229	<0.05	6.61	65	1.1	<0.001
W596543		0.04	0.06	179	<0.05	9.07	56	0.5	<0.001
W596544		0.05	0.11	111	0.15	8.62	65	0.5	0.001
W596545		0.03	0.07	219	0.05	7.63	65	1.9	0.001
W596546		0.05	1.69	3	<0.05	4.03	26	13.7	0.001
W596547		0.04	1.87	3	<0.05	3.90	22	16.0	0.001
W596548		0.04	1.44	2	<0.05	3.67	23	14.0	0.001
W596549		1.61	4.77	315	2.29	8.32	8380	3.6	1.420
W596550		0.04	1.66	2	<0.05	3.87	24	14.4	0.001
W596551		0.05	2.23	1	<0.05	3.86	24	13.3	0.001
W596552		0.04	1.41	2	0.06	3.83	27	13.2	<0.001
W596553		0.07	0.80	227	0.08	11.70	106	3.9	0.007
W596554		0.02	<0.05	246	<0.05	6.06	64	1.0	0.002
W596555		1.57	4.28	308	2.19	8.03	8180	3.5	1.310
W596556		0.08	0.21	234	0.05	11.75	71	2.6	0.002
W596557		0.06	0.89	10	<0.05	5.70	33	22.4	0.002
W596558		0.03	1.14	218	0.06	9.14	82	5.5	0.013
W596559		0.02	0.76	35	0.08	10.45	55	20.6	0.001
W596560		0.04	0.27	189	0.05	7.02	76	2.2	0.008
W596561		0.05	<0.05	218	<0.05	9.71	60	1.7	<0.001

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295858

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	LOG-21
LOG-21d	LOG-23	PUL-32	PUL-32d
PUL-QC	SPL-21	SPL-21d	WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

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Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE WH19295868

Project: Hartless Joe

P.O. No.: HJ-19-002

This report is for 40 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 21-NOV-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-32d	Pulverize Split -Dup 85% <75um
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
PUL-32	Pulverize 1000g to 85% < 75 um
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21d	Sample logging - ClientBarCode Dup
SPL-21d	Split sample - duplicate

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:



Saa Traxler, General Manager, North Vancouver

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Project: Hartless Joe

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295868

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
W596562		4.37	0.15	3.57	4.2	<0.02	<10	40	0.15	0.02	4.91	0.25	6.33	29.6	209	3.76
W596563		7.38	0.40	3.85	24.9	<0.02	<10	40	0.15	0.03	3.96	0.17	3.76	31.5	219	2.84
W596564		10.16	0.41	2.80	25.2	<0.02	<10	60	0.25	0.26	4.55	0.13	9.17	21.8	152	3.99
W596565		3.55	1.08	1.22	145.5	0.02	<10	90	0.53	0.19	5.40	0.25	8.40	25.4	47	7.23
W596566		5.33	27.3	1.49	230	0.31	<10	110	0.51	0.09	6.23	0.50	7.22	30.0	58	6.48
W596567		4.98	0.04	0.03	0.7	<0.02	<10	10	<0.05	0.01	>25.0	0.01	1.23	0.6	1	0.05
W596568		6.77	0.79	3.61	37.9	<0.02	<10	30	0.20	0.02	4.28	0.15	4.13	27.8	243	3.29
W596569		4.73	0.25	3.58	14.9	<0.02	<10	20	0.21	0.02	3.16	0.25	4.48	29.8	206	2.40
W596570		4.38	0.25	3.94	20.2	<0.02	<10	30	0.30	0.04	3.22	0.31	5.22	29.0	228	2.73
W596571		3.67	0.57	2.91	64.9	<0.02	<10	30	0.23	0.04	7.79	0.91	4.26	29.5	156	2.85
W596572		6.60	0.28	4.11	27.8	<0.02	<10	20	0.18	0.03	3.56	0.43	3.84	33.7	305	3.01
W596573		3.26	0.31	4.18	30.7	<0.02	<10	20	0.21	0.03	3.24	0.34	3.73	35.3	307	2.96
W596574		10.51	0.08	3.62	2.2	<0.02	<10	50	0.13	0.01	3.43	0.11	3.39	27.6	128	5.16
W596575		11.53	0.05	3.04	3.8	<0.02	<10	60	0.14	0.02	3.73	0.09	3.30	26.6	102	6.67
W596576		10.95	0.04	3.01	2.3	<0.02	<10	60	0.14	0.02	5.72	0.09	3.07	28.5	147	5.76
W596577		9.79	0.07	3.61	6.7	<0.02	<10	70	0.20	0.02	2.35	0.11	3.59	30.3	109	7.62
W596578		8.44	0.18	3.66	16.2	<0.02	<10	30	0.16	0.02	3.14	0.12	2.64	31.5	261	3.82
W596579		5.76	0.66	3.72	41.0	<0.02	<10	20	0.15	0.02	3.21	0.09	3.01	33.4	324	2.97
W596580		3.11	2.56	3.24	522	0.07	<10	50	0.21	0.03	3.43	0.15	4.10	31.7	107	5.71
W596581		0.13	31.2	4.59	144.5	1.04	<10	40	0.27	9.99	4.55	34.1	12.40	90.7	56	0.96
W596582		9.83	0.38	3.93	28.2	<0.02	<10	20	0.16	0.02	2.62	0.09	3.71	29.6	160	2.59
W596583		5.53	3.30	3.08	159.5	0.27	<10	30	0.22	0.03	4.20	0.26	2.97	28.4	193	3.39
W596584		8.37	1.08	3.80	135.0	0.03	<10	20	0.32	0.03	4.41	0.16	4.42	29.8	164	2.81
W596585		7.88	0.49	0.97	23.4	0.02	<10	80	0.40	0.11	2.17	0.10	22.8	5.7	22	4.20
W596586		8.19	0.67	3.64	17.2	<0.02	<10	10	0.18	0.06	2.45	0.10	4.95	25.1	132	1.26
W596587		<0.02	0.75	3.64	20.8	<0.02	<10	10	0.23	0.08	2.61	0.11	5.45	25.8	128	1.31
W596588		5.87	0.21	3.76	11.5	<0.02	<10	40	0.15	0.10	3.61	0.12	2.94	28.8	119	2.58
W596589		8.27	0.35	3.57	25.7	<0.02	<10	30	0.25	0.20	1.58	0.10	5.67	28.7	162	3.47
W596590		7.02	0.09	0.48	5.6	<0.02	<10	90	0.22	0.09	1.99	0.04	19.60	2.8	11	2.79
W596591		10.56	0.03	0.39	8.2	<0.02	<10	100	0.20	0.03	1.36	0.04	21.4	2.2	3	3.51
W596592		10.40	0.03	0.32	7.8	<0.02	<10	70	0.17	0.04	1.41	0.03	19.10	1.6	4	4.45
W596593		10.71	0.08	0.32	4.3	<0.02	<10	80	0.20	0.13	1.67	0.04	15.30	1.6	4	3.03
W596594		0.13	30.4	4.51	140.0	1.26	<10	50	0.28	9.90	4.51	33.1	12.30	88.9	55	0.96
W596595		9.79	0.08	0.30	5.6	<0.02	<10	80	0.23	0.09	1.27	0.05	18.50	2.2	4	2.77
W596596		9.56	0.07	0.41	1.0	<0.02	<10	80	0.24	0.10	2.06	0.03	18.50	2.6	7	2.63
W596597		8.02	0.07	3.94	2.6	<0.02	<10	40	0.33	0.14	4.20	0.07	10.25	30.4	194	5.67
W596598		10.89	0.06	3.94	0.6	<0.02	<10	20	0.26	0.01	2.95	0.06	4.38	32.9	217	1.52
W596599		5.29	0.06	2.63	6.8	<0.02	<10	40	0.25	0.01	4.13	0.05	7.42	28.2	148	8.17
W596600		3.65	0.05	3.17	6.0	<0.02	<10	30	0.24	0.01	3.78	0.05	9.07	30.8	169	5.24
W597701		5.80	0.09	2.77	5.7	<0.02	<10	90	0.35	0.02	4.06	0.07	9.64	30.2	139	6.80

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 9-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295868

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
W596562		89.3	5.42	11.25	0.17	0.05	<0.01	0.048	0.18	3.1	29.8	4.56	1150	1.12	0.05	<0.05
W596563		99.9	5.69	10.85	0.07	<0.02	<0.01	0.042	0.18	1.8	41.9	4.59	989	1.00	0.05	<0.05
W596564		66.0	4.09	7.33	<0.05	0.09	<0.01	0.032	0.18	4.7	30.2	3.44	924	0.63	0.03	<0.05
W596565		90.7	3.92	2.76	<0.05	0.07	<0.01	0.030	0.26	4.5	10.2	1.89	1200	1.41	0.02	<0.05
W596566		119.5	4.91	3.25	<0.05	0.05	0.01	0.031	0.32	3.6	13.9	1.72	1250	2.04	0.02	<0.05
W596567		2.6	0.11	0.10	<0.05	0.02	<0.01	<0.005	0.01	1.3	0.5	0.83	116	0.07	0.01	0.14
W596568		87.3	5.56	10.40	0.06	<0.02	<0.01	0.040	0.12	1.8	45.1	4.60	1120	0.48	0.04	<0.05
W596569		95.2	5.49	11.45	0.08	0.03	<0.01	0.050	0.04	2.1	45.8	4.27	990	1.54	0.05	<0.05
W596570		79.3	6.03	13.10	0.09	0.02	<0.01	0.047	0.06	2.6	57.3	4.36	1090	0.28	0.04	<0.05
W596571		71.6	4.94	9.10	<0.05	0.02	<0.01	0.037	0.10	2.3	34.2	3.35	1440	1.30	0.03	<0.05
W596572		89.6	6.17	13.30	0.16	0.04	<0.01	0.045	0.04	2.0	45.7	5.00	1110	1.35	0.04	<0.05
W596573		95.3	6.30	13.65	0.15	0.04	<0.01	0.048	0.04	1.9	46.4	5.06	1070	1.80	0.04	<0.05
W596574		73.8	6.31	12.90	0.18	0.03	<0.01	0.061	0.14	1.3	26.9	4.49	1030	0.28	0.05	<0.05
W596575		78.0	6.03	11.05	0.14	0.04	<0.01	0.051	0.19	1.4	19.8	3.77	1000	0.58	0.05	<0.05
W596576		70.9	5.68	10.50	0.16	0.05	<0.01	0.045	0.23	1.2	21.2	3.84	1190	0.74	0.06	<0.05
W596577		97.8	6.22	13.30	0.26	0.05	<0.01	0.059	0.31	1.4	23.3	4.47	839	0.16	0.05	<0.05
W596578		82.9	5.98	11.85	0.21	0.03	<0.01	0.051	0.12	1.1	28.9	4.80	1000	0.42	0.05	<0.05
W596579		86.4	6.22	11.15	0.12	<0.02	<0.01	0.043	0.06	1.3	31.8	5.38	994	0.40	0.04	<0.05
W596580		100.0	6.31	9.77	0.06	<0.02	<0.01	0.052	0.20	1.7	28.4	3.93	968	0.22	0.04	<0.05
W596581		7280	8.64	6.67	0.10	0.10	0.44	2.47	0.22	6.5	5.9	1.11	599	52.4	0.32	0.12
W596582		74.9	6.76	13.20	0.14	<0.02	<0.01	0.053	0.12	1.4	41.4	4.91	980	0.10	0.05	<0.05
W596583		128.0	5.45	6.75	<0.05	<0.02	0.01	0.034	0.22	1.3	34.1	4.69	962	0.89	0.02	<0.05
W596584		86.6	5.52	7.67	<0.05	<0.02	0.01	0.033	0.16	2.1	52.7	4.55	962	0.28	0.01	<0.05
W596585		16.0	1.64	2.79	<0.05	0.43	<0.01	0.011	0.24	13.9	8.5	0.75	396	0.81	0.04	<0.05
W596586		82.2	6.12	12.15	0.15	<0.02	0.01	0.053	0.02	2.2	37.5	3.81	958	0.64	0.05	<0.05
W596587		86.5	6.07	12.50	0.13	<0.02	<0.01	0.056	0.03	2.5	36.2	3.82	1000	0.48	0.06	<0.05
W596588		108.0	6.28	11.85	0.12	<0.02	<0.01	0.049	0.13	1.3	33.0	3.96	1070	0.29	0.05	<0.05
W596589		106.0	6.26	11.05	0.11	<0.02	<0.01	0.051	0.06	2.6	31.3	3.77	731	0.24	0.06	<0.05
W596590		6.7	1.01	1.48	<0.05	0.42	<0.01	0.005	0.22	11.8	2.0	0.33	262	0.24	0.04	<0.05
W596591		3.0	0.85	1.07	<0.05	0.48	<0.01	<0.005	0.22	12.1	0.7	0.05	205	0.12	0.05	<0.05
W596592		1.5	0.79	0.84	<0.05	0.46	<0.01	0.005	0.19	11.3	0.6	0.07	178	0.20	0.04	<0.05
W596593		2.1	0.77	0.91	<0.05	0.44	<0.01	0.008	0.23	9.3	0.3	0.13	205	0.42	0.04	<0.05
W596594		7080	8.47	6.64	0.08	0.26	0.51	2.44	0.22	6.5	5.7	1.09	594	52.6	0.32	0.13
W596595		5.1	0.72	0.92	<0.05	0.47	<0.01	<0.005	0.23	10.9	0.3	0.17	181	0.29	0.04	<0.05
W596596		6.3	0.87	1.19	<0.05	0.40	0.01	<0.005	0.22	11.2	1.4	0.21	227	0.11	0.04	<0.05
W596597		54.4	7.62	11.95	0.12	0.04	<0.01	0.060	0.17	3.8	39.3	3.45	793	1.21	0.04	<0.05
W596598		62.2	7.42	12.80	0.22	0.35	<0.01	0.029	0.07	1.4	45.8	3.52	780	0.18	0.05	0.05
W596599		50.4	7.44	8.89	0.10	0.11	<0.01	0.048	0.16	2.6	20.0	2.52	704	0.32	0.03	<0.05
W596600		41.8	7.63	10.55	0.14	0.05	<0.01	0.054	0.24	3.1	22.2	3.72	786	0.14	0.04	<0.05
W597701		48.3	6.44	8.38	0.06	0.14	0.01	0.045	0.18	4.0	24.3	3.46	866	0.37	0.05	<0.05

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295868

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
W596562		70.0	420	1.6	4.3	0.008	0.25	0.22	31.3	1.1	0.2	230	<0.01	0.05	0.3	0.047
W596563		74.6	210	2.2	4.4	0.004	0.26	0.43	30.4	1.0	<0.2	202	<0.01	0.09	0.2	0.025
W596564		56.7	200	5.8	5.3	<0.001	0.01	0.79	20.9	<0.2	<0.2	273	<0.01	0.03	1.3	0.009
W596565		50.7	180	10.6	7.5	<0.001	0.03	7.03	16.5	0.3	<0.2	350	<0.01	0.06	1.0	<0.005
W596566		60.3	170	27.5	9.3	0.001	0.10	10.65	16.8	0.4	<0.2	207	<0.01	0.11	0.7	0.009
W596567		0.6	70	0.6	0.4	<0.001	<0.01	0.07	0.2	0.3	<0.2	84.1	<0.01	0.01	0.2	<0.005
W596568		78.6	220	1.8	3.6	<0.001	0.10	0.43	31.1	0.6	<0.2	274	<0.01	0.02	<0.2	0.012
W596569		72.5	200	1.9	1.2	0.005	0.15	0.23	30.4	0.8	0.2	142.0	<0.01	0.04	0.2	0.010
W596570		85.6	290	2.2	1.6	0.001	<0.01	0.19	30.0	0.3	0.2	180.5	<0.01	0.03	0.2	0.011
W596571		78.8	290	10.8	2.7	0.002	0.10	0.34	23.0	0.6	0.2	414	<0.01	0.05	<0.2	0.006
W596572		125.0	230	2.1	1.2	0.004	0.19	0.19	32.2	0.9	0.4	155.5	<0.01	0.03	<0.2	0.017
W596573		122.5	240	2.2	1.1	0.002	0.22	0.18	33.7	0.8	0.3	154.5	<0.01	0.04	<0.2	0.017
W596574		39.3	350	0.8	3.6	0.001	0.17	0.38	34.6	0.2	<0.2	146.0	<0.01	0.02	<0.2	0.044
W596575		35.5	300	1.1	4.7	0.001	0.38	0.23	33.4	0.5	0.2	165.0	<0.01	0.01	<0.2	0.053
W596576		52.9	250	0.9	5.4	0.002	0.44	0.14	31.7	0.3	0.2	283	<0.01	0.02	<0.2	0.080
W596577		38.0	310	0.3	7.6	0.001	0.18	0.15	37.3	<0.2	0.4	141.0	<0.01	0.02	<0.2	0.104
W596578		82.9	240	0.7	2.9	0.001	0.19	0.26	33.9	<0.2	0.3	119.0	<0.01	0.04	<0.2	0.061
W596579		109.0	190	1.1	1.7	<0.001	0.17	0.41	32.4	<0.2	0.3	111.0	<0.01	0.04	<0.2	0.018
W596580		52.3	330	3.8	5.7	0.001	0.23	5.19	30.8	<0.2	0.2	124.0	<0.01	0.03	<0.2	0.025
W596581		349	660	8670	13.8	0.017	6.81	19.90	4.5	12.6	5.7	72.3	<0.01	0.63	2.0	0.050
W596582		57.3	330	1.1	3.1	<0.001	0.07	0.29	31.3	<0.2	0.2	115.5	<0.01	0.02	<0.2	0.030
W596583		91.1	140	31.1	5.9	<0.001	0.28	0.80	22.1	0.4	0.3	254	<0.01	0.04	<0.2	0.011
W596584		87.5	160	5.7	4.5	0.001	0.31	0.37	20.2	<0.2	0.2	301	<0.01	0.05	0.2	0.007
W596585		11.8	340	8.1	7.3	0.001	0.32	0.29	3.3	<0.2	<0.2	166.0	<0.01	0.02	6.0	<0.005
W596586		43.8	240	1.4	0.8	0.003	0.12	0.15	29.4	0.2	<0.2	152.5	<0.01	0.10	0.2	0.011
W596587		46.8	260	1.7	1.0	0.003	0.13	0.19	30.7	0.3	<0.2	161.0	<0.01	0.09	0.3	0.011
W596588		45.7	170	1.5	3.4	0.001	0.12	0.58	33.0	<0.2	<0.2	202	<0.01	0.06	<0.2	0.017
W596589		49.3	200	1.7	1.9	0.003	0.11	0.21	30.8	0.3	0.2	109.5	<0.01	0.15	0.2	0.010
W596590		3.8	270	11.6	5.8	<0.001	0.02	0.14	1.7	<0.2	0.2	106.5	<0.01	0.01	4.7	<0.005
W596591		1.6	280	12.4	5.8	<0.001	0.01	0.18	0.6	<0.2	0.2	55.1	<0.01	0.01	5.1	<0.005
W596592		1.2	270	9.9	5.3	<0.001	0.02	0.10	0.6	<0.2	<0.2	47.4	<0.01	0.02	5.1	<0.005
W596593		1.4	260	13.3	5.9	<0.001	0.11	0.19	0.5	<0.2	<0.2	75.4	<0.01	0.02	4.7	<0.005
W596594		340	650	8560	14.4	0.015	6.69	20.5	4.4	13.0	5.7	70.5	<0.01	0.58	2.0	0.052
W596595		1.3	270	17.0	6.1	<0.001	0.05	0.13	0.5	<0.2	<0.2	56.2	<0.01	0.02	5.0	<0.005
W596596		3.7	260	12.0	5.5	<0.001	0.01	0.10	1.0	<0.2	<0.2	98.9	<0.01	<0.01	4.6	<0.005
W596597		86.2	630	1.1	5.2	0.001	0.04	0.43	26.5	<0.2	0.2	120.0	<0.01	0.01	<0.2	0.015
W596598		96.3	540	<0.2	1.8	<0.001	0.07	0.06	17.9	0.2	0.4	48.3	<0.01	0.01	<0.2	0.447
W596599		79.8	600	<0.2	5.1	<0.001	0.04	0.59	20.6	<0.2	<0.2	87.6	<0.01	0.01	<0.2	0.061
W596600		78.5	520	<0.2	7.6	<0.001	0.07	0.52	23.4	<0.2	0.2	96.5	<0.01	<0.01	<0.2	0.026
W597701		80.9	450	1.5	6.2	<0.001	0.11	0.79	19.5	<0.2	0.2	139.5	<0.01	<0.01	0.7	0.022

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295868

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Au-ICP21
	Analyte	Tl	U	V	W	Y	Zn	Zr	Au
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.001
W596562		0.08	0.21	228	<0.05	10.15	74	1.5	0.003
W596563		0.08	0.16	212	0.05	5.97	68	0.6	0.004
W596564		0.04	0.70	139	0.15	6.84	50	3.6	0.005
W596565		0.06	1.75	51	0.49	9.88	57	2.6	0.022
W596566		0.11	2.17	62	0.78	11.15	93	2.0	0.365
W596567		<0.02	0.20	1	<0.05	3.04	2	<0.5	<0.001
W596568		0.05	0.23	185	0.08	7.14	65	0.5	<0.001
W596569		0.03	0.26	217	<0.05	7.05	74	1.0	<0.001
W596570		0.02	0.31	215	0.07	7.19	81	0.9	0.003
W596571		0.03	0.34	148	0.11	7.95	113	0.8	0.049
W596572		0.03	0.26	236	<0.05	7.67	92	1.6	<0.001
W596573		0.03	0.27	241	<0.05	7.40	89	1.6	<0.001
W596574		0.04	<0.05	264	<0.05	7.42	71	0.7	0.001
W596575		0.06	0.10	253	<0.05	7.39	69	0.9	<0.001
W596576		0.07	<0.05	238	0.05	8.09	65	1.3	<0.001
W596577		0.09	<0.05	266	<0.05	6.07	74	1.2	<0.001
W596578		0.04	0.05	250	<0.05	4.58	66	1.3	0.001
W596579		0.04	<0.05	235	<0.05	3.41	65	<0.5	<0.001
W596580		0.06	0.25	225	0.29	4.36	80	<0.5	0.090
W596581		1.65	5.15	309	2.47	7.74	8220	3.6	1.455
W596582		0.04	<0.05	242	0.15	3.02	75	<0.5	<0.001
W596583		0.06	<0.05	118	0.18	4.59	71	<0.5	0.388
W596584		0.05	0.05	129	0.23	6.50	70	<0.5	0.039
W596585		0.05	2.63	20	0.25	5.63	38	17.3	0.021
W596586		<0.02	0.12	223	0.14	5.43	79	<0.5	0.001
W596587		0.02	0.12	222	0.07	5.75	80	0.6	<0.001
W596588		0.04	0.06	245	<0.05	4.35	75	<0.5	0.001
W596589		0.02	0.14	221	0.07	4.03	84	<0.5	<0.001
W596590		0.04	1.42	9	0.10	4.34	28	15.0	<0.001
W596591		0.05	0.83	2	0.15	3.99	28	16.0	<0.001
W596592		0.04	1.05	1	0.07	3.65	24	15.2	<0.001
W596593		0.04	1.36	1	0.10	3.74	22	14.2	<0.001
W596594		1.60	4.03	305	2.42	7.80	8130	3.7	1.355
W596595		0.04	1.45	2	0.08	3.82	31	16.0	<0.001
W596596		0.03	2.04	5	0.08	3.96	24	14.7	<0.001
W596597		0.04	0.91	201	0.13	18.40	89	0.8	<0.001
W596598		<0.02	0.06	209	0.33	14.00	80	10.4	<0.001
W596599		0.04	1.02	135	0.12	16.80	81	3.1	<0.001
W596600		0.05	0.05	145	<0.05	13.95	77	1.1	<0.001
W597701		0.05	0.34	122	0.08	12.50	73	5.7	<0.001

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VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 9-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295868

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	LOG-21
LOG-21d	LOG-23	PUL-32	PUL-32d
PUL-QC	SPL-21	SPL-21d	WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 6-DEC-2019
Account: MTT

CERTIFICATE WH19295877

Project: Hartless Joe

P.O. No.: HJ-19-003

This report is for 40 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 21-NOV-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-32d	Pulverize Split -Dup 85% <75um
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21d	Sample logging - ClientBarCode Dup
SPL-21d	Split sample - duplicate

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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Finalized Date: 6-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295877

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
W597702		5.70	0.12	4.90	3.5	<0.02	<10	60	0.15	0.01	1.09	0.07	5.26	30.5	23	1.06
W597703		9.62	0.11	4.06	3.9	<0.02	<10	50	0.14	0.01	2.11	0.09	3.96	29.6	16	0.51
W597704		4.88	0.10	3.35	2.1	<0.02	<10	150	0.11	0.03	1.39	0.09	3.62	27.8	13	1.21
W597705		4.11	0.14	3.70	2.2	<0.02	<10	260	0.15	0.10	1.44	0.08	4.28	29.5	16	1.87
W597706		5.27	0.07	2.27	1.2	<0.02	<10	130	0.26	0.07	0.63	0.05	34.2	12.9	13	1.76
W597707		5.00	<0.01	0.04	0.2	<0.02	<10	20	<0.05	0.01	>25.0	0.01	0.99	0.6	1	<0.05
W597708		3.41	0.03	0.94	8.3	<0.02	<10	90	0.35	0.03	3.44	0.05	31.2	13.5	9	3.57
W597709		4.58	0.43	3.43	13.9	<0.02	<10	230	0.28	0.12	2.55	0.13	9.42	30.7	13	2.33
W597710		4.05	0.16	2.01	85.9	<0.02	<10	200	0.71	0.06	0.36	0.21	10.00	30.3	7	5.73
W597711		4.98	0.11	3.81	33.7	<0.02	<10	80	0.39	0.01	0.36	0.10	10.60	32.3	11	3.28
W597712		3.79	0.34	2.95	194.0	<0.02	<10	80	0.43	0.01	0.26	0.28	10.80	33.1	5	3.18
W597713		1.80	2.61	1.16	779	4.60	<10	50	0.18	0.02	0.14	4.55	3.58	12.0	10	1.11
W597714		4.03	1.95	2.80	617	0.78	<10	90	0.49	0.01	0.30	0.39	7.97	31.6	9	2.39
W597715		0.13	32.8	4.62	139.5	2.17	<10	20	0.26	10.05	4.41	35.1	12.85	86.4	55	0.95
W597716		9.39	0.13	4.09	16.9	<0.02	<10	90	0.28	0.03	0.53	0.10	7.96	29.4	14	1.17
W597717		10.98	0.29	3.94	7.7	0.02	<10	120	0.27	0.06	0.59	0.13	9.00	28.5	12	1.75
W597718		6.94	0.27	2.60	40.8	<0.02	<10	150	0.54	0.49	0.31	0.41	14.80	20.2	26	3.68
W597719		6.27	0.06	0.68	2.5	<0.02	<10	120	0.26	0.07	0.13	0.07	44.5	2.1	2	1.59
W597720		6.08	0.03	0.66	0.8	<0.02	<10	160	0.23	0.07	0.30	0.05	43.6	2.0	3	1.38
W597721		7.09	0.03	0.62	1.4	<0.02	<10	180	0.25	0.06	0.43	0.04	45.9	1.9	2	1.88
W597722		6.50	0.02	0.47	2.5	<0.02	<10	120	0.17	0.04	0.13	0.03	29.8	2.1	4	1.47
W597723		<0.02	0.02	0.51	2.4	<0.02	<10	130	0.18	0.03	0.13	0.03	28.6	2.1	4	1.48
W597724		5.14	0.01	0.43	1.5	<0.02	<10	120	0.19	0.03	0.85	0.03	29.3	2.2	4	1.58
W597725		6.02	0.04	0.46	3.1	<0.02	<10	140	0.22	0.09	1.40	0.04	29.8	2.2	4	1.72
W597726		9.46	0.10	0.39	2.7	<0.02	<10	130	0.24	0.11	1.48	0.05	43.8	2.0	3	1.85
W597727		7.58	0.04	0.43	4.3	0.03	<10	120	0.18	0.05	1.54	0.04	44.7	2.5	4	1.55
W597728		2.32	0.27	1.21	82.4	0.04	<10	190	0.32	0.04	3.44	2.51	7.00	24.0	71	4.24
W597729		5.07	0.13	1.55	15.1	<0.02	<10	40	0.18	0.03	16.55	0.87	6.23	14.0	75	1.23
W597730		3.06	0.13	1.58	21.1	<0.02	<10	60	0.20	0.02	3.05	0.36	6.96	23.0	117	2.34
W597731		0.13	31.9	4.56	137.5	2.26	<10	20	0.23	9.34	4.34	33.6	12.05	84.3	55	0.92
W597732		4.32	0.06	2.98	8.9	<0.02	<10	50	0.21	0.03	2.80	0.13	7.94	23.8	145	1.53
W597733		5.69	0.09	2.58	17.5	<0.02	<10	160	0.41	0.01	1.23	0.21	10.10	27.2	20	4.75
W597734		7.89	0.20	3.07	14.3	<0.02	<10	180	0.20	0.02	4.79	0.26	8.57	22.6	62	3.25
W597735		6.54	0.24	4.35	20.0	<0.02	<10	70	0.16	0.02	3.09	0.23	2.64	29.4	199	1.30
W597736		6.62	0.15	3.39	42.9	<0.02	<10	40	0.18	0.01	3.94	0.29	3.22	23.9	148	1.80
W597737		5.72	0.24	2.76	9.9	<0.02	<10	20	0.19	0.03	8.14	1.26	7.63	19.2	139	0.64
W597738		3.25	0.24	2.68	10.4	<0.02	<10	20	0.18	0.03	8.19	1.19	7.14	19.3	138	0.59
W597739		8.83	0.10	0.99	12.0	<0.02	<10	40	0.17	0.01	>25.0	1.20	3.33	7.6	40	0.63
W597740		8.90	0.11	1.06	8.6	<0.02	<10	40	0.15	0.01	>25.0	1.09	3.31	7.8	51	0.34
W597741		9.88	0.17	1.33	10.2	<0.02	<10	30	0.15	0.02	23.0	0.98	3.79	11.6	71	0.40

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 6-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295877

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
W597702		84.5	6.72	12.60	0.09	0.13	0.01	0.027	0.09	1.9	33.4	2.84	1180	0.12	0.18	<0.05
W597703		120.0	5.69	9.48	0.13	0.16	<0.01	0.016	0.05	1.3	29.5	2.29	934	0.06	0.13	<0.05
W597704		81.0	5.41	7.32	0.08	0.20	0.01	0.010	0.07	1.2	17.4	1.71	901	0.30	0.20	<0.05
W597705		81.7	5.32	8.41	0.09	0.18	0.01	0.014	0.08	1.4	20.9	1.86	868	0.24	0.22	<0.05
W597706		34.3	3.06	6.07	0.06	0.49	<0.01	0.016	0.16	20.9	10.9	1.01	640	0.42	0.14	<0.05
W597707		1.2	0.09	0.12	0.05	<0.02	0.01	<0.005	0.01	1.1	0.9	0.87	115	<0.05	0.02	<0.05
W597708		6.4	3.42	2.43	<0.05	0.29	<0.01	0.026	0.17	18.7	12.8	0.87	726	0.52	0.07	<0.05
W597709		168.5	7.43	11.90	0.07	0.08	<0.01	0.047	0.11	3.1	20.7	2.25	1560	1.27	0.07	<0.05
W597710		92.2	9.27	4.67	0.07	<0.02	0.01	0.041	0.14	3.4	22.6	0.92	1410	0.33	0.04	<0.05
W597711		38.8	8.58	12.55	0.09	0.06	<0.01	0.054	0.11	3.5	21.9	2.24	1540	0.31	0.06	<0.05
W597712		82.0	8.29	7.76	0.06	<0.02	0.01	0.040	0.27	3.7	17.6	1.63	1460	0.44	0.03	<0.05
W597713		64.2	4.20	3.13	<0.05	<0.02	0.01	0.045	0.12	1.6	10.3	0.79	553	0.55	0.02	<0.05
W597714		188.0	7.25	6.18	0.05	<0.02	0.01	0.033	0.26	2.6	24.5	1.99	1500	0.18	0.03	<0.05
W597715		7180	8.50	6.69	0.10	0.11	0.52	2.51	0.22	6.5	5.8	1.10	593	51.6	0.31	0.12
W597716		41.7	7.41	11.80	0.08	0.10	<0.01	0.046	0.11	2.6	27.3	2.58	1280	0.25	0.07	<0.05
W597717		124.5	7.62	12.40	0.08	0.12	<0.01	0.047	0.18	2.9	25.9	2.25	1260	0.14	0.08	<0.05
W597718		141.5	6.15	8.16	0.06	0.06	0.01	0.069	0.13	8.2	22.1	1.39	934	1.29	0.05	<0.05
W597719		35.6	1.01	2.35	<0.05	0.33	<0.01	0.009	0.21	28.3	2.9	0.16	233	0.25	0.07	<0.05
W597720		7.8	0.87	2.32	<0.05	0.28	<0.01	0.006	0.21	27.7	2.8	0.19	246	0.23	0.06	<0.05
W597721		5.8	0.85	1.78	<0.05	0.38	<0.01	0.005	0.24	29.5	2.0	0.11	257	0.23	0.06	<0.05
W597722		1.2	0.87	1.33	<0.05	0.39	0.01	0.005	0.15	18.6	1.7	0.11	205	0.20	0.05	<0.05
W597723		1.3	0.89	1.44	<0.05	0.38	<0.01	0.005	0.16	17.9	1.7	0.11	206	0.09	0.06	<0.05
W597724		1.1	0.92	1.30	<0.05	0.40	<0.01	0.005	0.13	18.0	2.0	0.10	244	0.21	0.06	<0.05
W597725		5.7	0.92	1.55	<0.05	0.44	<0.01	<0.005	0.19	19.2	1.2	0.12	240	1.38	0.06	<0.05
W597726		26.8	0.89	1.31	<0.05	0.49	<0.01	0.006	0.20	28.0	1.4	0.05	227	3.61	0.06	<0.05
W597727		6.6	1.15	1.63	<0.05	0.39	<0.01	0.006	0.16	28.3	1.1	0.07	220	0.53	0.07	<0.05
W597728		96.2	5.25	2.77	0.06	0.07	<0.01	0.056	0.09	5.8	8.0	0.58	874	5.31	0.06	<0.05
W597729		54.0	3.13	5.53	<0.05	0.05	<0.01	0.037	0.04	4.1	13.4	1.37	808	3.11	0.05	<0.05
W597730		74.3	5.40	5.41	0.05	0.02	<0.01	0.067	0.07	3.3	11.3	1.07	1100	0.62	0.07	<0.05
W597731		6970	8.42	6.13	0.11	0.13	0.50	2.37	0.22	6.0	5.5	1.10	586	48.8	0.31	0.13
W597732		67.7	5.39	10.65	0.08	0.02	<0.01	0.074	0.03	3.0	23.9	2.77	779	0.10	0.07	<0.05
W597733		82.1	7.34	8.06	0.06	0.06	<0.01	0.060	0.09	3.6	18.0	1.74	1010	0.12	0.06	<0.05
W597734		85.6	5.90	11.30	0.13	0.04	<0.01	0.058	0.25	4.0	25.9	2.98	682	0.86	0.06	<0.05
W597735		107.0	6.64	12.05	0.23	<0.02	<0.01	0.054	0.06	1.3	35.2	4.56	769	1.32	0.05	<0.05
W597736		114.0	5.97	9.45	0.09	0.03	<0.01	0.049	0.10	1.8	26.1	4.19	873	0.93	0.05	<0.05
W597737		69.5	4.52	8.77	0.15	0.16	<0.01	0.046	0.04	5.0	22.4	2.62	760	3.34	0.04	<0.05
W597738		67.4	4.42	8.52	0.14	0.15	<0.01	0.046	0.03	4.8	21.1	2.57	736	3.09	0.04	<0.05
W597739		27.1	1.74	2.23	<0.05	0.08	<0.01	0.015	0.08	3.3	9.3	0.86	527	4.11	0.01	<0.05
W597740		26.1	1.81	2.64	<0.05	0.11	<0.01	0.015	0.07	3.4	10.1	0.98	465	3.71	0.02	<0.05
W597741		35.1	2.20	3.66	0.06	0.14	<0.01	0.021	0.05	3.9	13.4	1.29	417	4.59	0.02	<0.05

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To: **STRATEGIC METALS LTD.**
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Project: Hartless Joe

Finalized Date: 6-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295877

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
W597702		13.5	510	0.6	2.7	<0.001	<0.01	0.11	20.9	0.2	0.3	41.8	<0.01	<0.01	0.2	0.244
W597703		11.8	520	0.5	1.3	<0.001	<0.01	0.09	11.7	0.3	0.3	52.7	<0.01	0.01	<0.2	0.281
W597704		11.6	510	1.0	1.9	0.001	0.26	0.14	5.8	0.2	0.2	70.9	<0.01	0.01	<0.2	0.280
W597705		12.7	500	1.2	2.4	<0.001	0.13	0.16	7.4	<0.2	0.3	94.1	<0.01	0.03	<0.2	0.287
W597706		6.0	440	7.1	4.8	<0.001	<0.01	0.09	8.6	0.2	<0.2	37.7	<0.01	<0.01	6.4	0.063
W597707		0.4	80	0.4	0.4	<0.001	0.01	0.05	0.3	<0.2	<0.2	81.9	<0.01	<0.01	<0.2	0.006
W597708		5.4	450	6.9	4.9	0.001	0.03	0.26	13.7	0.3	<0.2	98.5	<0.01	0.01	5.4	<0.005
W597709		9.2	660	1.9	3.5	0.001	0.01	0.38	22.6	0.3	<0.2	56.7	<0.01	0.03	<0.2	0.043
W597710		9.6	660	1.6	4.3	<0.001	<0.01	1.02	22.5	0.3	0.2	41.5	<0.01	0.04	<0.2	<0.005
W597711		8.9	760	0.4	3.4	0.001	<0.01	0.17	25.8	<0.2	<0.2	37.5	<0.01	<0.01	<0.2	0.028
W597712		8.7	770	2.2	6.4	<0.001	<0.01	0.44	15.3	0.3	<0.2	32.4	<0.01	0.01	<0.2	0.008
W597713		4.5	390	289	2.7	<0.001	0.01	1.75	4.6	0.7	<0.2	17.3	<0.01	0.12	<0.2	<0.005
W597714		11.0	630	10.2	5.6	<0.001	<0.01	0.74	11.6	0.6	<0.2	40.2	<0.01	0.01	<0.2	<0.005
W597715		357	650	8770	13.5	0.012	6.94	20.1	4.4	13.8	6.2	66.9	<0.01	0.63	1.9	0.054
W597716		10.7	660	4.3	3.1	0.001	<0.01	0.14	25.4	<0.2	0.3	43.6	<0.01	0.01	<0.2	0.186
W597717		9.6	680	1.7	5.0	0.001	<0.01	0.18	20.8	<0.2	0.2	51.0	<0.01	0.01	<0.2	0.153
W597718		19.9	880	5.5	3.8	0.001	<0.01	1.44	18.3	0.9	<0.2	35.1	<0.01	0.05	1.2	0.006
W597719		1.3	390	13.9	5.9	<0.001	<0.01	0.11	0.7	<0.2	<0.2	14.4	<0.01	0.01	8.8	<0.005
W597720		1.6	370	11.1	6.2	<0.001	<0.01	0.09	0.6	<0.2	<0.2	18.3	<0.01	<0.01	9.1	<0.005
W597721		1.1	400	10.4	6.7	<0.001	<0.01	0.10	0.6	<0.2	<0.2	20.1	<0.01	0.01	8.7	<0.005
W597722		2.8	310	8.7	4.2	<0.001	<0.01	0.09	0.6	0.4	<0.2	13.4	<0.01	0.01	6.4	<0.005
W597723		2.9	310	8.8	4.5	<0.001	<0.01	0.10	0.6	<0.2	<0.2	14.0	<0.01	0.01	6.3	<0.005
W597724		2.7	300	9.8	3.8	<0.001	<0.01	0.14	0.6	<0.2	<0.2	29.9	<0.01	<0.01	6.2	<0.005
W597725		2.3	330	9.4	5.7	<0.001	0.08	0.22	0.5	0.2	<0.2	51.4	<0.01	0.01	7.0	<0.005
W597726		1.0	390	14.7	6.1	0.001	0.04	0.53	0.6	0.2	<0.2	50.0	<0.01	0.01	8.6	<0.005
W597727		2.1	440	5.9	5.1	<0.001	0.02	0.15	0.8	0.2	<0.2	47.5	<0.01	0.01	10.9	<0.005
W597728		80.3	660	3.3	2.6	<0.001	0.01	0.72	24.7	2.5	<0.2	101.0	<0.01	0.09	0.5	<0.005
W597729		35.8	470	1.5	1.0	0.001	0.01	0.44	15.7	1.9	<0.2	835	<0.01	0.02	0.2	0.005
W597730		50.0	290	1.2	1.7	0.001	0.01	2.20	26.5	0.9	0.2	33.0	<0.01	0.02	0.2	<0.005
W597731		344	640	8550	13.9	0.016	6.66	18.80	4.5	12.9	5.6	68.4	<0.01	0.60	1.9	0.054
W597732		56.2	180	3.0	1.0	0.001	0.01	0.11	23.9	<0.2	0.3	69.4	<0.01	0.01	<0.2	0.005
W597733		13.2	580	0.6	3.3	<0.001	0.01	0.28	29.8	<0.2	0.2	53.8	<0.01	<0.01	<0.2	0.006
W597734		26.3	640	1.7	5.6	0.005	0.56	0.56	24.1	2.1	0.2	190.0	<0.01	0.01	0.3	0.036
W597735		57.7	200	0.8	1.4	0.008	0.15	0.28	36.7	1.0	<0.2	126.5	<0.01	0.04	<0.2	0.033
W597736		54.6	220	1.5	2.9	0.001	0.12	4.04	32.0	0.9	<0.2	169.0	<0.01	0.04	<0.2	0.010
W597737		59.0	480	2.2	1.0	0.009	0.75	0.76	18.1	5.0	0.2	229	<0.01	0.06	0.3	0.060
W597738		58.6	450	2.1	0.9	0.008	0.73	0.77	17.7	4.8	0.2	231	<0.01	0.05	0.3	0.060
W597739		25.0	490	1.4	1.9	0.006	0.30	0.41	5.0	2.7	<0.2	1460	<0.01	0.03	<0.2	0.005
W597740		29.4	460	1.3	1.6	0.006	0.27	0.42	5.6	3.1	<0.2	1335	<0.01	0.02	0.2	<0.005
W597741		38.6	500	1.0	1.2	0.008	0.54	0.66	8.5	4.1	<0.2	1075	<0.01	0.04	0.2	0.028

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Finalized Date: 6-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295877

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Au-ICP21
	Analyte	Tl	U	V	W	Y	Zn	Zr	Au
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.001
W597702		0.03	0.12	209	0.58	12.40	72	2.8	0.003
W597703		0.02	<0.05	143	0.47	9.71	72	3.9	<0.001
W597704		0.04	0.21	112	0.22	8.89	60	4.4	<0.001
W597705		0.05	0.22	128	0.36	9.97	63	4.6	<0.001
W597706		0.04	1.85	68	0.14	7.45	48	20.0	<0.001
W597707		<0.02	0.13	1	<0.05	2.26	<2	<0.5	<0.001
W597708		0.05	1.69	46	<0.05	8.29	44	10.9	<0.001
W597709		0.06	0.42	221	0.06	15.65	92	1.6	0.002
W597710		0.04	0.63	118	6.22	16.40	84	<0.5	<0.001
W597711		0.03	0.18	211	0.08	18.15	88	1.0	0.006
W597712		0.08	0.40	123	0.44	16.10	84	<0.5	0.012
W597713		0.03	0.65	57	5.27	5.44	403	<0.5	5.80
W597714		0.08	0.54	88	0.72	12.25	77	<0.5	0.939
W597715		1.69	4.13	304	2.47	7.67	7890	3.7	1.470
W597716		0.04	0.21	205	0.46	16.75	85	2.4	0.007
W597717		0.06	0.21	199	0.21	15.65	85	2.7	0.005
W597718		0.04	0.96	121	0.10	14.85	131	2.3	0.026
W597719		0.05	1.29	4	0.06	4.54	32	14.9	<0.001
W597720		0.06	1.46	4	0.05	4.62	28	13.4	<0.001
W597721		0.07	1.77	2	0.06	5.06	26	17.9	<0.001
W597722		0.04	0.84	3	0.06	3.24	25	10.6	<0.001
W597723		0.05	0.82	2	0.07	3.21	25	10.8	<0.001
W597724		0.04	1.04	2	<0.05	3.22	29	11.2	<0.001
W597725		0.05	1.63	2	0.07	3.73	27	14.7	0.023
W597726		0.07	1.98	2	0.06	4.64	29	20.9	<0.001
W597727		0.04	1.64	4	0.08	4.78	21	18.9	0.014
W597728		0.05	1.09	129	0.18	14.70	150	3.1	0.088
W597729		0.02	0.61	121	0.05	9.24	77	2.3	0.014
W597730		0.03	0.22	124	0.07	12.95	93	0.6	0.013
W597731		1.70	4.54	296	2.14	7.52	7680	4.2	1.535
W597732		<0.02	0.06	158	<0.05	6.78	91	<0.5	0.004
W597733		0.03	0.20	157	0.14	16.35	83	0.9	0.001
W597734		0.11	0.26	196	<0.05	12.60	104	1.2	0.001
W597735		0.04	0.14	249	<0.05	5.15	80	<0.5	0.001
W597736		0.04	0.25	195	0.07	5.61	78	0.9	0.004
W597737		0.02	0.36	198	0.09	13.30	126	5.8	0.001
W597738		0.03	0.31	193	0.10	12.50	124	5.5	0.002
W597739		0.04	1.31	52	0.07	8.61	63	3.4	<0.001
W597740		0.04	1.08	62	0.05	8.63	67	4.0	<0.001
W597741		0.02	1.28	94	0.07	9.63	68	4.9	<0.001

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 6-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295877

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	LOG-21
LOG-21d	LOG-23	PUL-32	PUL-32d
PUL-QC	SPL-21	SPL-21d	WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 7-DEC-2019
Account: MTT

CERTIFICATE WH19295883

Project: Hartless Joe

P.O. No.: HJ-19-004

This report is for 40 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 21-NOV-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-32d	Pulverize Split -Dup 85% <75um
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21d	Sample logging - ClientBarCode Dup
SPL-21d	Split sample - duplicate

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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Finalized Date: 7-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295883

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
W597742		4.49	0.15	2.86	26.8	<0.02	<10	30	0.22	0.04	8.23	1.04	6.26	19.6	153	0.75
W597743		7.74	0.11	4.88	10.6	<0.02	<10	40	0.25	0.02	4.09	0.09	4.02	29.6	390	1.98
W597744		5.02	0.51	4.86	54.2	0.08	<10	50	0.28	0.10	4.30	0.38	5.14	28.2	248	1.78
W597745		5.84	0.58	2.69	52.6	<0.02	<10	70	0.31	0.02	10.90	0.72	6.32	19.8	74	1.99
W597746		9.77	0.08	5.16	4.1	<0.02	<10	10	0.18	0.01	5.64	0.07	3.56	27.0	22	0.41
W597747		4.96	<0.01	0.05	0.8	<0.02	<10	20	<0.05	0.01	>25.0	0.02	1.03	0.6	1	0.05
W597748		7.73	0.11	3.90	1.4	<0.02	<10	30	0.34	0.01	2.43	0.10	3.88	31.2	24	0.73
W597749		3.48	0.10	2.82	16.5	<0.02	<10	100	0.50	0.02	1.83	0.10	5.13	26.7	23	5.91
W597750		6.30	0.12	4.35	6.6	<0.02	<10	110	0.25	0.01	0.89	0.09	5.30	34.0	25	2.36
W597751		5.59	0.07	4.53	3.7	<0.02	<10	40	0.17	0.01	2.49	0.09	4.00	30.8	20	0.54
W597752		4.65	0.08	4.60	0.4	<0.02	<10	30	0.15	0.01	2.45	0.07	4.15	24.8	13	2.26
W597753		0.13	33.1	4.83	150.5	0.89	10	20	0.26	9.29	4.50	36.0	12.45	90.5	58	0.98
W597754		8.05	0.07	5.21	1.0	<0.02	<10	10	0.20	0.01	3.95	0.09	3.89	26.5	15	0.50
W597755		6.66	0.14	4.49	11.6	<0.02	<10	20	0.07	0.01	2.27	0.08	3.64	28.4	13	0.52
W597756		4.32	0.06	4.15	4.9	<0.02	<10	40	0.13	0.01	1.34	0.06	4.74	30.4	24	1.24
W597757		5.16	0.39	3.76	142.5	0.11	<10	90	0.31	0.05	0.27	0.35	6.16	34.6	29	1.93
W597758		4.02	0.89	3.54	261	0.95	<10	30	0.21	0.02	3.89	0.26	5.07	30.8	23	0.73
W597759		<0.02	0.87	3.42	246	0.89	<10	30	0.22	0.01	3.90	0.26	5.23	30.3	23	0.72
W597760		7.23	0.09	3.72	5.4	<0.02	<10	30	0.15	0.01	2.31	0.11	4.49	26.7	16	1.21
W597761		6.51	0.06	4.25	6.7	<0.02	<10	30	0.11	0.01	1.75	0.08	4.82	27.8	13	1.08
W597762		4.07	0.14	1.10	49.2	<0.02	<10	180	0.51	0.10	1.41	0.16	5.87	27.2	4	4.46
W597763		4.43	0.47	0.80	62.9	0.03	<10	140	0.52	0.21	0.39	0.63	4.80	17.5	16	2.67
W597764		7.90	0.05	0.68	9.8	<0.02	<10	130	0.22	0.11	0.82	0.05	20.9	3.5	4	1.90
W597765		8.84	0.03	0.56	6.9	<0.02	<10	100	0.25	0.06	0.21	0.05	36.6	2.8	2	1.65
W597766		7.76	0.03	0.45	3.8	<0.02	<10	100	0.20	0.03	1.62	0.06	20.8	2.3	5	1.40
W597767		6.35	0.09	5.23	10.4	<0.02	<10	140	0.23	0.02	0.34	0.14	2.55	37.2	246	0.95
W597768		0.13	31.9	4.42	134.5	1.23	<10	40	0.22	8.81	4.36	33.7	12.20	87.2	53	0.92
W597769		10.60	0.27	3.11	26.0	<0.02	<10	60	0.31	0.05	8.86	2.25	7.27	26.0	140	1.66
W597770		7.67	0.16	6.09	6.1	<0.02	<10	40	0.28	0.47	0.69	0.64	8.96	48.6	300	0.58
W597771		8.51	0.10	3.96	3.4	<0.02	<10	20	0.34	0.06	2.96	0.19	13.20	35.8	25	0.80
W597772		5.97	0.04	3.58	1.9	<0.02	<10	30	0.25	0.01	1.53	0.14	13.15	36.4	22	0.72
W597773		4.62	0.03	3.54	3.3	<0.02	<10	90	0.55	0.01	2.21	0.16	18.95	37.1	20	2.83
W597774		3.49	0.04	4.19	8.2	<0.02	<10	80	0.48	0.01	2.36	0.12	17.05	38.2	21	2.33
W597775		1.69	0.07	4.18	10.1	<0.02	<10	90	0.50	0.01	2.14	0.13	16.85	41.0	20	2.70
W597776		5.38	0.07	3.05	3.3	<0.02	<10	40	0.51	0.02	3.77	0.14	20.6	36.9	21	1.11
W597777		6.44	0.04	5.43	5.0	<0.02	<10	60	0.45	0.01	2.49	0.21	22.3	42.2	16	1.32
W597778		5.36	1.73	3.39	795	0.26	<10	60	0.40	0.05	4.49	0.39	15.10	42.7	9	1.35
W597779		6.94	0.54	3.63	76.0	<0.02	<10	40	0.34	0.01	3.96	0.67	18.50	43.3	14	0.89
W597780		2.88	3.87	0.09	90.9	0.75	<10	10	<0.05	0.04	0.06	0.74	0.88	3.1	30	0.45
W597781		5.80	8.85	2.15	2540	3.69	<10	30	0.40	0.01	6.42	1.05	8.15	39.4	71	1.25

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 7-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295883

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
W597742		55.3	4.44	9.13	0.08	0.12	<0.01	0.042	0.03	4.2	24.9	2.81	852	3.16	0.05	<0.05
W597743		70.3	5.69	10.80	0.06	0.02	<0.01	0.042	0.09	1.9	47.0	5.52	800	0.17	0.04	<0.05
W597744		88.6	6.11	9.66	0.05	<0.02	<0.01	0.039	0.21	2.4	55.0	5.13	828	0.98	0.03	<0.05
W597745		66.4	4.28	4.64	0.05	0.07	<0.01	0.027	0.33	4.1	26.2	2.47	1220	2.14	0.02	<0.05
W597746		69.2	5.84	11.05	0.24	0.24	<0.01	0.016	0.02	1.3	21.7	2.23	1100	0.07	0.09	<0.05
W597747		1.5	0.12	0.11	<0.05	<0.02	<0.01	<0.005	0.01	1.2	0.8	1.03	130	<0.05	0.01	<0.05
W597748		99.6	6.90	10.05	0.10	0.22	<0.01	0.019	0.06	1.3	33.3	2.87	1260	0.06	0.09	<0.05
W597749		86.0	6.23	6.15	<0.05	0.07	<0.01	0.033	0.18	1.8	29.4	1.62	943	0.15	0.07	<0.05
W597750		88.4	6.98	9.64	0.06	0.14	<0.01	0.031	0.11	1.8	33.3	2.84	1260	0.06	0.11	<0.05
W597751		85.6	5.83	9.38	0.12	0.23	<0.01	0.019	0.05	1.4	27.5	2.39	958	0.20	0.15	<0.05
W597752		108.0	5.64	8.68	0.12	0.21	<0.01	0.019	0.06	1.5	23.1	2.21	913	0.22	0.17	<0.05
W597753		7420	8.93	6.54	0.09	0.13	0.45	2.57	0.23	6.5	5.9	1.15	613	51.5	0.33	0.13
W597754		96.2	5.66	10.65	0.19	0.25	<0.01	0.022	0.03	1.4	27.1	2.23	907	0.10	0.13	<0.05
W597755		111.0	5.79	9.45	0.11	0.18	<0.01	0.013	0.03	1.3	16.5	2.17	970	0.24	0.24	<0.05
W597756		55.4	6.18	8.75	0.11	0.22	<0.01	0.026	0.06	1.6	22.1	2.94	1040	0.07	0.14	<0.05
W597757		70.4	7.39	7.85	0.05	0.02	<0.01	0.032	0.29	2.3	22.0	2.71	1420	0.12	0.03	<0.05
W597758		48.9	6.90	7.51	<0.05	<0.02	<0.01	0.032	0.29	1.9	19.2	2.80	1260	0.24	0.03	<0.05
W597759		49.6	6.73	7.57	0.05	<0.02	<0.01	0.027	0.26	2.0	19.7	2.74	1220	0.21	0.02	<0.05
W597760		106.0	6.05	8.65	0.11	0.19	<0.01	0.023	0.07	1.6	16.4	2.29	1000	0.12	0.14	<0.05
W597761		66.5	6.66	10.35	0.09	0.12	<0.01	0.028	0.07	1.7	15.8	2.31	1180	0.10	0.20	<0.05
W597762		203	7.61	2.32	0.05	0.03	<0.01	0.057	0.20	2.2	2.9	0.41	1200	0.35	0.03	<0.05
W597763		123.0	6.08	1.34	<0.05	0.07	<0.01	0.072	0.23	3.6	0.6	0.18	618	0.59	0.02	<0.05
W597764		10.7	1.25	1.38	<0.05	0.26	<0.01	0.006	0.24	13.1	0.5	0.12	258	0.13	0.05	<0.05
W597765		7.3	1.21	1.21	<0.05	0.32	<0.01	0.008	0.22	22.3	0.6	0.11	275	0.23	0.05	<0.05
W597766		16.8	0.88	1.24	<0.05	0.35	<0.01	0.006	0.24	12.9	0.3	0.05	165	0.18	0.06	<0.05
W597767		56.8	7.03	12.95	0.10	0.02	<0.01	0.037	0.07	1.0	42.9	5.18	725	0.09	0.04	<0.05
W597768		6800	8.29	6.39	0.09	0.10	0.48	2.39	0.22	6.0	5.1	1.08	574	50.2	0.30	0.12
W597769		73.2	5.37	9.01	0.06	0.04	<0.01	0.045	0.11	4.1	26.5	2.42	944	1.20	0.03	<0.05
W597770		61.2	7.60	15.20	0.14	0.03	<0.01	0.060	0.04	3.0	49.7	6.47	1060	0.25	0.02	<0.05
W597771		55.3	7.94	16.40	0.20	0.59	<0.01	0.065	0.02	4.5	16.0	3.38	1100	0.54	0.05	0.09
W597772		72.4	7.26	16.60	0.18	0.80	0.01	0.039	0.01	4.3	16.2	2.94	947	0.18	0.05	0.09
W597773		52.4	8.41	17.00	0.16	0.52	<0.01	0.090	0.02	6.5	17.9	2.63	1090	0.22	0.04	<0.05
W597774		47.1	9.73	19.15	0.16	0.38	<0.01	0.096	0.01	5.6	23.5	3.25	997	0.42	0.04	<0.05
W597775		51.1	9.95	18.65	0.17	0.31	<0.01	0.086	0.02	5.6	23.7	3.25	1060	0.44	0.03	<0.05
W597776		48.4	8.41	17.55	0.17	0.51	0.01	0.080	0.01	6.7	12.6	2.27	908	1.17	0.05	0.06
W597777		47.4	11.55	21.1	0.16	0.05	<0.01	0.121	0.03	8.8	19.8	3.98	1180	0.11	0.01	<0.05
W597778		146.5	10.85	13.60	0.10	0.03	<0.01	0.139	0.11	5.3	18.3	2.40	1060	1.23	0.01	<0.05
W597779		46.2	9.80	15.70	0.10	0.04	<0.01	0.102	0.12	6.3	20.4	2.68	1140	0.52	0.01	<0.05
W597780		41.5	1.96	0.34	<0.05	<0.02	<0.01	0.022	0.05	0.3	0.4	0.03	79	0.76	<0.01	<0.05
W597781		97.2	7.25	5.66	0.05	0.02	0.01	0.058	0.27	3.0	16.4	3.08	973	0.61	<0.01	<0.05

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
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Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com/geochemistry

To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 7-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295883

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
W597742		57.1	470	2.0	0.8	0.007	0.44	0.52	19.1	3.4	<0.2	286	<0.01	0.04	0.3	0.039
W597743		112.0	160	0.8	2.1	<0.001	0.05	0.18	28.6	0.3	<0.2	172.5	<0.01	0.02	<0.2	0.014
W597744		91.3	210	34.4	5.4	0.001	0.13	0.24	25.3	0.6	0.3	344	<0.01	0.04	0.2	0.008
W597745		57.0	400	3.5	7.6	0.005	0.52	0.31	11.9	2.5	0.2	558	<0.01	0.05	0.2	0.060
W597746		12.9	450	0.7	0.5	<0.001	<0.01	0.10	13.7	<0.2	0.2	50.9	<0.01	<0.01	<0.2	0.339
W597747		0.7	70	0.3	0.4	<0.001	0.01	<0.05	0.3	0.2	<0.2	86.0	<0.01	<0.01	<0.2	<0.005
W597748		13.8	490	0.2	2.3	<0.001	<0.01	0.05	19.9	0.3	0.4	56.9	<0.01	<0.01	<0.2	0.321
W597749		12.3	450	0.3	6.5	<0.001	0.03	0.10	21.0	<0.2	0.4	58.5	<0.01	<0.01	<0.2	0.039
W597750		14.7	540	<0.2	3.9	<0.001	<0.01	0.10	23.1	<0.2	0.2	33.8	<0.01	0.01	<0.2	0.171
W597751		14.2	460	<0.2	1.9	<0.001	0.03	0.09	16.0	<0.2	0.2	46.3	<0.01	0.01	<0.2	0.293
W597752		10.8	500	<0.2	2.2	<0.001	0.02	0.12	11.7	<0.2	0.3	39.3	<0.01	<0.01	<0.2	0.278
W597753		362	670	8930	14.5	0.016	7.02	19.50	4.6	13.1	6.0	70.5	<0.01	0.66	1.9	0.057
W597754		12.3	460	4.1	0.7	<0.001	0.01	0.08	12.3	<0.2	0.3	42.2	<0.01	0.01	<0.2	0.329
W597755		12.1	500	0.7	0.9	0.001	0.11	0.05	6.8	<0.2	0.5	54.2	<0.01	0.01	<0.2	0.304
W597756		13.8	520	0.2	1.7	<0.001	<0.01	0.18	17.8	<0.2	0.3	36.4	<0.01	<0.01	<0.2	0.349
W597757		16.3	560	18.2	6.4	<0.001	0.01	0.29	17.6	<0.2	0.2	17.5	<0.01	0.03	<0.2	0.006
W597758		12.9	510	5.5	6.2	0.002	0.30	0.51	14.2	0.4	<0.2	57.9	<0.01	0.04	<0.2	0.015
W597759		13.0	500	5.2	6.0	<0.001	0.31	0.52	14.2	<0.2	<0.2	60.5	<0.01	0.03	<0.2	0.013
W597760		11.2	500	0.3	2.2	0.001	<0.01	0.42	16.3	0.4	0.3	53.5	<0.01	<0.01	<0.2	0.270
W597761		10.6	560	<0.2	1.9	0.001	0.04	0.19	14.1	<0.2	0.2	50.3	<0.01	<0.01	<0.2	0.225
W597762		12.5	730	3.1	5.6	<0.001	<0.01	0.72	23.5	<0.2	<0.2	28.4	<0.01	0.04	0.5	<0.005
W597763		34.6	860	6.8	6.1	0.001	<0.01	4.10	15.4	1.7	<0.2	23.3	<0.01	0.13	0.8	<0.005
W597764		4.1	390	5.4	6.7	0.001	<0.01	0.32	1.7	<0.2	<0.2	19.4	<0.01	0.01	3.9	<0.005
W597765		2.0	420	10.6	6.8	<0.001	<0.01	0.19	1.0	<0.2	<0.2	15.2	<0.01	0.01	8.1	<0.005
W597766		2.3	320	6.1	6.3	<0.001	<0.01	0.13	0.6	0.2	<0.2	45.6	<0.01	<0.01	3.5	<0.005
W597767		95.1	130	1.2	1.9	<0.001	<0.01	0.13	31.6	<0.2	<0.2	26.3	<0.01	0.01	<0.2	0.011
W597768		333	620	8480	12.5	0.013	6.53	20.7	4.2	14.0	6.0	69.5	<0.01	0.72	1.8	0.050
W597769		82.2	510	8.4	2.9	0.001	0.01	0.76	17.3	1.5	<0.2	258	<0.01	0.04	0.2	0.005
W597770		246	600	2.9	1.4	<0.001	<0.01	0.16	27.4	<0.2	<0.2	26.6	<0.01	0.03	<0.2	0.014
W597771		31.8	880	2.6	0.5	0.002	0.04	0.15	19.8	<0.2	0.7	57.9	<0.01	0.02	0.4	0.489
W597772		32.3	990	0.6	0.3	0.001	<0.01	0.13	10.5	0.2	0.8	22.6	<0.01	0.01	0.2	0.676
W597773		31.8	1190	0.7	1.0	<0.001	<0.01	0.16	22.8	0.2	0.8	88.8	<0.01	0.01	0.2	0.347
W597774		32.5	1150	0.6	0.7	<0.001	0.06	0.19	21.6	0.2	0.9	119.5	<0.01	0.01	0.2	0.316
W597775		32.3	1180	0.7	0.9	0.001	0.15	0.26	20.1	0.4	0.8	113.0	<0.01	0.01	0.2	0.284
W597776		29.3	1070	0.7	0.5	0.003	0.14	0.18	22.4	0.5	0.8	140.0	<0.01	0.01	0.2	0.384
W597777		24.4	1370	0.9	0.9	<0.001	<0.01	0.19	21.6	0.3	0.3	58.3	<0.01	<0.01	0.2	0.020
W597778		22.7	1330	20.9	2.6	0.002	0.42	1.93	20.4	1.1	0.3	136.0	<0.01	0.04	0.2	0.010
W597779		26.8	1270	13.9	2.7	0.003	0.40	0.80	23.6	0.4	0.2	130.0	<0.01	0.01	0.2	0.013
W597780		14.5	90	492	1.1	<0.001	0.03	1.26	1.4	0.3	0.2	3.6	<0.01	0.38	<0.2	<0.005
W597781		94.2	680	13.0	5.0	0.002	2.33	2.34	16.2	0.8	<0.2	260	<0.01	0.08	<0.2	<0.005

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 7-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295883

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Au-ICP21
	Analyte	Tl	U	V	W	Y	Zn	Zr	Au
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.001
W597742		0.02	0.28	191	0.09	11.95	113	4.3	0.001
W597743		0.03	0.09	209	<0.05	5.68	58	0.5	<0.001
W597744		0.07	0.26	176	<0.05	6.36	96	<0.5	0.076
W597745		0.09	0.41	78	0.39	12.00	94	2.2	0.004
W597746		<0.02	0.05	175	2.59	10.05	65	6.7	0.002
W597747		<0.02	0.07	2	<0.05	2.27	2	<0.5	<0.001
W597748		0.03	0.10	191	1.10	10.30	83	4.5	0.001
W597749		0.05	0.07	128	0.15	10.35	72	1.3	<0.001
W597750		0.04	<0.05	174	0.29	11.30	79	3.3	<0.001
W597751		0.03	<0.05	147	0.30	9.42	67	5.9	<0.001
W597752		0.02	<0.05	142	0.36	9.58	64	5.6	<0.001
W597753		1.77	4.23	310	2.47	7.71	8040	4.5	1.475
W597754		<0.02	<0.05	152	0.67	9.38	73	6.9	0.002
W597755		0.02	<0.05	138	0.62	9.33	70	4.2	0.001
W597756		0.03	<0.05	167	0.32	11.95	71	5.7	<0.001
W597757		0.08	<0.05	136	1.02	12.60	96	<0.5	0.141
W597758		0.08	<0.05	138	3.10	10.05	80	0.5	0.760
W597759		0.08	<0.05	134	2.98	10.10	78	<0.5	0.832
W597760		0.03	<0.05	155	0.36	11.30	79	4.6	0.007
W597761		0.02	<0.05	179	0.35	11.90	79	2.8	0.001
W597762		0.07	0.45	59	0.50	13.65	89	0.8	0.004
W597763		0.07	0.42	36	0.39	12.90	156	2.7	0.105
W597764		0.07	0.81	4	0.07	3.50	31	9.4	0.002
W597765		0.07	1.57	3	0.09	5.84	27	17.2	0.001
W597766		0.06	0.68	3	0.06	2.64	28	11.7	0.001
W597767		0.02	0.08	226	<0.05	5.49	72	<0.5	<0.001
W597768		1.70	4.33	295	2.44	6.93	7650	3.6	1.630
W597769		0.04	0.34	171	0.08	11.80	135	1.5	0.007
W597770		0.02	0.06	240	0.21	14.50	89	<0.5	<0.001
W597771		<0.02	0.17	271	0.20	25.8	94	20.0	<0.001
W597772		0.02	0.25	220	0.18	29.2	88	27.6	<0.001
W597773		0.02	0.18	280	0.17	33.0	97	15.5	<0.001
W597774		0.02	0.16	312	0.15	27.2	108	9.3	<0.001
W597775		0.02	0.18	301	0.17	27.3	107	8.4	<0.001
W597776		0.02	0.08	302	0.22	34.6	98	13.0	<0.001
W597777		<0.02	0.12	348	0.05	20.0	141	1.0	<0.001
W597778		0.03	0.19	292	0.16	25.1	143	1.1	0.353
W597779		0.03	0.10	319	0.10	31.5	134	1.0	0.009
W597780		0.02	0.08	19	0.23	0.92	199	<0.5	1.050
W597781		0.07	0.09	103	0.13	14.95	123	0.8	3.88

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 7-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295883

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	LOG-21
LOG-21d	LOG-23	PUL-32	PUL-32d
PUL-QC	SPL-21	SPL-21d	WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

ALS Canada Ltd.

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VANCOUVER BC V6B 1L8

Finalized Date: 7-DEC-2019
Account: MTT

CERTIFICATE WH19295889

Project: Hartless Joe

P.O. No.: HJ-19-005

This report is for 40 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 21-NOV-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-32d	Pulverize Split -Dup 85% <75um
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21d	Sample logging - ClientBarCode Dup
SPL-21d	Split sample - duplicate

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 7-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295889

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001
W597782		4.52	0.951
W597783		3.91	0.535
W597784		5.45	0.034
W597785		3.75	0.013
W597786		6.40	0.003
W597787		5.12	<0.001
W597788		3.38	0.007
W597789		5.68	0.001
W597790		4.96	<0.001
W597791		6.05	0.020
W597792		5.45	0.002
W597793		6.61	0.002
W597794		4.37	0.004
W597795		5.26	0.012
W597796		6.30	0.009
W597797		8.50	0.007
W597798		5.02	0.002
W597799		3.30	0.071
W597800		0.26	1.475
W597801		3.86	0.008
W597802		3.44	0.102
W597803		5.48	0.022
W597804		3.90	0.068
W597805		3.89	<0.001
W597806		7.47	<0.001
W597807		0.13	1.340
W597808		3.42	0.080
W597809		6.54	0.250
W597810		7.88	<0.001
W597811		8.29	0.001
W597812		7.31	0.013
W597813		8.98	<0.001
W597814		<0.02	<0.001
W597815		5.99	0.007
W597816		8.49	<0.001
W597817		6.32	0.003
W597818		6.63	0.005
W597819		7.81	0.002
W597820		7.42	0.040
W597821		4.19	<0.001

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 7-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295889

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

Applies to Method:				
	BAG-01	CRU-32	CRU-QC	LOG-21
	LOG-21d	LOG-23	PUL-32	PUL-32d
	PUL-QC	SPL-21	SPL-21d	WEI-21

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:	
	Au-ICP21

ALS Canada Ltd.

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 6-DEC-2019
Account: MTT

CERTIFICATE WH19295895

Project: Hartless Joe

P.O. No.: HJ-19-006

This report is for 15 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 21-NOV-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 6-DEC-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19295895

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
W597822		5.83	0.13	4.77	12.2	<0.02	<10	30	0.45	0.02	4.06	0.11	15.65	37.5	27	1.26
W597823		9.12	0.03	0.26	3.4	<0.02	<10	70	0.11	0.02	1.97	0.04	18.90	2.0	5	2.38
W597824		9.06	0.03	0.37	3.8	<0.02	<10	90	0.17	0.02	1.98	0.03	21.0	2.2	5	2.69
W597825		5.20	<0.01	0.01	0.3	<0.02	<10	10	<0.05	0.01	>25.0	0.01	0.90	1.0	1	<0.05
W597826		4.60	0.10	0.34	3.8	<0.02	<10	80	0.25	0.02	1.72	0.04	22.4	2.3	4	2.74
W597827		5.81	0.03	0.36	3.8	<0.02	<10	90	0.18	0.02	1.74	0.03	22.0	1.8	5	2.69
W597828		2.84	0.03	0.40	5.0	<0.02	<10	70	0.17	0.06	1.89	0.08	21.1	2.3	3	3.01
W597829		5.16	0.04	0.68	3.5	<0.02	<10	80	0.19	0.04	2.60	0.07	20.7	3.3	5	2.86
W597830		0.13	32.8	4.55	137.0	1.72	<10	40	0.22	9.80	4.45	34.1	12.00	88.3	54	0.89
W597831		8.01	0.21	4.74	19.5	<0.02	<10	30	0.38	0.06	5.11	0.21	17.95	41.8	23	2.65
W597832		4.49	0.04	0.34	5.8	<0.02	<10	60	0.19	0.10	2.73	0.07	19.00	2.9	4	3.13
W597833		4.81	0.08	0.35	9.4	<0.02	<10	40	0.13	0.16	2.01	0.07	14.05	4.2	5	2.49
W597834		7.26	0.18	3.89	23.2	<0.02	<10	30	0.32	0.04	4.51	0.26	17.70	43.9	76	2.94
W597835		3.39	0.20	3.66	23.1	<0.02	<10	20	0.30	0.05	4.44	0.24	16.35	42.5	81	2.92
W597836		5.72	0.22	3.61	9.7	<0.02	<10	10	0.26	0.01	4.54	0.20	9.81	28.2	82	1.75

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 6-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295895

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
W597822		48.0	9.37	19.45	0.23	0.16	0.01	0.088	0.01	5.3	23.8	4.02	1010	0.34	0.02	0.06
W597823		1.7	0.94	0.82	<0.05	0.36	<0.01	<0.005	0.16	11.7	0.4	0.20	222	0.22	0.03	<0.05
W597824		1.3	1.02	1.23	<0.05	0.42	<0.01	0.005	0.21	13.4	0.6	0.28	230	0.16	0.04	<0.05
W597825		9.6	0.07	0.07	0.06	<0.02	0.01	<0.005	0.01	1.0	0.5	0.73	101	<0.05	<0.01	<0.05
W597826		1.2	1.02	1.10	<0.05	0.38	<0.01	0.005	0.21	14.1	0.3	0.25	235	0.24	0.04	<0.05
W597827		4.2	1.06	0.96	<0.05	0.37	<0.01	<0.005	0.18	13.7	0.4	0.12	233	0.28	0.04	<0.05
W597828		3.8	1.10	1.30	<0.05	0.38	<0.01	<0.005	0.14	13.2	1.3	0.16	231	0.24	0.03	<0.05
W597829		5.9	1.28	2.65	<0.05	0.47	<0.01	0.007	0.17	12.8	4.1	0.29	315	0.26	0.03	<0.05
W597830		7020	8.54	6.45	0.08	0.10	0.48	2.39	0.23	6.0	4.8	1.10	589	54.5	0.31	0.12
W597831		60.7	10.50	20.2	0.20	0.05	0.01	0.095	0.01	5.9	30.5	3.59	956	2.09	0.02	<0.05
W597832		3.9	1.07	1.07	<0.05	0.38	<0.01	0.006	0.18	11.9	0.9	0.29	266	0.93	0.03	<0.05
W597833		3.0	1.37	1.07	<0.05	0.37	<0.01	0.007	0.11	8.2	1.7	0.31	236	0.34	0.03	<0.05
W597834		57.8	8.07	14.65	0.09	0.07	<0.01	0.083	0.06	7.8	30.0	3.42	916	0.94	0.02	<0.05
W597835		66.0	7.61	14.05	0.12	0.06	0.01	0.076	0.06	6.8	27.8	3.33	889	0.95	0.01	<0.05
W597836		77.3	7.29	13.25	0.12	0.12	0.01	0.056	0.04	3.8	26.8	2.82	1180	0.60	0.03	<0.05

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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295895

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
W597822		32.1	1000	0.9	0.5	0.001	0.10	0.12	27.3	0.4	0.6	111.0	0.01	<0.01	0.2	0.336
W597823		1.3	270	4.2	4.0	<0.001	0.06	0.13	0.6	0.5	<0.2	56.3	<0.01	0.03	3.3	<0.005
W597824		1.6	270	6.7	5.7	<0.001	0.10	0.15	0.8	0.2	<0.2	68.9	<0.01	0.02	3.7	<0.005
W597825		0.3	60	0.3	0.3	<0.001	0.01	0.05	0.2	0.2	<0.2	81.1	<0.01	0.01	<0.2	<0.005
W597826		1.6	280	6.8	6.1	<0.001	0.18	0.21	0.7	0.2	<0.2	64.3	<0.01	0.04	4.0	<0.005
W597827		1.5	270	5.1	5.0	<0.001	0.02	0.15	0.6	0.2	0.2	47.2	<0.01	0.02	3.6	<0.005
W597828		1.5	280	5.3	4.0	<0.001	0.01	0.19	0.6	0.3	<0.2	58.8	<0.01	0.01	3.7	<0.005
W597829		2.8	310	5.9	5.0	<0.001	0.03	0.15	1.4	0.2	0.2	86.7	<0.01	0.02	3.6	0.010
W597830		347	640	8690	13.7	0.015	6.74	19.90	4.2	14.3	5.8	70.5	<0.01	0.75	1.9	0.052
W597831		29.1	1240	6.9	0.5	0.001	0.20	0.20	26.9	<0.2	0.4	216	<0.01	0.01	0.2	0.133
W597832		3.0	370	10.1	5.6	0.001	0.12	0.15	0.7	0.2	0.3	106.0	<0.01	0.01	4.1	<0.005
W597833		3.6	350	6.5	3.4	0.001	0.11	0.21	1.1	0.2	<0.2	65.4	<0.01	0.03	3.5	<0.005
W597834		68.8	1480	1.8	1.8	0.004	0.21	0.98	20.8	0.7	0.4	135.5	<0.01	0.05	0.4	0.015
W597835		71.8	1200	1.9	1.7	0.003	0.22	1.23	20.5	0.6	0.5	132.0	<0.01	0.05	0.4	0.013
W597836		30.5	800	0.8	1.2	0.001	0.11	0.13	20.3	0.4	0.3	150.5	<0.01	0.01	<0.2	0.112

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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 6-DEC-2019
Account: MTT

Project: Hartless Joe

CERTIFICATE OF ANALYSIS WH19295895

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Au-ICP21
	Analyte	Tl	U	V	W	Y	Zn	Zr	Au
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.001
W597822		<0.02	0.12	360	0.31	28.6	106	5.3	<0.001
W597823		0.05	0.95	3	<0.05	3.04	25	12.3	<0.001
W597824		0.06	1.35	5	0.05	3.19	29	12.1	<0.001
W597825		<0.02	0.12	<1	<0.05	2.18	<2	<0.5	<0.001
W597826		0.06	1.61	2	0.08	3.16	37	11.8	0.001
W597827		0.05	0.71	2	0.10	2.99	23	12.3	<0.001
W597828		0.04	0.74	7	0.14	3.09	34	13.5	<0.001
W597829		0.05	0.47	16	0.13	4.20	30	15.6	<0.001
W597830		1.59	4.87	300	2.94	7.36	7870	3.7	1.430
W597831		<0.02	0.10	398	0.42	32.5	133	1.4	<0.001
W597832		0.05	1.62	5	0.09	3.02	27	12.9	<0.001
W597833		0.03	1.10	10	<0.05	3.08	28	12.5	0.003
W597834		0.02	0.36	279	0.07	21.0	104	2.5	<0.001
W597835		0.03	0.29	262	0.07	18.45	98	2.4	<0.001
W597836		0.02	0.09	266	0.36	16.15	89	2.7	<0.001

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CERTIFICATE OF ANALYSIS WH19295895

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	LOG-21
LOG-23	PUL-32	PUL-QC	SPL-21
WEI-21			

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

ALS Canada Ltd.

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 23-JUL-2019
Account: MTT

CERTIFICATE WH19164265

Project: Hartless Joe

This report is for 14 Rock samples submitted to our lab in Whitehorse, YT, Canada on 5-JUL-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL SCOTT NEWMAN	ANDREW CARNE	JACK MORTON

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
DRY-22	Drying - Maximum Temp 60C
CRU-32	Fine Crushing 90% <2mm
BAG-01	Bulk Master for Storage
CRU-QC	Crushing QC Test
SPL-21	Split sample - riffle splitter
PUL-QC	Pulverizing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Ag-OG46	Ore Grade Ag - Aqua Regia	
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
Au-GRA21	Au 30g FA-GRAV finish	WST-SIM

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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Project: Hartless Joe

Finalized Date: 23-JUL-2019
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CERTIFICATE OF ANALYSIS WH19164265

Sample Description	Method	WEI-21	Au-ICP21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co
	Units	kg	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.02	0.001	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1
W591773		0.48	>10.0	36.3	53.5	0.13	712	>25.0	<10	10	0.06	0.03	1.19	40.6	1.77	3.8
W591775		0.76	0.029		0.10	0.11	2.2	0.03	<10	20	0.06	0.11	0.36	0.07	6.15	0.7
W591776		0.53	0.119		76.9	0.92	4.3	0.12	<10	10	0.06	170.0	1.82	1.54	1.26	16.2
W591777		0.75	0.013		0.55	1.53	28.6	0.02	<10	10	0.21	1.05	9.80	0.24	5.64	23.4
W591780		0.78	0.005		0.30	1.51	19.0	<0.02	<10	20	0.16	0.33	5.89	0.85	7.00	15.4
W591782		0.26	0.002		0.84	1.34	1.3	<0.02	90	20	0.12	0.18	1.83	1.37	3.32	9.6
W591783		0.83	0.003		0.21	1.01	2.3	<0.02	<10	10	0.07	0.56	1.71	0.16	1.38	12.6
W591784		1.65	0.027		0.10	1.64	6.3	0.03	<10	30	0.09	0.05	0.48	0.55	1.87	13.5
W591785		1.36	0.028		0.13	0.13	106.5	0.03	<10	10	<0.05	0.03	0.21	0.33	0.07	67.3
W591786		0.82	0.001		0.05	0.49	3.7	<0.02	<10	130	0.22	0.25	0.75	0.07	32.9	2.3
W591787		0.78	0.017		1.04	0.52	40.5	<0.02	<10	30	0.10	1.87	0.46	0.62	4.11	10.5
W591788		1.06	>10.0	12.55	>100	0.21	863	11.45	<10	20	0.05	0.03	0.05	2.73	2.32	3.5
W591789		1.17	0.950		2.81	0.05	38.3	0.49	<10	10	<0.05	0.01	0.02	0.04	1.03	1.0
W591790		1.07	0.100		0.52	0.08	98.6	0.10	<10	20	0.09	0.01	0.05	0.13	0.79	4.2

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Project: Hartless Joe

Finalized Date: 23-JUL-2019
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CERTIFICATE OF ANALYSIS WH19164265

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	Units	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	1	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05
W591773		27	0.23	44.7	4.56	0.51	<0.05	<0.02	0.14	0.048	0.08	0.6	0.9	0.33	276	0.82
W591775		30	0.14	0.7	0.87	0.36	<0.05	0.09	<0.01	<0.005	0.05	3.7	0.3	0.01	144	0.64
W591776		95	0.16	6.1	3.72	3.61	<0.05	0.02	<0.01	0.017	0.03	0.4	7.3	1.34	447	0.81
W591777		10	1.28	47.7	5.99	7.33	<0.05	0.02	<0.01	0.048	0.01	2.5	9.5	1.47	492	0.69
W591780		19	0.42	44.7	3.62	4.54	<0.05	0.04	<0.01	0.104	0.03	2.8	13.1	1.45	753	0.78
W591782		27	0.08	1360	6.14	3.95	0.19	0.39	0.01	0.074	0.02	1.4	1.4	0.25	258	1.68
W591783		33	0.63	28.7	2.50	4.08	<0.05	<0.02	0.01	0.019	0.07	0.4	5.9	1.26	412	0.43
W591784		100	0.40	25.1	3.68	7.26	0.07	0.03	<0.01	0.022	0.01	0.7	6.7	1.69	377	0.34
W591785		331	0.07	6.8	4.30	0.25	<0.05	<0.02	0.02	0.007	<0.01	<0.2	1.1	16.50	660	0.08
W591786		3	4.49	5.5	1.24	1.29	<0.05	0.49	<0.01	<0.005	0.19	20.3	1.3	0.10	239	0.05
W591787		34	0.85	179.5	3.25	1.93	<0.05	0.11	<0.01	0.011	0.06	3.0	4.8	0.35	276	3.03
W591788		19	1.03	155.0	3.50	0.78	<0.05	<0.02	0.09	0.016	0.12	1.2	0.2	0.03	140	1.48
W591789		34	0.05	6.2	1.22	0.80	<0.05	<0.02	<0.01	<0.005	0.04	0.4	0.6	0.04	76	0.76
W591790		21	0.19	28.5	5.92	0.88	0.05	<0.02	<0.01	<0.005	0.01	0.3	0.3	0.03	339	0.91

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Account: MTT

CERTIFICATE OF ANALYSIS WH19164265

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01
W591773		0.01	<0.05	25.7	150	2740	2.3	<0.001	3.05	4.91	1.4	2.8	<0.2	76.6	<0.01	1.16
W591775		0.02	<0.05	1.2	70	5.7	1.9	<0.001	0.01	<0.05	0.2	<0.2	<0.2	18.2	<0.01	0.08
W591776		0.04	<0.05	26.6	140	3100	1.1	<0.001	1.65	0.09	10.7	3.6	<0.2	27.2	<0.01	21.8
W591777		0.01	<0.05	17.2	470	12.6	0.5	0.002	2.51	0.28	9.1	1.0	0.3	145.5	<0.01	0.06
W591780		0.02	<0.05	16.8	580	11.6	0.9	<0.001	0.77	0.20	8.2	0.7	<0.2	78.3	<0.01	0.04
W591782		0.01	0.31	11.2	530	2.6	0.3	0.001	1.13	0.34	5.7	17.3	3.6	29.9	<0.01	0.07
W591783		0.02	<0.05	12.3	120	3.9	3.4	<0.001	0.31	<0.05	9.0	0.2	<0.2	14.9	<0.01	0.32
W591784		0.02	<0.05	26.1	190	1.3	0.3	<0.001	0.18	0.05	12.5	0.5	<0.2	8.5	<0.01	<0.01
W591785		0.01	<0.05	1080	10	46.7	0.2	<0.001	0.09	32.3	7.0	0.2	<0.2	1.0	<0.01	0.09
W591786		0.04	<0.05	4.3	340	10.6	6.4	<0.001	<0.01	0.24	0.6	<0.2	<0.2	24.7	<0.01	0.02
W591787		0.01	<0.05	28.8	2020	55.1	2.0	<0.001	<0.01	1.58	2.0	2.5	<0.2	29.6	<0.01	0.67
W591788		0.01	<0.05	1.8	160	1310	3.1	0.001	0.04	21.8	3.0	2.3	<0.2	9.9	<0.01	1.51
W591789		0.01	<0.05	1.6	60	9.2	0.6	<0.001	0.07	0.58	0.7	<0.2	<0.2	6.4	<0.01	0.02
W591790		0.01	<0.05	3.3	140	3.5	0.3	<0.001	0.01	0.55	1.4	0.5	<0.2	2.0	<0.01	0.04

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
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www.alsglobal.com/geochemistry

To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 23-JUL-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19164265

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Ag-OG46
	Analyte	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Ag
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.2	0.005	0.02	0.05	1	0.05	0.05	2	0.5	1
W591773		<0.2	<0.005	0.03	<0.05	8	196.0	3.10	3520	<0.5	
W591775		0.9	<0.005	0.02	0.31	3	9.45	0.94	11	2.9	
W591776		<0.2	0.009	0.23	<0.05	63	19.05	1.93	36	0.5	
W591777		<0.2	0.053	<0.02	0.12	119	3.57	8.81	50	0.7	
W591780		<0.2	0.010	0.02	0.12	90	1.29	9.81	111	1.7	
W591782		0.2	0.250	0.05	0.47	51	1.00	6.48	128	13.4	
W591783		<0.2	0.007	0.03	<0.05	59	0.76	2.55	39	<0.5	
W591784		<0.2	0.010	<0.02	0.09	95	0.39	5.64	31	0.5	
W591785		<0.2	<0.005	<0.02	<0.05	13	0.36	0.17	7	<0.5	
W591786		7.0	<0.005	0.05	0.71	2	0.17	4.31	23	19.9	
W591787		0.3	<0.005	0.03	0.50	29	1.34	4.93	62	4.7	
W591788		<0.2	<0.005	0.04	0.09	43	320	1.79	186	<0.5	494
W591789		<0.2	<0.005	<0.02	<0.05	10	0.94	0.43	5	<0.5	
W591790		<0.2	<0.005	<0.02	0.38	15	0.67	1.39	4	0.5	

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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 23-JUL-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19164265

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	DRY-22
LOG-21	PUL-32	PUL-QC	SPL-21
WEI-21			

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Ag-OG46	Au-GRA21	Au-ICP21	ME-MS41
ME-OG46			

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 4-AUG-2019
Account: MTT

CERTIFICATE WH19168073

Project: Hartless Joe

This report is for 4 Rock samples submitted to our lab in Whitehorse, YT, Canada on 10-JUL-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL SCOTT NEWMAN	ANDREW CARNE	JACK MORTON

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
OA-HSUL10	Handling of High Sulphide Samples
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 4-AUG-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19168073

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1
W591774		0.74	0.012	0.70	2.27	1.8	<0.02	<10	50	0.46	0.32	1.17	0.27	55.9	33.6	377
W591778		0.47	0.008	1.26	1.93	34.4	<0.02	<10	20	0.35	0.38	0.55	8.20	9.19	14.2	38
W591779		0.95	0.019	0.98	4.52	103.5	<0.02	<10	10	0.36	0.03	1.54	0.24	2.56	52.9	287
W591781		0.99	0.019	2.00	1.82	58.0	<0.02	<10	10	0.27	0.35	1.20	5.43	12.85	26.0	43

***** See Appendix Page for comments regarding this certificate *****

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Project: Hartless Joe

Finalized Date: 4-AUG-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19168073

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
W591774		4.70	49.0	4.41	7.66	0.16	0.04	0.01	0.023	1.45	23.9	30.9	2.48	304	2.53	0.18
W591778		0.54	391	20.5	5.88	0.09	0.41	0.01	0.415	0.09	3.6	22.1	2.02	332	39.0	0.01
W591779		3.08	76.0	16.15	13.90	0.17	<0.02	<0.01	0.061	0.04	0.9	26.1	5.06	539	0.69	0.02
W591781		0.62	446	23.9	6.67	0.20	0.27	0.01	0.139	0.04	10.7	16.5	1.29	473	80.8	0.01

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
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VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 4-AUG-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19168073

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
W591774		1.90	116.5	3050	2.2	77.2	<0.001	2.04	0.78	5.2	3.7	1.0	104.0	<0.01	0.34	10.6
W591778		<0.05	226	2000	40.8	1.8	0.030	>10.0	2.27	3.7	9.1	1.2	5.1	<0.01	0.29	2.2
W591779		<0.05	159.5	330	13.5	1.4	0.002	10.00	3.23	22.9	0.7	<0.2	38.1	<0.01	0.01	<0.2
W591781		<0.05	189.0	4970	94.0	1.3	0.063	>10.0	2.59	4.8	19.0	0.6	17.5	<0.01	0.28	1.4

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
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VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 4-AUG-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19168073

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
W591774		0.603	0.46	3.87	118	0.19	7.90	74	0.9
W591778		0.010	0.12	4.71	121	0.10	11.35	2060	22.3
W591779		0.027	0.05	<0.05	205	<0.05	4.49	88	0.9
W591781		0.009	0.15	6.10	264	0.38	26.6	643	18.7

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: Hartless Joe

Finalized Date: 4-AUG-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19168073

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

CRU-31	CRU-QC	LOG-21	OA-HSUL10
PUL-31	PUL-QC	SPL-21	WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

ALS Canada Ltd.

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE WH19216456

Project: HARTLESS JOE

This report is for 72 Soil samples submitted to our lab in Whitehorse, YT, Canada on 30-AUG-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

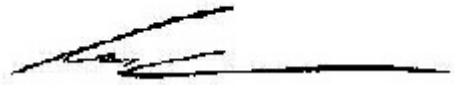
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SCR-41	Screen to -180um and save both

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature: 

Colin Ramshaw, Vancouver Laboratory Manager

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To: **STRATEGIC METALS LTD.**
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1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216456

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1
YY16301		0.29	0.001	0.06	1.78	5.0	<0.02	<10	120	0.25	0.11	0.31	0.07	14.45	9.4	31
YY16302		0.38	0.001	0.07	1.66	5.8	<0.02	<10	120	0.22	0.13	0.35	0.11	16.50	9.0	41
YY16303		0.50	0.003	0.07	2.38	6.0	<0.02	<10	170	0.30	0.10	0.41	0.10	19.35	14.4	56
YY16304		0.43	0.001	0.06	1.28	4.0	<0.02	<10	60	0.14	0.10	0.19	0.12	10.05	7.7	26
YY16305		0.52	0.002	0.05	1.15	3.9	<0.02	<10	90	0.19	0.08	0.39	0.10	23.3	9.1	34
YY16306		0.40	<0.001	0.06	1.85	4.6	<0.02	<10	90	0.28	0.12	0.23	0.19	18.95	7.0	35
YY16307		0.45	0.001	0.05	1.41	5.0	<0.02	<10	130	0.21	0.17	0.36	0.15	17.20	8.2	36
YY16308		0.45	0.003	0.09	2.21	4.8	<0.02	<10	100	0.31	0.12	0.25	0.12	18.30	8.2	37
YY16309		0.46	0.007	0.06	1.95	5.0	<0.02	<10	90	0.28	0.11	0.35	0.11	18.15	9.4	36
YY16310		0.55	0.004	0.05	2.39	5.6	<0.02	<10	150	0.29	0.14	0.24	0.08	18.45	10.5	44
YY16311		0.49	0.030	0.03	1.23	2.9	<0.02	<10	70	0.17	0.07	0.38	0.10	19.40	9.5	30
YY16312		0.48	<0.001	0.03	1.52	5.9	<0.02	<10	90	0.21	0.17	0.26	0.19	15.85	7.2	35
YY16313		0.62	0.001	0.05	1.43	4.2	<0.02	<10	80	0.21	0.08	0.36	0.08	22.1	9.0	32
YY16314		0.40	0.008	0.04	1.07	2.7	<0.02	<10	70	0.20	0.07	0.34	0.11	20.2	7.5	27
YY16315		0.50	0.002	0.05	1.79	5.3	<0.02	<10	110	0.29	0.10	0.34	0.10	23.2	11.3	41
YY16316		0.68	0.033	0.05	1.26	3.6	<0.02	<10	80	0.20	0.08	0.34	0.08	20.0	7.2	30
YY16317		0.64	0.001	0.07	1.60	4.0	<0.02	<10	110	0.24	0.10	0.38	0.10	21.1	10.6	35
YY16318		0.86	0.004	0.11	1.89	4.8	<0.02	<10	160	0.32	0.10	0.60	0.12	23.2	10.9	41
YY16319		0.60	0.027	0.11	1.94	4.0	<0.02	<10	150	0.25	0.11	0.39	0.06	23.9	9.9	40
YY16320		0.65	0.011	0.05	1.21	4.8	<0.02	<10	80	0.19	0.09	0.39	0.10	19.75	9.0	32
YY16321		0.56	<0.001	0.06	1.61	5.2	<0.02	<10	150	0.26	0.12	0.37	0.13	24.5	10.8	42
YY16322		0.55	0.002	0.20	2.59	11.6	<0.02	<10	170	0.47	0.21	0.34	0.14	28.4	16.2	55
YY16323		0.61	0.002	0.11	2.20	8.5	<0.02	<10	130	0.41	0.18	0.39	0.20	26.2	19.0	45
YY16324		0.54	0.008	0.16	2.19	8.6	<0.02	<10	100	0.40	0.21	0.32	0.23	25.2	29.6	39
YY16351		0.20	0.002	0.17	2.41	11.3	<0.02	<10	70	0.41	0.24	0.48	0.24	16.95	29.8	34
YY16352		0.33	0.003	0.06	1.58	6.1	<0.02	<10	90	0.28	0.12	0.38	0.28	25.4	14.2	39
YY16353		0.39	0.010	0.09	1.30	10.1	<0.02	<10	130	0.44	0.26	0.54	0.36	18.55	14.4	29
YY16354		0.40	0.001	0.08	2.28	5.8	<0.02	<10	90	0.39	0.19	0.41	0.28	17.55	22.4	59
YY16355		0.28	<0.001	0.14	1.76	5.5	<0.02	<10	120	0.37	0.18	0.51	0.24	14.75	19.4	39
YY16356		0.41	0.003	0.12	1.66	4.7	<0.02	<10	150	0.51	0.13	0.56	0.25	14.85	33.3	75
YY16357		0.36	0.002	0.10	1.74	6.4	<0.02	<10	140	0.24	0.11	0.59	0.13	18.55	12.5	45
YY16358		0.50	0.006	0.06	1.30	5.0	<0.02	<10	120	0.26	0.12	0.41	0.26	21.4	10.1	33
YY16359		0.47	0.004	0.11	1.53	5.5	<0.02	<10	120	0.32	0.12	0.42	0.14	21.8	11.2	40
YY16360		0.36	0.001	0.05	1.16	4.5	<0.02	<10	90	0.21	0.08	0.45	0.11	18.05	9.2	35
YY16361		0.42	0.001	0.09	1.43	4.8	<0.02	<10	120	0.23	0.10	0.49	0.11	18.00	9.5	39
YY16362		0.45	0.001	0.06	1.16	4.9	<0.02	<10	90	0.17	0.08	0.54	0.10	19.70	9.5	35
YY16363		0.41	0.002	0.10	1.51	5.7	<0.02	<10	120	0.26	0.11	0.46	0.11	23.4	10.0	43
YY16364		0.38	0.001	0.11	1.31	5.0	<0.02	<10	120	0.27	0.12	0.40	0.15	21.1	6.6	37
YY16365		0.47	0.001	0.06	0.94	3.5	<0.02	<10	80	0.17	0.07	0.40	0.11	19.95	8.1	32
YY16366		0.35	0.001	0.06	1.61	6.0	<0.02	<10	100	0.31	0.19	0.26	0.15	21.1	7.0	31

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216456

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
YY16301		1.26	31.2	2.00	5.25	<0.05	<0.02	0.01	0.016	0.05	7.5	7.8	0.56	322	0.50	0.04
YY16302		1.62	24.6	2.54	6.04	<0.05	<0.02	0.02	0.016	0.06	8.5	8.8	0.62	284	0.66	0.03
YY16303		3.11	50.0	2.59	5.81	<0.05	0.02	0.02	0.017	0.05	11.2	12.2	1.10	437	0.47	0.04
YY16304		0.94	19.2	1.61	4.21	<0.05	<0.02	0.02	0.012	0.03	5.0	4.9	0.38	477	0.70	0.03
YY16305		0.77	20.8	1.90	3.65	0.05	0.05	0.01	0.009	0.06	12.9	7.3	0.56	292	0.33	0.03
YY16306		1.18	20.0	2.17	5.61	<0.05	<0.02	0.02	0.015	0.05	10.3	7.0	0.46	417	0.69	0.02
YY16307		1.42	21.8	2.28	7.24	<0.05	<0.02	0.01	0.018	0.05	9.2	8.7	0.56	252	0.77	0.02
YY16308		1.13	23.1	2.26	6.60	<0.05	<0.02	0.03	0.018	0.05	9.7	8.8	0.57	279	0.59	0.02
YY16309		1.22	23.8	2.26	6.31	<0.05	<0.02	0.02	0.017	0.05	9.9	9.0	0.57	267	0.51	0.03
YY16310		1.80	33.2	2.70	6.98	<0.05	<0.02	0.01	0.019	0.07	10.3	10.9	0.69	414	0.58	0.02
YY16311		0.70	18.6	1.78	4.03	0.05	0.02	0.01	0.012	0.04	10.4	6.9	0.50	264	0.29	0.03
YY16312		1.10	14.6	2.51	8.51	<0.05	0.02	0.02	0.019	0.05	7.8	9.0	0.47	259	0.83	0.02
YY16313		0.80	21.8	1.87	4.41	0.05	0.02	0.01	0.014	0.05	12.2	7.2	0.52	271	0.34	0.03
YY16314		0.53	15.7	1.58	3.47	<0.05	0.02	0.01	0.010	0.03	10.5	5.6	0.40	202	0.28	0.03
YY16315		0.90	25.6	2.31	5.31	<0.05	0.04	0.02	0.018	0.05	10.7	9.1	0.69	337	0.48	0.03
YY16316		0.77	22.1	1.80	4.02	<0.05	<0.02	0.01	0.013	0.04	11.3	7.0	0.47	212	0.36	0.03
YY16317		1.06	24.0	2.06	5.14	0.05	0.02	0.02	0.016	0.05	11.7	9.0	0.59	317	0.41	0.03
YY16318		1.19	34.5	2.33	5.48	<0.05	0.02	0.02	0.017	0.06	13.4	10.1	0.69	380	0.53	0.04
YY16319		1.26	31.7	2.10	5.75	<0.05	0.03	0.02	0.019	0.05	14.3	10.7	0.68	232	0.34	0.03
YY16320		0.72	21.6	1.85	3.69	<0.05	0.02	0.01	0.012	0.04	10.6	7.0	0.52	274	0.39	0.03
YY16321		1.12	27.6	2.26	4.73	<0.05	0.02	0.02	0.015	0.07	12.2	9.4	0.69	387	0.41	0.02
YY16322		2.42	64.4	3.16	7.71	<0.05	0.02	0.03	0.027	0.09	16.6	14.1	0.87	561	1.25	0.03
YY16323		3.39	62.4	3.18	6.79	0.05	<0.02	0.03	0.026	0.07	14.1	13.0	0.78	520	0.85	0.03
YY16324		4.44	136.0	3.79	7.06	0.05	<0.02	0.08	0.027	0.06	12.9	12.8	0.75	635	1.49	0.03
YY16351		4.49	190.5	4.48	7.44	0.05	0.02	0.05	0.037	0.05	8.0	10.9	0.72	553	3.10	0.03
YY16352		1.46	43.6	2.44	4.91	0.06	0.02	0.02	0.026	0.06	13.2	9.6	0.67	421	0.64	0.03
YY16353		2.68	38.0	4.48	4.36	<0.05	<0.02	0.04	0.102	0.07	8.7	7.6	0.52	800	1.58	0.02
YY16354		3.65	70.4	4.31	7.24	<0.05	<0.02	0.03	0.047	0.05	8.8	14.0	1.10	634	1.03	0.03
YY16355		3.85	67.2	4.34	5.17	<0.05	0.02	0.03	0.057	0.04	7.6	8.4	0.70	871	0.87	0.03
YY16356		8.35	54.5	7.06	5.95	0.05	0.02	0.04	0.139	0.06	6.5	9.0	0.65	1380	1.01	0.03
YY16357		1.60	37.6	2.58	4.95	<0.05	0.02	0.02	0.019	0.07	9.4	9.7	0.77	420	0.62	0.04
YY16358		1.84	32.2	2.60	4.44	0.06	0.02	0.01	0.039	0.05	11.5	8.3	0.57	457	0.63	0.03
YY16359		1.21	32.5	2.09	5.26	<0.05	0.02	0.02	0.016	0.05	12.8	11.0	0.65	321	0.54	0.03
YY16360		0.75	20.9	1.90	3.58	<0.05	0.02	0.01	0.011	0.05	10.0	7.5	0.57	297	0.43	0.03
YY16361		1.07	24.5	2.07	4.45	<0.05	0.02	0.03	0.014	0.05	10.8	9.6	0.65	356	0.57	0.03
YY16362		0.79	25.0	1.96	3.67	0.06	0.03	0.01	0.011	0.06	10.9	7.8	0.60	295	0.43	0.04
YY16363		1.10	32.6	2.22	4.79	0.06	0.04	0.02	0.014	0.08	13.9	10.4	0.71	348	0.55	0.03
YY16364		1.14	23.9	1.91	5.17	<0.05	<0.02	0.02	0.016	0.05	12.0	7.7	0.46	229	1.09	0.02
YY16365		0.65	19.3	1.75	3.02	0.05	0.02	0.01	0.008	0.06	10.6	6.7	0.53	292	0.34	0.03
YY16366		1.16	20.9	2.06	5.21	<0.05	<0.02	0.03	0.017	0.05	11.4	9.2	0.44	241	0.78	0.02

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Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216456

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
YY16301		0.49	20.8	680	4.2	6.0	<0.001	0.05	0.25	2.4	<0.2	0.3	14.5	<0.01	0.03	0.4
YY16302		0.69	22.7	480	4.7	8.1	<0.001	0.06	0.35	2.7	0.2	0.3	16.8	<0.01	0.02	0.6
YY16303		0.49	39.2	600	5.3	5.7	<0.001	0.04	0.31	4.8	0.4	0.3	17.5	<0.01	0.02	1.3
YY16304		0.28	13.9	590	3.4	4.2	<0.001	0.07	0.24	1.0	0.3	0.2	8.1	<0.01	0.02	<0.2
YY16305		0.65	19.6	740	3.9	5.8	<0.001	0.02	0.24	3.1	0.3	0.2	12.7	<0.01	0.01	4.7
YY16306		0.60	15.2	680	5.6	6.9	<0.001	0.08	0.31	1.2	0.3	0.4	12.0	<0.01	0.01	0.2
YY16307		0.94	19.5	490	6.4	10.5	<0.001	0.06	0.40	2.4	0.3	0.6	21.1	<0.01	0.03	0.6
YY16308		0.73	19.6	630	5.5	5.4	<0.001	0.07	0.31	1.7	0.4	0.4	12.8	<0.01	0.03	0.3
YY16309		0.58	21.1	650	5.6	6.0	<0.001	0.05	0.33	2.0	0.2	0.4	16.5	<0.01	0.01	0.4
YY16310		0.80	25.3	550	6.3	8.4	<0.001	0.04	0.33	3.4	0.3	0.4	11.0	<0.01	0.02	1.0
YY16311		0.74	17.4	620	3.8	4.0	<0.001	0.03	0.19	2.9	0.2	0.2	14.0	<0.01	0.01	2.4
YY16312		1.89	18.5	390	7.8	5.3	<0.001	0.04	0.43	2.5	0.3	0.6	15.1	<0.01	0.02	1.0
YY16313		0.85	19.6	610	4.0	5.4	<0.001	0.03	0.24	3.5	0.2	0.2	12.3	<0.01	0.01	3.7
YY16314		0.71	15.8	670	3.0	3.4	<0.001	0.03	0.21	2.6	0.2	0.2	11.7	<0.01	0.01	2.9
YY16315		1.17	31.3	470	5.1	5.5	<0.001	0.03	0.30	4.0	0.4	0.3	14.6	<0.01	0.02	4.6
YY16316		0.70	17.6	500	3.6	5.0	<0.001	0.03	0.22	2.7	0.3	0.3	13.0	<0.01	0.02	1.7
YY16317		0.91	23.0	610	4.7	6.4	<0.001	0.03	0.25	3.5	<0.2	0.3	15.0	<0.01	0.02	2.6
YY16318		0.84	26.0	680	4.9	8.2	<0.001	0.05	0.31	4.1	0.3	0.3	22.7	<0.01	0.01	3.5
YY16319		0.97	26.7	520	5.1	7.5	<0.001	0.02	0.24	4.8	0.3	0.3	15.9	<0.01	0.01	3.8
YY16320		0.72	19.3	600	3.7	4.9	<0.001	0.02	0.25	3.0	0.2	0.2	13.4	<0.01	0.01	3.5
YY16321		0.91	24.9	700	6.0	8.1	<0.001	0.03	0.33	3.5	0.2	0.3	17.8	<0.01	0.03	2.8
YY16322		0.89	36.1	910	8.6	11.9	<0.001	0.09	0.56	4.8	0.7	0.4	16.1	<0.01	0.04	1.5
YY16323		0.87	33.3	890	8.0	8.7	<0.001	0.04	0.45	5.4	0.2	0.4	18.4	<0.01	0.05	2.3
YY16324		0.81	33.2	1170	7.1	7.5	<0.001	0.05	0.50	5.4	0.8	0.4	18.1	<0.01	0.09	1.4
YY16351		0.52	26.7	1130	6.3	4.1	<0.001	0.12	0.44	3.8	1.2	0.4	20.2	<0.01	0.16	0.3
YY16352		0.82	25.2	790	5.0	5.9	<0.001	0.03	0.34	4.3	0.3	0.3	15.0	<0.01	0.03	3.1
YY16353		0.22	18.6	650	5.1	3.6	<0.001	0.05	1.96	5.2	0.3	0.6	15.9	<0.01	0.09	0.7
YY16354		0.57	32.2	890	5.6	5.6	<0.001	0.04	0.39	8.0	0.4	0.4	21.9	<0.01	0.10	1.4
YY16355		0.34	21.0	730	6.6	3.9	<0.001	0.07	0.72	9.0	0.5	0.3	18.9	<0.01	0.06	0.7
YY16356		0.20	41.8	880	4.3	4.9	<0.001	0.04	1.49	22.9	<0.2	0.7	19.1	<0.01	0.03	0.8
YY16357		0.64	27.8	670	4.9	7.1	<0.001	0.05	0.37	4.0	0.4	0.2	18.8	<0.01	0.01	1.6
YY16358		0.54	20.0	730	6.1	4.8	<0.001	0.03	0.32	4.3	0.4	0.4	16.2	<0.01	0.02	2.5
YY16359		0.74	26.1	640	5.1	7.7	<0.001	0.05	0.34	3.5	<0.2	0.3	18.9	<0.01	0.02	1.9
YY16360		0.67	18.9	680	3.7	5.2	<0.001	0.03	0.26	2.9	<0.2	0.2	15.2	<0.01	0.02	2.3
YY16361		0.61	22.3	550	4.1	7.0	<0.001	0.05	0.27	3.1	0.5	0.2	18.8	<0.01	0.01	2.8
YY16362		0.66	21.3	640	3.6	5.5	<0.001	0.02	0.28	3.3	<0.2	0.2	17.0	<0.01	0.01	3.3
YY16363		0.90	26.1	660	4.8	9.2	<0.001	0.02	0.31	4.6	0.2	0.3	17.0	<0.01	0.01	4.5
YY16364		0.51	20.5	870	6.8	7.3	<0.001	0.09	0.55	1.1	0.3	0.3	21.4	<0.01	0.02	0.2
YY16365		0.55	18.8	550	4.0	5.4	<0.001	0.01	0.28	2.8	<0.2	0.2	15.3	<0.01	0.02	2.9
YY16366		0.75	16.7	540	5.9	6.9	<0.001	0.04	0.38	1.9	0.3	0.4	14.0	<0.01	0.02	0.5

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Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
YY16301		0.064	0.08	0.66	51	0.40	4.70	38	<0.5
YY16302		0.077	0.08	0.59	68	0.61	4.73	41	<0.5
YY16303		0.052	0.08	0.87	58	2.22	6.66	49	0.6
YY16304		0.042	0.05	0.49	42	0.81	2.77	30	<0.5
YY16305		0.091	0.08	0.78	49	0.34	5.58	29	2.0
YY16306		0.054	0.10	0.95	55	0.34	5.24	37	<0.5
YY16307		0.080	0.10	0.71	57	0.45	4.06	42	<0.5
YY16308		0.063	0.09	1.02	55	0.36	5.53	38	<0.5
YY16309		0.057	0.09	0.76	57	0.42	5.32	36	<0.5
YY16310		0.081	0.13	0.96	68	0.58	5.46	47	<0.5
YY16311		0.076	0.06	0.49	49	0.36	4.76	25	0.6
YY16312		0.121	0.11	0.52	73	0.35	2.96	36	0.9
YY16313		0.081	0.07	0.77	50	0.42	6.05	27	0.8
YY16314		0.067	0.04	0.56	43	0.28	4.61	23	0.7
YY16315		0.092	0.08	0.98	59	0.34	5.31	36	1.4
YY16316		0.071	0.06	0.64	47	0.44	4.57	28	<0.5
YY16317		0.082	0.09	0.67	54	0.40	5.45	35	0.7
YY16318		0.077	0.09	1.00	60	0.51	6.78	42	0.8
YY16319		0.085	0.12	0.93	55	0.49	7.07	37	1.0
YY16320		0.080	0.06	0.64	48	0.40	4.99	29	0.9
YY16321		0.086	0.11	0.61	54	0.33	5.47	40	0.6
YY16322		0.080	0.18	1.45	76	0.72	10.45	56	0.5
YY16323		0.085	0.12	1.21	74	0.74	9.04	61	0.5
YY16324		0.079	0.12	1.70	83	0.67	13.65	71	<0.5
YY16351		0.059	0.10	1.10	86	0.54	13.65	98	<0.5
YY16352		0.089	0.08	0.82	59	0.49	7.67	61	0.9
YY16353		0.026	0.05	0.68	61	2.56	13.95	106	<0.5
YY16354		0.076	0.06	1.47	105	0.65	12.85	77	0.5
YY16355		0.034	0.05	1.03	101	1.08	16.75	78	0.6
YY16356		0.026	0.08	0.90	181	2.75	27.6	94	<0.5
YY16357		0.079	0.09	0.80	64	0.53	6.07	48	0.5
YY16358		0.073	0.05	0.76	58	0.65	10.40	57	0.6
YY16359		0.067	0.09	0.97	53	0.42	5.99	37	0.6
YY16360		0.078	0.07	0.52	49	0.46	4.76	32	0.5
YY16361		0.066	0.07	0.85	53	1.35	4.02	43	0.6
YY16362		0.080	0.07	0.58	50	0.40	5.40	33	1.1
YY16363		0.093	0.10	1.09	56	0.43	7.57	43	1.2
YY16364		0.049	0.06	1.00	49	0.26	5.81	33	<0.5
YY16365		0.069	0.06	0.41	43	0.41	4.38	29	0.8
YY16366		0.063	0.09	0.70	49	0.44	4.32	36	<0.5

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216456

Sample Description	Method	WEI-21	Au-ICP21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Au	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
YY16367		0.43	0.002	0.04	1.21	4.8	<0.02	<10	70	0.20	0.08	0.29	0.17	18.80	8.0	34
YY16368		0.47	0.004	0.04	1.74	7.4	<0.02	<10	100	0.32	0.13	0.31	0.17	20.3	9.7	47
YY16369		0.43	0.003	0.55	1.90	10.6	<0.02	<10	120	0.51	1.49	0.21	0.18	25.0	11.5	33
YY16370		0.48	0.004	0.04	1.08	2.5	<0.02	<10	70	0.19	0.09	0.42	0.08	24.6	5.8	30
YY16371		0.37	<0.001	0.09	1.68	5.6	<0.02	<10	110	0.29	0.12	0.29	0.12	19.65	8.9	36
YY16372		0.43	0.001	0.10	1.82	5.3	<0.02	<10	80	0.31	0.10	0.29	0.13	22.5	10.2	38
YY16373		0.33	0.002	0.10	1.54	5.4	<0.02	<10	50	0.27	0.10	0.22	0.18	18.85	7.9	34
YY16374		0.41	<0.001	0.05	1.38	4.9	<0.02	<10	70	0.22	0.08	0.26	0.10	20.4	8.1	36
YY16375		0.43	0.002	0.06	1.26	5.1	0.02	<10	70	0.22	0.09	0.38	0.09	20.9	13.2	39
YY16376		0.39	0.002	0.08	1.86	7.3	<0.02	<10	130	0.30	0.12	0.32	0.11	18.80	11.9	43
YY16401		0.44	<0.001	0.07	1.72	5.7	<0.02	<10	60	0.29	0.13	0.22	0.08	18.75	7.3	31
YY16402		0.44	<0.001	0.05	1.44	3.3	<0.02	<10	90	0.22	0.08	0.35	0.08	22.3	9.2	36
YY16403		0.42	0.003	0.12	1.40	3.8	0.07	<10	80	0.22	0.11	0.19	0.08	13.60	5.4	31
YY16404		0.44	0.004	0.02	1.18	3.5	<0.02	<10	50	0.15	0.11	0.16	0.07	13.00	4.6	26
YY16405		0.38	<0.001	0.01	0.94	6.1	<0.02	<10	40	0.15	0.18	0.09	0.07	12.75	3.4	21
YY16406		0.39	<0.001	0.03	1.01	3.1	<0.02	<10	60	0.15	0.15	0.14	0.08	12.65	3.8	22
YY16407		0.43	0.004	0.04	2.04	5.2	<0.02	<10	70	0.29	0.10	0.22	0.13	18.30	7.2	35
YY16408		0.35	<0.001	0.02	0.91	3.3	<0.02	<10	40	0.12	0.16	0.08	0.07	13.50	2.4	19
YY16409		0.39	<0.001	0.06	2.38	5.9	<0.02	<10	160	0.45	0.15	0.28	0.10	24.1	8.1	39
YY16410		0.42	0.001	0.05	1.40	5.5	<0.02	<10	130	0.22	0.10	0.39	0.11	21.3	10.0	40
YY16411		0.41	0.015	0.05	1.31	3.8	<0.02	<10	80	0.21	0.08	0.27	0.13	17.10	8.3	33
YY16412		0.58	<0.001	0.03	1.16	4.9	<0.02	<10	70	0.24	0.09	0.43	0.16	21.2	9.1	35
YY16413		0.40	<0.001	0.04	1.11	4.1	<0.02	<10	80	0.19	0.10	0.33	0.12	19.45	7.7	33
YY16414		0.42	<0.001	0.06	1.90	4.3	<0.02	<10	70	0.28	0.09	0.23	0.17	16.20	6.4	33
YY16415		0.60	0.004	0.04	1.47	5.5	<0.02	<10	120	0.24	0.11	0.39	0.10	20.6	10.2	41
YY16416		0.47	0.002	0.15	1.72	6.3	<0.02	<10	110	0.32	0.15	0.31	0.15	19.70	8.7	44
YY16417		0.32	<0.001	0.13	1.19	2.1	<0.02	<10	130	0.22	0.08	0.30	0.13	15.10	7.0	21
YY16418		0.32	0.001	0.25	1.93	4.9	<0.02	<10	160	0.41	0.13	0.30	0.18	21.6	12.2	39
YY16419		0.50	0.002	0.06	1.59	4.6	<0.02	<10	60	0.23	0.08	0.29	0.11	24.6	9.6	38
YY16420		0.70	0.002	0.08	1.59	4.8	<0.02	<10	100	0.28	0.10	0.39	0.07	22.8	10.0	41
YY16421		0.40	0.001	0.12	1.51	9.7	<0.02	<10	120	0.27	0.10	0.46	0.08	25.2	13.9	40
YY16422		0.39	0.006	0.09	1.98	8.1	<0.02	<10	160	0.34	0.15	0.42	0.10	23.3	13.4	45

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Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216456

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
	LOD	0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
YY16367		0.70	19.9	1.87	3.59	0.05	<0.02	0.02	0.012	0.05	9.7	6.8	0.49	279	0.58	0.02
YY16368		1.30	23.6	2.53	6.02	<0.05	<0.02	0.01	0.024	0.06	11.0	10.6	0.65	278	1.09	0.02
YY16369		3.40	58.7	2.94	7.07	0.05	<0.02	0.02	0.059	0.06	13.2	15.2	0.74	334	19.75	0.02
YY16370		0.82	20.2	1.43	3.64	0.06	<0.02	0.01	0.014	0.04	13.7	7.1	0.49	141	0.52	0.03
YY16371		1.17	20.0	2.18	5.50	<0.05	<0.02	0.02	0.018	0.05	10.6	9.4	0.54	301	0.73	0.02
YY16372		1.02	25.0	2.20	5.31	<0.05	0.02	0.03	0.017	0.05	10.5	9.1	0.56	316	0.80	0.03
YY16373		0.97	15.8	2.17	5.12	0.05	0.02	0.02	0.013	0.04	9.4	8.0	0.47	196	0.76	0.02
YY16374		0.86	15.1	2.03	4.73	<0.05	0.03	0.02	0.013	0.04	10.8	9.2	0.53	195	0.59	0.02
YY16375		1.28	44.0	2.14	4.08	0.06	0.03	0.01	0.013	0.06	11.1	9.0	0.62	299	0.67	0.03
YY16376		2.02	37.7	2.75	5.85	<0.05	<0.02	0.03	0.021	0.06	10.0	13.1	0.68	305	0.72	0.03
YY16401		1.09	17.0	2.17	6.01	<0.05	0.02	0.04	0.015	0.06	9.9	8.5	0.43	184	0.75	0.02
YY16402		0.98	23.8	2.03	4.74	0.05	<0.02	0.02	0.014	0.05	11.5	8.7	0.58	257	0.42	0.03
YY16403		1.01	16.9	2.10	5.67	<0.05	<0.02	0.02	0.016	0.05	7.6	7.3	0.39	152	0.69	0.02
YY16404		0.97	8.2	1.74	5.37	<0.05	0.02	0.02	0.010	0.03	6.6	4.0	0.27	204	0.76	0.02
YY16405		1.09	7.4	2.07	8.19	<0.05	0.02	0.02	0.015	0.04	6.6	5.4	0.21	118	1.02	0.01
YY16406		0.88	7.5	1.55	6.67	<0.05	<0.02	0.02	0.013	0.03	6.6	4.4	0.22	173	0.93	0.01
YY16407		0.89	14.8	2.19	5.43	<0.05	0.02	0.06	0.014	0.05	9.4	8.3	0.44	209	0.74	0.02
YY16408		1.11	6.6	1.54	8.09	<0.05	<0.02	0.04	0.013	0.03	6.8	4.3	0.16	92	0.89	0.01
YY16409		1.82	36.4	2.67	6.54	<0.05	<0.02	0.02	0.020	0.07	12.4	11.4	0.57	457	0.70	0.02
YY16410		0.96	23.3	2.16	4.11	<0.05	0.02	0.02	0.011	0.07	10.5	9.5	0.64	391	0.64	0.03
YY16411		0.80	20.3	1.86	3.74	<0.05	<0.02	0.02	0.012	0.04	8.6	6.4	0.45	357	0.67	0.02
YY16412		0.83	18.6	1.91	4.02	<0.05	<0.02	0.02	0.014	0.05	10.8	8.2	0.49	272	0.53	0.02
YY16413		0.83	21.7	1.87	3.89	<0.05	0.02	0.02	0.012	0.05	10.8	7.6	0.52	242	0.53	0.03
YY16414		0.84	16.6	2.10	4.42	<0.05	<0.02	0.03	0.016	0.04	8.6	6.3	0.40	230	0.74	0.02
YY16415		1.03	27.8	2.12	4.59	0.06	0.02	0.01	0.019	0.05	11.1	9.9	0.65	299	0.82	0.03
YY16416		1.39	29.9	2.13	5.57	<0.05	<0.02	0.02	0.019	0.05	11.1	10.7	0.60	231	1.04	0.02
YY16417		1.03	19.0	1.51	3.73	<0.05	<0.02	0.02	0.011	0.03	7.4	4.9	0.33	671	1.01	0.02
YY16418		2.17	30.7	2.36	5.79	<0.05	<0.02	0.05	0.021	0.07	12.6	10.1	0.57	581	1.35	0.03
YY16419		0.79	16.6	2.05	4.33	<0.05	0.02	0.04	0.012	0.05	13.0	8.5	0.49	285	0.76	0.02
YY16420		1.25	34.4	2.15	4.65	0.05	0.02	0.01	0.015	0.06	12.3	9.6	0.66	280	0.57	0.03
YY16421		1.58	40.1	2.34	4.95	<0.05	<0.02	0.03	0.016	0.05	14.4	10.7	0.62	346	0.90	0.03
YY16422		2.71	43.9	2.91	6.57	<0.05	<0.02	0.02	0.022	0.07	12.7	14.3	0.76	436	0.87	0.03

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Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
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CERTIFICATE OF ANALYSIS WH19216456

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
YY16367		0.49	19.3	690	4.1	4.9	<0.001	0.03	0.27	2.1	<0.2	0.2	11.5	<0.01	0.02	1.7
YY16368		0.79	26.1	590	5.3	6.4	<0.001	0.04	0.43	3.0	0.3	0.4	15.2	<0.01	0.04	1.4
YY16369		0.57	21.9	710	12.7	8.2	<0.001	0.07	0.57	3.7	0.4	0.8	14.8	<0.01	0.16	0.8
YY16370		0.60	17.7	730	3.7	4.7	<0.001	0.02	0.23	2.7	0.2	0.2	16.8	<0.01	0.02	1.6
YY16371		0.73	19.9	600	5.7	7.0	<0.001	0.04	0.30	2.2	0.2	0.3	16.0	<0.01	0.03	0.5
YY16372		1.00	25.1	540	5.1	6.6	<0.001	0.03	0.29	3.5	<0.2	0.3	13.0	<0.01	0.02	2.2
YY16373		1.24	20.2	340	4.7	7.6	<0.001	0.02	0.30	2.9	0.2	0.3	11.5	<0.01	0.02	3.0
YY16374		0.94	20.7	390	4.2	5.2	<0.001	0.02	0.24	3.1	0.2	0.2	10.8	<0.01	0.02	2.6
YY16375		0.73	24.8	580	3.9	5.6	<0.001	0.02	0.56	3.6	0.2	0.2	14.6	<0.01	0.02	3.0
YY16376		0.75	26.8	710	4.8	8.6	<0.001	0.06	0.47	3.0	<0.2	0.3	15.3	<0.01	0.04	0.8
YY16401		1.51	16.3	320	6.3	8.8	<0.001	0.02	0.32	2.9	0.2	0.4	12.2	0.01	0.03	2.3
YY16402		0.87	21.8	500	4.1	5.7	<0.001	0.02	0.23	3.4	0.2	0.2	15.2	<0.01	0.02	2.1
YY16403		0.95	14.4	370	4.7	5.6	<0.001	0.04	0.25	2.2	0.3	0.3	10.2	<0.01	0.02	0.7
YY16404		1.30	10.0	400	5.4	4.8	<0.001	0.02	0.26	2.1	0.2	0.5	9.0	0.01	0.01	1.8
YY16405		2.20	8.6	190	7.1	7.4	<0.001	0.01	0.46	1.8	0.2	0.8	7.9	<0.01	0.05	1.5
YY16406		1.54	9.3	340	6.8	4.8	<0.001	0.02	0.31	1.5	<0.2	0.6	9.8	<0.01	0.02	0.8
YY16407		1.14	18.3	530	5.1	6.1	<0.001	0.05	0.27	2.4	0.3	0.3	10.6	0.01	0.02	1.7
YY16408		1.86	6.9	300	7.4	4.3	<0.001	0.03	0.34	1.4	<0.2	0.7	7.5	<0.01	0.02	1.1
YY16409		0.65	22.5	750	6.4	10.0	<0.001	0.07	0.33	2.2	0.4	0.4	18.1	<0.01	0.03	0.4
YY16410		0.80	24.7	630	4.7	7.6	<0.001	0.02	0.32	3.2	<0.2	0.3	16.6	<0.01	0.02	2.6
YY16411		0.42	18.0	670	3.8	5.2	<0.001	0.05	0.23	1.6	0.2	0.2	12.8	<0.01	0.03	0.4
YY16412		0.58	20.9	690	4.2	5.3	<0.001	0.03	0.28	2.3	<0.2	0.2	15.6	<0.01	0.03	1.0
YY16413		0.67	19.5	620	3.9	5.3	<0.001	0.03	0.27	2.6	0.2	0.2	15.1	<0.01	0.02	1.6
YY16414		0.40	13.5	710	4.0	4.2	<0.001	0.07	0.27	0.9	0.4	0.2	10.5	<0.01	0.02	<0.2
YY16415		0.76	28.5	630	4.3	6.2	<0.001	0.02	0.30	4.1	0.2	0.3	16.2	<0.01	0.02	3.1
YY16416		0.48	26.8	710	4.6	8.9	<0.001	0.05	0.33	2.1	0.2	0.3	15.6	<0.01	0.03	0.4
YY16417		0.17	12.4	1210	3.3	4.5	<0.001	0.13	0.18	0.4	0.2	0.2	18.4	<0.01	0.02	<0.2
YY16418		0.63	24.4	890	7.6	11.2	<0.001	0.09	0.30	2.2	0.4	0.3	18.9	<0.01	0.04	0.4
YY16419		0.98	22.5	550	4.4	5.4	<0.001	0.02	0.27	3.1	0.2	0.2	12.3	<0.01	0.02	3.1
YY16420		0.84	26.2	500	4.3	7.7	<0.001	0.03	0.30	4.0	0.2	0.2	15.9	<0.01	0.03	2.8
YY16421		0.67	26.3	730	4.7	6.3	<0.001	0.05	0.42	3.5	0.4	0.2	22.2	<0.01	0.03	1.2
YY16422		0.81	30.9	690	6.6	10.4	<0.001	0.04	0.45	4.2	0.3	0.4	20.3	<0.01	0.04	1.7

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Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ti	Tl	U	V	W	Y	Zn	Zr
	Units	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.005	0.02	0.05	1	0.05	0.05	2	0.5
YY16367		0.064	0.05	0.51	47	0.33	3.94	33	<0.5
YY16368		0.086	0.08	0.83	64	1.23	5.80	42	<0.5
YY16369		0.057	0.12	1.17	56	3.17	7.74	74	<0.5
YY16370		0.069	0.07	0.59	41	1.95	5.37	27	<0.5
YY16371		0.060	0.09	0.62	53	0.42	4.86	35	<0.5
YY16372		0.089	0.07	0.62	57	0.60	4.93	30	0.7
YY16373		0.101	0.06	0.60	58	0.36	3.95	29	0.8
YY16374		0.086	0.05	0.43	52	0.28	3.85	26	0.9
YY16375		0.083	0.06	0.53	56	0.55	5.15	35	0.9
YY16376		0.075	0.10	0.88	76	0.34	4.89	42	<0.5
YY16401		0.098	0.08	0.54	58	0.40	4.30	29	0.7
YY16402		0.087	0.06	0.47	52	0.31	4.52	29	<0.5
YY16403		0.094	0.07	0.55	61	0.32	2.80	24	<0.5
YY16404		0.103	0.06	0.35	57	0.28	2.36	21	0.8
YY16405		0.123	0.10	0.36	68	0.33	1.95	23	0.7
YY16406		0.095	0.08	0.39	54	0.23	2.06	18	0.5
YY16407		0.082	0.06	0.48	57	0.29	3.62	24	0.7
YY16408		0.106	0.10	0.53	67	0.21	1.75	17	0.5
YY16409		0.064	0.11	1.13	66	0.30	6.36	70	<0.5
YY16410		0.083	0.08	0.55	54	0.37	4.54	38	0.6
YY16411		0.056	0.06	0.57	47	0.28	4.03	32	<0.5
YY16412		0.064	0.05	0.73	46	0.35	4.69	37	<0.5
YY16413		0.068	0.06	0.59	47	0.34	4.28	35	0.5
YY16414		0.045	0.06	0.66	52	0.25	3.70	31	<0.5
YY16415		0.089	0.07	0.66	54	0.47	5.57	38	0.8
YY16416		0.058	0.08	0.83	55	0.47	5.69	44	<0.5
YY16417		0.014	0.09	0.79	38	0.18	4.89	29	<0.5
YY16418		0.059	0.11	1.14	58	0.42	5.84	42	<0.5
YY16419		0.084	0.06	0.50	53	0.33	4.01	28	0.8
YY16420		0.084	0.08	0.71	55	0.38	5.98	34	0.7
YY16421		0.068	0.07	0.72	65	0.33	7.05	35	<0.5
YY16422		0.081	0.12	1.14	82	0.46	6.99	47	<0.5

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216456

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.
LOG-22 SCR-41 WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.
Au-ICP21 ME-MS41

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VANCOUVER BC V6B 1L8

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE WH19216483

Project: HARTLESS JOE

This report is for 25 Drill Core samples submitted to our lab in Whitehorse, YT, Canada on 30-AUG-2019.

The following have access to data associated with this certificate:

HEATHER BURRELL JACK MORTON	ANDREW CARNE SCOTT NEWMAN	STEVE ISREAL

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-32d	Pulverize Split -Dup 85% <75um
LOG-21	Sample logging - ClientBarCode
CRU-32	Fine Crushing 90% <2mm
SPL-21	Split sample - riffle splitter
CRU-QC	Crushing QC Test
PUL-32	Pulverize 1000g to 85% < 75 um
PUL-QC	Pulverizing QC Test
BAG-01	Bulk Master for Storage
LOG-23	Pulp Login - Rcvd with Barcode
LOG-21d	Sample logging - ClientBarCode Dup
SPL-21d	Split sample - duplicate

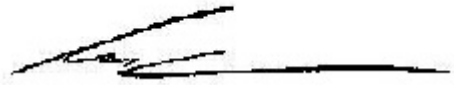
ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:



Colin Ramshaw, Vancouver Laboratory Manager

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VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216483

Sample Description	Method	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
K293601		8.98	0.03	1.13	1.0	<0.02	<10	90	0.49	0.06	1.06	0.07	49.3	6.2	4	1.28
K293602		2.53	0.42	1.53	45.7	0.05	<10	100	0.42	0.37	2.62	0.42	42.1	12.9	37	2.72
K293603		3.28	1.59	0.72	117.0	0.48	<10	60	0.45	0.07	3.38	5.18	9.32	12.3	15	4.88
K293604		5.18	<0.01	0.03	0.4	<0.02	<10	10	<0.05	0.01	>25.0	0.01	1.14	0.7	1	0.05
K293605		6.46	0.23	0.51	23.1	0.05	<10	50	0.29	0.01	2.08	0.12	10.55	2.8	2	4.07
K293606		7.06	0.14	0.66	24.1	0.08	<10	60	0.32	0.01	1.50	0.23	12.75	2.6	2	4.46
K293607		2.43	1.31	2.08	165.5	0.53	<10	30	0.29	0.02	7.76	1.42	5.97	31.2	88	2.21
K293608		9.52	0.17	2.99	60.7	<0.02	<10	30	0.17	0.01	7.74	0.18	7.48	37.5	179	1.42
K293609		4.37	0.17	2.98	62.1	<0.02	<10	30	0.16	0.01	7.16	0.20	7.68	36.9	183	1.49
K293610		3.85	0.16	4.28	80.5	0.02	<10	40	0.29	0.01	5.33	0.12	8.90	35.4	194	1.87
K293611		9.63	0.20	2.18	49.0	<0.02	<10	130	0.43	0.01	4.68	0.17	13.25	35.1	49	7.80
K293612		6.40	0.55	2.69	399	0.20	<10	80	0.40	0.01	4.62	0.26	12.45	39.7	9	6.09
K293613		0.06	18.75	1.82	17.7	9.61	<10	90	0.33	0.22	1.25	3.27	17.90	19.7	26	1.69
K293614		9.44	0.34	1.94	29.2	<0.02	<10	80	0.29	0.05	9.02	7.00	8.04	17.1	77	4.02
K293615		7.72	0.31	3.44	48.6	<0.02	<10	50	0.15	0.01	3.75	0.11	1.83	27.8	143	1.72
K293616		6.97	0.22	0.30	28.1	<0.02	<10	70	0.20	0.20	2.72	0.14	31.1	6.5	4	1.79
K293617		3.19	0.36	0.42	45.9	<0.02	<10	70	0.28	0.15	3.29	0.26	28.3	7.9	4	1.71
K293618		7.33	1.49	0.33	126.5	0.02	<10	50	0.33	0.13	5.08	5.17	7.10	18.4	12	1.66
K293619		5.01	0.01	0.02	0.4	<0.02	<10	10	<0.05	0.01	>25.0	0.02	0.98	0.6	<1	<0.05
K293620		2.25	3.05	0.43	454	0.69	<10	30	0.33	0.03	5.48	0.55	3.05	26.8	19	1.01
K293621		8.98	3.33	0.36	118.5	<0.02	<10	60	0.30	0.03	8.67	1.54	3.80	17.1	11	0.59
K293622		9.19	1.52	1.26	66.7	<0.02	<10	50	0.44	0.03	13.85	1.62	4.50	16.3	39	0.95
K293623		0.26	31.0	4.56	141.0	1.67	<10	30	0.24	10.25	4.40	33.5	12.50	89.3	54	0.96
K293624		9.40	0.14	2.15	4.7	<0.02	<10	90	0.71	0.04	3.49	0.08	45.1	17.3	14	1.83
K293625		<0.02	0.12	2.15	4.6	<0.02	<10	80	0.69	0.04	3.49	0.07	45.4	17.4	14	1.86

***** See Appendix Page for comments regarding this certificate *****

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To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216483

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
K293601		5.8	2.61	7.55	0.12	0.25	<0.01	0.020	0.08	25.7	10.7	0.60	489	1.19	0.07	0.45
K293602		31.3	3.82	8.76	0.09	0.41	<0.01	0.034	0.14	21.4	16.3	1.09	670	1.95	0.06	0.11
K293603		41.7	3.11	1.78	<0.05	0.18	<0.01	0.022	0.25	5.0	6.7	0.82	485	4.62	<0.01	<0.05
K293604		1.5	0.07	0.12	0.05	<0.02	<0.01	<0.005	0.01	1.2	0.6	0.55	89	<0.05	<0.01	0.11
K293605		14.2	0.90	1.34	<0.05	0.33	<0.01	<0.005	0.23	5.6	2.8	0.27	209	0.51	0.02	<0.05
K293606		6.2	0.90	1.68	<0.05	0.29	<0.01	<0.005	0.31	6.9	2.7	0.27	196	0.80	0.02	<0.05
K293607		44.5	6.55	5.03	0.05	0.03	<0.01	0.043	0.28	2.1	19.7	2.89	1140	0.34	0.01	<0.05
K293608		48.3	6.27	10.45	0.08	0.04	<0.01	0.049	0.09	2.5	28.1	3.53	1040	0.40	0.03	<0.05
K293609		48.9	6.21	10.35	0.09	0.04	<0.01	0.051	0.09	2.6	28.3	3.53	1030	0.37	0.03	<0.05
K293610		52.4	7.69	12.30	0.09	0.02	<0.01	0.054	0.15	3.0	40.3	4.07	859	0.19	0.02	<0.05
K293611		40.5	7.96	8.23	0.07	0.02	<0.01	0.080	0.12	4.8	28.1	3.31	1270	0.65	0.02	<0.05
K293612		33.7	11.05	12.15	0.11	0.04	<0.01	0.109	0.11	4.3	26.9	3.26	1500	0.79	0.02	<0.05
K293613		156.5	3.68	5.91	0.07	0.34	0.07	0.027	0.24	8.1	20.0	0.92	781	26.1	0.05	0.06
K293614		69.2	4.19	6.47	0.06	0.12	<0.01	0.042	0.11	5.4	18.8	2.01	694	18.60	0.02	<0.05
K293615		104.5	6.00	7.24	<0.05	<0.02	<0.01	0.031	0.20	0.7	28.1	4.90	988	0.07	0.02	<0.05
K293616		8.7	1.96	0.91	<0.05	0.33	<0.01	0.011	0.18	18.8	0.4	0.86	401	3.04	0.03	<0.05
K293617		19.8	2.10	1.15	<0.05	0.28	<0.01	0.014	0.25	17.0	0.5	0.82	497	3.42	0.03	<0.05
K293618		67.1	4.02	0.64	<0.05	0.11	<0.01	0.030	0.16	4.2	0.4	0.33	857	2.49	<0.01	<0.05
K293619		1.6	0.07	0.08	0.05	<0.02	<0.01	<0.005	0.01	1.1	0.4	0.57	92	<0.05	<0.01	0.10
K293620		64.8	5.32	0.80	<0.05	<0.02	<0.01	0.023	0.22	1.4	2.0	1.81	935	0.83	<0.01	<0.05
K293621		65.0	4.02	0.67	<0.05	0.08	<0.01	0.028	0.21	2.9	0.7	1.67	795	17.85	0.01	<0.05
K293622		47.2	3.55	2.57	<0.05	0.07	<0.01	0.027	0.14	3.6	13.5	1.55	1100	8.10	<0.01	<0.05
K293623		7000	8.59	6.77	0.10	0.11	0.45	2.49	0.22	6.5	4.9	1.07	578	51.5	0.31	0.13
K293624		12.2	4.87	10.70	0.10	0.21	<0.01	0.047	0.12	22.6	20.1	1.61	811	1.95	0.05	0.05
K293625		9.3	4.88	10.75	0.09	0.15	<0.01	0.046	0.11	22.2	19.7	1.63	816	1.98	0.05	0.05

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Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216483

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
K293601		1.6	950	9.6	2.7	<0.001	0.01	0.53	2.7	<0.2	0.8	44.0	<0.01	0.01	5.9	0.110
K293602		24.7	860	29.3	5.4	<0.001	0.70	1.52	6.3	0.3	1.2	62.1	<0.01	0.02	4.6	0.057
K293603		29.3	410	144.5	7.8	0.001	1.35	2.48	4.8	0.7	1.0	92.7	<0.01	0.14	2.1	<0.005
K293604		<0.2	90	0.3	0.6	<0.001	<0.01	<0.05	0.4	0.8	<0.2	79.3	<0.01	0.01	<0.2	0.005
K293605		2.6	260	7.8	5.2	<0.001	0.24	0.39	0.5	<0.2	0.3	99.3	<0.01	0.01	1.6	<0.005
K293606		2.4	300	7.3	7.1	<0.001	0.20	0.41	0.5	<0.2	0.3	63.9	<0.01	0.01	1.6	<0.005
K293607		90.7	600	204	7.7	0.001	1.07	1.77	14.0	0.6	<0.2	202	<0.01	0.04	<0.2	0.012
K293608		113.0	610	0.7	2.6	0.001	0.17	0.50	21.8	0.3	0.2	132.0	<0.01	<0.01	<0.2	0.028
K293609		109.5	630	0.9	2.6	0.002	0.14	0.54	22.4	0.5	0.3	135.5	<0.01	0.01	<0.2	0.032
K293610		104.5	740	0.8	4.1	0.002	0.09	0.25	23.7	0.3	0.3	164.5	<0.01	0.01	<0.2	0.008
K293611		40.1	1190	1.3	3.9	<0.001	0.04	0.61	25.7	<0.2	0.2	202	<0.01	<0.01	0.2	<0.005
K293612		18.0	1350	4.0	3.4	0.003	0.82	1.11	25.5	2.6	0.3	196.5	<0.01	0.01	0.2	0.008
K293613		16.3	670	31.4	11.8	0.004	1.15	0.38	7.9	1.5	0.8	60.1	<0.01	10.45	1.0	0.076
K293614		68.1	540	3.4	3.4	0.028	0.75	1.70	13.7	5.3	0.3	298	<0.01	0.08	0.8	<0.005
K293615		75.7	110	0.7	4.6	<0.001	0.05	0.40	19.6	<0.2	<0.2	282	<0.01	0.02	<0.2	0.005
K293616		8.1	570	6.2	5.4	<0.001	0.51	1.85	2.6	0.8	<0.2	159.0	<0.01	0.02	6.0	<0.005
K293617		11.5	550	7.5	6.9	0.001	0.36	9.23	3.6	0.8	<0.2	157.0	<0.01	0.02	5.3	<0.005
K293618		48.5	410	85.1	4.6	<0.001	0.25	10.65	8.7	2.5	0.7	55.2	<0.01	0.14	1.0	<0.005
K293619		<0.2	60	0.7	0.4	<0.001	<0.01	0.09	0.2	0.4	<0.2	79.2	<0.01	0.01	<0.2	<0.005
K293620		72.7	270	14.4	5.2	0.001	1.74	2.45	7.3	3.0	<0.2	173.5	<0.01	0.07	<0.2	<0.005
K293621		56.1	560	22.9	4.5	0.019	1.46	2.40	5.2	4.9	<0.2	256	<0.01	0.10	0.3	<0.005
K293622		53.5	560	12.7	3.8	0.006	0.62	1.76	8.1	3.4	<0.2	451	<0.01	0.10	0.2	<0.005
K293623		342	670	8470	14.5	0.015	6.80	23.1	4.6	13.6	5.9	69.6	<0.01	0.65	2.1	0.051
K293624		1.9	1460	9.4	4.6	<0.001	0.30	0.25	9.8	0.3	0.5	143.0	<0.01	0.02	6.3	0.045
K293625		1.8	1470	5.8	4.2	<0.001	0.29	0.24	9.7	0.2	0.5	145.0	<0.01	0.02	6.3	0.044

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
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Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com/geochemistry

To: **STRATEGIC METALS LTD.**
C/O ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Project: HARTLESS JOE

Finalized Date: 23-SEP-2019
Account: MTT

CERTIFICATE OF ANALYSIS WH19216483

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Au-ICP21
	Analyte	Tl	U	V	W	Y	Zn	Zr	Au
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.001
K293601		0.02	0.98	23	0.32	11.35	55	16.3	0.002
K293602		0.07	0.94	61	2.09	11.15	86	22.0	0.041
K293603		0.11	0.93	20	34.9	6.38	395	8.2	0.512
K293604		<0.02	0.15	2	<0.05	2.43	2	<0.5	<0.001
K293605		0.05	0.75	2	3.93	1.91	27	15.0	0.052
K293606		0.07	0.71	2	0.20	1.85	33	13.1	0.101
K293607		0.11	0.09	78	0.21	11.10	138	1.1	0.398
K293608		0.04	0.31	188	0.08	14.45	70	2.0	<0.001
K293609		0.04	0.29	190	0.09	14.20	70	1.6	<0.001
K293610		0.05	0.11	195	0.09	14.90	82	1.2	0.025
K293611		0.04	0.16	200	0.15	24.5	93	0.5	0.003
K293612		0.05	0.13	278	0.15	26.2	128	1.6	0.201
K293613		0.27	0.43	76	0.70	7.87	105	10.5	9.61
K293614		0.07	1.23	309	0.15	10.40	332	5.4	0.004
K293615		0.05	<0.05	122	<0.05	3.84	59	<0.5	0.001
K293616		0.05	1.53	5	0.10	3.82	34	17.7	0.010
K293617		0.07	1.35	7	0.22	4.89	51	13.9	0.008
K293618		0.06	0.63	21	1.15	7.40	296	5.5	0.078
K293619		<0.02	0.14	<1	<0.05	2.26	2	<0.5	<0.001
K293620		0.07	0.11	24	3.12	5.54	63	<0.5	0.852
K293621		0.12	0.53	26	9.86	7.23	129	3.9	0.125
K293622		0.06	0.64	51	3.37	9.15	120	3.2	0.031
K293623		1.73	5.14	299	2.43	7.74	7730	3.8	1.570
K293624		0.05	1.20	118	0.08	15.00	67	12.8	<0.001
K293625		0.04	1.18	118	0.07	15.05	62	10.7	<0.001

***** See Appendix Page for comments regarding this certificate *****

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CERTIFICATE OF ANALYSIS WH19216483

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

BAG-01	CRU-32	CRU-QC	LOG-21
LOG-21d	LOG-23	PUL-32	PUL-32d
PUL-QC	SPL-21	SPL-21d	WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Au-ICP21	ME-MS41

APPENDIX IV

GEOLOGICAL AND GEOTECHNICAL LOGS

<see excel file for correlated samples numbers>

Hartless Joe - Hartless Joe

Grid East	Grid North	Easting	Northing	Elevation	Depth (m)
		515621	6752154	1830.3	105.16

ZONE: Unknown

SECTION:

HOLE: HJ -19-001

CLAIM:

Contractor: Platinum

Drill: 1

Core Size: NTW

Casing Depth:

Drilling Dates: -

Geology Logged By: R. Burke

SURVEY			
Depth (m)	Azimuth	Dip	Method

TARGET:

SUMMARY			
From (m)	To (m)	Interval (m)	Rock Type
0	9.36	9.36	VOL
9.36	9.4	0.04	FLT
9.4	12.25	2.85	VOL
12.25	13.4	1.15	SST
13.4	16.45	3.05	VOL
16.45	17.88	1.43	VOL
17.88	18.29	0.41	VOL
18.29	18.5	0.21	VOL
18.5	19.6	1.1	VOL
19.6	20.5	0.9	VOL
20.5	21.1	0.6	VOL
21.1	21.34	0.24	MST
21.34	25.5	4.16	VOL
25.5	27.36	1.86	VOL
27.36	27.47	0.11	MST
27.47	27.68	0.21	LST

SAMPLES	
Numbers:	K293601 to K293614, W597734 to W597745
Total:	26
Batch:	001, 003, 004
Certificates:	WH19216483, WH19295877, WH19295883

COMMENTS

27.68	30.28	2.6	MST
30.28	33.6	3.32	FEL
33.6	39.09	5.49	AND
39.09	39.25	0.16	QV
39.25	39.72	0.47	FEL
39.72	40.26	0.54	QV
40.26	45	4.74	FEL
45	50	5	MST
50	50.04	0.04	FLT
50.04	51.65	1.61	VOL
51.65	51.69	0.04	FLT
51.69	52.88	1.19	VOL
52.88	53.47	0.59	VOL
53.47	54.98	1.51	BXA
53.47	53.72	0.25	MST
53.72	54.75	1.03	VOL
54.98	54.99	0.01	FLT
54.99	69.79	14.8	MST
69.79	70.1	0.31	LST
70.1	75.21	5.11	MST
75.21	78.2	2.99	VOL
78.2	81.1	2.9	VOL
81.1	81.2	0.1	VOL
81.2	92.36	11.16	VOL
92.36	94.35	1.99	VOL
94.35	95.4	1.05	SST
95.4	103.34	7.94	VOL
103.34	105.16	1.82	VOL

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
0.00	9.36	9.36	VOL	CG	matrix-supported volcaniclastic package. Dark grey mudstone with subrounded clasts of fine-grained volcanic sandstone, volcanic fragments, and calcareous volcanic sandstone. Individual fragments are subrounded and can range in size from <1 cm to >5 cm in size. Large cariety of clast sizes and shapes. Some intervals react strongly with HCL, while others do not. Weak siliceous clasts that are light greyish green, have small black flecks of a soft mineral and are present throughout volcaniclastic package. Rare laminated mudstone clasts throguhout interval as well. Trace patchy pyrite throughout, and disseminated pyrite in mudstone rich intervals of clastic unit. Weak quartz carbonate veining cuts clasts and mudstone matrix, trending sporadically, and some have weak oxide alteration haloes and trace pyrite on their margins. No significant mineralization in this interval, except for trace pyrite.							
									CAR	1I		
									SIL	1I	Py	0.01
9.36	9.40	0.04	FLT	--	clay altered gougeed material with a contact that trends 70 TCA sharp upper and lower contcat							
									CAR	4I		
									CLY	5I		
9.40	12.25	2.85	VOL	MG	volcaniclastic mudstone; matrix supported, with large variable sandstone, volcanic, and mudstone clasts.							
12.25	13.40	1.15	SST	MG	medium grained greyish green volcanic sandstone with quartz carbonte infill and sporadic very fine grained light grey brecciated stockwork. No significant mineralization							
									CAR	2I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
13.40	16.45	3.05	VOL	MG	chaotic volcaniclastic mudstone; matrix supported, with volcanic fragments, clasts of laminated mudstone with soft-sediment deformation microfractures and offsets, and carbonaceous mudstone clasts. Weak disseminated pyrite in mudstone rich intervals, and weak quartz carbonate veining developed sporadically throughout. Gradational lower contact with a large fragment of very fine-grained volcanic silstone, with large black "flecks" of a soft black mineral 2-3 mm in size; weakly foliated and rare throughout.							
16.45	17.88	1.43	VOL	FG	fine-grained volcanic silstone with weak foliation of black aphanitic volcanic fragments. Some sort of a weakly welded tuff. Gradational diffuse lower contact with volcaniclastic mudstone. One large clay and quartz carbonate altered fracture in middle of interval, trending 30 TCA							
17.88	18.29	0.41	VOL	--	volcaniclastic mudstone with weak quartz carbonte stringers; no sulfide							
18.29	18.50	0.21	VOL	FG	fine-grained volcanic silstone with weak foliation of black aphanitic volcanic fragments. Some sort of a weakly welded tuff. Gradational diffuse lower contact with volcaniclastic mudstone.							
18.50	19.60	1.10	VOL	--	volcaniclastic mudstone with numerous carbonaceous fragments, mudstone fragments, and siltstone fragments							
19.60	20.50	0.90	VOL	FG	fine-grained interval of volcaniclastic mudstone, medium greenish grey							
20.50	21.10	0.60	VOL	--	volcaniclastic mudstone							
21.10	21.34	0.24	MST	FG	laminated mudstone, very carbonaceous, with fine-grained disseminated pyrite							
21.34	25.50	4.16	VOL	--	volcaniclastic mudstone, with volcanic, sandy, silty, and mudstone fragments. Very chaotic, and sporadically reactive to HCL. Fragments are 1 cm to 7 cms in size, subrounded							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
25.50	27.36	1.86	VOL	MG	volcanic silstone to sandstone, medium grey to light greenish grey, with rare clasts of volcanic fragments and sany fragments. Some sort of pervasive alteration is causing pervasive weak clay alteration and patchy oxidative staining throughout entire interval. Diffuse lower contact with volcaniclastic, clast-rich, mudstone							
27.36	27.47	0.11	MST	VF	Dark green-black volcanic mudstone, supporting rounded grey and orange-brown clasts, up to 3 cm by 1 cm in size, suspended in the mud matrix; hosting undulatory, banded, tan quartz veinlets, up to 4 mm wide, which cut both the mudstone and the clasts.							
27.47	27.68	0.21	LST	FG	Orange-brown to tan, f.g. limestone, hosting sugary quartz-carbonate veins up to 5mm wide, that terminate at the contacts, (is this interval a large suspended cobble of limestone?), as well as orange weathering, <1mm wide veinlets that cross into the underlying mudstone.							
27.68	30.28	2.60	MST	VF	Dark grey, v.f.g. chloritic and limey mudstone, with increasing pale grey, patchy and ribboned silica down section, becoming a matrix around sub-rounded, dark grey mudstone clasts near the lower contact, (with carbonate content inverse to silica); hosting a # of sugary quartz-carbonate veinlets (described in secondary structures).							
30.28	33.60	3.32	FEL	VF	Pale grey-green, aphyric latite, with a mottled appearance, becoming increasingly dark and more chloritized down section; abundant clay, chlorite and dendritic manganese on fracture surfaces; cut by numerous patchy, pale orange-tan quartz-carbonate+/-chlorite veinlets (recorded in secondary structures).							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
33.60	39.09	5.49	AND	VF	Unaltered, medium grey-green, feldspar porphyry andesite, with 4-5mm diameter phenocrysts of tan to white feldspar, rarely euhedral but commonly with corroded/fuzzy grain margins, and with fine grained hornblende crowding around the feldspars, set in an aphanitic matrix; cut by a few anastamosing and undulatory, <1mm wide calcite veinlets with ambiguous orientations; manganese 'dots' on fracture surfaces.							
39.09	39.25	0.16	QV	VF	Orange weathering, quartz-carbonate-sericite-pyrite vein, with bands of smokey quartz-sericite and ferruginous carbonate, as well as small ribbons and disseminations of v.f.g. pyrite.							
											Py	0.5
39.25	39.72	0.47	FEL	VF	Pale grey, strongly silicified and weakly fractured latite, pepperered with v.f.g. fuzzy 'dots' that look like pyrite-sericite replacing feldspar, and with fractures filled with orange weathering carbonate.							
											Py	0.5
39.72	40.26	0.54	QV	VF	Banded, cloudy white and dark grey quartz-sericite-carbonate-pyrite vein, with abundant ribbons of tan sericite, rare ribbons of v.f.g. pyrite, as well as moderate v.f.g. pyrite disseminated throughout; hosting patches of dark grey, smokey quartz and dark black, non-metallic mineralization; intervals ends in 2 cm of brecciated quartz with subrounded to subangular clasts supported in a dark grey pyrite-mud matrix.							
											Py	3
40.26	45.00	4.74	FEL	VF	Same lithology as 39.25-39.72, but peppered grains are replaced entirely by pyrite, which has partially weathered to oxide (hematite), so that a large portion of the interval is brown to maroon in colour; a number of small veins are described further in secondary structures.							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
45.00	50.00	5.00	MST	VF	Moderately fractured, dark grey, limey mudstone, with moderate f.g. chlorite on fracture surfaces, becoming increasingly more siliceous, less limey, and pale in colour down section, and cut by numerous cross-cutting quartz-carbonate veinlets; hosts an 8cm wide, banded quartz-sericite-carbonate-pyrite vein at the top of the interal, with moderate ribbons of v.f.g. pyrite, and an ambiguous contact down-section into a 10 cm wide section of pyrite-sericite mudstone autobreccia, and finally into coherent mudstone.							
50.00	50.04	0.04	FLT	--	Fault gouge.							
50.04	51.65	1.61	VOL	VF	1.53 m of medium grey-green to orange brown and moderately oxidized, volcanic crackle breccia, with clasts healed in an orange-tan to medium brown quartz-carbonate matrix; manganese 'dots' on fracture surfaces.							
51.65	51.69	0.04	FLT	--	Fault gouge.							
51.69	52.88	1.19	VOL	VF	Strongly clay-altered, oxidized and silica-flooded, volcanic crackle breccia, with numerous <1mm wide dark brown fractures, grading down-section into a moderately oxidized volcanic rock.							
52.88	53.47	0.59	VOL	VF	Orange to brick-red, non-calcareous volcanic rock, becoming increasingly altered and more brown-green in colour down section; three zones of strong brecciation, between 52.93-53.03 m, 53.16-53.20 m, and 53.37-42.00 m, with clast-supported fragments of medium grey, angular quartz, up to 3 cm in diameter, set in a hematite matrix; tan coloured, brecciated and colloform quartz vein, between 53.03-53.15 m, hosting sparse blebs of dark black mineralization and with no discernable orientation.							
53.47	53.72	0.25	MST	VF	Dark green-black, non-calcareous mudstone, which ends in a 7 mm wide, banded quartz vein, with dark black (sulphide?) bands, <1mm wide, fragmented by micro-faulting and within a narrow halo of maroon hematite alteration.							
											Py	1

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
53.72	54.75	1.03	VOL	VF	Rock with the same lithology as 52.88-53.47 m.							
54.98	54.99	0.01	FLT	--	Well healed fault contact.							
54.99	69.79	14.80	MST	VF	Dark grey-black volcanic mudstone, with polymictic, sub-angular clasts, up to 3 cm in diameter, suspended in a dark, sometimes calcareous mud matrix; the first 49 cm is extremely soft, gougey and chloritized, and is cut by an intense mesh of mm-scale calcite veinlets, with abundant gashes and veinlets, up to 4 mm wide, in a random, discontinuous array; the rest of the interval (past ~50.54 m) is a mix of predominatently mudstone conglomerate as described previously with sections tan coloured, limey mudstone, and an array of ptygmatic calcite veins/veinlets, up to 7 mm wide, in decreasing abundance down section, as well as v.f.g. disseminated pyrite which increases in abundance down section.							
69.79	70.10	0.31	LST	FG	Small interval of medium grey, weakly fractured limestone, with sharp contacts on either side.							
70.10	75.21	5.11	MST	VF	Same as 54.98-69.79 m, becoming increasingly tan in colour, and banded toward the end of the interval.							
75.21	78.20	2.99	VOL	MG	medium to fine-grained, medium greenish grey to medium grey, volcaniclastic silt/sandstone with <5% clastic material. Clastic intervals are rare and 3-10 cm wide, containing a variety of clastic fragments. Majority of interval is volcanic sandtone, medium grained, homogenous, very reactive to HCL							
78.20	81.10	2.90	VOL	FG	clat-supported, very clast-rich volcaniclastic mudstone, with a weak foliation to the clasts, trending 70 TCA throughout entire interval. Weak disseminated pyrite pesists throughout interval, and there are weak sporadic quartz carbonate veinlets developed throughout. Very reactive to HCL.							
											Py	0.1
81.10	81.20	0.10	VOL	FG	30 TCA quartz carbonate vein zone with pervasive clay alteration; no visible sulfide							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
81.20	92.36	11.16	VOL	--	matrixsupported mudstone volcaniclastic, containing fragments of volcanics, silstone fragments, carbonaceous mudstone fragments, and laminated mudstone, sand/siltstone fragments. Mudstone rich sections of the clastic unit contain appreciable amounts of disseminated fine-grained pyrite. Weak quartz carbonate stringers trend sporadically throughout interval. Clasts range in size from a few cms to tens of cms wide.							
92.36	94.35	1.99	VOL	MG	clast-supported volcaniclastic mudstone. Gradational upper contact with matrix-supported mudstone above. This interval has smaller, more homogenous grain size, but is dominantly clastic fragments of volcanic, mudstone, silt/sandstone, and carbonaceous fragments, while the matrix supported interval is more sporadic and contains larger fragments. Sharp contact below with homogenous fine-grained volcanic sandstone. Wuartz carbonte veinlets cut sporadically throughout interval							
94.35	95.40	1.05	SST	FG	fine-grained volcanic sandstone, homoegenous grain-size with fine-grained volcanic fragments. Greenish grey in colour, with trace patchy fine-grained disseminated pyrite (partially oxidized).							
						MD	GY					
						MD	GN					
95.40	103.34	7.94	VOL	FG	mixture of fine-grained greenish grey volcanic sandstone to siltstone, and a mixture of fine-grained volcaniclastic mudstone (~3-5%). Volcanic sandstone/siltstone is homogenous and fine-grained, and has weak dark grey fine-grained seams dispersed throughout (small muddy intervals?) Grain size varies from fine to very fine-grained and there are small 5-10 cm intervals of clastic fragmental mudstone interbedded with the homogenous silt/sandstone. Very trace oxidized pyrite patchy occurring throughout entirety of interval. Sharp lower contact with volcaniclastic mudstone.							
						MD	GY					
						MD	GN					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
103.34	105.16	1.82	VOL	MG	volcaniclastic mudstone; matrix supported, with large clasts 3-10 cms in size. Very trace disseminated pyrite in mudstone rich intervals and mudstone clasts. Small seams of pyrite occurr within the interval as well							
						DK	GY					
						MD	GY		SIL	1I	Py	0.5

HJ -19-001

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
0.00	1.52	1.52	0.39	26	0.00	0	4R	3H	2W	
1.52	3.05	1.53	1.28	84	0.10	7	4R	3H	2W	
3.05	4.57	1.52	1.22	80	0.10	7	4R	3H	2W	
4.57	6.10	1.53	1.35	88	0.90	59	4R	3H	1W	
6.10	7.62	1.52	1.48	97	0.98	64	4R	3H	2W	
7.62	9.14	1.52	1.4	92	0.50	33	4R	3H	2W	
9.14	10.67	1.53	1.41	92	1.13	74	4R	3H	1W	
10.67	12.19	1.52	1.46	96	1.46	96	4R	3H	1W	
12.19	13.72	1.53	1.51	99	1.43	93	3R	3H	1W	
13.72	15.24	1.52	1.47	97	1.23	81	3R	3H	1W	
15.24	16.76	1.52	1.52	100	1.30	86	4R	3H	1W	
16.76	18.29	1.53	1.48	97	1.18	77	3R	3H	1W	
18.29	19.81	1.52	1.46	96	1.40	92	2R	3H	1W	
19.81	21.34	1.53	1.53	100	1.46	95	2R	3H	1W	
21.34	22.86	1.52	1.47	97	1.37	90	4R	3H	1W	
22.86	24.38	1.52	1.52	100	1.28	84	2R	3H	1W	
24.38	25.91	1.53	1.53	100	1.25	82	1R	4H	1W	
25.91	27.43	1.52	1.48	97	1.24	82	2R	3H	1W	
27.43	28.96	1.53	1.53	100	1.19	78	2R	3H	2W	
28.96	30.48	1.52	1.52	100	1.28	84	3R	3H	2W	
30.48	32.00	1.52	1.46	96	0.32	21	1R	4H	3W	
32.00	33.53	1.53	1.53	100	0.55	36	1R	3H	3W	
33.53	35.05	1.52	1.52	100	0.47	31	2R	4H	3W	
35.05	36.58	1.53	1.53	100	0.42	27	2R	5H	2W	
36.58	38.10	1.52	1.52	100	0.82	54	1R	5H	2W	
38.10	39.62	1.52	1.52	100	0.73	48	3R	3H	4W	
39.62	41.15	1.53	1.44	94	0.74	48	3R	3H	2W	
41.15	42.67	1.52	1.5	99	0.94	62	2R	5H	2W	
42.67	44.20	1.53	1.53	100	1.07	70	1R	5H	2W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
44.20	45.72	1.52	1.49	98	1.39	91	1R	5H	2W	
45.72	47.24	1.52	1.46	96	0.63	41	2R	4H	3W	
47.24	48.77	1.53	1.53	100	1.21	79	2R	4H	2W	
48.77	50.29	1.52	1.52	100	0.52	34	3R	2H	4W	
50.29	51.82	1.53	1.33	87	0.31	20	1R	2H	5W	
51.82	53.34	1.52	1.52	100	0.34	22	1R	2H	6W	
53.34	54.86	1.52	1.34	88	0.91	60	1R	3H	4W	
54.86	56.39	1.53	1.53	100	1.20	78	4R	2H	4W	
56.39	57.91	1.52	1.47	97	0.43	28	4R	4H	2W	
57.91	59.44	1.53	1.46	95	0.84	55	4R	4H	2W	
59.44	60.96	1.52	1.48	97	1.03	68	3R	2H	3W	
60.96	62.48	1.52	1.49	98	1.21	80	3R	4H	2W	
62.48	64.01	1.53	1.45	95	1.32	86	3R	4H	2W	
64.01	65.53	1.52	1.4	92	0.82	54	4R	3H	3W	
65.53	67.06	1.53	1.43	93	0.68	44	4R	4H	3W	
67.06	68.58	1.52	1.49	98	1.28	84	4R	3H	3W	
68.58	70.10	1.52	1.49	98	1.16	76	4R	3H	3W	
70.10	71.63	1.53	1.48	97	1.21	79	4R	2H	2W	
71.63	73.15	1.52	1.5	99	1.36	89	4R	3H	2W	
73.15	74.68	1.53	1.48	97	1.34	88	4R	2H	2W	
74.68	75.21	0.53	0.27	51	0.17	32	4R	2H	2W	
75.21	76.20	0.99	0.99	100	0.93	94	3R	3H	1W	
76.20	77.72	1.52	1.52	100	1.47	97	4R	1H	1W	
77.72	79.25	1.53	1.51	99	1.44	94	4R	3H	1W	
79.25	80.77	1.52	1.52	100	1.52	100	4R	3H	1W	
80.77	82.30	1.53	1.53	100	1.53	100	4R	3H	1W	
82.30	83.82	1.52	1.5	99	1.32	87	4R	3H	1W	
83.82	85.34	1.52	1.47	97	1.10	72	4R	3H	1W	
85.34	86.87	1.53	1.49	97	1.37	90	4R	3H	1W	
86.87	88.39	1.52	1.52	100	1.52	100	4R	3H	1W	
88.39	89.92	1.53	1.53	100	1.36	89	4R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
89.92	91.44	1.52	1.52	100	1.34	88	4R	3H	1W	
91.44	92.96	1.52	1.48	97	1.23	81	4R	3H	1W	
92.96	94.49	1.53	1.5	98	1.20	78	4R	3H	1W	
94.49	96.01	1.52	1.44	95	1.04	68	1R	3H	1W	
96.01	97.54	1.53	1.27	83	0.88	58	2R	3H	1W	
97.54	99.06	1.52	1.48	97	1.19	78	2R	3H	1W	
99.06	100.58	1.52	1.52	100	1.25	82	3R	3H	1W	
100.58	102.11	1.53	1.47	96	1.04	68	4R	3H	1W	
102.11	103.63	1.52	1.4	92	1.16	76	3R	3H	1W	
103.63	105.16	1.53	1.53	100	1.42	93	4R	3H	1W	

Hartless Joe - Hartless Joe

Grid East	Grid North	Easting	Northing	Elevation	Depth (m)
		515363	6752222	1810.6	207.3

ZONE: Unknown

SECTION:

HOLE: HJ -19-002

CLAIM:

Contractor: Platinum

Drill: 1

Core Size: NTW

Casing Depth:

Drilling Dates: -

Geology Logged By: R. Burke

SURVEY			
Depth (m)	Azimuth	Dip	Method

TARGET:

SUMMARY			
From (m)	To (m)	Interval (m)	Rock Type
0	1.2	1.2	OVB
1.2	3.3	2.1	OVB
3.3	5.5	2.2	VOL
5.5	13.89	8.39	VOL
13.89	13.91	0.02	QV
13.91	14.66	0.75	VOL
14.66	17.8	3.14	VOL
17.8	18.4	0.6	VOL
18.4	26.5	8.1	VOL
26.5	27.7	1.2	VOL
27.7	27.89	0.19	MST
27.89	30.8	2.91	VOL
30.8	53.34	22.54	DYK
53.34	57.91	4.57	VOL
57.91	59.35	1.44	VOL
59.35	60.25	0.9	VOL

SAMPLES	
Numbers:	W596522 to W596600, W597701
Total:	80
Batch:	001, 002
Certificates:	WH19295858, WH19295868

COMMENTS

60.25	60.53	0.28	SST
60.53	60.68	0.15	MST
60.68	64.64	3.96	SST
64.64	78.42	13.78	DYK
78.42	83	4.58	SST
83	89.15	6.15	VOL
89.15	90.72	1.57	DYK
90.72	91.6	0.88	SST
91.6	93.63	2.03	DYK
93.63	95.3	1.67	VOL
95.3	103.3	8	SST
103.3	103.8	0.5	SST
103.8	104.3	0.5	VOL
104.3	111.4	7.1	VOL
111.4	111.54	0.14	SST
111.54	112.3	0.76	SST
112.3	113.25	0.95	DYK
113.25	113.6	0.35	VOL
113.6	115.34	1.74	DYK
115.34	115.82	0.48	VOL
115.82	116.4	0.58	VOL
116.4	117.15	0.75	SST
117.15	117.7	0.55	VOL
117.7	118.37	0.67	SST
118.37	121.5	3.13	VOL
121.5	121.8	0.3	VOL
121.8	124.15	2.35	VOL
124.15	126.18	2.03	SST
126.18	126.21	0.03	QV
126.21	128.6	2.39	SST
128.6	129.25	0.65	SST
129.25	130	0.75	VOL

130	130.02	0.02	QV
130.02	139.9	9.88	SST
139.9	142.34	2.44	VOL
142.34	143	0.66	SST
143	143.06	0.06	QV
143.06	147.25	4.19	SST
147.25	147.4	0.15	QV
147.4	147.94	0.54	SST
147.94	148.08	0.14	QV
148.08	148.25	0.17	SST
148.25	149.68	1.43	SST
149.68	149.7	0.02	QV
149.7	150.56	0.86	SST
150.56	150.95	0.39	SST
150.95	152.77	1.82	DYK
152.77	157.09	4.32	SST
157.09	157.23	0.14	MST
157.23	160.8	3.57	SST
160.8	164.3	3.5	DYK
164.3	168.3	4	DYK
168.3	170	1.7	DYK
170	170.36	0.36	DYK
170.36	179.5	9.14	DYK
179.5	181.1	1.6	SST
181.1	182.2	1.1	BAS
182.2	183.25	1.05	SST
183.25	192.8	9.55	BAS
192.8	193.75	0.95	BAS
193.75	197.15	3.4	BAS
197.15	197.18	0.03	QV
197.18	199.45	2.27	BAS
199.45	199.46	0.01	QV

199.46	206.75	7.29	BAS
206.75	207.3	0.55	BAS

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
0.00	1.20	1.20	OVB	--	overburden, box 1 starts at 1.20 m							
1.20	3.30	2.10	OVB	--	rubbly subrounded rock fragments of dark grey to black volcanic mudstone breccia, with chaotic mixture of clasts that are angular to rounded to boxy. Clasts are comprised of volcanic fragments and mudstones and siltstone. Fine-grained black mudstone matrix cementing light grey clasts up to 3 cm by 5 cm in size. No visible sulfides in this interval							
						MD	GY					
						DK	GY					
3.30	5.50	2.20	VOL	FG	Medium grey to bleached orange, fractured volcanic mudstone and volcanic fragments, with weak carbonate veinlets sporadically dispersed throughout. Likely faulted and oxidized due to meteoric water infiltration and proximity to surface. No visible sulfides in this interval							
						LT	GY		OXI	2I		
						MD	BN		CAR	2I		
						LT	BN					
5.50	13.89	8.39	VOL	FG	Medium to dark grey volcanic mudstone with volcanic fragments that are subrounded to subangular; varying in size from 0.5 cm to 8 cm. Very fine-grained dark grey to black groundmass. Some volcanic fragments contain fragments within them. Sporadically oriented carbonate strginer veinlets pervasive throughout interval, typically <1mm wide with no sulfide associated with them. There are rare carbonate-rich clasts within the mudstone. Some siliceous clasts are subrounded and have very dark grey hairline frx within them (manganese staining?). Small intervals are weakly brecciated and filled with a siliceous groundmass (described in secondary structures). Interval terminates sharply at a 80 TCA quartz vein that is 2 cm wide. Following this vein, the unit is the same, however, it is slightly bleached and oxidized due to the presence of large volcanic clasts within the mudstone volcaniclastic.							
						DK	GY					
						MD	GY					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
13.89	13.91	0.02	QV	FG	very fine grained milky white, with a whitish pinkish cream outer margin, quartz vein. Small mudstone fragments within quartz on margin of vein. Trends 80 TCA; no visible sulfide.							
						LT	WH					
						LT	CR					
						LT	TN					
13.91	14.66	0.75	VOL	FG	volcanic mudstone; dark grey to grey, with large volcanic fragments within larger volcanic fragments. These fragments are light greyish green. No visible sulfides in interval.							
						MD	GY					
						DK	GY					
						LT	GN					
14.66	17.80	3.14	VOL	FG	Medium to dark grey volcanic mudstone with volcanic fragments that are subrounded to subangular; varying in size from 0.5 cm to 5 cm. Very fine-grained dark grey to black groundmass. Some volcanic fragments contain fragments within them. Sporadically oriented carbonate strginer veinlets pervasive throughout interval, typically <1mm wide with no sulfide associated with them. There are rare carbonate-rich clasts within the mudstone.							
						MD	GY					
						DK	GY					
17.80	18.40	0.60	VOL	FG	light to medium grey volcanic mudstone. Large volcanic fragments in this interval with little to no mudstone matrix. Small clasts disseminated throughout ranging in size from 0.2-1 cm in size.							
						LT	GY					
						MD	GY					
18.40	26.50	8.10	VOL	FG	fine-grained black to dark grey mudstone with numerous volcanic fragments and clasts with pervasive carbonate alteration within the grounmass. Individual fragments and clasts are subangular to subrounded, 0.2-5 cm in size, and are persistent throughout interval. No apparent alteration is visible within the interval, however, there are some 70 TCA carbonate stringer veinlets 5 mm wide that are present in the lower 2 m. Sporadic, discrete 5-10 cm intervals of hairline carbonate stockwork fractures are present, but have no sulfides associated with them. No sulfide visible in this interval							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						DK	GY					
						MD	GY		CAR	2I		
26.50	27.70	1.20	VOL	MG	clast-supported mudstone volcaniclastic with a high density of subangular to subrounded volcanic and sedimentary fragments 1-3 cm in size. Rare mm-sclae quartz carbonate veinlets are sporadically interleaved throughout interval, and contain trace pyrite on their margins. Gradational upper contact with matrix-supported volcaniclastic mudstone, and sharp lower contact trending 70 TCA with a volcanic mudstone devoid of any clasts or volcanic fragments.							
						MD	GY		CAR	1I	Py	0.1
						DK	GY		SIL	1I		
27.70	27.89	0.19	MST	FG	very fine grained, laminated mudstone devoid of clasts or volcanic fragments. Laminations alternate between dark grey and medium greyish brown, with small offsets and microfractures within (soft-sediment deformation?). No carbonate reactivity whatsoever in this interval (clast-rich intervals are carbonate reactive.) Sharp 30 TCA lower contact with a volcanic silstone/sandstone without any clasts contained within.							
						DK	GY					
						MD	GY					
27.89	30.80	2.91	VOL	FG	volcanic sandstone to siltstone, with fine-grained, rounded volcanic fragments. Light to medium greenish grey with a fractured stockwork of carbonate stringers persistent throughout interval. No visible sulfide. Terminates in a sharp lower contact with a quartz eye rhyolite dyke, with the lower contact trending 40 TCA							
						LT	GY		CAR	3I		
						MD	GY					
						MD	GN					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
30.80	53.34	22.54	DYK	FG	Quartz eye porphyry rhyolite dyke, medium grey to orangeish grey, with patchy oxidation throughout, and weak quartz carbonatestringer veinlets randomly oriented and intermittently repeating throughout entire interval. No significant section looks as if it could host mineralization. Individual quartz eyes are rounded and vary in size from 0.2 cm to 1 cm. Groundmass consists of fine-grained to medium grained feldspar grains with quartz eyes throughout. Trace very fine-grainedpyrite is visible on some of the quartz carbonate veinlets within the dyke (highlighted in secondary structures). Fragmented lower contact with volcanic mudstone with volcanic and sedimentary fragments.							
						LT	OR					
						LT	GY		OXI	2I	Py	0.1
						LT	GN		SIL	2I		
						MD	GY		CAR	2I		
53.34	57.91	4.57	VOL	FG	fine-grained volcanic siltstone to sandstone with cryptic grainsize variation chaotically throughout. Mm-scale quartz carbonate veinlets throughout entire interval (~1%). Chaotic colour variation from medium grey to dark grey, with sandtone to silty sized volcanic fragments. No visible volcanic fragments or clasts within this interval. Colour variation corresponds to a grain size variation, where finer-grained muds are darker grey and the sandsotone sized intervals are a lighter grey to greenish grey. Diffuse lower contact with a light to medium grey with patchy orange alteration volcanic sandstone to siltstone with quartz carbonate veinlets dispersed throughout.							
57.91	59.35	1.44	VOL	FG	Very fine-grained dark grey mudstoneandine-grained volcanic sandstone, chaotically interbedded with each other. Local oxidation persists throughout interval and is a dark orange to light orange. This oxidative stain is localized along fracture surfaces. Very trace very finegrained dissemianted pyrite is rare throughout interval.							
						DK	GY		OXI	2I	Py	0.1
						MD	GY		CAR	2I		
						LT	OR					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
59.35	60.25	0.90	VOL	FG	oxide stained, brecciated volcanic mudstone to siltstone, with pervaive orange weathering throughout entire interval. Fairly soft; likely pervasively clay altered. Two dark grey to black breccia zones with fragments of oxidized wallrock are injected within the interval. However, there are no sulfides associated with this event. Very fine-grained black dendritic manganese staining is present sporadically within the oxidatively weathered siltstone, and disseminated carbonate is present throughout.							
									CLY	3I		
						LT	OR		CAR	2I		
						MD	OR		OXI	2I		
						LT	GY		SIL	1I		
60.25	60.53	0.28	SST	FG	volcanic siltstone to sandstone; medium grey to greenish grey, with fine grained volcanic fragments throughout							
						MD	GY					
60.53	60.68	0.15	MST	FG	laminated mudstone fragment with a sharp upper and lower contact trending 80 TCA. Laminations are dark grey to medium greyish brown, trending 30 TCA							
						DK	GY					
						MD	GY					
60.68	64.64	3.96	SST	FG	very fine grained medium to dark grey siltstone to mudstone with varying grain size throughout interval. Weak quartz carbonate strginers developed throughout interval, with no visible sulfides associated with them. Weak clay alteration on some fracture surfaces.							
						MD	GY		CLY	1I		
						DK	GY		CAR	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
64.64	78.42	13.78	DYK	FG	Quartz eye porphyry rhyolite dyke, medium grey to orangeish grey, with patchy oxidation throughout, and weak quartz carbonatestringer veinlets randomly oriented and intermittently repeating throughout entire interval. No significant section looks as if it could host mineralization. Individual quartz eyes are rounded and vary in size from 0.2 cm to 1 cm. Groundmass consists of fine-grained to medium grained feldspar grains with quartz eyes throughout. Trace very fine-grainedpyrite is visible on some of the quartz carbonate veinlets within the dyke (highlighted in secondary structures).							
						LT	GN		SIL	1I		
						MD	GY		CAR	1I		
						LT	OR		OXI	2I	Py	0.01
78.42	83.00	4.58	SST	FG	fine grained to very fine grained volcanic sandstone to siltstone. Sandstone to siltsone volcanic lenses are medium greenish grey, and small intervals are dark grey mudstone. Realtively competent, with discrete small intervals of weak brecciation (highlighted in secondary structures). Upper contact with dyke is faulted and fragmented; weakly clay altered; no sulfides. Lower contact is gradational, grading from a clast-poor volcanic sand/silt/mudstone to a clast-rich volcaniclastic with a mudstone matrix.							
						MD	GY		CLY	1I		
						DK	GY		CAR	1I		
									SIL	1I		
83.00	89.15	6.15	VOL	FG	fine-grained to very fine grained mudstone; dark grey to medium grey with subangular to subrounded volcanic fragments and sedimentery fragments. Weak carbonate stringer veinlets persist throughout interval and contain no visible sulfides. Sharp lower contact trending 30 TCA with a quartz eye porphyry rhyolite dyke							
						DK	GY		SIL	1I		
						MD	GY		CAR	2I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
89.15	90.72	1.57	DYK	MG	medium grained, medium to light greenish grey feldspar and minor quartz phyric dyke, with a sharp upper and lower contact trending 30 TCA . Brecciated mudstone above, and brecciated mudstone below. Small hairline OX seams are persistent throughout interval, and are weakly oxidized and iron altered. Weak manganese staining throughout interval along fine-grained seams. No visible sulfide in this interval. Same dyke as encountered from 91.60-93.63m							
						MD	OR					
						MD	GY		OXI	2I		
						MD	GN		CAR	1I		
90.72	91.60	0.88	SST	MG	fine to very fine grained dark grey to grey volcanic siltstone to mudstone, with rare sub cm carbonate veinlets sporadically dispersed throughout interval, comprising <1% of the total sample. Sharp upper and lower contact with feldspar porphyr y quartz eye dyke. No sulfide in this interval, or near lithological contacts.							
						DK	GY		CAR	1I		
						MD	GY					
91.60	93.63	2.03	DYK	MG	medium grained, medium greenish grey felsdpar porphyry dyke with incipiently "speckled" clay altered fragments with minor magnetite in contact with the clay. This is not a quartz eye rhyolite porphyry, but a different type of dyke than previously encountered higher in the hole.							
						MD	GN		---	1I		
						MD	GY		CLY	1I		
93.63	95.30	1.67	VOL	MG	weakly brecciated dark grey to medium greyish brown laminated mudstone, with injections of low angle quartz carbonate veinlets (1 cm wide; 30 TCA; rare) and small hairline faults and minor offsets in the mudstone throughout interval. Weak offsetting likely due to injection of oriented hairline quartz carbonate seams ~30 TCA. One 15 cm interval has a high density of these hairline injections (described in secondary). Gradational lower contact into a brecciated volcaniclastic unit that has a very fine-grained creamy grey to light grey cement infilling brecciated clasts of volcanic sandstone							
						DK	GY		SIL	1I		
						MD	GY		CLY	1I		
						LT	OR		CAR	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
95.30	103.30	8.00	SST	FG	fine-grained, medium grey, volcanic sandstone with a network of very fine-grained creamy grey to light grey material infilling along numerous fractures, creating an overall cemented breccia-like texture within the broader interval of volcanic sandstone. Majority of clasts are of volcanic sandstone, fractured and annealed by the cement-like infill. However, there are rare clasts of lighter grey, finegrained, carbonate rich material (reacts strongly to HCL); very rare (two observed) of reddish brown volcanic fragments up to 5 cm by 4 cm in size, and rare laminated mudstone caught up in the more heavily brecciated intervals within the broader moderately brecciated interval. There are trace amounts of disseminated pyrite throughout.							
						MD	GY		CAR	1I	Py	0.1
						MD	GN		SIL	1I		
103.30	103.80	0.50	SST	FG	fine grained volcanic sandstone. Dark grey to medium grey							
						MD	GY					
						DK	GY					
103.80	104.30	0.50	VOL	FG	clast-supported volcaniclastic with a dark grey mudstone matrix; clasts comprised of volcanic fragments, laminated mudstone, carbonate-rich clasts, and volcanic sandstone and siltstone. Clasts range in size from 0.2-3 cm and are subangular. Three small quartz carbonate veinlets cut this clast-supported interval, with ultra trace pyrite along their margins							
						DK	GY		SIL	1I		
						MD	GY		CAR	1I	Py	0.01
104.30	111.40	7.10	VOL	FG	alternating package of volcanic sandstone to siltstone, with intervals 30-50 cm wide that contain clastic volcanic and sedimentary fragments. Clasts range in size from 0.2-1 cm in size, and are subrounded to subangular. There are rare larger subangular clasts of mudstone up to 5 cm in size that are rare within the interval. Small fine-graiend hairline quartz carbonate fractures tending ~70 TCA are present in the lower half of the interval.							
						MD	GY		CAR	1I		
						DK	GY		SIL	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
111.40	111.54	0.14	SST	FG	finegrained volacnic mudstone to silstone, medium grey; with one 30 TCA fracture and silicification extending from fracture into host rock. One 3 cm siliceous interval (veinlet) comes up along fracture, and contains trace disseminated pyrite							
						MD	GY		SIL	1I	Py	0.1
111.54	112.30	0.76	SST	FG	finegrained medium grey sandstone to mudstone with low ATCA frx running throughout. Fractures look dry, and have weak clay alteration. No visible sulfides. Gradational contact with a chaotic mixture between brecciated mudstone volcaniclastic, and quartz eye porphyry dyke (heavily altered/oxidized).							
						MD	GY		CLY	1I		
112.30	113.25	0.95	DYK	MG	medium grained quartz eye feldspar porphry dyke; heavily oxidized. Light to medium orangeish brown, with weak clay alteration on fracture surfaces							
						MD	GY		OXI	3I		
						MD	BN					
						MD	OR					
113.25	113.60	0.35	VOL	MG	chaotic breccia with large volcanic and sedimentary fragments with intense quartz carbonate stockwork infilling breccia between clasts. Entire sample is heavily oxidized and has a reddish brown weathering on surface. Small blebs of chlorite are present within the volcanic fragments contained within the breccia (rare). Gradational upper contact, and a gradational lower contact. The lower contact is comprised of a low ATCA fracture that trends 5-10 TCA and cuts breccia, with one half of core being the quartz eye rhyolite dyke, and the other half of the core being the volcanic mudstone/siltstone volcaniclastic. Disseminated pyrite along quartz carbonate seams cutting clasts and infilling breccia							
						MD	GY		SIL	2I	Py	1
						MD	OR		CAR	2I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
113.60	115.34	1.74	DYK	MG	rhyolite dyke with intervals of oxidized mudstone within. Chaotic and intermingled throughout entire interval, with fine-grained quarzt carbonate seams throughout interval, trending sporadically. No distinct contact between, but unit looks prospective due to its medium orangeish brown weathering and density of hairline stringers throughout							
						MD	OR		OXI	3I		
						MD	BN		CAR	1I		
									SIL	1I		
115.34	115.82	0.48	VOL	MG	Oxidized, orange chaotic mixture of clastic mudstone, brecciated and fractured, annealed by quartz carbonate veinlets that are oxidized. Three small quarta carbonate veinlets 75 TCA have fine-grained black patches in them, likely disseminated finegrained pyrite. Heavily oxidized interval suggesets oxidizing fluid injections have altered the host rock that was once dark grey to medium grey.							
									SIL	1I		
									CAR	1I		
						MD	OR		OXI	3I	Py	1
115.82	116.40	0.58	VOL	FG	medium to dark grey volcaniclastic mudstone, with clasts and fragments of volcanic/mudstone; subrounded. This interval is clast-supported. Weak quartz carbonate veinlets cut throughout interval, barren of sulfide							
						MD	GY		SIL	1I		
						DK	GY		CAR	1I		
116.40	117.15	0.75	SST	FG	fine-grained volcanic silstone to sandstone, medium greyish brown to greyish green; no stringers or alteration.							
						MD	GY					
						MD	BN					
117.15	117.70	0.55	VOL	FG	medium to dark grey volcaniclastic mudstone with dense fine-graiend black fractures and wek quartz carbonate infilling some fractures. No visible sulfides.							
						DK	GY		CAR	1I		
						MD	GY		SIL	1I		
117.70	118.37	0.67	SST	FG	medium greyish brown volcanic sandstone to silstone							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
118.37	121.50	3.13	VOL	FG	volcaniclastic mudstone to silstone, with subrounded clasts of mudstone, volcanic fragments, and sandstone, mixed with weak rare 40 TCA fracturing and rare <1cm quartz carbonate veinlets containing no visible sulfide. Weak oxidation on surface near veinlets, suggesting trace sulfide. However, none visible in interval							
						MD	GY		SIL	1I		
						DK	GY		OXI	1I		
121.50	121.80	0.30	VOL	FG	brecciated, quartz infilled, oxidized volcaniclastic. Medium orange with entire interval being infilled by quartz carbonate. One veinlet runs parallel TCA, while others run 30 TCA and 80 TCA. These veinlets "leak" into surrounding wallrock and do not have discrete sharp contacts (i.e. likely brecciation infill). Small clasts up to 4 cm are present within, and contain fine-grained stockwork of seams that are oxidized. Trace sulfide visible throughout interval, as finegrained pyrite, with weak oxidized rims.							
						MD	GY		SIL	4I	Py	0.5
						MD	OR		CAR	1I		
						LT	WH		OXI	3I		
121.80	124.15	2.35	VOL	MG	clast supported volcaniclastic with dark grey mudstone matrix. Subrounded to subangular fragments of mudstone, sandstone, and volcanic fragments contained within. Small quartz carbonate seams pervasive throughout, containing weak oxidized outer margins. No visible sulfide.							
						MD	GY					
						DK	GY					
124.15	126.18	2.03	SST	FG	fine-grained, medium grey, volcanic sandstone with a network of very fine-grained creamy grey to light grey material infilling along numerous fractures, creating an overall cemented breccia-like texture within the broader interval of volcanic sandstone. Majority of clasts are of volcanic sandstone, fractured and annealed by the cement-like infill.							
						MD	GY					
						DK	GY					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
126.18	126.21	0.03	QV	FG	fine-grained milky to creamy white quartz vein with minor carbonate on outer margin. Weak pyrite along margin, very fine-grained. Sharp upper and lower contact trending 90 TCA							
						LT	WH		SIL	5I	Py	0.2
						LT	CR		CAR	1I		
126.21	128.60	2.39	SST	FG	fine-grained, medium grey, volcanic sandstone with a network of very fine-grained creamy grey to light grey material infilling along numerous fractures, creating an overall cemented breccia-like texture within the broader interval of volcanic sandstone. Majority of clasts are of volcanic sandstone, fractured and annealed by the cement-like infill. Trace parallel TCA seams of quartz persist throughout entire interval. Weak pyrite associated with these seams, and weak fine-grained black material rims the edge of them (manganese staining?).							
						MD	GY		SIL	2I	Py	0.1
						DK	GY					
128.60	129.25	0.65	SST	FG	fine-grained, heavily fractured and weakly clay altered along fractures (frx trending 30 TCA), brecciated and infilled volcanic sandstone, annelaed by very fine grained light cream brown material. Weak oxidative staining throughout interval.							
						MD	GY		OXI	2I		
						MD	OR		CLY	2I		
129.25	130.00	0.75	VOL	FG	mudstone to silstone volcaniclastic with fragments ofmudsotne and volcanics mixed within a mudstone to stilstone matrix. No alteration or sulfides							
						MD	GY					
						DK	GY					
130.00	130.02	0.02	QV	FG	one small 1 cm wide quartz carbonate veinlet 1 cm wide with quartz and carbonate alteration; trace pyrite							
						LT	CR		CAR	1I	Py	0.1
						LT	WH		SIL	1I		
130.02	139.90	9.88	SST	FG	fine-grained medium grey to dark grey volcanic sandstone to siltstone, with rare small siliceous clasts, and weak hirline frx of quartz and carbonate with no visible sulfide.							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						MD	GY					
						DK	GY					
139.90	142.34	2.44	VOL	FG	fine-grained mudstone to sandstone with dense network of fine-grained black seams, with no sulfide. Higher propotion of sedimentary and volcanic clasts in this interval, but still matrix supported overall.							
						MD	GY		CAR	1I		
						DK	GY					
142.34	143.00	0.66	SST	FG	silstsone to mudstone dark grey to medium grey, with 4 40 TCA quartz carbonate stringers with minor sulfide							
						MD	GY		SIL	1I	Py	0.1
						DK	GY		CAR	1I		
143.00	143.06	0.06	QV	FG	fine-grained, oxidized, 60 TCA quartz vein with oxidized alteration haloe extending 2 cm on either side of the vein. Vein has weak recessively weathered pits and has minor carbonate mixed in with the quartz. Fine-grained anastomosing network of hairline cramy white frx cutting the quartz vein throughout. No visible sulfide, but textures suggest the potential for sub-microscopic sulfide to be present.							
						MD	OR		SIL	4I		
						LT	WH		CAR	1I		
						LT	CR					
143.06	147.25	4.19	SST	FG	fine grained volcanic sandstone to siltstone with rare 10 TCA quartz carbonte veinlets and 40 TCA quartz carbonate veinlets with trace pyrite along them. Very fine grained creamy brown infill along fractures throughout interval							
						MD	GY		SIL	1I		
						DK	GY		CAR	1I		
						LT	BN					
147.25	147.40	0.15	QV	FG	true quartz vein from 147.31 to 147.34, trending 80 TCA. Afine-grained brownish purple alteration (biotite alteration?) enveloped the quartz vein. Small stringers trend 30 TCA and cut the 80 TCA vein. Thre are ultra trace pyrite; very fine grained; disseminated in vein as well as in the stringers that cut it.							
						MD	BN		SIL	1I	Py	0.1
						MD	PU					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						LT	WH					
147.40	147.94	0.54	SST	FG	fine-grained volcanic sandstone to siltstone, with weak very fine grained creamy brown infill along fracture surfaces.							
						MD	GY					
						MD	BN					
147.94	148.08	0.14	QV	FG	fine-grained milky white quartz vein 80 TC; sharp upper and lower contact, with fine-grained pyritic hairline seams (3) in interval. Quartz vein itself has very trace pyrite.							
						LT	CR					
						LT	WH		SIL	5I	Py	0.5
148.08	148.25	0.17	SST	FG	chaotic, altered mudstone to siltstone, creamy greenish brown, with patchy greenish brown alteration (epidote?) directly beneath lower contact of vein. Weak silicification persists throughout interval, and no sulfides are visible							
148.25	149.68	1.43	SST	FG	fine-grained meidum grey sandstone to mudstone, with weak quartz carbonate vein development trending 40 TCA with ultra trace pyrite disseminated along their margin.							
						MD	GY		SIL	1I	Py	0.1
									CAR	1I		
149.68	149.70	0.02	QV	FG	fine-grained quartz vein with disseminated pyrite, and weak oxidative alteration halo, 70 TCA							
						LT	WH		SIL	5I	Py	0.5
149.70	150.56	0.86	SST	FG	fine grained medium grey volcanic mudstone to stilstone, with chaotic laminations between sadnstone to siltstone throughout. Quartz seams and small lenses of quartz persist throughout interval and are 1-2 cm wide. No visible sulfides associted with them. Sporadic injections of mudstone are intermingled within the siltstone.							
						MD	GY		SIL	1I	Py	0.1
						DK	GY		CAR	1I		
150.56	150.95	0.39	SST	FG	siliceous interval of sandstone to mudstone, with brecciated quartz veinlets trending 80 TCA, filled by subhorizontal fine-grained black seams. Disseminated pyrite thorughout siliceous sections of core.							
						MD	GY		SIL	3I	Py	0.5

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
150.95	152.77	1.82	DYK	MG	Medium grained quartz porphyritic dyke with fine-grained black seams throughout entire interval. Grounmdmass is bleached greyish green and fine-grained. Sharp upper and lower contact. Upper contac ttrends 70 TCA and lower contact trends 80 TCA							
						MD	GY		SIL	1I		
						MD	GN					
152.77	157.09	4.32	SST	FG	Repeating intervals ~50 cm wide of finegrained volcanic sandstone, and very fine-grained laminated mudstone. Sandstone intervals have weak oxidized quartz carbonate stringers within them, and mudstone intervals have rare quartz carbonate seams in them.							
						MD	GY					
						LT	BN					
						LT	GY					
157.09	157.23	0.14	MST	FG	laminated very dark grey mudstone with two 1 cm wide 40 TCA quartz veinlets with trace pyrite.							
						DK	GY		SIL	2I	Py	0.1
157.23	160.80	3.57	SST	FG	repeating 50 cm intervals of fine-grained volcanic sandstone, and very fine-grained laminated siltston/mudstone. Weak 40 TCA quartz veinlets throguhout interval (3) and some 80 TCA veinlets as well(see secondary structures). Gradational irregular contact with rhyolite dyke below.							
						MD	GY		SIL	1I	Py	0.1
						LT	GY		CAR	1I		
160.80	164.30	3.50	DYK	MG	orangeish grey, quartz porphyritic rhyolite dyke, with sporadic intervals of intense oxidative staining, and weak quartz carbonte seams trending 70 and 40 TCA, with some intervals being sporadically more oxidatively weathered than other intervals. Quartz grains are ~1 cm and subrounded. No visible sulfides on fracture surfaces							
						MD	OR		OXI	2I		
						MD	BN		SIL	1I		
									CAR	1I		
164.30	168.30	4.00	DYK	MG	hevaily fractured interval of same rhyolite dyke described above							
						MD	OR					
						MD	BN					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						MD	GY					
168.30	170.00	1.70	DYK	MG	orangeish grey, quartz porphyryitic rhyolite dyke, with sporadic intervals of intense oxidative staining, and weak quartz carbonte seams trending 70 and 40 TCA, with some intervals being sporadically more oxidatively weathered than other intervals. Quartz grains are ~1 cm and subrounded. No visible sulfides on fracture surfaces							
						MD	GY					
						MD	BN					
170.00	170.36	0.36	DYK	MG	clay altered brownish orange interval of rhyolite dyke. Likely faulted interval wihtin dyke							
						MD	BN		CLY	5I		
170.36	179.50	9.14	DYK	MG	quartz eye porphyry rhyolite dyke, medium orangeish brown, with quartz porphyry eyes 1 cm by 1 cm. Frx with weak clay alteration are present; dominant TCA is 40 for frx.							
						MD	BN		SIL	1I		
						MD	OR		CAR	1I		
179.50	181.10	1.60	SST	MG	fine-grained volcanic mud to siltstone, with a gradational upper contact with oxidized rhyolite, and a gradational lower contact with pillowed basalt. Small seams o quarz carbonate persist throughout interval, and contain no visible sulfide. Light to medium brownish grey							
						MD	GY		CAR	1I		
						MD	BN		SIL	1I		
						LT	GY					
181.10	182.20	1.10	BAS	FG	fine-grained basalt with 2-5 cm subrounded "pillows" with weak very fine-grained chill margins around them. Infilling pillow fragments s very fine-grained dark grey material with weak spotted clay alteration. Interspersed with these pillowed fragments are siliceous "bacterial" looking agglomerations that are subronuded and .2-.5 cm in size. These could be filled amygdules. The density of the amygdules increases until they become one large 5-10 cm interval of siliceous material. Perhaps this is another lavaflow within the pillow basalt? Small quartz carbonate seams are present within the basalt, and ome 80 TCA seams have weak oxidative alteration haloes around them. Gradational lower contact with another len of volcanic siltstone to mudstone							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						DK	GY		CAR	1I	Py	0.1
						MD	GY		SIL	1I		
						DK	GN					
182.20	183.25	1.05	SST	MG	fine-grained volcanic silstone to mudstone with light grey very fine grained infill along stockwork fracture seams. No sulphide							
						MD	GY					
183.25	192.80	9.55	BAS	FG	fine-grained dark grey to dark greenish grey basalt, with small basalt pillows dispsersed throughout entire interval. Small agglomerations of bacterial textures resrobed siliceous grains (0.2 by 0.2 cm) are present throughout interval. They extend into the pillowed basalt from siliceous 10 cm intervals, beginning as dense clumps extending from the interval, decreasing in density as they extend into the basalt, until they become bacterial "spots" that are fairly spread out (see picture). Quartz carbonate veinlets sporadically oriented occur throughout interval, and contain no visible sulfide.							
						DK	GY		CAR	1I		
						DK	GN		SIL	1I		
192.80	193.75	0.95	BAS	FG	orangeish brown, oxidized basalt. Two 80 TCA clay altered fractures in interval, likely causing orangeish weathering throughout broader interval. 192.80 to 193.3 is intensely oxidized, and the reamining interval is less oxidized and weathered overall. Lots of quartz carboante seams along fractures throughout interval, and weak oxidation along frcaturs. Sporadic dissemaitned pyrite throughout interval, very trace.							
						MD	BN		CLY	3I	Py	0.2
						MD	OR		SIL	2I		
									CAR	2I		
193.75	197.15	3.40	BAS	FG	pillow basalt, light grey to mediu grey, with rare quartz carbonate stringers throughout. No visible sulfide							
						DK	GY		CAR	1I		
						MD	GY		SIL	1I		
197.15	197.18	0.03	QV	FG	quartz vein 60 TCA; no sulfdie. Weeak oxidation around it.							
						LT	WH					
						LT	OR					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
197.18	199.45	2.27	BAS	FG	pillow basalt, weakly veined, no sulfide							
						MD	GY					
						DK	GY					
199.45	199.46	0.01	QV	FG	40 TCA quartz vein with weak oxidative halo							
						LT	WH					
						LT	OR					
199.46	206.75	7.29	BAS	FG	pillow basalt with quartz carbonate storkcowrk steingers. No extensive alteration and no extensive mineralization associated with this unit.							
						MD	GY					
						DK	GY					
206.75	207.30	0.55	BAS	FG	fine-grained pillow basalt, with orangeish brown weathering, and a finegrained orange seam stockwork of strginers, without any associated sulfide							
						MD	BN		SIL	1I		
						MD	OR		CAR	1I		

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
1.52	3.05	1.53	0.29	19	0.00	0	0R	2H	3W	
3.05	4.57	1.52	0.44	29	0.14	9	1R	2H	2W	
4.57	6.10	1.53	1.1	72	0.00	0	2R	2H	4W	
6.10	7.62	1.52	1.48	97	0.47	31	1R	2H	2W	breciated calc mudstone
7.62	9.14	1.52	1.33	88	1.02	67	2R	2H	2W	
9.14	10.67	1.53	1.46	95	0.92	60	2R	2H	1W	
10.67	12.19	1.52	1.32	87	0.87	57	2R	2H	1W	
12.19	13.72	1.53	1.39	91	0.83	54	1R	2H	1W	
13.72	15.24	1.52	1.23	81	0.90	59	2R	2H	2W	
15.24	16.76	1.52	1.5	99	1.25	82	3R	3H	1W	
16.76	18.29	1.53	1.44	94	1.14	75	2R	3H	1W	
18.29	19.81	1.52	1.43	94	0.98	64	2R	3H	1W	
19.81	21.34	1.53	1.46	95	1.16	76	2R	3H	1W	
21.34	22.81	1.47	1.46	99	1.17	80	3R	3H	1W	
22.81	24.38	1.57	1.42	90	1.10	70	2R	2H	1W	
24.38	25.91	1.53	1.44	94	0.99	65	2R	3H	1W	
25.91	27.43	1.52	1.42	93	1.14	75	3R	3H	1W	
27.43	28.96	1.53	1.48	97	1.01	66	2R	2H	1W	
28.96	30.48	1.52	1.37	90	0.49	32	2R	2H	1W	
30.48	32.00	1.52	1.47	97	0.57	38	1R	3H	2W	contact with quartz porphyry dyke
32.00	33.53	1.53	1.48	97	1.27	83	1R	3H	1W	small calcite veins
33.53	35.05	1.52	1.43	94	0.67	44	1R	4H	1W	
35.05	36.58	1.53	1.49	97	1.25	82	1R	4H	1W	
36.58	38.10	1.52	1.5	99	1.07	70	1R	3H	1W	
38.10	39.62	1.52	1.47	97	0.80	53	1R	4H	1W	
39.62	41.15	1.53	1.42	93	1.39	91	1R	4H	2W	
41.15	42.67	1.52	1.44	95	1.15	76	1R	4H	2W	
42.67	44.20	1.53	1.47	96	1.35	88	1R	3H	2W	oxidation haloes around natural fracture surfaces
44.20	45.72	1.52	1.45	95	0.62	41	1R	4H	2W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
45.72	47.24	1.52	1.39	91	0.83	55	1R	3H	1W	
47.24	48.77	1.53	1.34	88	0.83	54	1R	4H	1W	
48.77	50.29	1.52	1.49	98	0.58	38	1R	3H	1W	
50.29	51.82	1.53	1.48	97	0.87	57	1R	4H	1W	
51.82	53.34	1.52	1.46	96	0.66	43	2R	4H	1W	
53.34	54.86	1.52	1.5	99	1.19	78	2R	2H	1W	
54.86	56.39	1.53	1.52	99	1.04	68	1R	3H	2W	
56.39	57.91	1.52	1.47	97	1.16	76	1R	3H	1W	
57.91	59.44	1.53	1.48	97	1.14	75	2R	2H	2W	clay altered orange- brown weathered volcanic
59.44	60.96	1.52	1.43	94	1.14	75	1R	2H	2W	
60.96	62.48	1.52	1.51	99	1.13	74	2R	3H	1W	
62.48	64.01	1.53	1.47	96	0.86	56	1R	3H	1W	
64.01	65.53	1.52	1.47	97	0.87	57	2R	3H	1W	calcite along fracture surfaces
65.53	67.06	1.53	1.48	97	0.96	63	2R	3H	1W	
67.06	68.58	1.52	1.34	88	1.09	72	1R	3H	1W	
68.58	70.10	1.52	1.51	99	1.34	88	1R	3H	1W	
70.10	71.63	1.53	1.45	95	1.11	73	1R	3H	1W	
71.63	73.15	1.52	1.51	99	1.15	76	1R	3H	1W	
73.15	74.68	1.53	1.48	97	0.82	54	1R	2H	1W	
74.68	76.20	1.52	1.5	99	1.08	71	1R	2H	1W	
76.20	77.72	1.52	1.45	95	0.82	54	1R	2H	1W	
77.72	79.25	1.53	1.34	88	0.47	31	2R	2H	1W	
79.25	80.77	1.52	1.48	97	0.73	48	3R	3H	1W	
80.77	82.30	1.53	1.42	93	0.58	38	3R	2H	1W	
82.30	83.82	1.52	1.45	95	1.07	70	3R	3H	1W	
83.82	85.34	1.52	1.46	96	1.19	78	3R	3H	1W	
85.34	86.87	1.53	1.48	97	0.81	53	2R	3H	1W	
86.87	88.39	1.52	1.49	98	1.11	73	3R	3H	1W	
88.39	89.92	1.53	1.41	92	0.89	58	3R	2H	1W	
89.92	91.44	1.52	1.47	97	0.91	60	2R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
91.44	92.96	1.52	1.49	98	1.04	68	1R	3H	1W	
92.96	94.49	1.53	1.47	96	0.69	45	2R	4H	1W	
94.49	96.01	1.52	1.39	91	1.10	72	2R	2H	2W	
96.01	97.54	1.53	1.46	95	0.94	61	3R	3H	1W	
97.54	99.06	1.52	1.5	99	1.10	72	3R	2H	1W	
99.06	100.58	1.52	1.42	93	1.12	74	3R	2H	1W	
100.58	102.11	1.53	1.48	97	1.20	78	2R	3H	1W	
102.11	103.63	1.52	1.5	99	0.93	61	3R	3H	1W	
103.63	105.16	1.53	1.49	97	1.13	74	2R	3H	1W	
105.16	106.68	1.52	1.51	99	1.31	86	2R	2H	1W	
106.68	108.20	1.52	1.51	99	0.99	65	2R	2H	1W	
108.20	109.73	1.53	1.49	97	0.83	54	2R	3H	1W	
109.73	111.25	1.52	1.5	99	1.21	80	1R	2H	1W	
111.25	112.78	1.53	1.45	95	0.37	24	2R	2H	2W	
112.78	114.30	1.52	1.35	89	0.16	11	2R	2H	2W	
114.30	115.82	1.52	1.46	96	0.65	43	2R	2H	3W	
115.82	117.35	1.53	1.44	94	0.51	33	1R	2H	2W	
117.35	118.87	1.52	1.42	93	0.99	65	2R	2H	1W	
118.87	120.40	1.53	1.38	90	0.60	39	1R	2H	1W	
120.40	121.92	1.52	1.41	93	0.29	19	2R	2H	1W	
121.92	123.44	1.52	1.5	99	1.20	79	2R	2H	1W	
123.44	124.97	1.53	1.5	98	0.95	62	1R	2H	1W	
124.97	126.49	1.52	1.48	97	1.22	80	1R	2H	1W	
126.49	128.01	1.52	1.47	97	1.42	93	1R	2H	1W	
128.01	129.54	1.53	1.45	95	0.79	52	2R	2H	1W	
129.54	131.06	1.52	1.44	95	1.18	78	1R	2H	1W	
131.06	132.59	1.53	1.49	97	1.34	88	1R	2H	1W	
132.59	134.11	1.52	1.43	94	1.02	67	1R	2H	1W	
134.11	135.64	1.53	1.51	99	1.40	92	1R	2H	1W	
135.64	137.16	1.52	1.46	96	1.37	90	1R	2H	1W	
137.16	138.68	1.52	1.47	97	1.33	88	2R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
138.68	140.21	1.53	1.5	98	1.32	86	2R	3H	1W	
140.21	141.73	1.52	1.49	98	1.13	74	1R	2H	1W	
141.73	143.26	1.53	1.46	95	1.10	72	1R	2H	1W	
143.26	144.78	1.52	1.49	98	0.95	63	1R	2H	1W	
144.78	146.30	1.52	1.5	99	1.16	76	1R	3H	1W	
146.30	147.83	1.53	1.5	98	0.62	41	2R	2H	1W	
147.83	149.35	1.52	1.5	99	0.97	64	3R	2H	1W	
149.35	150.88	1.53	1.41	92	0.64	42	2R	2H	1W	
150.88	152.40	1.52	1.51	99	1.31	86	1R	3H	1W	
152.40	153.92	1.52	1.46	96	1.00	66	1R	2H	1W	
153.92	155.45	1.53	1.5	98	0.59	39	1R	2H	1W	
155.45	156.97	1.52	1.47	97	0.68	45	1R	2H	1W	
156.97	158.50	1.53	1.42	93	0.85	56	1R	2H	1W	
158.50	160.02	1.52	1.46	96	1.22	80	1R	2H	1W	
160.02	161.54	1.52	1.43	94	0.85	56	2R	3H	1W	
161.54	163.07	1.53	1.37	90	0.95	62	1R	2H	1W	
163.07	164.59	1.52	1.43	94	1.12	74	1R	3H	1W	
164.59	166.12	1.53	1.42	93	0.26	17	1R	3H	1W	
166.12	167.64	1.52	1.32	87	0.16	11	1R	2H	1W	
167.64	169.16	1.52	1.49	98	0.80	53	1R	3H	1W	
169.16	170.69	1.53	1.36	89	0.48	31	2R	2H	2W	
170.69	172.21	1.52	1.5	99	1.25	82	1R	3H	1W	
172.21	173.74	1.53	1.39	91	1.06	69	1R	2H	1W	
173.74	175.26	1.52	1.42	93	0.00	0	1R	2H	1W	
175.26	176.78	1.52	1.47	97	0.96	63	1R	2H	1W	
176.78	178.31	1.53	1.45	95	0.62	41	1R	3H	1W	
178.31	179.83	1.52	1.47	97	0.80	53	1R	3H	1W	
179.83	181.36	1.53	1.46	95	0.99	65	1R	2H	1W	
181.36	182.88	1.52	1.48	97	1.31	86	1R	2H	1W	
182.88	184.40	1.52	1.51	99	0.77	51	1R	2H	1W	
184.40	185.93	1.53	1.51	99	0.85	56	1R	2H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
185.93	187.45	1.52	1.32	87	0.68	45	1R	2H	1W	
187.45	188.98	1.53	1.44	94	0.80	52	2R	2H	1W	
188.98	190.50	1.52	1.46	96	1.33	88	2R	2H	1W	
190.50	192.02	1.52	1.45	95	0.93	61	2R	2H	1W	
192.02	193.55	1.53	1.44	94	1.02	67	2R	2H	2W	
193.55	195.07	1.52	1.49	98	1.29	85	1R	2H	1W	
195.07	196.60	1.53	1.5	98	1.21	79	1R	2H	1W	
196.60	198.12	1.52	1.5	99	1.04	68	1R	2H	1W	
198.12	199.64	1.52	1.43	94	1.08	71	1R	3H	1W	
199.64	201.17	1.53	1.46	95	1.03	67	2R	3H	1W	
201.17	202.69	1.52	1.46	96	0.92	61	2R	3H	1W	
202.69	204.22	1.53	1.48	97	1.44	94	3R	3H	1W	
204.22	205.74	1.52	1.36	89	1.06	70	2R	2H	1W	
205.74	207.30	1.56	1.48	95	1.13	72	1R	2H	2W	

Hartless Joe - Hartless Joe

Grid East	Grid North	Easting	Northing	Elevation	Depth (m)
		515800	6751379	1815.4	146.3

ZONE: Unknown

SECTION:

HOLE: HJ -19-003

CLAIM:

Contractor: Platinum

Drill: 1

Core Size: NTW

Casing Depth:

Drilling Dates: -

Geology Logged By: R. Burke

SURVEY			
Depth (m)	Azimuth	Dip	Method

TARGET:

SUMMARY			
From (m)	To (m)	Interval (m)	Rock Type
0	0.6	0.6	OVB
0.6	1.75	1.15	SST
1.75	4.4	2.65	SST
4.4	8	3.6	SST
8	10.2	2.2	SST
10.2	13.1	2.9	SST
13.1	14.92	1.82	SST
14.92	15.3	0.38	DYK
15.3	17	1.7	SST
17	17.9	0.9	SST
17.9	24.1	6.2	SST
24.1	24.45	0.35	SST
24.45	24.55	0.1	FLT
24.55	24.95	0.4	SST
24.95	25.83	0.88	SST
25.83	27.2	1.37	SST

SAMPLES	
Numbers:	K293615 to K293625, W597702 to W597733
Total:	43
Batch:	001, 003
Certificates:	WH19216483, WH19295877

COMMENTS

27.2	28.53	1.33	SST
28.53	28.96	0.43	QV
28.96	29.2	0.24	SST
29.2	29.22	0.02	QV
29.22	29.55	0.33	SST
29.55	29.61	0.06	QV
29.61	30.05	0.44	SST
30.05	37	6.95	SST
37	38.15	1.15	MST
38.15	38.17	0.02	MST
38.17	39.93	1.76	MST
39.93	41.5	1.57	DYK
41.5	41.8	0.3	DYK
41.8	47	5.2	DYK
47	57.05	10.05	DYK
57.05	69.19	12.14	DYK
69.19	70.3	1.11	FLT
70.3	76.2	5.9	VOL
76.2	78.53	2.33	SST
78.53	82	3.47	SST
82	98.35	16.35	MST
98.35	101.55	3.2	FEL
101.55	102.78	1.23	MST
102.78	103.16	0.38	QV
103.16	103.88	0.72	MST
103.88	104.55	0.67	DYK
104.55	110	5.45	MST
110	116.85	6.85	BAS
116.85	134.92	18.07	MST
134.92	135.5	0.58	MST
135.5	146.3	10.8	DYK

HJ -19-003

Hartless Joe
Unknown Zone

Archer,Cathro & Associates (1981) Limited

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
0.00	0.60	0.60	OVB	--	overbuden							
13.10	14.92	1.82	SST	--	medium greenish grey volcanic sandstone, unaltered.							
						MD	GN					
						MD	GY					
24.45	24.55	0.10	FLT	--	intensely oxidized, dark orange fault gouge material, with a sharp upper contact 40 TCA and lower contact trending 30 TCA. Bounded by heavily oxidized clay altered basalt							
						MD	OR		OXI	5I		
						DK	BN					
						DK	OR		CLY	5I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
0.00	0.60	0.60	OVB	--	overbuden							
0.60	1.75	1.15	SST	--	heavily rubbly fragmented finegrained volcanic sandstone at the top of box 1, with one small interval of ~5 cm containing rubbled fragments of vuggy looking quartz chips (~0.80-0.85m).							
						MD	GY					
1.75	4.40	2.65	SST	--	fractured, fragmental volcanic sand/siltstone roughly 5-10 cm pieces of core fragments, containing small fine-grained feldspar grains within a very fine-grained dark grey groundmass.							
						MD	GY					
4.40	8.00	3.60	SST	--	semi-competent, dark grey to medium greenish grey, volcanic sandstone. Fine-grained groundmass and fine-grained feldspar grains dissemianted throughout. Stockwork recessively weathered seams are randomly oriented throughout - indicating acidic fluid infiltration and void-space creation. Recessively weathered stockwork veinlets are filled with quartz (maybe carbonate has since weathered out leaving open space?) and open space.							
8.00	10.20	2.20	SST	--	dark grey medium greenish grey fine-grained volcanic sandstone with weak chlorite alteration and weak oxidative staining on low ATCA fractures.							
						MD	GY		CHL	1I		
						MD	GN					
10.20	13.10	2.90	SST	--	medium greenish grey volcanic sandstone with pervaisve oxidation, giving an orangeish brown appearance to the rock. Weakly silicified and clay altered, heavily fragmented. Majority of interval is oxidized small fragments of basalt.							
						MD	GY		OXI	2I		
						MD	BN					
						MD	GN		BLE	2I		
						MD	OR					
13.10	14.92	1.82	SST	--	medium greenish grey volcanic sandstone, unaltered.							
						MD	GY					
						MD	GN					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
14.92	15.30	0.38	DYK	--	light maroon reddish brown, siliceous, medium grained feldspar quartz rhyolite dyke with 70 TCA recessively weathered linear features that repeat every 2 cm. This texture looks like hydrothermal fluids channeled along these features and caused open-space voids to develop. It has a sharp contact with the basalt above it, trending 60 TCA. The lower contact is cryptic, due to fragmented rock and rubble from 15.24 to 15.5 m in the hole. Diffuse contact back into basalt.							
						MD	BN					
						MD	RD					
15.30	17.00	1.70	SST	--	medium grained, medium greenish grey, volcanic sandstone, with discrete 5cm sections that are faulted and oxidized on fracture surfaces.							
						MD	GN					
						MD	GY					
17.00	17.90	0.90	SST	--	bleached and oxidized interval of sandstone, pervaisvely weakly clay altered. Light brownish orange, with two light creamy orange bleached intervals spatially bounding two 1 cm wide quartz carbonate veinlets 80 TCA with no visible sulfide.							
									CLY	2I		
						LT	OR		BLE	2I		
						LT	BN		OXI	2I		
17.90	24.10	6.20	SST	--	medium greenish grey volcanic sandstone with fine-grained flecks of feldspar within a fine-grained groundmass. Sparse (three) quartz carbonate veinlets that are 1-3 mm wide are found throughout the basalt, with minor oxide stianing and trace pyrite. Stockwork fracture with recessively weathered linear features 1-3 mm wide cut through the basalt, indicating hydrothermal fluid flow. From 21 to 23.3 m there are 20 TCA carbonate veinlets that trend through the basalt. Oxidation on fractures is pervasive.							
						MD	GY		OXI	2I	Py	0.1
						MD	GN		SIL	1I		
									CAR	1I		
24.10	24.45	0.35	SST	--	bleached, oxidized, pervasively clay altered volcanic sand/siltstone with 40 TCA vuggy seams of quartz carbonate							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						LT	CR		OXI	2I		
						LT	OR		CLY	3I		
						LT	WH		BLE	3I		
24.45	24.55	0.10	FLT	--	intensely oxidized, dark orange fault gouge material, with a sharp upper contact 40 TCA and lower contact trending 30 TCA. Bounded by heavily oxidized clay altered basalt							
						DK	OR		CLY	5I		
						DK	BN					
						MD	OR		OXI	5I		
24.55	24.95	0.40	SST	--	heavily oxidized, dark orangeish brown, clay altered volcanis silt/sandstone.							
						DK	OR		CLY	4I		
						DK	BN					
24.95	25.83	0.88	SST	--	intenseley bleached, light creamy white, pervasively clay altered vol. siltstone/sandstone. Heavily fragmented interval. Oxidized 2-5 mm fractures with vuggy quartz infill proliferate along fractures and contain very fine-grained pyrite. Lower contact grades into weakly bleached competent sandsotne, with significatnly less alteration, yet still fractured and oxidized along fracture surfaces							
						LT	OR		OXI	3I		
						LT	WH		BLE	4I	Py	0.1
						LT	CR		CLY	4I		
25.83	27.20	1.37	SST	--	medium greenish grey sandstone with dark purplish black oxide coating on fracture surfaces. Heavily fractured basalt persists throughout. Grades into bleached basalt							
						MD	GN					
						MD	GY		OXI	2I		
27.20	28.53	1.33	SST	--	bleached, light brownish green to greenish grey, volcanic sandstone with a 15 cm interval containing 80 TCA recessive fractures spaces <1cm apart, with associated clay alteration. Sharp lower contact with oxidized, vuggy quartz vein.							
						LT	GN		SIL	1I		
						LT	GY		BLE	1I		
						LT	BN		OXI	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
28.53	28.96	0.43	QV	FG	Sharp upper contact trending 80 TCA, with a diffuse gradational lower contact, quartz vein. Vein is milky white with fine-grained ox seams trending 80 TCA, and vuggy limonitic oxidized pits 0.5 by 0.5 cm. Fracture surfaces contain clotted blebs of dissemianted fine-grained oxidized pyrite, as well as patchy disseminations of oxidized pyrite throguhout vein interval. Lower 20 cm of vein begins to contain a mixture of quartz and fragments of basalt within the vein, indicating it is younger than the basalt it is hosted within. More pitted oxidized vugs are present in the lower 15 cm of the vein, and sporadic bladed quartz veinlets cut through basaltic fragments. Almost a brecciated gradational lower contact, seemingly trending ~80 TCA. "True" quartz vein (i.e. 100% quartz) is present from 28.53-28.74 and has 80 TCA lower and upper contact. From 28.74-28.96 there is fragmental basalt contained within the quartz, and a high proportion of oxidized vuggy pits.							
						LT	CR				Py	0.5
						LT	WH		SIL	5I	Py	1
28.96	29.20	0.24	SST	--	medium brownish, greenish grey, altered and oxidized vol sandstone with strong, pervasive clay alteration							
						MD	OR		CLY	4I		
						MD	BN		OXI	3I		
						MD	GY		BLE	2I		
29.20	29.22	0.02	QV	--	small quartz vein with oxidized limonite blebs (oxidized pyrite?) and weak vuggy textures. Sharp upper and lower contact trending 70 TCA							
						LT	CR		SIL	4I		
						LT	WH		OXI	3I	Py	0.1
29.22	29.55	0.33	SST	--	medium brownish, greenish grey, altered and oxidized volcanic sandstone with strong, pervasive clay alteration							
						MD	GY					
						MD	OR		OXI	1I		
						MD	BN		CLY	3I		
29.55	29.61	0.06	QV	--	small milky white quartz vein with small oxidized vuggy pits and weak patchy oxidative staining. Sharp upper and lower contact trending 70 TCA							
						LT	CR		SIL	5I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						LT	WH		OXI	2I	Py	0.5
29.61	30.05	0.44	SST	--	bleached, medium greenish grey sandstone with pervasive clay alteration. In this interval there are 3 small <1 cm wide milky white quartz veinlets trending 70 TCA, containig weak patchy oxidized vugs and trace disseminated pyrite.							
						MD	GY		OXI	1I	Py	0.1
						MD	GN		CLY	2I		
30.05	37.00	6.95	SST	--	fine-grained dark grey volcanic sandstone, with fine-grained flecks of feldspar. Fractured with dark purplish black staining on fracture surfaces, and a small network of fine-grained oxidized seams in the last 50 cm of the interval. Fragmented rubbly lower contact, with fine-grained, bleached mudstone beneath.							
						DK	GY					
						MD	GY					
37.00	38.15	1.15	MST	FG	fine-grained laminated mudstone, with a light greenish grey bleached colour, oxide staining on fracture surfaces, and weak recessive weathered quartzbearing 1-3mm wide fractures throughout.							
						LT	GY		BLE	2I		
						LT	BN		OXI	2I		
									CLY	3I		
38.15	38.17	0.02	MST	FG	fine-grained mudstone with a large oxidized vug, trending 80 TCA . Bounding this vug is a fine-seam of a bleached yellowish green mineral that is very soft and has a greasy feel to it. This vug is present right at the contact between light grey bleached mudstone and dark grey, unbleached laminated mudstone							
						MD	GY		CLY	4I		
						DK	GY		OXI	1I		
						DK	OR					
38.17	39.93	1.76	MST	FG	fine-grained, laminated mudstone, with patchy bleached intervals of light greenish grey, and intervald of medium to dark grey. Small oxidized seams run 70 TCA parallel to laminations, and there are recessively weathered fractures throughout the entire interval. From 38.60-39 there is a high density of recesivvely weathered fractures. Sharp lower contact with light to medium greenish grey basalt							
						MD	GY		BLE	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						DK	GY		OXI	2I		
39.93	41.50	1.57	DYK	MG	light greenish grey rhyolite, with feldspar flecks and rare subrounded quartz grains. In sharp ontact with mudstone above it, trending 80 TCA							
						LT	GY					
						LT	GN					
41.50	41.80	0.30	DYK	--	bladed recessive fractures trending 70 TCA within oxidized, bleached rhyolite							
						LT	GY		OXI	3I		
						LT	CR		SIL	2I		
						LT	OR		BLE	3I		
41.80	47.00	5.20	DYK	FG	medium to fine-grained, quartz feldspar dacitic to rhyolite dyke with open space mm-scale seams/frx with fine-grained quartz. Patchy oxidative alteration haloes surround some fractures. Interval is siliceous and patchy clay alteration is associated with oxidized fractures. Gradational contact with light greyish brown, bleached, silicified interval of rhyolite below.							
						MD	GY		OXI	2I		
						MD	GN		BLE	1I		
						LT	GY		SIL	1I		
47.00	57.05	10.05	DYK	--	medium grey to patchy brownish grey, oxidatively stained along fractues, siliceous rhyolite dyke with quartz eyes and quartz carbonate seams trending 30 TCA (as well as randomly; multiple sets). Oxide stains peforate along fractures for up to 1 cm. One small 5 cm interval is intensely clay altered (see secondary). As you move lower in the interval, the abundance of quartz eyes increases, and the degree of siliciaition increases as well.							
						MD	BN		SIL	1I		
						MD	GY		CLY	2I		
						LT	GN					
57.05	69.19	12.14	DYK	--	Fine-grained rhyolite with oxidative bleaching and staining, weak quartz carbonate stringers pervasive throughout, and pervasive silicification.							
						LT	GY					
						MD	BN		SIL	1I		
						MD	OR					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
69.19	70.30	1.11	FLT	--	clay altered, gouged, rubbly faulted interval. Sharp upper contact with rhyolite, and sharp lower contact with fragmental volcanic. Upper and lower contact trends 70 TCA							
						LT	OR		CLY	4I		
						LT	GY		OXI	2I		
70.30	76.20	5.90	VOL	MG	fragmental volcaniclastic, with volcanic fragments; subrounded to subangular; up to 5 cm in size. Mudstone matrix, with mudstone rich intervals without any fragments. Patchily bleached and oxidized, rubbly and gouged throughout entire interval. This is likely a faulted section of fragmental volcaniclastic +- mudstone. Patchy bleaching and oxidation, pervasive clay alteration and intense weathering persists throughout majority of interval. No visible sulfides, but the weathering profile of the core suggests it may contain trace sulfides							
76.20	78.53	2.33	SST	MG	Medium green, locally weakly foliated, homogenous, non-calcareous, volcanic sandstone, with dark green grains of chlorite and weakly clay altered feldspar grains. Numerous <= 1mm wide, orange weathering, quartz veinlets							
78.53	82.00	3.47	SST	CG	Medium green, weakly foliated, homogenous, non-calcareous, volcanic sandstone, with dark green grains of chlorite and feldspar grains altered to carbonate; last 28 cm is bleached, partially texturally destroyed, and silica-flooded; hosting a number of <= 1mm wide, orange weathering, quartz veinlets; sharp contact with bedded mudstone below.							
82.00	98.35	16.35	MST	--	Medium grey-green, non-calcareous, bedded volcanic mudstone, lesser f.g. homogenous sandstone, and minor c.g. volcanic sandstone; contains dark grey, banded/bedded, silica-carbonate horizons with individual bands <= 1mm wide, but in aggregate up to 15 mm wide, between 85.63 to 86.20 m; below 86.20, weakly fractured with a matrix of dark green-black silica; numerous veins are described in the secondary structures log; bottom 29 cm is dark brown to orange, hematite-altered, with a sharp contact, 60 degrees TCA, with the dyke below.							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
98.35	101.55	3.20	FEL	--	Dark grey to tan latite dyke, peppered with dark, v.f.g. fuzzy 'dots' that appear to be pyrite + sericite replacing feldspar, which in some sections have weathered to limonite, resulting in pervasive orange weathering; becoming increasingly aphyric down section; cut by moderate amount of cream-coloured quartz-adularia(?) veinlets, up to 0.5 cm wide, sometimes weathering bright orange; last ~20 cm covers a cryptic quartz-adularia-pyrite vein breccia, described in the secondary structures log.							
101.55	102.78	1.23	MST	--	Orange-black, variably chlorite-, sericite-, clay- and hematite-altered, mudstone crackle breccia; dendridic manganese on fracture surfaces; becoming increasingly chloritized, gougey and brecciated down section, with in-situ, strongly altered mudstone(?) clasts in a dark grey silica matrix, giving way to sub-rounded quartz clasts, suspended in a chlorite matrix, and finally ending in approximately 10 cm of fault gouge.							
102.78	103.16	0.38	QV	--	Intensley fractured, cream-white quartz vein, hosting an abundant network of orange oxide in narrow fractures, as well as in interstitial clots throughout; cut by minor, <1mm wide, dark grey-black fractures; rare clots of rusty-red tarnishing, v.f.g. sulphide; 30 degree TCA attitude.							
103.16	103.88	0.72	MST	--	Strongly oxidized, orange weathering, dark grey-black volcanic mudstone, with thin muddy bands and small brecciated sections of sub-rounded clasts of orange weathering mudstone; also hosting sparse clots and disseminations of dark red weathering, c.g. pyrite; interval covers a 10 cm wide banded, pyritic quartz vein, described further in the secondary structures log; diffuse bottom contact with the underlying dyke.							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
103.88	104.55	0.67	DYK	--	Strongly bleached and sericite-altered, orange weathering, pyritic rhyolite dyke; brecciated in places, with numerous mm-scale, dark, sub-angular sulphide clasts containing pyrite and lesser arsenopyrite, which have been cut by a number of cream-white, mm-scale veinlets, as well as pyrite veinlets, up to 1 cm wide; unidentified fine to coarse grained turquoise-green mineral replacing feldspar?; some veins are described in the secondary structures log; undulatory, but sharp contact with the mudstone below.							
104.55	110.00	5.45	MST	--	Dark grey-black, calcareous, variably bedded and brecciated, pyritic, volcanic mudstone, becoming increasingly chloritic toward the bottom of the interval; the top 20 cm is medium grey and silica-flooded, hosting moderate, disseminated, v.f.g. sooty pyrite and minor arsenopyrite, followed by a 3 cm wide vein described in the secondary structures log; cut by numerous mm-scale, ptygmatic, milkly white quartz-carbonate veinlets; sharp contact with the underlying basalt.							
110.00	116.85	6.85	BAS	--	Dark green, f.g. basalt, with orange weathering grains of feldspar; cut by a number of mm-scale quartz-carbonate veins, with alteration halos described in the secondary structures log; sharp contact, at 43 degrees TCA, with the mudstone below.							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
116.85	134.92	18.07	MST	--	Repeating sequences of non-calcareous mudstone conglomerate, with a dark grey-black chloritic mud matrix hosting medium grey, soft (altered?), sub-rounded clasts, up to 5 cm in diameter, and sandstone; top of interval with about a 50-50 mud-clast proporation becoming increasingly clast-supported and polymictic down interval, so that by 120.40 m now a medium-grey, poorly-sorted, polymictic, clast-suppored conglomerate, with sub-angular to sub-rounded clasts aligned perpendicular TCA; by 121.55 m the interval has transitioned into a medium grey, c.g., poorly sorted sandstone; this sequence repeats two more times with sharp contacts at the sandstone/conglomeratic mudstone: 125.13 to 129.21 and 129.21 to 134.31; unidentified fine to coarse grained turquoise-green mineral replacing feldspar?; possibly earthy orange fault gouge between 117.64 to 118 m.							
134.92	135.50	0.58	MST	--	Dark black, polymictic mudstone conglomerate, with angular to sub-rounded clasts, up to 4cm in diameter, cut by a network of ptygmatic, mm-scale, orange weathering, cream-white, quartz-carbonate gashes and veinlets; sharp contact with the underlying rhyolite.							
135.50	146.30	10.80	DYK	--	Bleached, yellow-tan to maroon, quartz-eye rhyolite, with some feldspars altered to sericite and dark black illmenite?; cut by numerous, mm-scale, cream-coloured quartz veinlets, set in bleached (feldspar?) halos, sometimes weathering pale orange.							

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
0.00	0.60	0.60	0	0	0.00	0	--	--	--	OVB
0.60	1.52	0.92	0.92	100	0.00	0	0R	3H	2W	
1.52	3.05	1.53	1.53	100	0.20	13	0R	3H	2W	
3.05	4.57	1.52	1.36	89	0.12	8	1R	3H	2W	
4.57	6.10	1.53	1.53	100	1.37	90	2R	3H	2W	
6.10	7.62	1.52	1.52	100	0.98	64	1R	3H	1W	
7.62	9.14	1.52	1.52	100	1.27	84	0R	3H	2W	
9.14	10.67	1.53	1.53	100	1.16	76	0R	3H	2W	
10.67	12.19	1.52	1.28	84	0.22	14	0R	3H	3W	
12.19	13.72	1.53	1.36	89	0.66	43	0R	3H	3W	
13.72	15.24	1.52	1.51	99	0.71	47	0R	3H	2W	
15.24	16.76	1.52	1.3	86	0.57	38	0R	3H	3W	
16.76	18.28	1.52	1.52	100	0.96	63	1R	3H	1W	HCl reactivity in veinlets
18.28	19.81	1.53	1.51	99	0.91	59	1R	3H	2W	HCl reactivity in veinlets and minor reactivity in vuggy texture.
19.81	21.34	1.53	1.43	93	0.79	52	2R	3H	2W	HCl reactivity in vein and veinlets
21.34	22.86	1.52	1.52	100	1.48	97	2R	3H	2W	
22.86	24.38	1.52	1.39	91	0.86	57	1R	3H	2W	
24.38	25.91	1.53	1.16	76	0.28	18	0R	2H	3W	
25.91	27.43	1.52	1.24	82	0.00	0	1R	2H	3W	
27.43	28.96	1.53	1.39	91	0.58	38	1R	2H	3W	
28.96	30.48	1.52	1.5	99	0.38	25	0R	2H	3W	
30.48	32.00	1.52	1.29	85	0.26	17	1R	3H	2W	
32.00	33.53	1.53	1.43	93	0.39	25	1R	2H	2W	Locally, HCl reactivity in fractures
33.53	35.05	1.52	1.08	71	0.00	0	2R	2H	2W	HCl reactivity in fractures
35.05	36.58	1.53	1.53	100	0.58	38	1R	3H	2W	Locally, HCl reactivity in fractures
36.58	38.10	1.52	1.32	87	0.16	11	1R	2H	2W	
38.10	39.62	1.52	1.29	85	0.47	31	0R	1H	2W	
39.62	41.15	1.53	1.45	95	0.11	7	1R	3H	2W	
41.15	42.67	1.52	1.44	95	0.80	53	1R	3H	2W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
42.67	44.20	1.53	1.43	93	0.87	57	1R	3H	2W	
44.20	45.72	1.52	1.46	96	0.92	61	1R	3H	1W	
45.72	47.24	1.52	1.49	98	0.52	34	1R	3H	1W	
47.24	48.77	1.53	1.38	90	0.42	27	1R	3H	2W	
48.77	50.29	1.52	1.33	88	0.34	22	1R	3H	2W	
50.29	51.82	1.53	1.38	90	0.31	20	1R	3H	2W	
51.82	53.34	1.52	1.4	92	0.78	51	2R	3H	2W	
53.34	54.86	1.52	1.35	89	0.37	24	0R	3H	2W	
54.86	56.39	1.53	1.42	93	1.06	69	1R	3H	2W	
56.39	57.91	1.52	1.52	100	1.31	86	1R	3H	1W	
57.91	59.44	1.53	1.48	97	1.48	97	1R	4H	1W	
59.44	60.96	1.52	1.45	95	1.24	82	1R	3H	1W	
60.96	62.48	1.52	1.52	100	1.10	72	2R	4H	1W	
62.48	64.01	1.53	1.53	100	1.26	82	2R	4H	1W	
64.01	65.53	1.52	1.52	100	1.46	96	2R	4H	1W	
65.53	67.06	1.53	1.49	97	1.35	88	2R	4H	1W	
67.06	68.58	1.52	1.52	100	1.52	100	2R	4H	1W	
68.58	70.10	1.52	1.12	74	0.61	40	1R	4H	3W	Highly fractured at meter 70.
70.10	71.63	1.53	1.22	80	0.73	48	4R	4H	3W	
71.63	73.15	1.52	1.3	86	0.43	28	3R	4H	3W	Interval is highly fractured
73.15	74.68	1.53	1.53	100	0.92	60	3R	3H	3W	
74.68	76.20	1.52	1.41	93	0.53	35	1R	3H	3W	
76.20	77.72	1.52	1.45	95	0.86	57	2R	3H	1W	
77.72	78.53	0.81	0.81	100	0.69	85	2R	3H	1W	
78.53	79.24	0.71	0.7	99	0.21	30	2R	3H	2W	
79.24	80.77	1.53	1.43	93	1.05	69	2R	3H	1W	
80.77	82.29	1.52	1.46	96	0.77	51	2R	3H	2W	
82.29	83.82	1.53	1.43	93	0.78	51	1R	2H	3W	
83.82	85.34	1.52	1.4	92	0.23	15	1R	2H	3W	
85.34	86.86	1.52	1.47	97	0.64	42	1R	3H	2W	
86.86	88.39	1.53	1.4	92	0.68	44	1R	2H	2W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
88.39	89.91	1.52	1.46	96	0.53	35	2R	2H	3W	
89.91	91.44	1.53	1.41	92	0.57	37	1R	4H	1W	
91.44	92.96	1.52	1.5	99	1.22	80	0R	4H	1W	
92.96	94.48	1.52	1.51	99	0.96	63	1R	4H	1W	
94.48	96.01	1.53	1.44	94	1.02	67	1R	3H	2W	
96.01	97.53	1.52	1.43	94	0.77	51	1R	3H	1W	
97.53	99.06	1.53	1.49	97	1.32	86	0R	3H	3W	
99.06	100.58	1.52	1.45	95	0.90	59	0R	4H	3W	
100.58	102.10	1.52	1.49	98	0.83	55	2R	3H	2W	
102.10	103.63	1.53	1.44	94	0.79	52	2R	1H	6W	
103.63	105.15	1.52	1.5	99	1.30	86	2R	2H	4W	
105.15	106.68	1.53	1.48	97	1.42	93	1R	4H	1W	
106.68	108.20	1.52	1.45	95	1.04	68	3R	4H	1W	
108.20	109.72	1.52	1.47	97	1.31	86	2R	3H	3W	
109.72	111.25	1.53	1.48	97	0.83	54	3R	3H	2W	
111.25	112.77	1.52	1.46	96	0.78	51	2R	3H	1W	
112.77	114.30	1.53	1.49	97	1.16	76	2R	3H	1W	
114.30	115.82	1.52	1.5	99	1.45	95	3R	2H	2W	
115.82	117.34	1.52	1.52	100	0.94	62	2R	2H	1W	
117.34	118.87	1.53	1.48	97	0.41	27	3R	1H	5W	
118.87	120.39	1.52	1.48	97	0.94	62	2R	1H	1W	
120.39	121.92	1.53	1.51	99	1.01	66	2R	2H	1W	
121.92	123.44	1.52	1.46	96	0.71	47	1R	2H	1W	
123.44	124.96	1.52	1.49	98	0.91	60	3R	2H	2W	
124.96	126.49	1.53	1.5	98	1.08	71	3R	2H	1W	
126.49	128.01	1.52	1.46	96	1.33	88	2R	2H	1W	
128.01	129.54	1.53	1.51	99	1.08	71	2R	2H	1W	
129.54	131.06	1.52	1.5	99	1.31	86	2R	2H	1W	
131.06	132.58	1.52	1.46	96	0.99	65	2R	2H	2W	
132.58	134.11	1.53	1.41	92	0.98	64	3R	1H	5W	
134.11	135.63	1.52	1.49	98	0.75	49	2R	2H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
135.63	137.16	1.53	1.51	99	1.02	67	1R	3H	1W	
137.16	138.68	1.52	1.47	97	1.06	70	1R	3H	2W	
138.68	140.20	1.52	1.49	98	0.70	46	1R	3H	2W	
140.20	141.73	1.53	1.48	97	1.05	69	1R	3H	1W	
141.73	142.06	0.33	0.31	94	0.10	30	1R	3H	1W	
142.06	143.26	1.20	1.2	100	1.00	83	2R	4H	1W	
143.26	144.78	1.52	1.49	98	1.22	80	2R	4H	1W	
144.78	146.30	1.52	1.52	100	1.47	97	2R	4H	1W	

Hartless Joe - Hartless Joe

Grid East	Grid North	Easting	Northing	Elevation	Depth (m)
		515800	6751379	1815.4	208.78

ZONE: Unknown

SECTION:

HOLE: HJ -19-004

CLAIM:

Contractor: Platinum

Drill: 1

Core Size: NTW

Casing Depth:

Drilling Dates: -

Geology Logged By: R. Burke

SURVEY			
Depth (m)	Azimuth	Dip	Method

TARGET:

SUMMARY			
From (m)	To (m)	Interval (m)	Rock Type
0	0.5	0.5	OVB
0.5	1.7	1.2	SST
1.7	4.6	2.9	SST
4.6	8.5	3.9	SST
8.5	8.8	0.3	SST
8.8	9.25	0.45	SST
9.25	10.67	1.42	SST
10.67	12.25	1.58	SST
12.25	12.6	0.35	SST
12.6	13	0.4	SST
13	15.1	2.1	SST
15.1	15.12	0.02	QV
15.12	15.8	0.68	SST
15.8	16.25	0.45	FLT
16.25	19.9	3.65	SST
19.9	20.5	0.6	SST

SAMPLES	
Numbers:	W597746 to W597789
Total:	44
Batch:	004, 005
Certificates:	WH19295883, WH19295889, WH19310170

COMMENTS

20.5	24.38	3.88	SST
24.38	32	7.62	SST
32	33	1	SST
33	35.36	2.36	SST
35.36	35.43	0.07	QV
35.43	36.4	0.97	SST
36.4	36.42	0.02	QV
36.42	39.12	2.7	SST
39.12	39.16	0.04	QV
39.16	58.75	19.59	SST
58.75	59.05	0.3	SST
59.05	61.48	2.43	SST
61.48	62.62	1.14	FLT
62.62	64.1	1.48	MST
64.1	77.42	13.32	DYK
77.42	79.64	2.22	VOL
79.64	82.5	2.86	VOL
82.5	85.7	3.2	VOL
85.7	89.37	3.67	VOL
89.37	90.14	0.77	DYK
90.14	91.17	1.03	VOL
91.17	94	2.83	FLT
94	104.5	10.5	VOL
104.5	105.1	0.6	DYK
105.1	129.6	24.5	VOL
129.6	130.52	0.92	VOL
130.52	130.72	0.2	FLT
130.72	133.2	2.48	VOL
133.2	133.74	0.54	VOL
133.74	134.04	0.3	FLT
134.04	136.45	2.41	VOL
136.45	138.1	1.65	VOL

138.1	138.8	0.7	VOL
138.8	146.66	7.86	VOL
146.66	146.82	0.16	DYK
146.82	148.2	1.38	VOL
148.2	148.6	0.4	VOL
148.6	152.17	3.57	VOL
152.17	152.26	0.09	FLT
152.26	159	6.74	VOL
159	161.5	2.5	VOL
161.5	163	1.5	VOL
163	163.53	0.53	VOL
163.53	164.38	0.85	QV
164.38	165	0.62	VOL
165	166.18	1.18	VOL
166.18	166.24	0.06	FLT
166.24	166.5	0.26	VOL
166.5	166.58	0.08	QV
166.58	167.05	0.47	VOL
167.05	167.15	0.1	QV
167.15	168.03	0.88	VOL
168.03	168.27	0.24	QV
168.27	169.75	1.48	VOL
169.75	170.57	0.82	VOL
170.57	170.65	0.08	QV
170.65	172.36	1.71	VOL
172.36	173.27	0.91	VOL
173.27	181.13	7.86	VOL
181.13	183.52	2.39	DYK
183.52	200.3	16.78	VOL
200.3	208.5	8.2	DYK
208.5	208.78	0.28	VOL

HJ -19-004

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
13.00	15.10	2.10	SST	--	volcanic sandstone, relatively unaltered. Weak oxide stianing on frx surfaces							
						MD	GN					
						MD	GY					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
0.00	0.50	0.50	OVB	--	overburden and soil with minor rock fragments							
0.50	1.70	1.20	SST	--	medium to finge grained volcanic siltstone to sandtsone, medium greenish grey to grey, with weak clay and chlorite alteration on fractures. Grades into volcanic sandtone, with low angle fracture and veining development							
						MD	GY		CHL	1I		
						MD	GN		CAR	1I		
1.70	4.60	2.90	SST	--	medium greenish grey volcanic sandstone, with patchy pervasive quartz carbonate disseminated throughout; some patches of carbonate have a pinkish white hue on them. For the entire interval, there is a +-10 TCA quartz vein/fault that is nosed by the core. This vein is ~1-2 cm wide and contains chlorite. Clay, and carbonate alteration on its margins. Additionally, there is weak vuggy textures throughout the vein, with euhedral space filling fine grained quartz crystals. Some weak oxide development is visible along these fractures.							
						MD	GY		SIL	3I	Py	0.1
						MD	GN		CAR	2I		
						LT	WH		CHL	3I		
									CLY	2I		
4.60	8.50	3.90	SST	--	medium to fine graiend greenish grey volcanic sandstone with 30 TCA quartz carbonte veinlets developed throughout; no sulfide							
						MD	GY					
						MD	GN					
8.50	8.80	0.30	SST	--	fractured interval of volcanic sandstone							
8.80	9.25	0.45	SST	--	medium to fine grained medium greenish grey volcanic sandstone							
						MD	GN					
						MD	GY					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
9.25	10.67	1.42	SST	--	medium to fine grained medium greenish grey volcanic sandstone, with pervasive dry carbonate fractures with weak clay alteration throughout interval. Some of the fractures are ~10-20 TCA, similar to the frx that hosts the vein from 1.7-4.6m							
						MD	GY		CHL	1I		
						MD	GN		CAR	1I		
									CLY	1I		
10.67	12.25	1.58	SST	--	volcanic sandstone to siltstone, with patchy carbonate stockwork pervasive throughout interval. No sulfide							
						MD	GY					
						MD	GN					
12.25	12.60	0.35	SST	--	brecciated volcanic sandstone with fragments of subangular volcanic clasts, and siliceous infill, with weak oxide staining. Recessively weathered weak pitted texture is present on margin of siliceous infill.							
						MD	GY		SIL	3I	Py	0.1
						MD	GN					
12.60	13.00	0.40	SST	--	bleached white and oxidized, clay altered volcanic, with intnese orange staining and pervasive clay alteration. This likely correlates with the 40 cm vein encountered in HJ19-03 in box 8.							
						LT	WH		SIL	3I		
						LT	OR		CLY	4I		
						LT	CR		OXI	4I		
									BLE	4I		
13.00	15.10	2.10	SST	--	volcanic sandstone, relatively unaltered. Weak oxide stianing on frx surfaces							
						MD	GY					
						MD	GN					
15.10	15.12	0.02	QV	--	light creamy white bladed quartz veinlet/breccia fragment in volcanic sandstone							
15.12	15.80	0.68	SST	--	volcanic sandstone, medium greenish grey							
						MD	GY					
						MD	GN					
15.80	16.25	0.45	FLT	FG	gouged clat altered interval in volcanic sandstone, likely representing a fault surface. Sharp lower contact trending 30 CTA							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
16.25	19.90	3.65	SST	--	medium to fine grained volcanic sandstone, with weak clay and carbonate alteration on rare fractures							
						MD	GY					
						MD	GN					
19.90	20.50	0.60	SST	--	volcanic sandstone with stockwork quartz veinlets that are recessively weathered and weakly bladed in appearance. They occur sporadically throughout interval and contain no visible sulfide. There is weak oxide development throughout, and the veins look space-filling and have an almost "ribbon" looking infill in the seams							
						MD	GY					
						MD	GN					
20.50	24.38	3.88	SST	--	medium to fine-grained, medium greenish grey volcanic sandstone, with 3 low angle TCA quartz veinlets developed throughout interval. These quartz carbonate veinlets contain trace oxide along their surfaces, and weak clay alteration.							
						MD	GY					
						MD	GN					
24.38	32.00	7.62	SST	--	medium to inegrained volcanic sandstone, medium greenish grey, with weak low angle <5mm quartz veinlets and fractures (rare) containing weak oxide material inside and no sulfide.							
						MD	GN					
						MD	GY					
32.00	33.00	1.00	SST	--	fractured volcanic sandstone							
						MD	GN					
						MD	GY					
33.00	35.36	2.36	SST	--	medium to fine grained volcanic sandstone, relatively unaltered and unmineralized							
						MD	GY					
						MD	GN					
35.36	35.43	0.07	QV	--	fine-grained, mlky white quartz vein with a sharp upper and lower contact trending 70 TCA with weak 70 TCA oxidized seams trending throguhout. Oxide staining on frx surface, weak oxidized pyrite trending 70 TCA.							
						LT	WH		SIL	5I	Py	0.1

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						LT	OR		OXI	3I		
35.43	36.40	0.97	SST	--	fine to medium grained pervasively oxidized sandstone to silstone							
						MD	GY					
						MD	GN					
						MD	OR					
36.40	36.42	0.02	QV	--	very small quartz veinlet, milky whtie with trace oxide and fine-grained pyrite, contact possibly trending ~50 TCA							
						LT	WH					
						LT	OR					
36.42	39.12	2.70	SST	--	fine-grained to medium grained volcanic sandstone with weak clay and sericite alteration of feldspar grains.							
						MD	GY		CAR	1I		
						MD	GN		CLY	2I		
39.12	39.16	0.04	QV	--	small quartz vein trending 60 TCA, with weak oxide seams trending 60 TCA within the vein. Weak small pitted vugs within the vein. Weak clay alteration envelopesaround the vein.							
						LT	WH		SIL	4I	Py	0.1
						LT	CR		OXI	2I		
						LT	OR					
39.16	58.75	19.59	SST	--	medium grained medium greenish grey volcanic sandstone, with sparse quartz carbonate veinlets trending throughout, sporadically oriented between 30-80 TCA.							
						MD	GY		CAR	1I		
						MD	GN					
58.75	59.05	0.30	SST	--	Medium greyish, weakly bleached, clay altered volcanic sandstone with weak recessively weathered bladed fractures.							
						LT	GY					
						MD	GY					
						MD	GN					
59.05	61.48	2.43	SST	--	fine to medium grained volcanic silt/sandstone with weak quartz carbonate vienlets sparsely developed throughout, with random orientations. Weak oxide stianing on margin of veinlets. No visible sulfide							
						MD	GN					
						DK	GY		CAR	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
61.48	62.62	1.14	FLT	--	intensely oxidize,d oragneish brown pervasively clay altered fault material, with a sharp upper contact trending 70 TCA, and a diffuse lower contact, grading out into heavily fractured and altred mudstone.							
						LT	OR		CLY	4I		
						LT	BN		OXI	4I		
62.62	64.10	1.48	MST	FG	very fine grained dark to medium grey mudstone, with pervasive fracturing and pervasive clay alteration, crypitc lower contact with quartz eye rhyolite. The lower contact is comprised of heavily fractured bleached rhyolite fragments mixed in with bleached mudstone fragments (i.e. no sharp contact)							
						MD	GY		CLY	3I		
						DK	GY		CAR	1I		
									OXI	1I		
64.10	77.42	13.32	DYK	MG	quartz eye rhyolite dyke; light whitish creamy grey to orangeish brown, pervasively patchily oxidized, pervasively fractured and patchily clay altered.Weak intervals of disseminated ifne-grained pyrite (partially oxidized). Pervasive manganese staining and fracture-hosted manganese throguhout entire interval. Weak recessively weathered vuggy open-space seams with fine-grained quartz in vugs. No visible sulfide in these vuggy patches. No significatn mineralization in the dyke, except for fine-grained pyrite disseminated throughout. Sharp lower contact with volcaniclastic sandstone, brecciated and infilled by a very fine grained light grey material.							
						LT	OR		SIL	1I	Py	0.1
						LT	WH					
						LT	BN		CLY	2I		
						LT	CR					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
77.42	79.64	2.22	VOL	MG	volcaniclastic unit with a fine to mediumgrained snadstone matrix. Weak welded texture, containing fragmental volcanic clasts rangin in size from 0.2-3 cm, subangular to subrounded. Interval is pervasively fractured, and is directly beneath the overlying rhyolite. Weak quartz carbonte veining is developed throughout interval, with weak open space oxidized vugs (small; 0.5 cm max; <1%). Patchy pervasive clay alteration and oxidation on fracture surfaces							
						MD	GY		CLY	2I		
						MD	GN		OXI	1I		
						LT	OR					
79.64	82.50	2.86	VOL	CG	volcaniclastic silt/sandstone, medium greyish green to light grey, with very fine grained grey infill, containing flattened volcanic fragments that are weakly welded. There are larger clasts of very fine grained grey material (almost cherty). These portions behave in a more brittle manner, and contain more open-space fractures with weak oxidative staining.							
						LT	GY					
						MD	GY					
						MD	GN					
82.50	85.70	3.20	VOL	MG	volcanic sandstone, relatively homogenous and medium grained, with fragmental volcanics and cherty very fine grained light grey brecciated intervals (minor; <5%). Majority of interval is volcanic sandstone. Small amount of volcaniclastic clasts could indicate proximity to volcaniclastic mudstone unit described in other holes. Weak welded tuffaceous texture sporadic throughout interval.							
						MD	GN					
						MD	GY		OXI	1I		
85.70	89.37	3.67	VOL	FG	alternating 1-2 m intervals of highly fractured dark gre volcanic mudstone and greenish grey volcanic sandstone. Dense fracture network annealed b silica infill and sporadic oxidation. Gradational contact between mudstone and volcanic sandstone, with patch clay alteration and sporadic carbonate alteration							
									SIL	2I		
									OXI	2I		
									CLY	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
89.37	90.14	0.77	DYK	MG	quartz eye rhyolite dyke with a sharp upper and lower contact trending 20 TCA. Patchil oxidized, medium grey to orange, with no significant alteration extending from upper or lower contact.							
									SIL	1I		
90.14	91.17	1.03	VOL	FG	volcanic sandstone; light grey to medium greenish grey, with dry siliceous veinlets barren of sulfide							
91.17	94.00	2.83	FLT	--	rubbly to fragmental interval of volcanic silstone/sandstone, with extensive fracturing and oxide development on durface. No distinct upper or lower contact.							
									CLY	1I		
									OXI	1I		
94.00	104.50	10.50	VOL	FG	fine to very fine grained greyish green volcanic siltstone, with weak vuggy fractures (rare; 1%) sporadic throughout. No significant mineralization here. Gradational lower contact with a small bleached offwhite rhyolite dyke. Preceding this contact is the best 1.5 m of volcanic silstone within the broader intrval, it is highly fractured and has a higher density of vugs than the rest of the interval							
									CAR	1I		
									SIL	1I		
104.50	105.10	0.60	DYK	MG	bleached offwhite to grey quart eye rhyolite dyke, with vuggy pitted textures on the upper and lower contact. Contains trace rust pyrite in dyke, and fractured silstone above the upper and lower contact for ~50 cm							
									SIL	1I	Py	0.1
105.10	129.60	24.50	VOL	FG	fine-grained volcanic siltstone; medium greenish grey to light greenish grey. Fine-grained quartz bearing fractures, barren of sulfides occurr throughout interval. Also, minor carbonate stringers sporadically ocurr throughout entire interval. Weak clay alteration is hosted in fracture networks, and are spatially related to localized 5-10 cm zones of brecciation within the otherwise relatively homogenous fine-grained siltstone. Rare vuggy seams are found throughout the rock and contain quartz but no visible sulfide minerals.							
									SIL	2I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
									CAR	1I		
									CLY	2I		
129.60	130.52	0.92	VOL	FG	fine-grained volcanic silstone, pervasively oxidized, brownish orange to grey, with pervasive weak clay alteration, increasing in intensity as you move down section to a sharp lower contact with a small rubbly faulted interval of siltstone, trending 80 TCA							
									OXI	3I		
									CLY	2I		
130.52	130.72	0.20	FLT	--	clay altered, rubbly, oxidized fault material, with the last 5 cm of interval being highly silicified volcanic silstone, with minor milky white quartz injections thorughout. No visible sulfide							
									CLY	2I		
									OXI	5I		
130.72	133.20	2.48	VOL	FG	fine-grained volcanic siltstone; medium greenish grey to light greenish grey; sporadic quartz carbonte seams occurring throughout.							
133.20	133.74	0.54	VOL	FG	oidized orangeish grey volcanic siltstone with pervasive clay altertaion, increasing until a sharp lower contact trending 60 TCA with a faulted, rubbly interval of silstone							
									CLY	2I		
133.74	134.04	0.30	FLT	--	faulted, oxidized, rubbly, clay altered interval of volcanic siltstone							
									OXI	5I		
									CLY	5I		
134.04	136.45	2.41	VOL	MG	volcanic sand/siltstone with very fresh looking black "speckles" ie. Rounded 0.5 cm chlorite grains within volcanic siltstone, as well as sporadic rounded carbonate grains. These could be filled amygdules, or some sort of an altertaion within the volcanis silststone. Very unique and this texture hasn't been logged yet.							
									CAR	2I		
									CHL	2I		
136.45	138.10	1.65	VOL	FG	fine-grained volcanic silstone, without any notable features.							
138.10	138.80	0.70	VOL	FG	fine-grained pervasively oxidized and clay altered siltstone, medium orangeish brown to light grey							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
138.80	146.66	7.86	VOL	FG	fine-grained volcanic siltstone with patchy localized intervals of weak brecciation with carbonate infill. Patchy clay alteration surrounds the localized carbonate breccia zones. Light greyish green to medium brownish grey, with a sharp lwoer contact with a very siliceous dyke? (dyke is only 15 cm wide, 70 TCA upper and lower contact)							
									CAR	2I		
									CLY	2I		
146.66	146.82	0.16	DYK	FG	very fine-grained rhyolite, very siliceous with oxidized hairline fractures.							
									SIL	4I		
									OXI	2I		
146.82	148.20	1.38	VOL	FG	fine-grained medium greysih green volcanic siltstone							
148.20	148.60	0.40	VOL	FG	bleached, oxidized, clay alterd volcanic siltstone							
									BLE	2I		
									CLY	4I		
									SIL	2I		
148.60	152.17	3.57	VOL	FG	fine-grained volcanic silstone							
152.17	152.26	0.09	FLT	FG	brecciated fault cement in volcanic siltstone, with pervasive oxide and clay alteration							
									CLY	4I		
									OXI	3I		
152.26	159.00	6.74	VOL	FG	fine-grained volcanic silstone with patchy rubbly intervals (discrete; 2-5 cm; clay altered and oxidized). Localized clastic material begins to appear in trace amounts at bottom of interval, grading into a brecciated volcanic siltstone to sandstone							
159.00	161.50	2.50	VOL	MG	volcanic silstone with localied clastiv material and pathcy clay alteration and oxidation. Localized brecciated intervals found throughout interval							
									CLY	3I		
									OXI	3I		
161.50	163.00	1.50	VOL	FG	fingrained volcanic siltstone, with no distinguishable characteristics							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
163.00	163.53	0.53	VOL	FG	oxidized and bleached, clay altered volcanic siltstone							
									OXI	3I		
									CLY	2I		
									BLE	3I		
163.53	164.38	0.85	QV	FG	milky white quartz vein with oxidized stringers trending sporadically throughout, with spotty oxidized disseminated pyrite, and weak hematite alteration. No visible pyrite or any sulfide, but it has a sharp upper and lower contact that trends 75 TCA. Clay alteration in hanging wall and footwall of vein, extending 10 cm into the volcanic silstone host.							
									SIL	5I		
									OXI	2I		
164.38	165.00	0.62	VOL	FG	fine-grained, pervasively bleached and oxidized volcanic siltstone, orangeish brown to light grey							
165.00	166.18	1.18	VOL	FG	Medium grey to dark greenish grey, heavily fractured volcaniclastic sandstone with fragmentsal, brecciated appearance due to high density of fracture veinlets throughout interval, containing an abundance of quartz and carbonate. Patchy disseminated pyrite found throughout interval. Light greyish brown, almost "chert-like" volcanic fragments found within this interval, and have a brecciated appearance. Grades into a n oxide, pervasively clay altered interval, which could represent a fault.							
						MD	GY		SIL	2I	Py	0.5
						DK	GY					
166.18	166.24	0.06	FLT	--	pervasively clay altered volcaniclastic siltstone, with intense orange weathering and soft clay alteration throguohut. Weak quartz veinlet hosted in clay altered material.							
						MD	BN		SIL	1I		
						MD	OR		CLY	5I		
166.24	166.50	0.26	VOL	FG	brecciated, silicified, light greenish grey to dark grey volcaniclastic breccia. Large fragments of very fine-grained light grey "cherty" material, and dark grey silisceous siltstone with disseminated pyrite, and weak quartz stringers that contain trace disseminated pyrite. Grades into a quartz vein that has pyrite within, and small seams of pyrite witin the larger quartz vein.							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						MD	GY		SIL	3I	Py	0.5
						LT	GY					
						LT	GN					
166.50	166.58	0.08	QV	MG	Milky white quartz vein with a brecciated upper contact, and a diffuse lower contact trending 80 TCA. Within the vein are small hairline seams trending 80 TCA with pyrite (5 counted in interval). These seams pinch and swell witihn the vein itself. Weak oxidation on fracture surfaces within the vein							
						LT	WH		SIL	5I	Py	1
166.58	167.05	0.47	VOL	MG	brecciated volcaniclastic with quartz material and quartz veins contained within. Heavily silicified and altered, with light greenish grey "chert-like" fragments, and an overall bleached and oxidized appearance.							
167.05	167.15	0.10	QV	FG	milky white quartz vein with patchy pyrite stringers, with a sharp upper contact tredning 65 TCA, and a diffuse lower contact, with silicification bleeding out into wallrock. There are three small quartz veinlets in the 5 cm following the vein, and the wallrock beneath contains disseminated pyrite and is silicified.							
									SIL	5I	Py	1
									OXI	2I		
167.15	168.03	0.88	VOL	MG	very fine-grained, light greenish grey, siliceous volcanic breccia, with very fine-grained siliceous infill with trace pyrite. Clasts within breccia look almost "cherty" and there is a large amount of disseminated patchy pyrite within the breccia. Sharp lower contcat with a pyritic milky white quartz vein							
									SIL	3I	Py	1
168.03	168.27	0.24	QV	FG	milky white quartz vein with sporadic orange hairline frx trending throughout, and a sharp upper and lower contact trending 70 TCA. Weak 70 TCA pyrite stringers occurr within vein (in lower half; 5 counted in total). Patchy bleb of very fine grained dark mineral throughout, this could be very finegraeind pyrite of fine-grained arsenopyrite							
									SIL	4I	Py	1
											As	0.1

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
168.27	169.75	1.48	VOL	MG	brecciated, mineralized volcaniclastic with siliceous pyritic infill and light greyish green "cherty" fragments. Strange spotted, partially resorbed and altered subrounded grains are patchy throughout interval and are diagnostic feature of this mineralized volcaniclastic unit. Weak pyritic stringer veinlets trend throguhout interval, and have disseminated pyrite within them.							
									SIL	3I	Py	0.75
169.75	170.57	0.82	VOL	FG	homoegenous fine-grained volcanic siltstone to sandstone, pervasively oxidized and clay altered, with rare clasts in upper portion of interval. Grades into patchily oxidized volcanic sandstone with carbonte fracture and stringer network developed							
									OXI	4I		
									CLY	4I		
170.57	170.65	0.08	QV	FG	milky white quartz vein with oxidized stringers and a ~80 TCA upper and lower contact in oxidized volcanic silt/sandstone							
170.65	172.36	1.71	VOL	FG	fine-grained volcanic silt/sandstone with pervasive network of carbonate veinlets.							
172.36	173.27	0.91	VOL	MG	pervasively clay altered, oxidized, volcanic siltstone with a true brecciated section from 172.9 to 173.1, with weak pyrite throughout.							
									CLY	4I		
									CAR	2I		
173.27	181.13	7.86	VOL	FG	fine-grained volcanic siltstone to sandstone, edium greenish grey, with pervasive stockwork carbonate veinlets dispersed throughout (no sulfides). Cryptic fragmented lower contact with a horndblende feldspar porphyry dyke trending ~20 TCA.							
									CAR	2I		
181.13	183.52	2.39	DYK	FG	fine-grained medium grey groundmass, with small grains of clay altered feldspars and very fine-grained flecks of altered hornblende peppered throughout dyke. Fragments uper contact trends ~20 TCA and lower contact is faulted, with breccia developed into the underlying silt/sandstone for ~10 cm. This faulted lower contact is at a high ATCA (~80).							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
									CLY	2I		
									CHL	1I		
183.52	200.30	16.78	VOL	FG	fine-grained, dark to mefium greenish grey volcanic sandstone, with pervaive carbonate veinlets throughout, some with weak oxide staining. Localized zones of weak brecciation occurr throughout, with no significant alteration. Sharp lower contact with crowded light grey quartz feldspar porphyry dyke, trending 60 TCA							
									CAR	2I		
200.30	208.50	8.20	DYK	MG	crowded quartz (rare) feldspar porphyry dyke with no sulfides or anything significant. Diffuse lower contact with volcanic silt/sandstone							
									CAR	1I		
208.50	208.78	0.28	VOL	FG	fine-grained dark greyish green volcanic silt/sandstone							

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
0.00	1.52	1.52	1.13	74	0.21	14	0R	3H	2W	
1.52	3.05	1.53	1.45	95	0.78	51	2R	4H	2W	
3.05	4.57	1.52	1.49	98	0.50	33	2R	4H	2W	
4.57	6.10	1.53	1.4	92	0.86	56	0R	4H	1W	
6.10	7.62	1.52	1.48	97	1.25	82	0R	4H	1W	
7.62	9.14	1.52	1.49	98	0.83	55	0R	4H	1W	
9.14	10.67	1.53	1.37	90	0.56	37	1R	3H	1W	
10.67	12.19	1.52	1.49	98	1.31	86	2R	4H	1W	
12.19	13.72	1.53	1.37	90	0.68	44	1R	3H	2W	Locally weak HCl reactivity, at the top of the interval.
13.72	15.24	1.52	1.34	88	0.52	34	0R	3H	1W	
15.24	16.76	1.52	1.29	85	0.29	19	0R	3H	2W	
16.76	18.29	1.53	1.44	94	0.84	55	1R	3H	2W	
18.29	19.81	1.52	1.51	99	1.00	66	0R	3H	1W	
19.81	21.34	1.53	1.43	93	0.95	62	0R	3H	1W	
21.34	22.86	1.52	1.52	100	0.75	49	0R	3H	1W	
22.86	24.38	1.52	1.45	95	1.26	83	1R	3H	1W	Locally, moderate HCl reactivity in a carbonate coated fracture.
24.38	25.91	1.53	1.37	90	1.05	69	0R	4H	1W	
25.91	27.43	1.52	1.52	100	1.07	70	0R	4H	1W	
27.43	28.96	1.53	1.53	100	0.73	48	1R	4H	1W	At the top of the interval, weak HCl reactivity in the vuggy texture section.
28.96	30.48	1.52	1.52	100	0.95	63	0R	4H	1W	
30.48	32.00	1.52	1.45	95	0.61	40	0R	4H	1W	
32.00	33.53	1.53	1.34	88	0.52	34	2R	4H	1W	Strong HCl reactivity in carbonate infilled joints
33.53	35.05	1.52	1.47	97	0.97	64	1R	4H	1W	Locally, weak HCl reactivity
35.05	36.58	1.53	1.44	94	0.52	34	0R	3H	2W	
36.58	38.10	1.52	1.5	99	1.40	92	2R	3H	1W	
38.10	39.62	1.52	1.48	97	0.90	59	2R	3H	1W	
39.62	41.15	1.53	1.53	100	1.21	79	1R	4H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
41.15	42.67	1.52	1.52	100	1.20	79	2R	3H	1W	
42.67	44.20	1.53	1.52	99	1.17	76	1R	3H	1W	
44.20	45.72	1.52	1.45	95	0.72	47	1R	4H	2W	HCl reactivity locally weak in the 20 cm interval of highly fractured rock.
45.72	47.24	1.52	1.41	93	0.33	22	1R	4H	2W	Weak HCl reactivity locally
47.24	48.77	1.53	1.48	97	1.15	75	0R	4H	2W	
48.77	50.29	1.52	1.52	100	1.52	100	1R	4H	1W	Weak HCl reactivity associated with a carbonate infilled joint
50.29	51.82	1.53	1.5	98	1.45	95	0R	3H	1W	
51.82	53.34	1.52	1.52	100	1.28	84	1R	3H	1W	HCl reactivity in carbonate stringers
53.34	54.86	1.52	1.52	100	1.30	86	1R	3H	1W	HCl reactivity in carbonate stringers/veinlets
54.86	56.39	1.53	1.52	99	1.52	99	1R	3H	1W	HCl reactivity in carbonate stringers/veinlets
56.39	57.91	1.52	1.52	100	1.15	76	1R	3H	1W	HCl reactivity in carbonate stringers/veinlets
57.91	59.44	1.53	1.45	95	1.29	84	1R	3H	1W	HCl reactivity in carbonate stringers/veinlets, and strong HCl reactivity in the 10 cm of highly fractured rock at 59.80m.
59.44	60.96	1.52	1.5	99	1.37	90	1R	3H	1W	HCl reactivity in carbonate stringers/veinlets
60.96	62.48	1.52	1.49	98	1.00	66	1R	2H	1W	Weak HCl reactivity in the highly altered clay fault gouge. HCl reactivity in carbonate stringers/veinlets
62.48	64.01	1.53	1.53	100	0.58	38	1R	2H	1W	Weak HCl reactivity in the highly altered clay fault gouge.
64.01	65.53	1.52	1.42	93	0.82	54	1R	3H	1W	Weak HCl reactivity on carbonate clay coated fractures.
65.53	67.06	1.53	1.52	99	0.92	60	1R	3H	1W	Weak HCl reactivity in carbonate infilled joints.
67.06	68.58	1.52	1.32	87	1.10	72	1R	3H	1W	Weak HCl reactivity in carbonate infilled joints.
68.58	70.10	1.52	1.52	100	1.42	93	1R	3H	1W	Very weak HCl reactivity in carbonate infilled joints.
70.10	71.63	1.53	1.53	100	1.12	73	1R	3H	1W	Weak HCl reactivity in carbonate infilled joints.

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
71.63	73.15	1.52	1.45	95	0.92	61	1R	3H	1W	Weak HCl reactivity in carbonate infilled joints.
73.15	74.68	1.53	1.4	92	1.27	83	1R	3H	1W	Moderate HCl reactivity in carbonate stringers/veinlets.
74.68	76.20	1.52	1.51	99	1.07	70	1R	3H	1W	Moderate HCl reactivity in carbonate stingers/veinlets
76.20	77.72	1.52	1.44	95	0.78	51	1R	3H	1W	Weak HCl reactivity in carbonate stringers/veinlets
77.72	79.25	1.53	1.32	86	0.10	7	0R	3H	2W	Highly fractured interval
79.25	80.77	1.52	1.52	100	1.27	84	2R	4H	1W	Variable HCl reactivity between rock type; very strong in the black mudstone, and moderate in the brecciated volcanoclastic.
80.77	82.30	1.53	1.4	92	0.46	30	2R	3H	1W	
82.30	83.82	1.52	1.46	96	0.84	55	2R	3H	1W	
83.82	85.34	1.52	1.45	95	1.17	77	2R	3H	1W	
85.34	86.87	1.53	1.49	97	0.57	37	3R	3H	1W	
86.87	88.39	1.52	1.46	96	1.28	84	3R	3H	1W	Strong HCl reactivity when scratched
88.39	89.92	1.53	1.5	98	1.49	97	2R	3H	1W	Moderate HCl reactivity when scratched, or associated with carbonate infilled joints/stringers
89.92	91.44	1.52	1.5	99	1.25	82	3R	3H	1W	
91.44	92.96	1.52	0.94	62	0.10	7	2R	3H	1W	Moderate HCl reactivity when scratched. No or very weak HCl reactivity on the fracture surfaces. Dark-purplish oxidized fracture surfaces.
92.96	94.49	1.53	1.13	74	0.31	20	2R	3H	1W	Moderate HCl reactivity when scratched. No or very weak HCl reactivity on the fracture surfaces. Dark-purplish oxidized fracture surfaces.
94.49	96.01	1.52	1.31	86	0.11	7	1R	3H	1W	Weak HCl reactivity, locally when scratched. Dark-purplish oxidized fracture surfaces.
96.01	97.54	1.53	1.4	92	0.61	40	1R	3H	1W	
97.54	99.06	1.52	1.44	95	1.12	74	3R	3H	1W	
99.06	100.58	1.52	1.5	99	1.11	73	1R	3H	1W	
100.58	102.11	1.53	1.53	100	1.02	67	2R	3H	1W	
102.11	103.63	1.52	1.4	92	0.91	60	1R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
103.63	105.16	1.53	1.38	90	0.76	50	1R	3H	1W	Weak HCl reactivity on the unbleached rock. Dark-purplish oxidized fracture surfaces.
105.16	106.68	1.52	1.41	93	0.95	63	1R	3H	1W	Dark-purplish oxidized fracture surfaces.
106.68	108.20	1.52	1.42	93	1.05	69	1R	3H	1W	Dark-purplish oxidized fracture surfaces.
108.20	109.73	1.53	1.45	95	0.67	44	0R	3H	1W	10 cm section of highly fractured rock with dark-purplish oxidized fracture surfaces.
109.73	111.25	1.52	1.52	100	1.41	93	1R	3H	1W	
111.25	112.78	1.53	1.47	96	1.00	65	0R	3H	1W	
112.78	114.30	1.52	1.52	100	1.22	80	0R	3H	1W	
114.30	115.82	1.52	1.48	97	1.25	82	0R	3H	1W	
115.82	117.48	1.66	1.53	92	1.14	69	0R	3H	1W	
117.48	118.87	1.39	1.39	100	0.75	54	1R	3H	1W	Locally, very weak HCl reactivity.
118.87	120.40	1.53	1.53	100	1.07	70	1R	3H	1W	Dark-purplish oxidized fracture surfaces.
120.40	121.92	1.52	1.49	98	0.92	61	0R	4H	1W	
121.92	123.44	1.52	1.52	100	1.06	70	0R	4H	1W	
123.44	124.97	1.53	1.47	96	1.27	83	0R	4H	1W	
124.97	126.49	1.52	1.51	99	1.16	76	0R	4H	1W	
126.49	128.02	1.53	1.53	100	1.40	92	1R	4H	1W	Weak HCl reactivity in carbonate infilled joints.
128.02	129.54	1.52	1.4	92	1.35	89	1R	4H	1W	Weak HCl reactivity when scratched. Abundant carbonate stringers/joints
129.54	131.06	1.52	1.45	95	1.00	66	2R	3H	1W	Moderate HCl reactivity at the gradual contact between altered and unaltered rock. Orange/purplish oxidized interval with a 10 cm of highly fractured rock.
131.06	132.59	1.53	1.5	98	1.46	95	0R	3H	1W	
132.59	134.11	1.52	1.35	89	1.03	68	0R	3H	1W	20 cm of highly fractured rock with orange-brownish oxidized surfaces, at 34.90m.
134.11	135.64	1.53	1.53	100	1.45	95	1R	3H	1W	Moderate HCl reactivity associated with carbonate fragment and stringers.
135.64	137.16	1.52	1.52	100	1.44	95	1R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
137.16	138.68	1.52	1.52	100	1.00	66	2R	3H	1W	Moderate HCl reactivity between 138.17m and 138.60m in the highly oxidized altered section.
138.68	140.21	1.53	1.47	96	1.40	92	0R	3H	1W	
140.21	141.73	1.52	1.47	97	1.30	86	0R	3H	1W	
141.73	143.26	1.53	1.42	93	1.22	80	2R	3H	1W	
143.26	144.78	1.52	1.48	97	1.29	85	2R	3H	1W	
144.78	146.30	1.52	1.47	97	1.29	85	1R	3H	1W	
146.30	147.83	1.53	1.49	97	0.93	61	1R	3H	1W	Locally weak HCl reactivity
147.83	149.35	1.52	1.4	92	0.88	58	2R	3H	1W	
149.35	150.88	1.53	1.51	99	1.16	76	0R	3H	1W	
150.88	152.40	1.52	1.49	98	0.86	57	1R	3H	1W	
152.40	153.92	1.52	1.46	96	0.50	33	1R	3H	1W	Last part of the interval have highly fractured rock with orange-oxidized material and dark-purplish oxidized fracture surfaces.
153.92	155.45	1.53	1.5	98	0.87	57	1R	3H	1W	
155.45	156.97	1.52	1.5	99	1.40	92	2R	3H	1W	
156.97	158.50	1.53	1.53	100	1.53	100	1R	3H	1W	
158.50	160.02	1.52	1.49	98	1.08	71	0R	3H	1W	
160.02	161.54	1.52	1.52	100	1.37	90	2R	3H	1W	Locally, moderate HCl reactivity, especially in the orange-oxidized sections of this interval.
161.54	163.07	1.53	1.44	94	1.33	87	2R	3H	1W	Locally, moderate HCl reactivity, especially in the orange-oxidized sections of this interval.
163.07	164.59	1.52	1.52	100	1.02	67	1R	3H	1W	Locally, moderate HCl reactivity, especially in the orange-oxidized sections of this interval.
164.59	166.12	1.53	1.53	100	1.21	79	1R	3H	1W	
170.69	172.21	1.52	1.52	100	1.44	95	1R	3H	1W	
172.21	173.74	1.53	1.53	100	0.75	49	2R	3H	1W	Weak to moderate HCl reactivity; oxidized altered rock is more reactive.
173.74	175.26	1.52	1.52	100	1.20	79	1R	3H	1W	
175.26	176.78	1.52	1.52	100	1.22	80	0R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
176.78	178.31	1.53	1.53	100	1.38	90	0R	3H	1W	
178.31	179.83	1.52	1.52	100	1.21	80	0R	3H	1W	
179.83	181.36	1.53	1.46	95	1.02	67	0R	3H	1W	
181.36	182.88	1.52	1.47	97	1.38	91	1R	3H	1W	
182.88	184.40	1.52	1.48	97	0.93	61	1R	4H	1W	
184.40	185.93	1.53	1.53	100	1.30	85	0R	4H	1W	
185.93	187.45	1.52	1.45	95	1.30	86	0R	3H	1W	
187.45	188.98	1.53	1.52	99	1.47	96	0R	3H	1W	
188.98	190.50	1.52	1.52	100	1.34	88	0R	4H	1W	
190.50	192.02	1.52	1.47	97	1.14	75	0R	4H	1W	
192.02	193.55	1.53	1.49	97	1.35	88	0R	4H	1W	
193.55	195.07	1.52	1.51	99	1.30	86	0R	4H	1W	
195.07	196.60	1.53	1.4	92	1.17	76	0R	4H	1W	
196.60	198.12	1.52	1.52	100	1.41	93	0R	4H	1W	
198.12	199.64	1.52	1.52	100	1.52	100	0R	4H	1W	
199.64	201.17	1.53	1.48	97	1.19	78	0R	4H	1W	
201.17	202.69	1.52	1.46	96	1.13	74	0R	4H	1W	
202.69	204.22	1.53	1.51	99	1.29	84	0R	4H	1W	
204.22	205.74	1.52	1.52	100	1.45	95	0R	4H	1W	
205.74	207.26	1.52	1.5	99	1.36	89	0R	4H	1W	
207.26	208.78	1.52	1.4	92	0.78	51	1R	3H	1W	

Hartless Joe - Hartless Joe

Grid East	Grid North	Easting	Northing	Elevation	Depth (m)
		515690	6752162	1809.9	187.45

ZONE: Unknown

SECTION:

HOLE: HJ -19-005

CLAIM:

Contractor: Platinum

Drill: 1

Core Size: NTW

Casing Depth:

Drilling Dates: -

Geology Logged By: R. Burke

SURVEY			
Depth (m)	Azimuth	Dip	Method

TARGET:

SUMMARY			
From (m)	To (m)	Interval (m)	Rock Type
0	2.5	2.5	VOL
2.5	3.25	0.75	VOL
3.25	9.21	5.96	SST
9.21	13.5	4.29	VOL
13.5	27.75	14.25	VOL
27.75	28.1	0.35	VOL
28.1	30	1.9	VOL
30	32.59	2.59	VOL
32.59	32.7	0.11	QV
32.7	42.17	9.47	VOL
42.17	50.4	8.23	VOL
50.4	51.15	0.75	VOL
51.15	52.9	1.75	VOL
52.9	53	0.1	FLT
53	60.66	7.66	VOL
60.66	62.25	1.59	VOL

SAMPLES	
Numbers:	W597790 to W597836
Total:	47
Batch:	005, 006
Certificates:	WH19295889, WH19295895, WH19310170

COMMENTS

62.25	62.97	0.72	VOL
62.97	66.3	3.33	DYK
66.3	75.5	9.2	VOL
75.5	75.92	0.42	SST
75.92	76.5	0.58	VOL
76.5	79	2.5	VOL
79	81.3	2.3	VOL
79	85.15	6.15	VOL
85.15	85.28	0.13	QV
85.28	87.19	1.91	VOL
87.19	87.22	0.03	QV
87.22	88.54	1.32	SST
88.54	89.14	0.6	SST
89.14	99.88	10.74	SST
99.88	117.25	17.37	DYK
117.25	121.92	4.67	DYK
121.92	124.72	2.8	SST
124.72	131.4	6.68	VOL
131.4	133	1.6	VOL
133	137.82	4.82	VOL
137.82	145.47	7.65	DYK
145.47	148.41	2.94	DYK
148.41	149.81	1.4	VOL
149.81	151.51	1.7	DYK
151.51	173.08	21.57	VOL
173.08	176.2	3.12	DYK
176.2	178	1.8	VOL
178	178.14	0.14	VOL
178.14	187.45	9.31	SST

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
0.00	2.50	2.50	VOL	FG	mixture of volcaniclastic mudstone and siltstone, with weak clastic fragments (<5%) and stringy zones of siliceous and carbonaceous alteration. Interval is locally highly fractured, and the lower contact terminates into a bleached, oxidized, clay altered interval of very fine grained hoogenous volcanic silt/mudstone							
									CAR	1I		
									SIL	1I		
2.50	3.25	0.75	VOL	FG	fine-grained, bleached, oxidized, clay altered volcanic siltstone within a larger package of volcanic silt/mudstone							
									CLY	3I		
									OXI	3I		
									BLE	3I		
3.25	9.21	5.96	SST	MG	fine-grained, homogenous volcanic sandstone, medium greenish grey. No alteration or anything significant here							
9.21	13.50	4.29	VOL	FG	fine-grained, dark grey, homogenous mudstone with interbedded horizons of volcanic silt/sandstone. Thes horizons increase in regularity as you move downhole, and eventually transition into a larger package of volcanic silt/sandstone with minor interbeds of mudstone. No significant min or anything to report in this interval.							
13.50	27.75	14.25	VOL	FG	dark to medium grey, greenish grey volcanic sandstone, with patchy intervals of siliceous siltstone (fragments?) and intervals of laminated mudstone. Alternating grain size between sand/silt/mudstone pervasive throughout entire interval. Trace low angle quartz veins with trace pyrite are sparse throughout interval (3; 1 cm wide; ~25 TCA). Localized weakly brecciated zones throughout. No significant alteration and mineralization throughout interval. However, trace disseminated pyrite occurr throughout mudstone rich intervals of core.							
									SIL	2I	Py	0.1
27.75	28.10	0.35	VOL	MG	brecciated mud to siltstone interval, with a mudstone matrix and volcanic fragmental clasts							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
											Py	0.5
28.10	30.00	1.90	VOL	FG	fine-grained volcanic siltstone, homogenous, medium greenish grey, with weak quartz veining throughout.							
									SIL	1I		
30.00	32.59	2.59	VOL	FG	finegrained, clast rich; mudstone matrix volcaniclastic. Medium greenish grey wth patchy oragne staining. Altered and contains localized ozones of brecciation. Weak quartz carbonate vein development throughout. Terminates in a sharp lower contact with quartz vein, trending 80 TCA							
									SIL	2I		
									CAR	1I		
									OXI	2I		
32.59	32.70	0.11	QV	FG	mixture of two quartz veins with contacts trending 80 TCA, with a middle 7 cm interval of oxidized and bleached, clay altered rock. These veins could be on the margins of a faulted boundary, 70 TCA lower contact with very fine grained, dark grey mudstone with large carbonaceous clasts within it.							
									OXI	3I	Py	0.5
									BLE	2I		
									SIL	2I		
32.70	42.17	9.47	VOL	FG	dark grey to black, fine-grained, matrix-supported volcaniclastic mudstone with large medium grey carbonaceous clasts. Trace stockwork frx of carbonate throughout. One 30 TCA quartz vein with trace pyrite. Trace fine grained disseminated pyrite thorughout entire interval							
									SIL	1I	Py	0.5
									CAR	1I		
42.17	50.40	8.23	VOL	MG	volcaniclastic with a chaotic mixture of different fragments up to 10 cms across. Volcanic fragments, sandstone fragments, and laminated mudstone fragments. Dropoff in pyrite content compared to the previous carbonaceous clast rich interval of volcaniclastic above.Weak carbonate stringers and quartz stringers found throughout.							
									CAR	1I		
									SIL	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
50.40	51.15	0.75	VOL	FG	fine-grained, clay altered, oxidized and bleached interval of volcanic siltstone, with one 4 cm wide quartz vein in the middle of the interval, with weak oxidized stringers throguhout it.							
									BLE	3I		
									OXI	4I		
									CLY	5I		
									SIL	3I		
51.15	52.90	1.75	VOL	FG	brecciated volcaniclastic siltstone with finegrained light grey "cherty" clasts and sandstone fragments, cemented by a siltstone matrix. Lower contact terminates in a faulted , brecciated interla							
52.90	53.00	0.10	FLT	FG	faulted mudstone volcaniclastic, cemented breccia							
53.00	60.66	7.66	VOL	FG	fine-grained dark grey volcaniclastic mudstone matrix, with a large amount of clastic material giving an overall coarse grained clastic appearance. Carbonaceous clasts, mudstone clasts, sandstone, and volcanic fragments, all evenly distributed throughout the interval. Some clasts are up to 20 cm in size, a nd range from 1 cm to 20. Patchy dissemianted pyrite is found throughout, with weak quartz carbonate veining. Sharp lower contact with clast-poor volcanic siltstone							
									CAR	2I		
									SIL	1I		
									OXI	1I		
60.66	62.25	1.59	VOL	FG	very fine grained volcanic siltstone, bleached and oxidized, and pervsaively clay altered, with quartz carbontae fractures and stockwork disseminated throughout.							
									BLE	2I		
									SIL	1I		
									CAR	1I		
									CLY	4I		
									OXI	2I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
62.25	62.97	0.72	VOL	FG	brecciated, light creamy grey, silicified volcaniclastic?, with patchy oxidized disseminated pyrite, and siliceous injections leading up to a sharp contact with a silicified feldspar phyric dyke. Extending ~30 cm above the dyke contact, the altered wallrock has an almost sheared look to it, with disseminated muscovite throughout.							
									SIL	3I	Py	0.5
62.97	66.30	3.33	DYK	FG	Fine-grained silicified light grey groundmass, with fine-grained clay altered feldspar grains, and weak, rare, fine grained chloritized hornblende grains in a dyke that has a sharp upper and lower contact trending 80 TCA. Dyke has patchy oxidative staining, and weak quartz carbonate veinlets developed. One vein near lower interval of dyke is 80 TCA and is 1 cm wide, containing abundant dissemianted pyrite. Flecks of oxidized pyrite are disseminated throughout entirety of dyke.							
									OXI	1I		
									SIL	2I	Py	0.5
66.30	75.50	9.20	VOL	FG	Chaotic mixture of basalt and siltstone, volcanic fragments, and carbonaceous clast bearing volcaniclastic. Volcaniclastic unit seems to be brecciated and infilled with fragmental basalt, which forms weak pillows and a stringy foliation that wraps around the basaltic fragments. Some volcanic fragments have quartz and carbonate filled amygdules, and there are very fine grained light purplish brown clasts that look like altered siltstone (possibly rhyolite?) On the margin of these fragments is a "bacterial" texture of spotted grains, extending from light purplish brown fine grained clasts into the wallrock, with a high abundance of "spots" proximal to their margins, which decreases in abundance as you move into the wallrock. Chlorite, clay and carbonate alteration is pervasive throughout, and rare quartz veinlets occur throughout, with no visible sulfides.							
									SIL	1I		
									CAR	2I		
									CHL	2I		
									CLY	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
75.50	75.92	0.42	SST	FG	fine-grained volcanic siltstone to sandstone, patchily oxidized, within the chaotic basaltic infilled volcaniclastic unit.							
75.92	76.50	0.58	VOL	FG	Chaotic mixture of basalt and siltstone, volcanic fragments, and carbonaceous clast bearing volcaniclastic. Volcaniclastic unit seems to be brecciated and infilled with fragmental basalt, which forms weak pillows and a stringy foliation that wraps around the basaltic fragments. Some volcanic fragments have quartz and carbonate filled amygdules, and there are very fine grained light purplish brown clasts that look like altered siltstone (possibly rhyolite?) On the margin of these fragments is a "bacterial" texture of spotted grains, extending from light purplish brown fine grained clasts into the wallrock, with a high abundance of "spots" proximal to their margins, which decreases in abundance as you move into the wallrock. Chlorite, clay and carbonate alteration is pervasive throughout, and rare quartz veinlets occur throughout, with no visible sulfides.							
76.50	79.00	2.50	VOL	FG	fine-grained homogenous volcanic siltstone, pervasively oxidized and weakly brecciated, with two weak clay altered intervals. Gradational upper and lower contact, with above being basalt filled volcaniclastic, and below is volcanic siltstone with weak basalt infill. There is trace oxidized basaltic infill in this interval, likely the basaltic volcaniclastic unit, just altered and 95% siltstone/sandstone, with ~5% fragmental basaltic infill.							
									OXI	1I		
									SIL	1I		
79.00	85.15	6.15	VOL	FG	fine-grained volcaniclastic siltstone with trace basaltic fragmental infill. Dark grey to grey, with weak pathcy oxide staining. Lower contact is 60 TCA with a quartz vein							
									OXI	1I		
									OXI	1I		
85.15	85.28	0.13	QV	FG	milky white qv with pyritic, oxide, and wallrock seams that trend 40-50 TCA							
									SIL	4I	Py	0.5
									OXI	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
85.28	87.19	1.91	VOL	FG	fine-grained volcaniclastic sand/siltstone with very fine-grained light grey brecciated infill (rare, <1%)							
87.19	87.22	0.03	QV	FG	50 TCA sharp upper and lower quartz vein with no visible sulfide.							
87.22	88.54	1.32	SST	FG	fine-grained homogenous dark grey volcanic siltstone, with weak quartz carbonate veining dispersed throughout.							
									SIL	1I		
									CAR	1I		
88.54	89.14	0.60	SST	FG	fine-grained volcanic silt/sandstone with five quart veins within this interval, hosting trace disseminated pyrite.							
									SIL	3I		
89.14	99.88	10.74	SST	FG	fine-grained dark to medium grey volcanic siltstone, with weak quartz veining developed throguhout; with trace pyrite. Sharp lower contact with crowded hornblende feldspar porphyry dyke.							
									SIL	1I	Py	0.1
99.88	117.25	17.37	DYK	MG	crowded hornblende feldspar porphyry dyke, medium greyish green, with patchy oxidized intervals. No mineralization within this dyke. 40 TCA upper contact and a diffuse lower contact with very fine-grained, siliceous, rhyolite dyke.							
						LT	GN					
						LT	GY		OXI	1I		
117.25	121.92	4.67	DYK	FG	very fine grained, light pale greenish grey to light pinkish grey, patchily light orangeish grey, highly siliceous rhyolite dyke. Dyke has pervasive stockwork fractures with fine-grained whiteish orange hairline seams, and trace pyrite stringers throughout. Faulted lower contact, with inclusions of underlying greenish grey volcanic siltstone/sandstone.							
						LT	GY					
						LT	GN					
						LT	PK		SIL	3I	Py	0.5
						LT	OR					

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
121.92	124.72	2.80	SST	MG	fine-grained volcanic siltstone/sandstone with sparse fragmented appearance, filled by very fine-grained black volcanic material (basalt infill?) weak carbonate veinlets found throughout, randomly oriented. Sharp faulted lower contact trending 60 with stockwork veined pyritic fragmental mudstone volcaniclastic unit below							
						MD	GY		CAR	1I		
						MD	GN					
124.72	131.40	6.68	VOL	FG	very fine-grained, dark grey to black carbonaceous, calcareous volcanic mudstone, heavily fractured with a stockwork vein network developed heavily from 124.72-128, and a lighter density of veining from 128-131.40. Pyritic veinlets are offset and occur sporadically thorugout interval, Graphite is devleoped on fracture surfaces, and there is a gradational lower contact with a mixture of volcaniclastic mudstone and silt/sandstone. This stockwork fractured mudstone lens sits directly below a small lens of fragmented volcanic sandstone, which sits beneath a highly silicified rhyolite dyke and a crowded hornblende feldspar porphyry dyke. Proximity to the dyke may be a reason why there is more pyrite in this interval.							
						MD	GY		SIL	2I	Py	0.5
						DK	GY		CAR	2I		
131.40	133.00	1.60	VOL	MG	Chaotic interval of volcanic mudstone and sandstone, that has been brecciated and infilled by pervasive quartz carbonate stockwork. Some veins have a very fine-grained pinkish orange mineral within them. This could be k-feldspar or adularia? This is unique and has not been observed in other intervals of the core logged previously. Gradational lower contact into more well-behaved, homoegenous, weakly brecciated volcanic sandstone							
						MD	GY		SIL	2I		
						LT	PK		CAR	2I		
						LT	CR					
133.00	137.82	4.82	VOL	MG	fine to medium-grained volcanic silt/sandstone with small 5-10 cm intervals of brecciation, infilled by quartz and carbonate material. Semi-sharp lower contact with a rhyolite dyke, trending 70 TCA							

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
						MD	GY		SIL	2I		
						DK	GY					
137.82	145.47	7.65	DYK	FG	very fine-grained quartz eye rhyolite dyke with small grains of quartz. Patchy oxidation near fracture surfaces, and weak patches of very fine-grained dark grey pyritic stringer zones throughout.							
						LT	CR					
						LT	OR					
						LT	GY		SIL	2I	Py	0.2
145.47	148.41	2.94	DYK	FG	same rhyolite dyke as described above, but pervasively oxidized and fractured, with manganese staining near fracture surfaces. One interval of clay alteration (fault related?) with a bleached alteratoin halo extending into the dyke. Oxidative haloes extend around fractures, and the lowr contact is faulted and gradational (~40 TCA) with a small lense of fine-grained volcanic sandstone with weak brecciated near the contact							
						MD	OR					
						LT	GN					
						LT	GY					
148.41	149.81	1.40	VOL	FG	fine-grained, medium greenish grey siltstone with weak clay aleration along fractures, present as a small lens between two rhyolite dykes. Not extensively altered only weak clay alteration along fractures within sandstone. Weak fine-grained black flecks present throughout, likely fine-grained glass within the volcanic sandstone.							
						MD	GY		CLY	1I		
						MD	GN					
149.81	151.51	1.70	DYK	FG	fine-grained quartz eye rhyolite dyke, with weak carbonate oxide staining and weak quartz veining developed from 150.88-151.3. One 1 cm wide quartz vein trending 60 TCA is cut by a ~40 TCA carboante veinlet, showing apparent sinistral offset of roughly 1 cm. Weak pyrite minerlazaiton is dissemianted thorughout, and weak pyrite is present on the two quartz veinlets							
						LT	GN		CAR	1I		
						LT	GY		SIL	1I	Py	0.5

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
151.51	173.08	21.57	VOL	FG	dark grey to medium greenish grey, volcanic silt to sandstone, with small discrete intervals 5-10 cm wide (rare throughout interval) of brecciated zones with quartz carbonate infill, and maybe fragmental basalt?. Some volcanic sandstone has quartz carbonate filled amygdules From 1 mm to 8 mm in size. Some amygdules are filled with a dark black very fine-grained soft mineral (volcanic glass?) Injections of quartz carbonate persist throughout entire interval, and do not contain sulphide. However, from 170.5 until 173.08, the denity of quartz carbonate veinlets increases with proximity to the lower contact with a siliceous rhyolite dyke, that contains ultra trace pyrite and weak oxidation on their margins preceding up to the contact							
									OXI	1I		
						MD	GY		CAR	2I	Py	0.1
						DK	GY		SIL	1I		
173.08	176.20	3.12	DYK	FG	fine-grained quartz eye rhyolite dyke, pervasively silicified and oxidized, with weak pyritic hairline stringers throughout dyke. Sharp upper contact trending 80 TCA, and a brecciated lower contact with no discernible trend							
						LT	GY		SIL	2I	Py	0.5
						LT	CR		OXI	1I		
						LT	OR					
176.20	178.00	1.80	VOL	FG	fine-grained siltstone with a fine-grained network of hairline clay fractures, and brecciated fragments of siliceous weakly pyritic mudstone. Cut by late quartz carbonate veinlets barren of sulfide. Brecciated fragmental volcaniclastic unit with trace pyrite within mudstone fragments							
						MD	GY		SIL	1I	Py	0.1
						DK	GY					
178.00	178.14	0.14	VOL	FG	oxidized interval of volcanic siltstone with two 1 cm wide quartz carbonte veinlets with clay alteration surrounding them. No visible sulfide, but altered interval beneath rhyolite dyke							
						LT	OR		SIL	1I		
						LT	GY		CLY	1I		

From (m)	To (m)	Interval (m)	Rock Type	Grain Size	Description	Shade	Colour	Texture	Alteration	Intensity	Mineral	Conc.
178.14	187.45	9.31	SST	FG	fine grained medium grey to greenish grey volcanic snadstone, with small 5 cm intervals of fragmented mudstone (only two observed in section. Mostly homogenous , with pervasive quartz carbonate stockwork and blebby veinlets (barren of sulfide) pervasive throughout interval.							
						DK	GY		CAR	1I		
						MD	GY		SIL	2I		

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
0.00	1.52	1.52	1.04	68	0.37	24	0R	3H	2W	
1.52	3.05	1.53	1.15	75	0.51	33	2R	4H	2W	
3.05	4.57	1.52	1.51	99	0.97	64	1R	4H	2W	
4.57	6.10	1.53	1.44	94	1.21	79	1R	4H	1W	
6.10	7.62	1.52	1.49	98	1.43	94	1R	4H	1W	
7.62	9.14	1.52	1.52	100	1.42	93	1R	4H	1W	
9.14	10.67	1.53	1.48	97	0.94	61	1R	4H	2W	
10.67	12.19	1.52	1.5	99	1.27	84	1R	4H	1W	Locally, moderate HCl reactivity.
12.19	13.72	1.53	1.48	97	0.86	56	1R	4H	1W	Locally, moderat HCl reactivity
13.72	15.24	1.52	1.52	100	1.46	96	2R	3H	1W	
15.24	16.76	1.52	1.48	97	1.28	84	2R	3H	1W	
16.76	18.29	1.53	1.51	99	1.30	85	1R	3H	1W	
18.29	19.81	1.52	1.46	96	0.70	46	0R	3H	1W	
19.81	21.34	1.53	1.49	97	1.09	71	1R	4H	1W	Locally, weak HCl reactivity
21.34	22.86	1.52	1.38	91	1.17	77	0R	4H	1W	
22.86	24.38	1.52	1.52	100	1.34	88	1R	4H	1W	
24.38	25.91	1.53	1.5	98	1.18	77	0R	3H	1W	
25.91	27.43	1.52	1.48	97	1.35	89	0R	3H	1W	
27.43	28.96	1.53	1.45	95	1.17	76	0R	4H	1W	
28.96	30.48	1.52	1.48	97	0.86	57	2R	3H	1W	
30.48	32.00	1.52	1.49	98	1.07	70	3R	3H	1W	
32.00	33.53	1.53	1.5	98	1.15	75	1R	4H	1W	
33.53	35.05	1.52	1.52	100	1.39	91	3R	4H	1W	
35.05	36.58	1.53	1.5	98	1.25	82	3R	4H	1W	
36.58	38.10	1.52	1.52	100	1.52	100	3R	4H	1W	
38.10	39.62	1.52	1.52	100	1.32	87	3R	4H	1W	
39.62	41.15	1.53	1.53	100	1.53	100	3R	4H	1W	
41.15	42.67	1.52	1.52	100	1.31	86	2R	3H	1W	
42.67	44.20	1.53	1.46	95	0.99	65	0R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
44.20	45.72	1.52	1.52	100	1.32	87	2R	3H	1W	
45.72	47.24	1.52	1.49	98	1.29	85	2R	4H	1W	
47.24	48.77	1.53	1.5	98	1.40	92	3R	4H	1W	
48.77	50.29	1.52	1.49	98	0.97	64	3R	4H	1W	
50.29	51.82	1.53	1.49	97	1.07	70	2R	3H	1W	From moderate to strong and to weak HCl reactivity along the interval as the rock type changes and alteration intensity.
51.82	53.34	1.52	1.5	99	1.33	88	0R	3H	1W	
53.34	54.86	1.52	1.5	99	1.48	97	3R	4H	1W	
54.86	56.39	1.53	1.51	99	1.45	95	3R	4H	1W	
56.39	57.91	1.52	1.52	100	1.37	90	3R	4H	1W	
57.91	59.44	1.53	1.5	98	1.41	92	3R	4H	1W	
59.44	60.96	1.52	1.52	100	1.50	99	3R	4H	1W	
60.96	62.48	1.52	1.51	99	1.03	68	1R	3H	1W	
62.48	64.01	1.53	1.53	100	1.53	100	0R	4H	1W	
64.01	65.53	1.52	1.52	100	1.46	96	1R	4H	1W	
65.53	67.06	1.53	1.52	99	1.42	93	1R	4H	1W	
67.06	68.58	1.52	1.5	99	1.31	86	1R	3H	1W	
68.58	70.10	1.52	1.48	97	1.48	97	1R	3H	1W	
70.10	71.63	1.53	1.53	100	1.37	90	2R	4H	1W	
71.63	73.15	1.52	1.49	98	1.49	98	2R	4H	1W	
73.15	74.68	1.53	1.53	100	1.41	92	2R	4H	1W	
74.68	76.20	1.52	1.52	100	1.27	84	1R	4H	1W	
76.20	77.72	1.52	1.52	100	1.00	66	1R	4H	1W	Oxidized fracture surfaces
77.72	79.25	1.53	1.42	93	0.90	59	0R	4H	1W	Oxidized fracture surfaces
79.25	80.77	1.52	1.52	100	1.41	93	1R	3H	1W	
80.77	82.30	1.53	1.53	100	1.43	93	2R	4H	1W	
82.30	83.82	1.52	1.52	100	1.52	100	2R	4H	1W	
83.82	85.34	1.52	1.52	100	1.52	100	2R	4H	1W	
85.34	86.87	1.53	1.5	98	1.50	98	2R	4H	1W	
86.87	88.39	1.52	1.52	100	1.52	100	2R	3H	1W	
88.39	89.92	1.53	1.53	100	1.37	90	1R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
89.92	91.44	1.52	1.5	99	1.39	91	2R	3H	1W	
91.44	92.96	1.52	1.52	100	1.52	100	2R	3H	1W	
92.96	94.49	1.53	1.52	99	1.41	92	2R	3H	1W	
94.49	96.01	1.52	1.52	100	1.42	93	2R	3H	1W	
96.01	97.54	1.53	1.44	94	1.28	84	2R	3H	1W	
97.54	99.06	1.52	1.52	100	1.05	69	2R	3H	1W	
99.06	100.58	1.52	1.52	100	1.49	98	2R	3H	1W	
100.58	102.11	1.53	1.44	94	1.29	84	1R	4H	1W	
102.11	103.63	1.52	1.52	100	1.47	97	1R	4H	1W	
103.63	105.12	1.49	1.49	100	1.21	81	1R	4H	1W	Oxidized fracture surfaces
105.12	106.68	1.56	1.56	100	1.41	90	1R	4H	1W	Oxidized fracture surfaces
106.68	108.20	1.52	1.52	100	0.96	63	1R	4H	1W	Oxidized fracture surfaces
108.20	109.73	1.53	1.53	100	0.92	60	1R	4H	1W	Oxidized fracture surfaces
109.73	111.25	1.52	1.52	100	1.34	88	1R	4H	1W	Oxidized fracture surfaces
111.25	112.78	1.53	1.49	97	1.00	65	1R	4H	1W	
112.78	114.30	1.52	1.52	100	1.20	79	1R	4H	1W	
114.30	115.82	1.52	1.45	95	1.19	78	1R	4H	1W	
115.82	117.35	1.53	1.53	100	1.24	81	1R	4H	1W	
117.35	118.97	1.62	1.52	94	0.79	49	0R	4H	1W	
118.97	120.39	1.42	1.42	100	1.35	95	0R	4H	1W	
120.39	121.92	1.53	1.48	97	1.17	76	1R	4H	1W	
121.92	123.44	1.52	1.52	100	1.25	82	0R	3H	1W	
123.44	124.97	1.53	1.51	99	1.00	65	0R	3H	1W	
124.97	126.49	1.52	1.52	100	1.22	80	2R	3H	1W	
126.49	128.02	1.53	1.53	100	1.05	69	2R	3H	1W	
128.02	129.54	1.52	1.5	99	1.36	89	2R	4H	1W	
129.54	131.06	1.52	1.52	100	1.42	93	2R	4H	1W	
131.06	132.59	1.53	1.46	95	1.00	65	1R	3H	1W	
132.59	134.11	1.52	1.52	100	1.34	88	0R	3H	1W	
134.11	135.64	1.53	1.51	99	1.16	76	0R	3H	1W	
135.64	137.16	1.52	1.52	100	1.39	91	1R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
137.16	138.68	1.52	1.52	100	1.43	94	2R	3H	1W	Moderate HCl reactivity only for the first half of this interval, as well for the hadrdness. The second half has no HCl reactivity and a higher hardness.
138.68	140.21	1.53	1.53	100	1.40	92	1R	4H	1W	
140.21	141.73	1.52	1.51	99	1.26	83	1R	4H	1W	
141.73	143.26	1.53	1.53	100	1.33	87	1R	4H	1W	
143.26	144.78	1.52	1.48	97	1.45	95	1R	4H	1W	
144.78	146.30	1.52	1.52	100	1.39	91	0R	4H	1W	
146.30	147.83	1.53	1.52	99	1.18	77	0R	4H	1W	
147.83	149.35	1.52	1.5	99	0.68	45	2R	3H	1W	
149.35	150.88	1.53	1.53	100	0.99	65	1R	4H	1W	Highly fractured at 149.50m for 30 cm.
150.88	152.40	1.52	1.52	100	1.42	93	1R	3H	1W	
152.40	153.93	1.53	1.5	98	1.33	87	0R	4H	1W	
153.93	155.45	1.52	1.52	100	1.19	78	0R	3H	1W	
155.45	156.97	1.52	1.52	100	1.35	89	0R	3H	1W	
156.97	158.50	1.53	1.52	99	1.39	91	0R	3H	1W	
158.50	160.02	1.52	1.48	97	1.40	92	0R	3H	1W	
160.02	161.54	1.52	1.52	100	1.21	80	0R	3H	1W	
161.54	163.07	1.53	1.51	99	1.35	88	0R	3H	1W	
163.07	164.59	1.52	1.52	100	1.12	74	1R	3H	1W	
164.59	166.12	1.53	1.37	90	1.03	67	2R	3H	1W	
166.12	167.64	1.52	1.43	94	1.16	76	2R	3H	1W	
167.64	169.16	1.52	1.52	100	1.45	95	2R	3H	1W	
169.16	170.69	1.53	1.46	95	1.28	84	2R	3H	1W	
170.69	172.21	1.52	1.52	100	1.42	93	2R	3H	1W	
172.21	173.74	1.53	1.48	97	1.21	79	1R	3H	1W	
173.74	175.26	1.52	1.5	99	1.27	84	1R	4H	1W	
175.26	176.78	1.52	1.52	100	1.19	78	1R	3H	1W	
176.78	178.31	1.53	1.5	98	1.07	70	1R	3H	1W	
178.31	179.83	1.52	1.52	100	1.44	95	1R	3H	1W	
179.83	181.36	1.53	1.47	96	1.47	96	1R	3H	1W	

From (m)	To (m)	Interval (m)	Recovery (m)	Recovery %	RQD	RQD %	Reactivity	Hardness	Weathering	Comments
181.36	182.88	1.52	1.52	100	1.37	90	1R	3H	1W	
182.88	184.40	1.52	1.49	98	1.26	83	1R	3H	1W	
184.40	185.93	1.53	1.53	100	1.43	93	1R	3H	1W	
185.93	187.45	1.52	1.49	98	1.19	78	1R	3H	1W	

STRATEGIC METALS LTD.

FIGURE 1

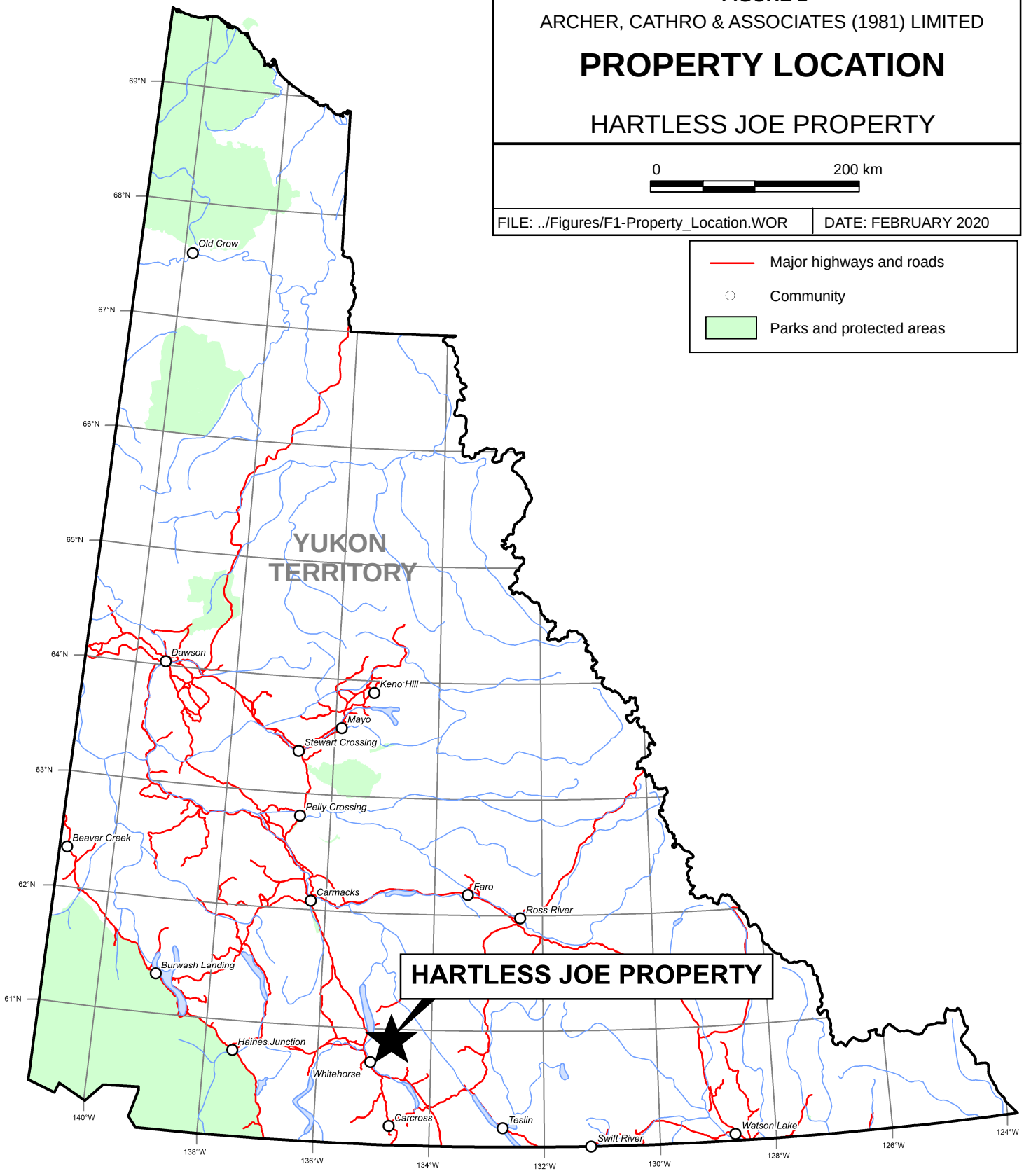
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

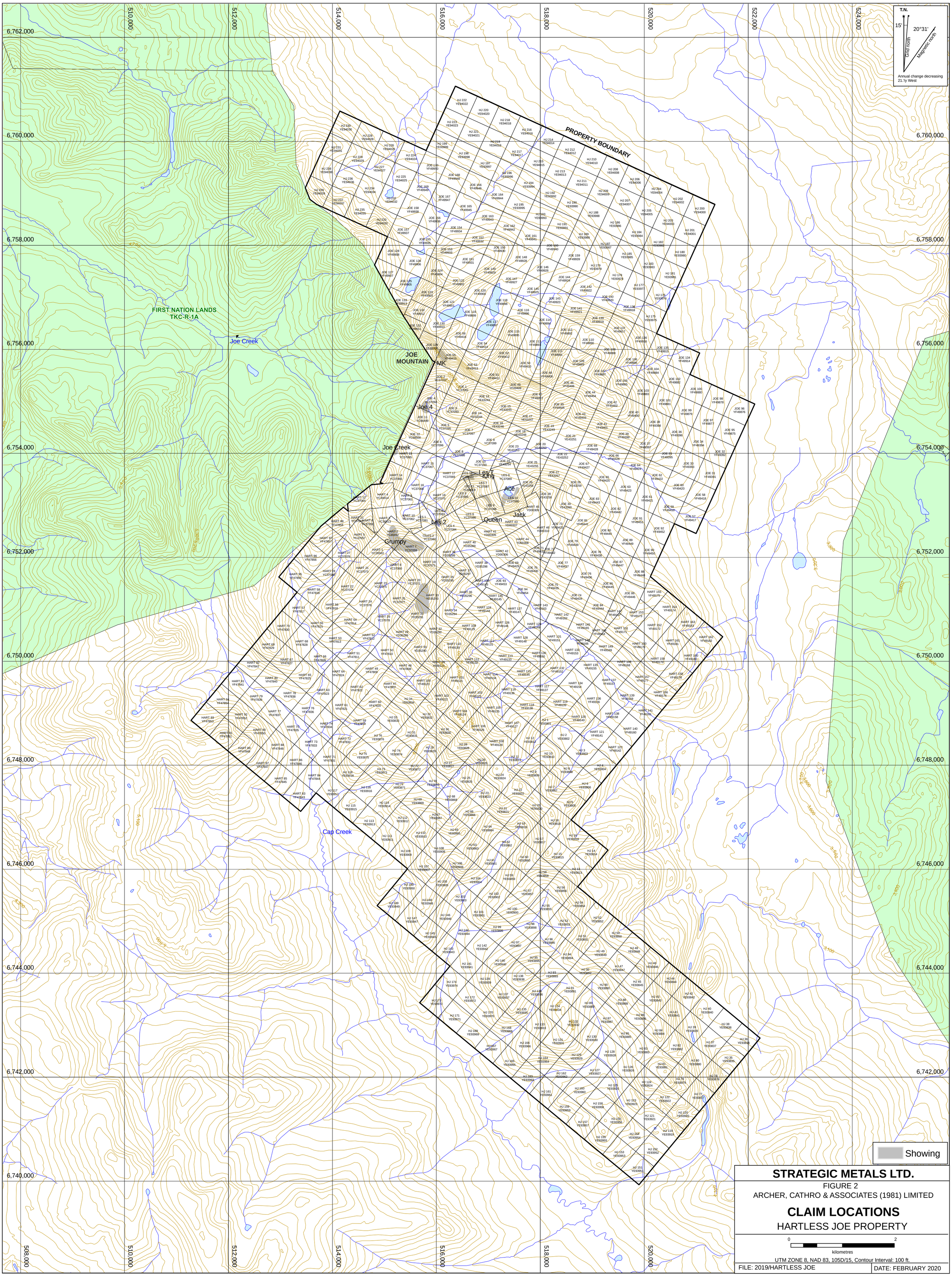
PROPERTY LOCATION

HARTLESS JOE PROPERTY

0 200 km

FILE: ../Figures/F1-Property_Location.WOR | DATE: FEBRUARY 2020





STRATEGIC METALS LTD.

FIGURE 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

CLAIM LOCATIONS

HARTLESS JOE PROPERTY

0 2

kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: 2019/HARTLESS JOE

DATE: FEBRUARY 2020

STRATEGIC METALS LTD.

FIGURE 3

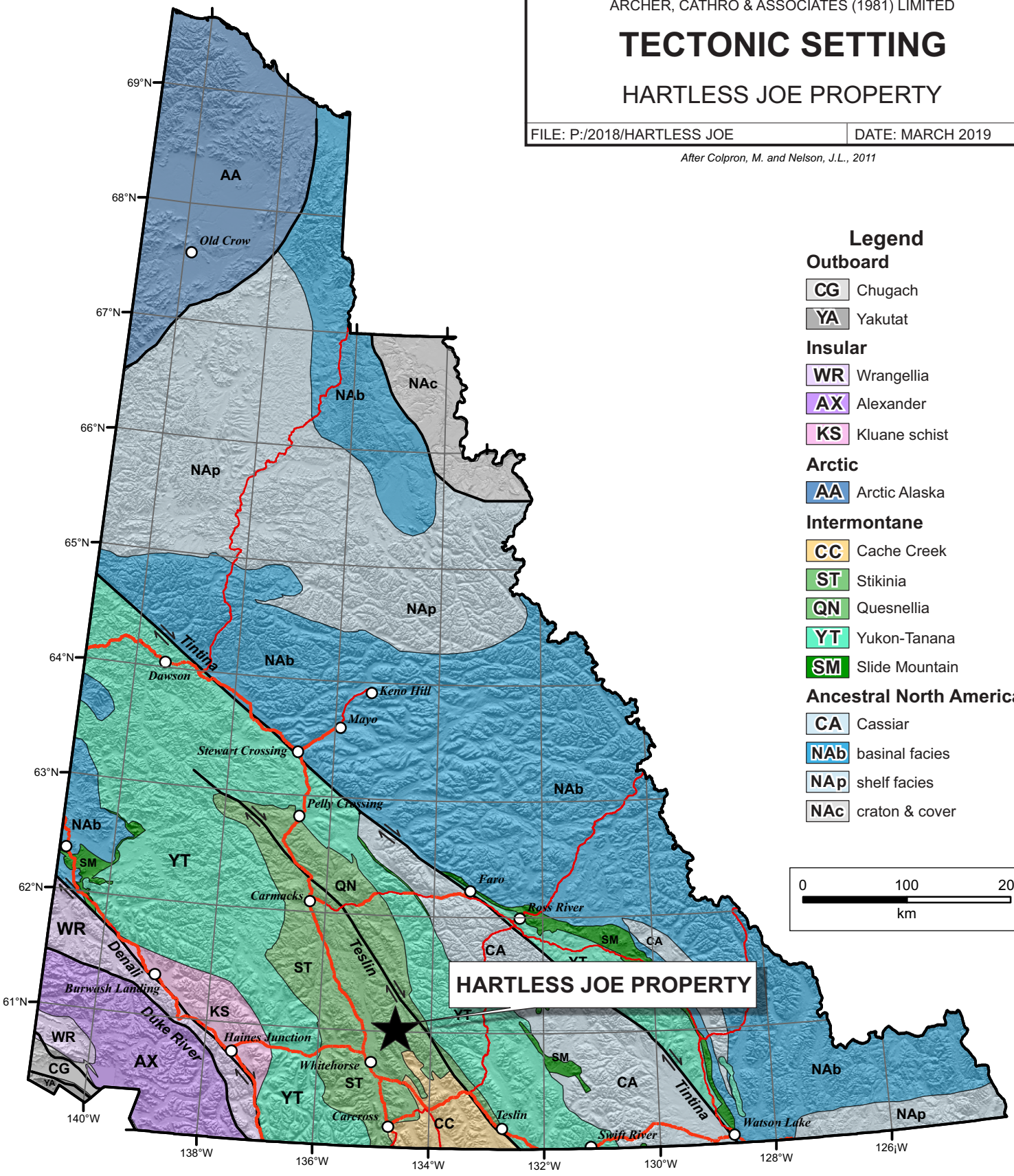
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

TECTONIC SETTING

HARTLESS JOE PROPERTY

FILE: P:/2018/HARTLESS JOE | DATE: MARCH 2019

After Colpron, M. and Nelson, J.L., 2011



Legend

Outboard

- CG Chugach
- YA Yakutat

Insular

- WR Wrangellia
- AX Alexander
- KS Kluane schist

Arctic

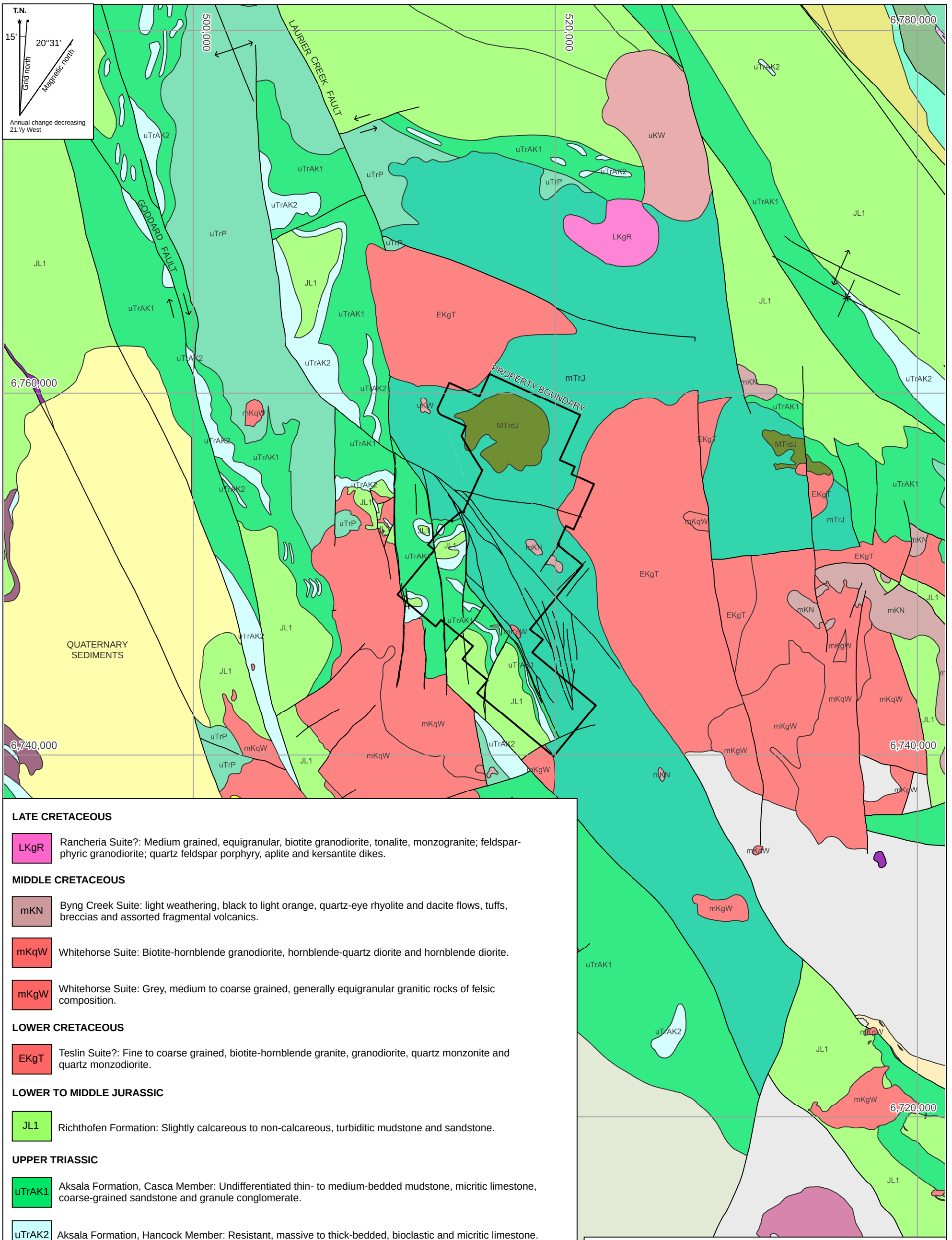
- AA Arctic Alaska

Intermontane

- CC Cache Creek
- ST Stikinia
- QN Quesnellia
- YT Yukon-Tanana
- SM Slide Mountain

Ancestral North America

- CA Cassiar
- NAb basinal facies
- NAp shelf facies
- NAc craton & cover



LATE CRETACEOUS

LKgR — Rancheria Suite?: Medium grained, equigranular, biotite granodiorite, tonalite, monzogranite; feldspar-phyric granodiorite; quartz feldspar porphyry, aplite and kersantite dikes.

MIDDLE CRETACEOUS

mKN — Byng Creek Suite: light weathering, black to light orange, quartz-eye rhyolite and dacite flows, tuffs, breccias and assorted fragmental volcanics.

mKqW — Whitehorse Suite: Biotite-hornblende granodiorite, hornblende-quartz diorite and hornblende diorite.

mKgW — Whitehorse Suite: Grey, medium to coarse grained, generally equigranular granitic rocks of felsic composition.

LOWER CRETACEOUS

EKgT — Teslin Suite?: Fine to coarse grained, biotite-hornblende granite, granodiorite, quartz monzonite and quartz monzodiorite.

LOWER TO MIDDLE JURASSIC

JL1 — Richthofen Formation: Slightly calcareous to non-calcareous, turbiditic mudstone and sandstone.

UPPER TRIASSIC

uTrAK1 — Aksala Formation, Casca Member: Undifferentiated thin- to medium-bedded mudstone, micritic limestone, coarse-grained sandstone and granule conglomerate.

uTrAK2 — Aksala Formation, Hancock Member: Resistant, massive to thick-bedded, bioclastic and micritic limestone.

uTrP — Povoas Formation: Flow-banded to pillowed, aphyric to pyroxene-phyric basalt, interbedded with lesser thick-bedded volcanic breccia, volcaniclastic sandstone and polymictic cobble conglomerate.

MIDDLE TRIASSIC

MTrdJ — Joe Mountain Formation: Discrete plutons of leucocratic, coarse-grained and texturally variable, pyroxene gabbro.

mTrJ — Joe Mountain Formation: Massive or pillowed, aphyric basalt and basaltic andesite; poorly sorted volcanic conglomerate; mafic tuff; volcanic mudstone and sandstone; and minor thin-bedded calcareous mudstone.

STRATEGIC METALS LTD.

FIGURE 4

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

REGIONAL GEOLOGY

HARTLESS JOE PROPERTY

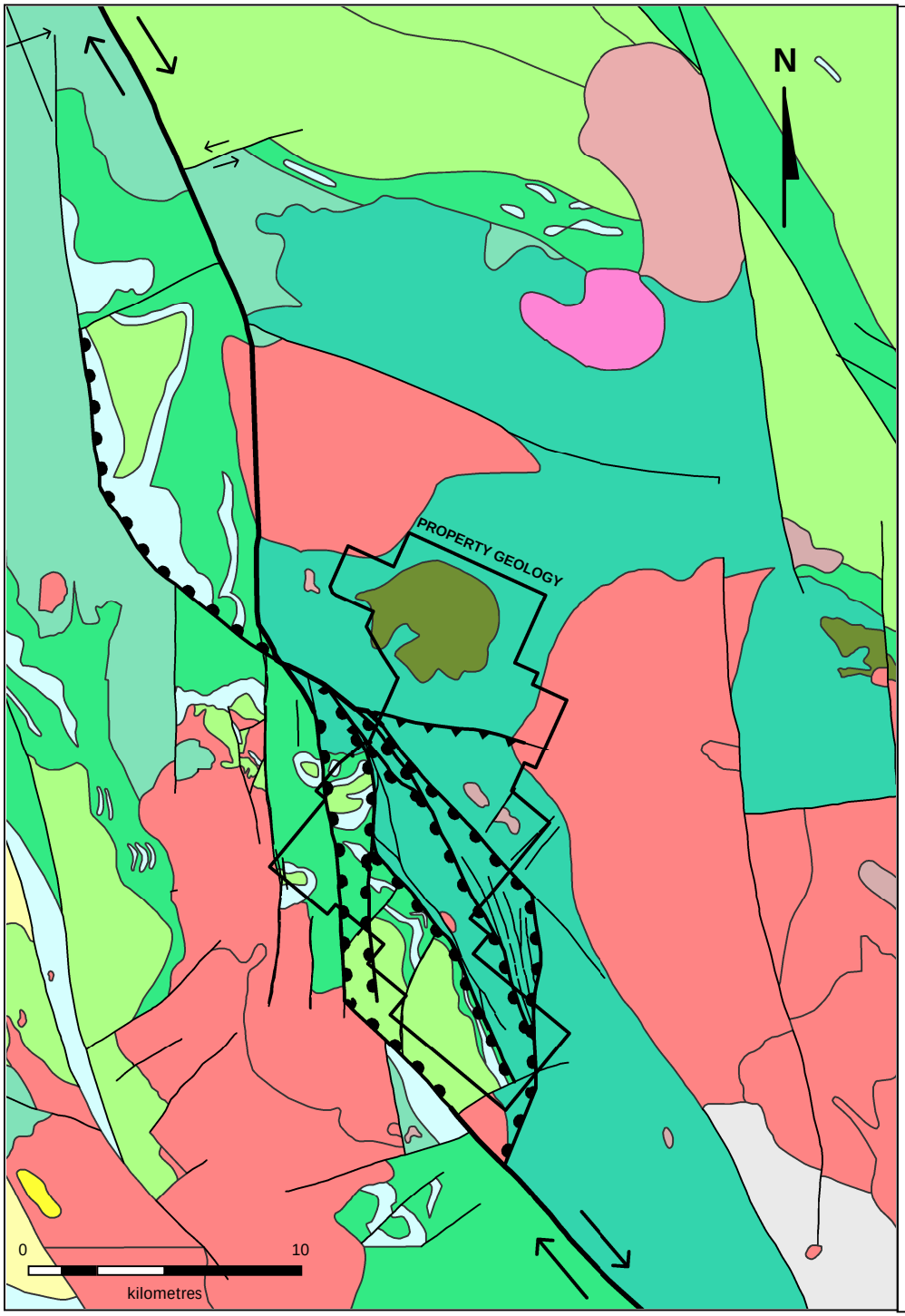
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kilometres

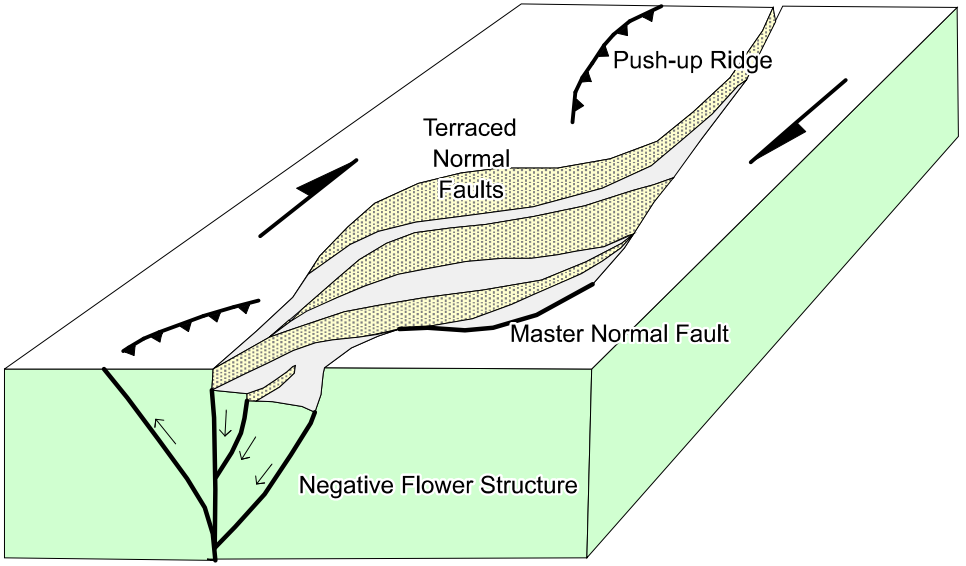
UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: 2019\HARTLESS JOE

DATE: FEBRUARY 2020



LOOKING SOUTH



* Adapted from Dooley and McClay, 1997.

STRATEGIC METALS LTD.

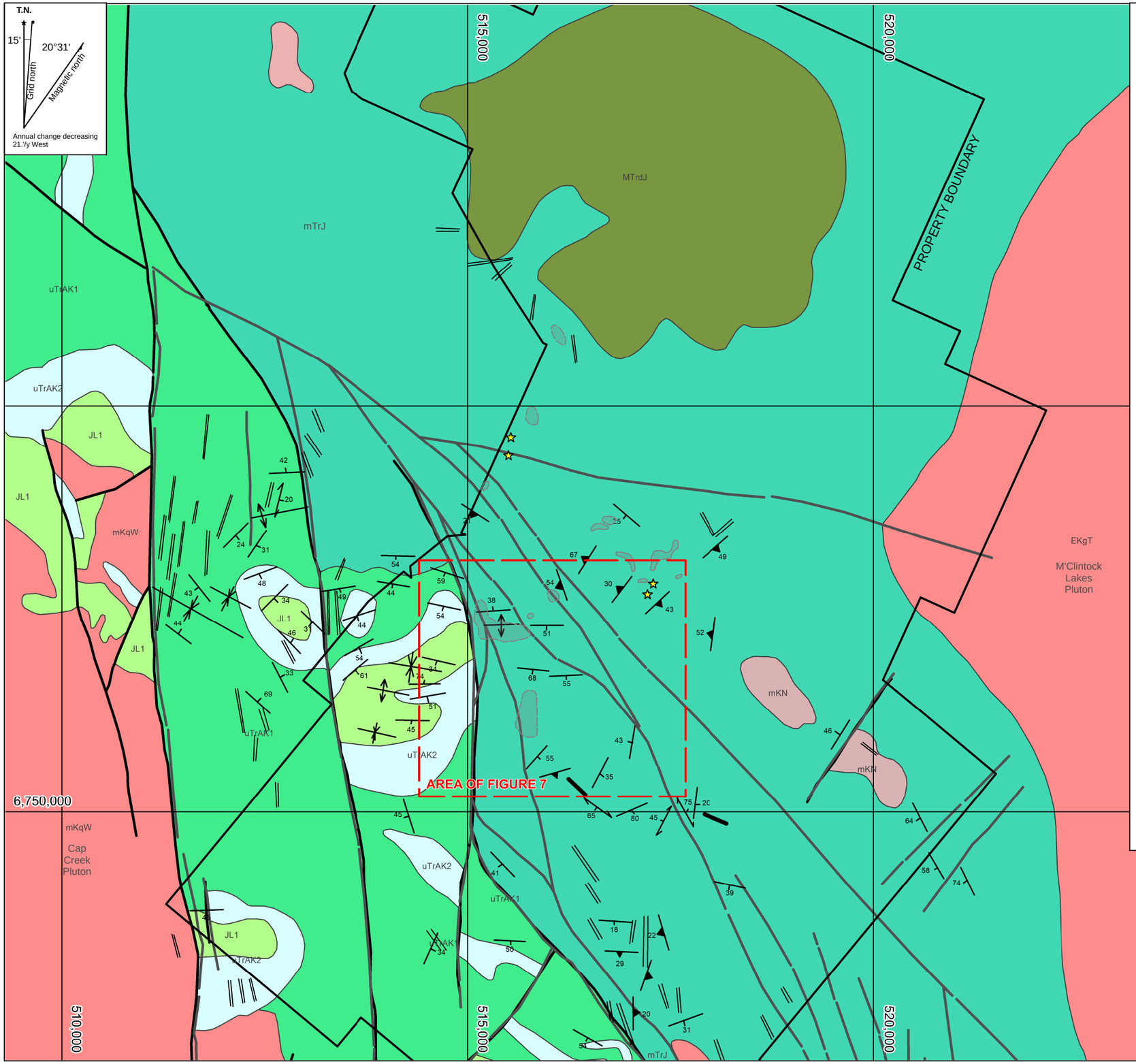
FIGURE 5

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

REGIONAL INTERPRETATION

HARTLESS JOE PROPERTY

FILE: 2019\HARTLESS JOE	DATE: FEBRUARY 2020



Showing

Anticline

Syncline

Flow surface

Bedding

Fault

Schistocity or shear zone

MIDDLE CRETACEOUS

mKN — Byng Creek Suite: Quartz-eye rhyolite and dacite flows, tuffs, breccias and assorted fragmental volcanics.

Andesite and feldspar porphyry dykes, assumed to be related to the Cap Creek Pluton.

mKqW — Whitehorse Suite: Biotite-hornblende granodiorite, hornblende-quartz diorite and hornblende diorite.

LOWER CRETACEOUS

EKgT — Teslin Suite?: Biotite-hornblende granite, granodiorite, quartz monzonite and quartz monzodiorite.

LOWER TO MIDDLE JURASSIC

JL1 — Richthofen Formation: Slightly calcareous to non-calcareous, turbiditic mudstone and sandstone.

UPPER TRIASSIC

uTrAK1 — Aksala Formation, Casca Member: Undifferentiated mudstone, micritic limestone, sandstone and conglomerate.

uTrAK2 — Aksala Formation, Hancock Member: Resistant, massive to thick-bedded, bioclastic and micritic limestone.

MIDDLE TRIASSIC

MTrdJ — Joe Mountain Formation: Coarse-grained, pyroxene gabbro.

mTrJ — Joe Mountain Formation: Massive or pillowed mafic volcanic rocks and volcaniclastics.
1) Pillowed basalts.
2) Chaotic assemblage of volcaniclastic and sedimentary rocks.
3) Pillowed basalts; minor diabase.
4) Cumulate gabbro, pyroxenite, anorthosite and diorite.

Basaltic andesite and gabbro dykes.

Algoma-type iron formation

STRATEGIC METALS LTD.

FIGURE 6

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

PROPERTY GEOLOGY

HARTLESS JOE PROPERTY

0 2

kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: 2020\HARTLESS JOE | DATE: FEBRUARY 2020

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.'/y West

515,000
516,000
6,752,000
6,751,000

EKp
uTrAK1
EKgd
uTrAK2
HJ-19-02
HJ-19-01
HJ-19-05
TR-19-01
mTrJ2
EKr
mTrJ3
mTrJ4
GG FAULT
TR-19-02
HJ-19-03 & -04
mTrJ3
EKr
mTrJ4

2019 diamond drill hole
2018 diamond drill hole
2018 hand trench
Fault

EARLY CRETACEOUS

EKp — Plagioclase-phyric, latite dyke

EKr — Teslin Suite(?) buff to tan, variably pyritic and flow-banded, quartz-eye rhyolite

EKgd — Teslin Suite(?) biotite-hornblende granodiorite

UPPER TRIASSIC

uTrAK1 — Aksala Formation, Casca Member: undifferentiated mudstone, micritic limestone, sandstone and conglomerate

uTrAK2 — Aksala Formation, Hancock Member: resistant, massive to thick-bedded, bioclastic and micritic limestone

MIDDLE TRIASSIC

mTrJ2 — Joe Mountain Formation: chaotic assemblage of volcanic conglomerate with angular clasts, gritty volcanic sandstone, dark siliceous mudstone and rare, medium grey limestone

mTrJ3 — Joe Mountain Formation: feldspar and pyroxene-phyric, pillowed basalt; localy interbedded with mTrJ2

mTrJ4 — Joe Mountain Formation: dark weathering, massive, coarse grained and locally pegmatitic, pyroxene gabbro and diorite

STRATEGIC METALS LTD.

FIGURE 7

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

DETAILED GEOLOGY, DRILL HOLE AND TRENCH LOCATIONS

HARTLESS JOE PROPERTY

0 500
metres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: 2019\HARTLESS JOE | DATE: FEBRUARY 2020

T.N.

15'

20°31'

Grid north

Magnetic north

Annual change decreasing
21.'/y West

515,000

516,000

6,753,000

6,752,000

6,751,000

W591773

W591774

W591775

W591776

W591777

W591778

W591779

W591780

W591781

W591782

W591783

W591784

W591785

W591786

W591787

W591788

W591789

W591790

AREA OF INTEREST

PROPERTY BOUNDARY

0 5

kilometres

STRATEGIC METALS LTD.

FIGURE 8

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

ROCK SAMPLE LOCATIONS

HARTLESS JOE PROPERTY

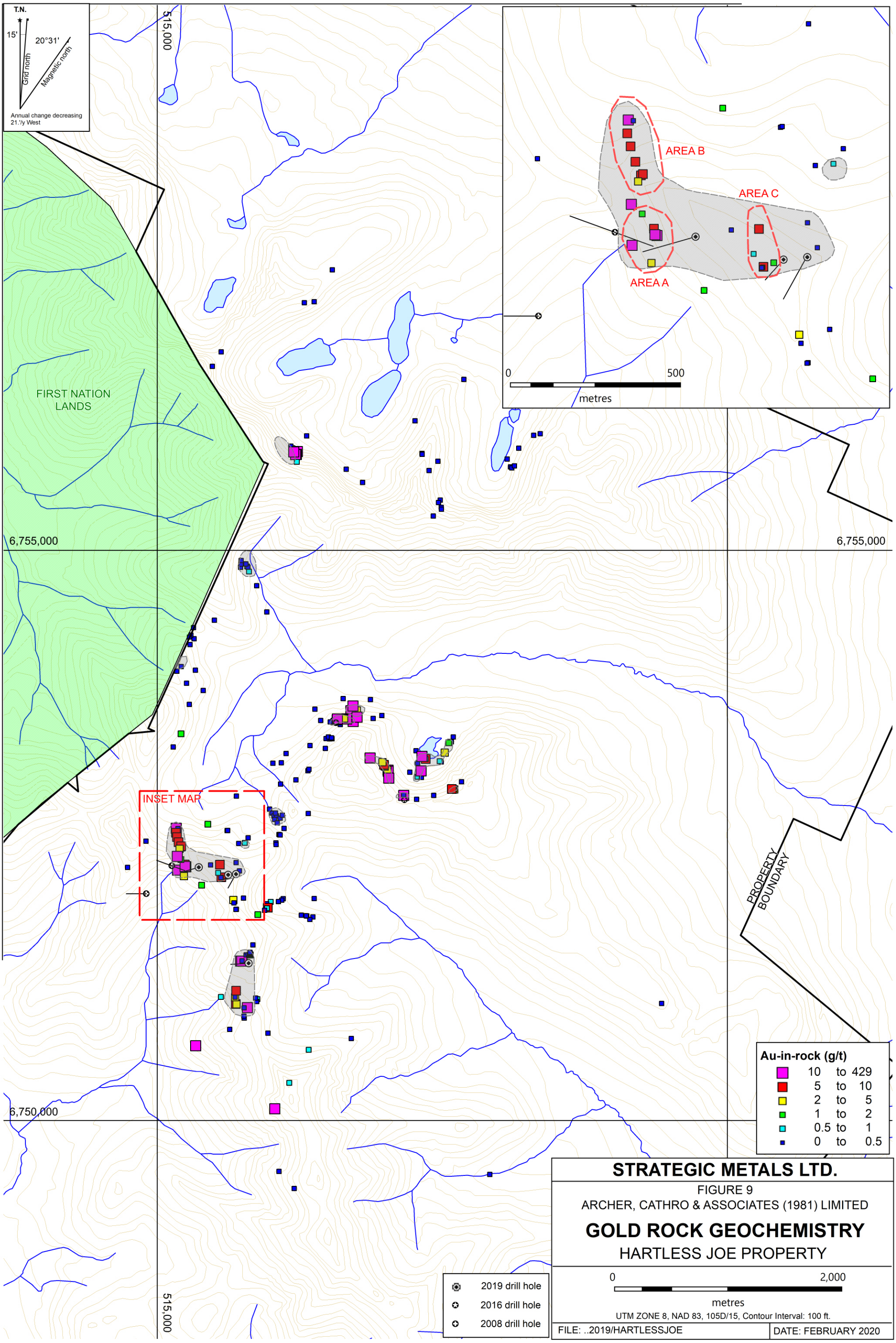
0 500

metres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ..2019/HARTLESSJOE

DATE: FEBRUARY 2020


T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing
21.'/y West
515,000
FIRST NATION
LANDS
6,755,000
6,755,000
AREA B
AREA C
AREA A
0
500
metres
INSET MAP
PROPERTY
BOUNDARY
6,750,000
515,000
Au-in-rock (g/t)
10 to 429
5 to 10
2 to 5
1 to 2
0.5 to 1
0 to 0.5
2019 drill hole
2016 drill hole
2008 drill hole
STRATEGIC METALS LTD.
FIGURE 9
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
GOLD ROCK GEOCHEMISTRY
HARTLESS JOE PROPERTY
0
2,000
metres
UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.
FILE: ..2019/HARTLESSJOE
DATE: FEBRUARY 2020

T.N.

15'

20°31'

Grid north

Magnetic north

Annual change decreasing 21.'/y West

515,000

FIRST NATION LANDS

6,755,000

6,755,000

AREA B

AREA C

AREA A

0

500

metres

INSET MAP

PROPERTY BOUNDARY

6,750,000

515,000

Ag-in-rock (g/t)

100 to	5,780
50 to	100
20 to	50
10 to	20
5 to	10
0 to	5

2019 drill hole

2016 drill hole

2008 drill hole

STRATEGIC METALS LTD.

FIGURE 10

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

SILVER ROCK GEOCHEMISTRY

HARTLESS JOE PROPERTY

0 2,000

metres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ..2019/HARTLESSJOE

DATE: FEBRUARY 2020

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.'/y West

515,000

FIRST NATION LANDS

6,755,000

AREA B
AREA C
AREA A

0
500
metres

INSET MAP

PROPERTY BOUNDARY

6,750,000

515,000

Copper-in-rock (%)
1 to 3.31
0.5 to 1
0.2 to 0.5
0.1 to 0.2
0.05 to 0.1
0 to 0.05

2019 drill hole
2016 drill hole
2008 drill hole
Line

STRATEGIC METALS LTD.

FIGURE 11
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

COPPER ROCK GEOCHEMISTRY

HARTLESS JOE PROPERTY

0
2,000
metres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ..2019/HARTLESSJOE
DATE: FEBRUARY 2020

514,000

515,000

516,000

517,000

6,760,000

6,759,000

6,758,000

T.N.

15'

20°31'

Grid north

Magnetic north

Annual change decreasing 21.'/y West

YY16422
YY16376
YY16421
YY16375
YY16420
YY16372
YY16374
YY16418
YY16373
YY16419
YY16371
YY16417
YY16370
YY16416
YY16369
YY16415
YY16368
YY16414
YY16367
YY16413
YY16366
YY16412
YY16365
YY16411
YY16364
YY16410
YY16363
YY16362
YY16361
YY16360
YY16359
YY16358
YY16357
YY16356
YY16355
YY16354
YY16353
YY16352
YY16351
YY16324
YY16323
YY16322
YY16321
YY16320
YY16319
YY16318
YY16317
YY16316
YY16315
YY16314
YY16313
YY16312
YY16311
YY16310
YY16309
YY16308
YY16307
YY16306
YY16305
YY16304
YY16303
YY16302
YY16301
YY16409
YY16408
YY16407
YY16406
YY16405
YY16404
YY16403
YY16402
YY16401

PROPERTY BOUNDARY

FIRST NATION LAND

STRATEGIC METALS LTD.

FIGURE 12

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

SOIL SAMPLE LOCATIONS

HARTLESS JOE PROPERTY

0 500

metres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARTLESS JOE

DATE: FEBRUARY 2020

514,000
516,000
518,000
520,000
6,758,000
6,756,000
6,754,000
6,752,000
6,750,000

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.1'/y West

PROPERTY BOUNDARY

FIRST NATION LAND

Showing

Gold-in-soil (ppb)
≥100 < 2,230
≥50 < 100
≥20 < 50
≥10 < 20
≥5< 10
0 < 5

STRATEGIC METALS LTD.

FIGURE 13

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GOLD SOIL GEOCHEMISTRY

HARTLESS JOE PROPERTY

0 1
kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARTLESS JOE

DATE: FEBRUARY 2020

514,000
516,000
518,000
520,000
6,758,000
6,756,000
6,754,000
6,752,000
6,750,000

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.7'/y West

PROPERTY BOUNDARY

FIRST NATION LAND

Showing

Silver-in-soil (ppm)
≥5 ≤ 8.6
≥2 < 5
≥1 < 2
≥0.5 < 1
≥0.2 < 0.5
0 < 0.2

STRATEGIC METALS LTD.

FIGURE 14

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

SILVER SOIL GEOCHEMISTRY

HARTLESS JOE PROPERTY

0 1
kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARLTESS JOE

DATE: FEBRUARY 2020

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.'/y West

PROPERTY BOUNDARY

FIRST NATION LAND

514,000
516,000
518,000
520,000
6,758,000
6,756,000
6,754,000
6,752,000
6,750,000

Copper-in-soil (ppm)
- ≥1,000 ≤ 1,955
- ≥500 < 1000
- ≥200 < 500
- ≥100 < 200
- ≥50 < 100
- ≥0 < 50

Showing

STRATEGIC METALS LTD.

FIGURE 15

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

COPPER SOIL GEOCHEMISTRY

HARTLESS JOE PROPERTY

0 1
kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARTLESS JOE

DATE: FEBRUARY 2020

514,000
516,000
518,000
520,000
6,758,000
6,756,000
6,754,000
6,752,000
6,750,000

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.'/y West

PROPERTY BOUNDARY

FIRST NATION LAND

Showing

Arsenic-in-soil (ppm)
- 200 ≤ 1,400
- ≥ 100 < 200
- ≥ 50 < 100
- ≥ 20 < 50
- ≥ 10 < 20
- ≥ 0 < 10

STRATEGIC METALS LTD.

FIGURE 16

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

ARSENIC SOIL GEOCHEMISTRY

HARTLESS JOE PROPERTY

0 1
kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARTLESS JOE

DATE: FEBRUARY 2020

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.1'/y West

PROPERTY BOUNDARY

514,000
516,000
518,000
520,000

6,758,000
6,756,000
6,754,000
6,752,000
6,750,000

FIRST NATION LAND

Lead-in-soil (ppm)
≥ 100 ≤ 247
≥ 50 < 100
≥ 20 < 50
≥ 10 < 20
≥ 5 < 10
0 < 5

Showing

STRATEGIC METALS LTD.

FIGURE 17

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LEAD SOIL GEOCHEMISTRY

HARTLESS JOE PROPERTY

0 1
kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARTLESS JOE

DATE: FEBRUARY 2020

514,000
516,000
518,000
520,000
6,758,000
6,756,000
6,754,000
6,752,000
6,750,000

T.N.
15'
20°31'
Grid north
Magnetic north
Annual change decreasing 21.'/y West

PROPERTY BOUNDARY

FIRST NATION LAND

Showing

Zinc-in-soil (ppm)
≥ 1,000 ≤ 1,420
≥ 500 < 1,000
≥ 200 < 500
≥ 100 < 200
≥ 50 < 100
0 < 50

STRATEGIC METALS LTD.

FIGURE 18

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

ZINC SOIL GEOCHEMISTRY

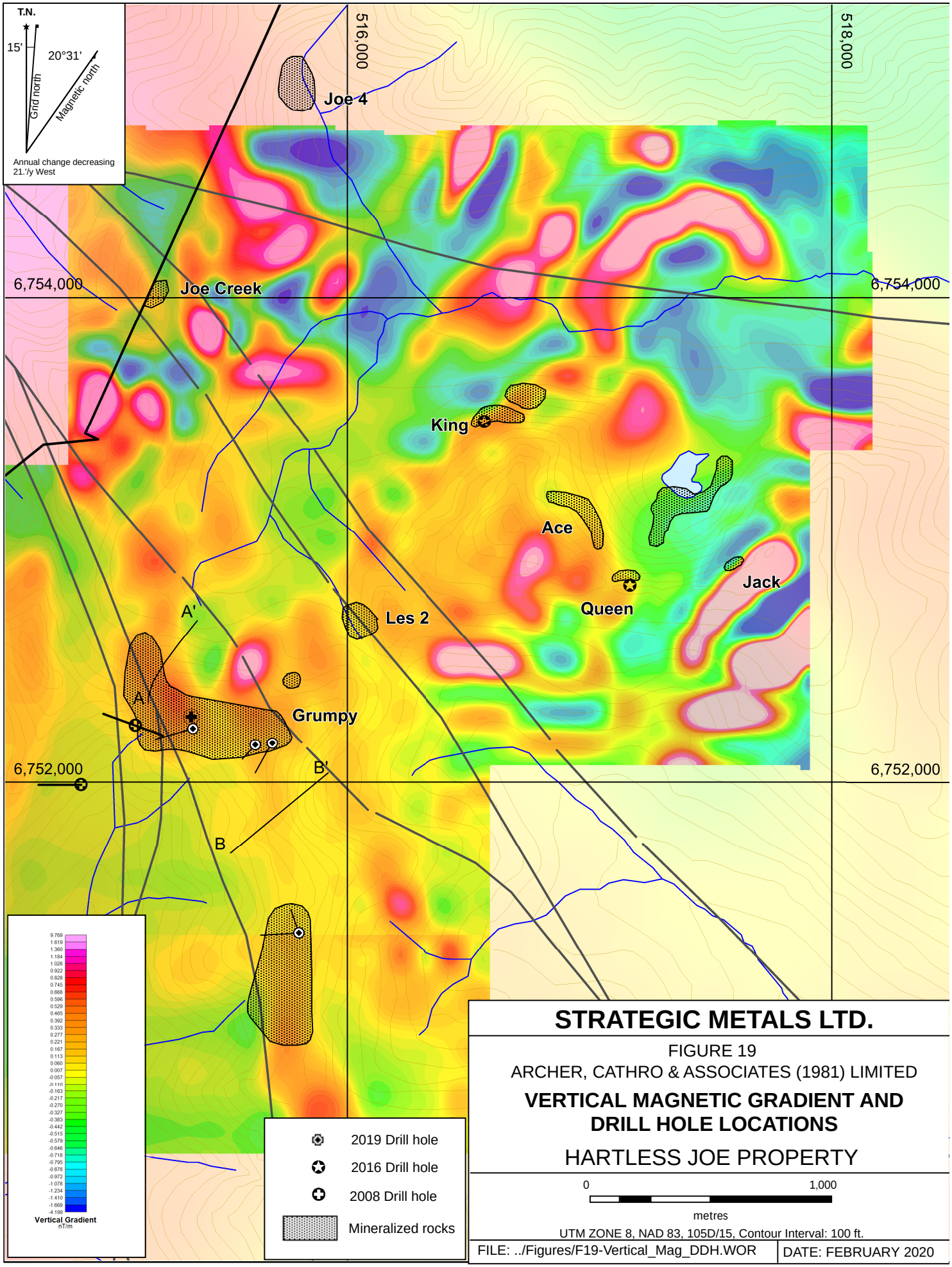
HARTLESS JOE PROPERTY

0 1
kilometres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../2019/HARTLESS JOE

DATE: FEBRUARY 2020



STRATEGIC METALS LTD.

FIGURE 19

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

VERTICAL MAGNETIC GRADIENT AND DRILL HOLE LOCATIONS

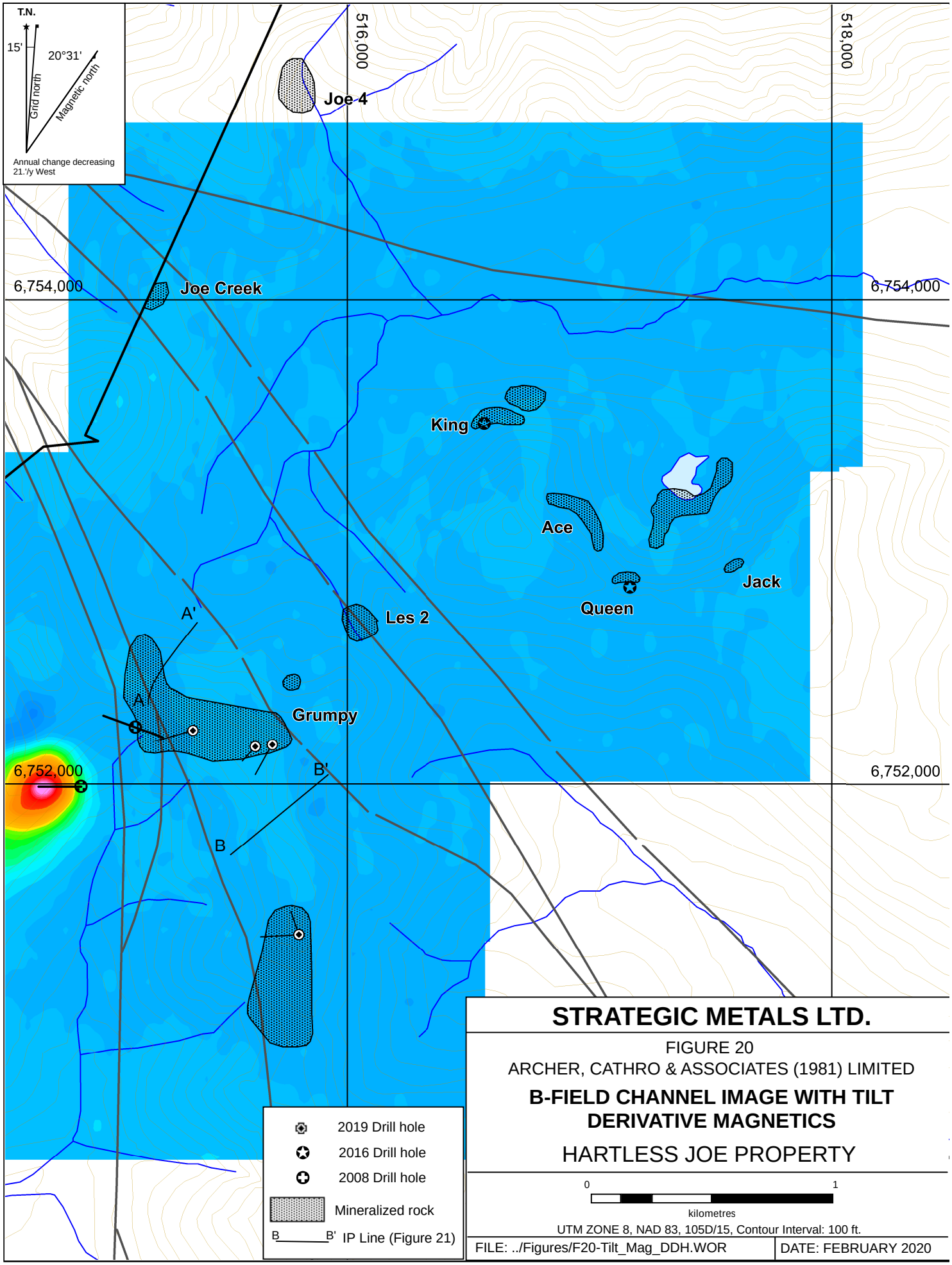
HARTLESS JOE PROPERTY

0 1,000

metres

UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

FILE: ../Figures/F19-Vertical_Mag_DDH.WOR | DATE: FEBRUARY 2020



STRATEGIC METALS LTD.

FIGURE 20

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

B-FIELD CHANNEL IMAGE WITH TILT DERIVATIVE MAGNETICS

HARTLESS JOE PROPERTY

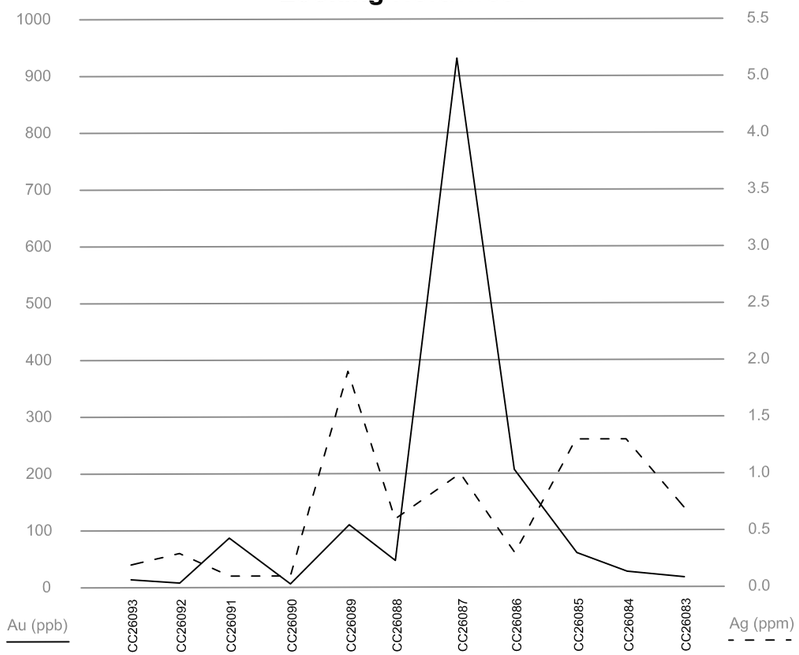
0 1

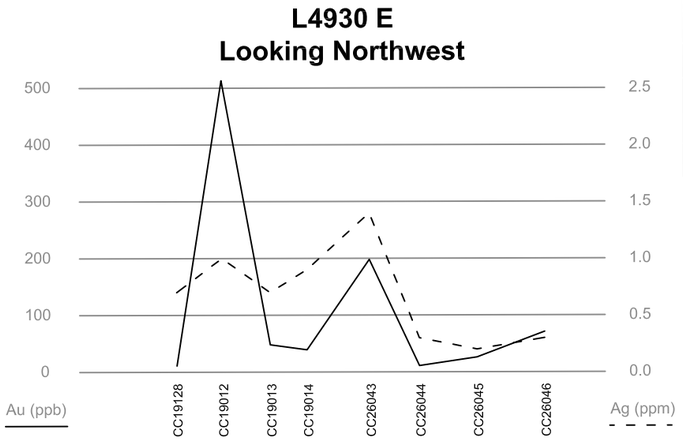
kilometres

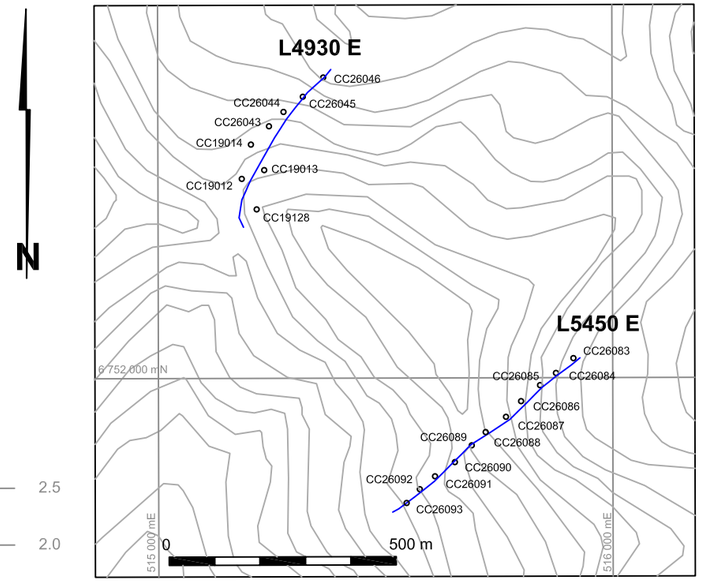
UTM ZONE 8, NAD 83, 105D/15, Contour Interval: 100 ft.

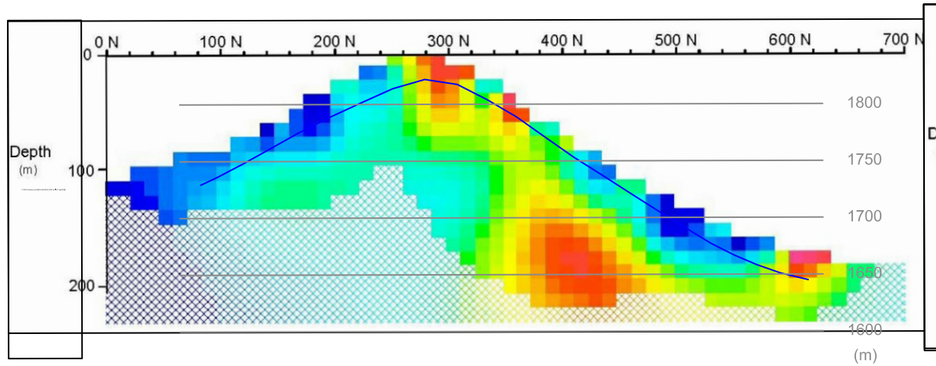
FILE: ../Figures/F20-Tilt_Mag_DDH.WOR

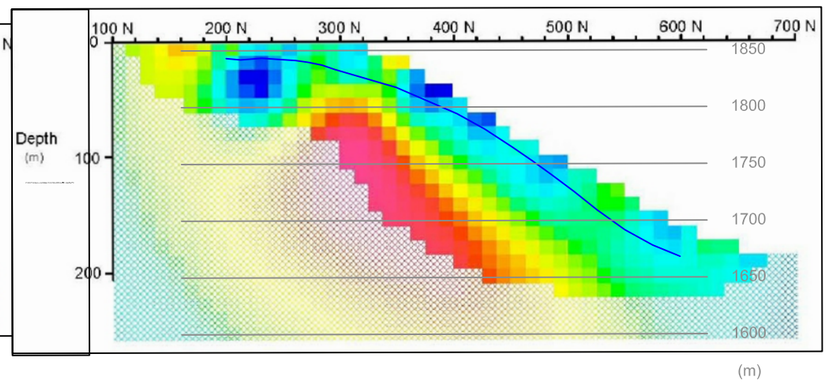
DATE: FEBRUARY 2020











STRATEGIC METALS LTD.

FIGURE 20

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

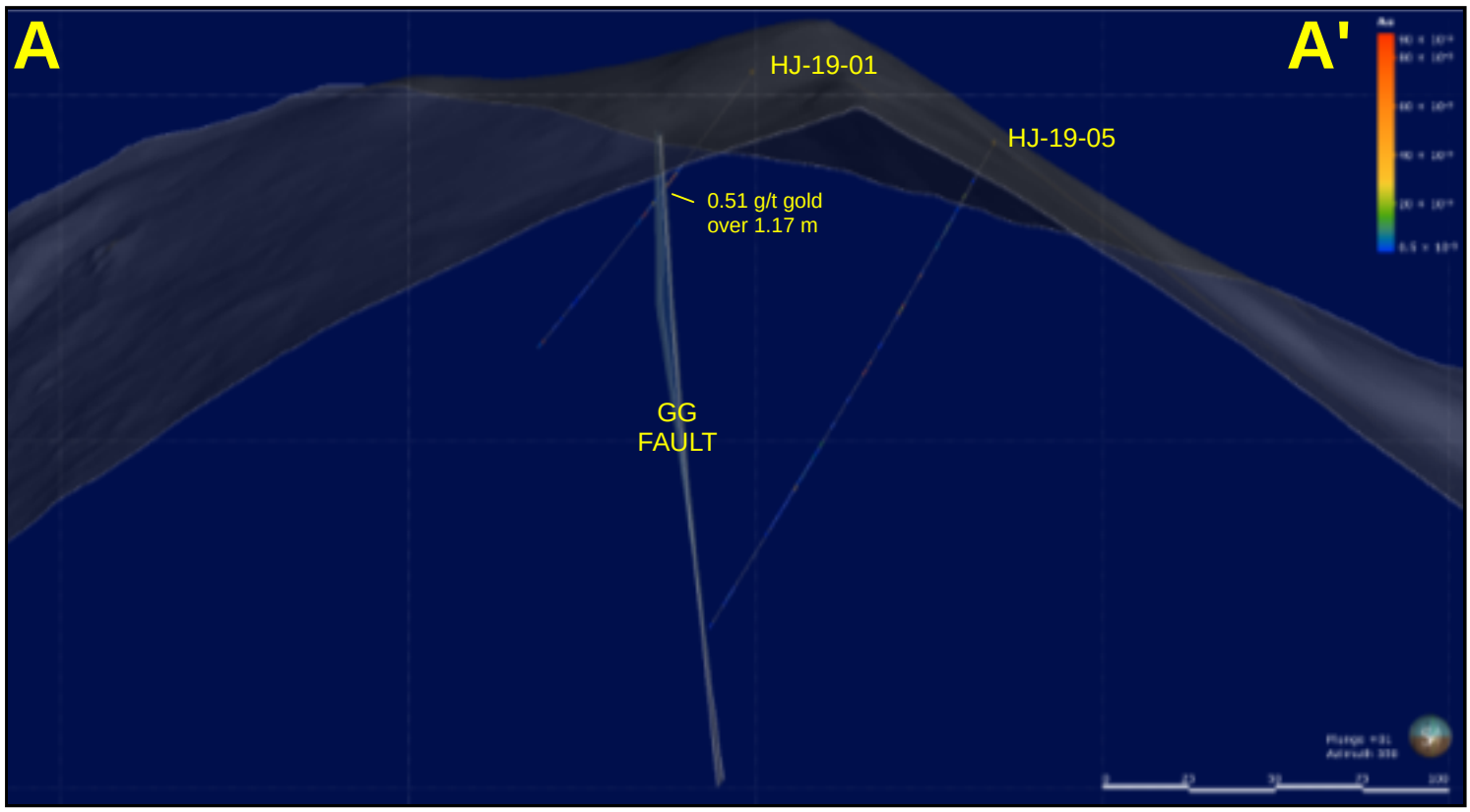
MODELLED CHARGEABILITY

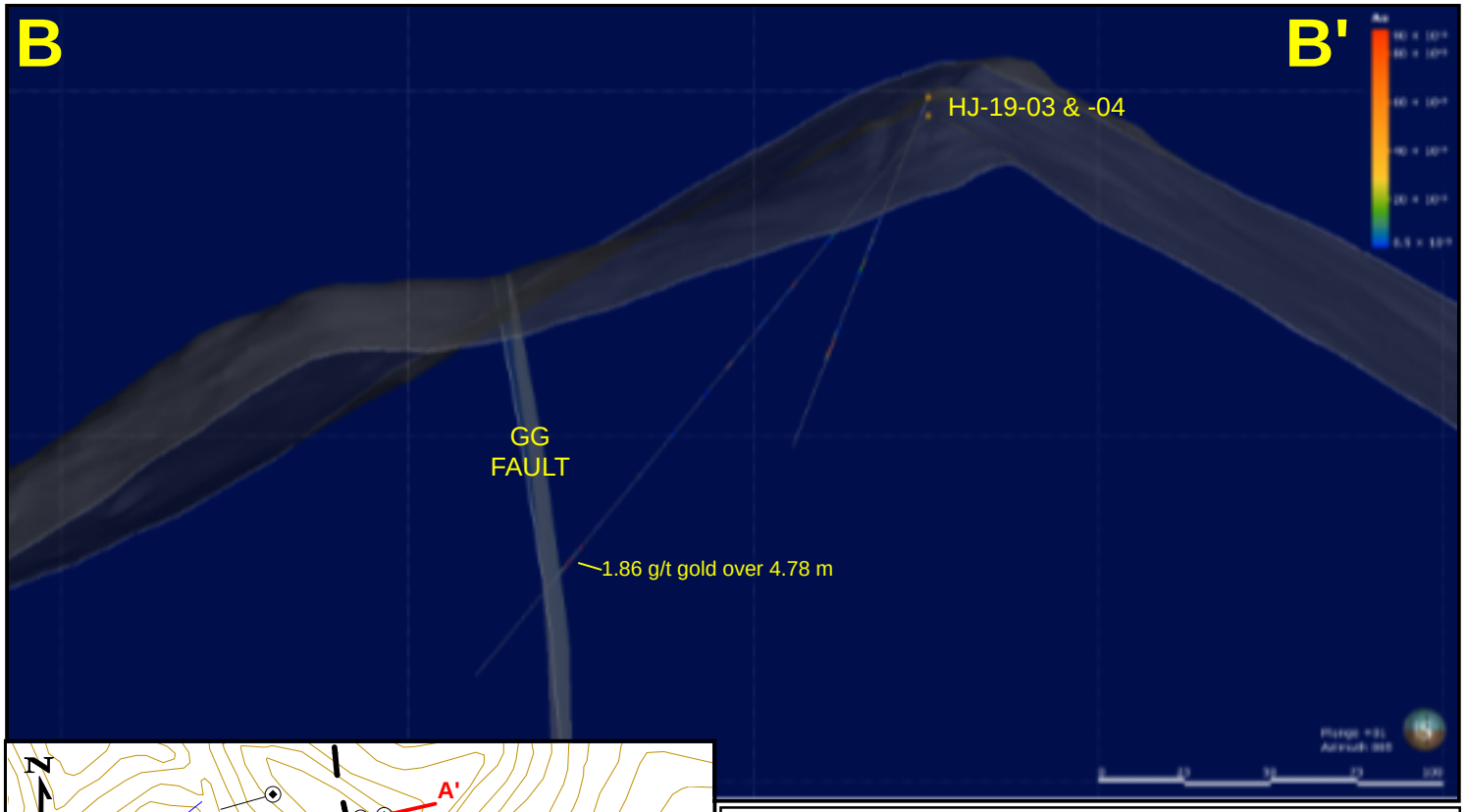
HARTLESS JOE PROPERTY

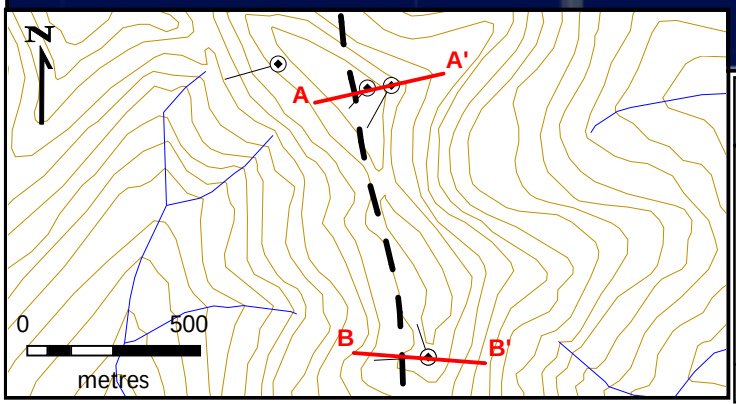
0 500 m

UTM ZONE 8, NAD 83, 115D/15

DRAWN / REVISED BY: MRD	
FILE: 2016/HARTLESSJOE	DATE: MARCH 2019







STRATEGIC METALS LTD.

FIGURE 22

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

2019 CROSS SECTIONS

HARTLESS JOE PROPERTY

FILE: ../Figures/F22-Cross_Sections.WOR	DATE: FEBRUARY 2020