# Updated Mineral Resource Estimate and NI 43-101 Technical Report for the Johnson Tract Project, Alaska

**State of Alaska, USA**
**Iniskin-Tuxedni Region, Kenai Quadrangle**
**Latitude: 60 07' 00" N Longitude: 152 58 40" W**


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## IMPORTANT NOTICE

This report was prepared for HighGold Mining Inc. ("HighGold") and its wholly owned subsidiary J T Mining, Inc. ("J T Mining") by **Ray C. Brown, CPG, James N. Gray, P.Geo., and Lyn Jones, P.Eng.** (the "Authors") for the Johnson Tract Project ("Johnson" or the "Project") located in the State of Alaska, USA. This report was prepared following the guidelines of National Instrument 43-101.

The quality of information and conclusions contained herein is consistent with the level of effort involved in the Consultant's services, based on:

i) information available at the time of preparation,

ii) data supplied by outside sources, and

iii) assumptions, conditions, and qualifications set forth in this report.

This report is intended for use by HighGold to file as a Technical Report with Canadian securities regulatory authorities pursuant to the Canadian Securities Administrators' National Instrument 43-101, *Standards of Disclosure for Mineral Projects,* Companion Policy 43-101CP and form 43-101F1 (collectively, "NI 43-101"). Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party's sole risk. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

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# 1 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION AND TERMS OF REFERENCE

HighGold Mining Inc. retained Ray C. Brown, CPG, James N. Gray, P.Geo., and Lyn Jones, P.Eng. (the "Authors") to produce a Technical Report ("Report") in compliance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101, "Standards of Disclosure for Mineral Projects" (collectively, "NI 43-101"), for the Johnson Tract Project ("Johnson", or the "Project") located in the State of Alaska, USA. This report updates and replaces a previous technical report dated August 9th, 2021. It incorporates new exploration completed since the last report, including an updated mineral resource estimate, and presents new recommendations.

The Project was initially prospected in 1975 during a mineral potential assessment program commissioned by Cook Inlet Region Inc. ("CIRI"). This ultimately led to the selection of the lands by CIRI, including the mineral rights, as part of the Alaska Native Claims Settlement Act. The Project was first drilled in 1982 by Anaconda Minerals Company resulting in the discovery of a gold-silver-zinc-copper-lead mineralized zone, now known as Johnson Tract deposit ("JT Deposit"). The discovery was followed by near-continuous exploration over a 13-year period, including definition of a historic mineral resource, engineering and economic studies, and the identification of multiple other prospects over a 12-kilometer strike length. Prior to HighGold, the Project was last explored in the mid 1990's by Westmin Resources Ltd. ("Westmin") who evaluated direct shipping ore from Johnson to the Premier mill near Stewart, British Columbia, approximately 900 nautical miles to the south.

On June 19th, 2018, Constantine Metal Resources Ltd. ("Constantine") entered into a non-binding letter agreement ("Letter Agreement") with CIRI for the proposed lease rights to the Project. The Letter Agreement was replaced by an exploration and mining lease (the "Lease Agreement") with an effective date of May 17th, 2019. Following completion of a spin-out transaction by way of plan of arrangement under the British Columbia *Business Corporations Act* on August 1, 2019, Constantine transferred its rights under the Lease Agreement and the ownership of its wholly owned US subsidiary J T Mining, Inc. ("J T Mining") to HighGold.

Since acquisition of the Project, HighGold has completed three drill programs for a total of 34,877 meters of drilling, including nine (9) drillholes totaling 2,247 meters in 2019, 37 drill holes totalling 16,422 meters in 2020 and 44 drill holes totalling 16,208 m in 2021. The 2019 drill results were combined with historic drill results to produce the initial mineral resource estimate for the JT Deposit. Drilling results from the 2020 and 2021 field seasons were added to the initial mineral resource and are included in this report.

## 1.2 PROPERTY DESCRIPTION AND OWNERSHIP

The Project is located in southcentral Alaska, 200 kilometers southwest of Anchorage, and 15 km west of Tuxedni Bay, approximately centred at a longitude of 152 58' 40" West and latitude of 60 07' 00" North. The Alaska Native village of Ninilchik (900 pop.) is the closest community to the Project, located 60 km away on the opposite side of Cook Inlet. Anchorage (300,000 pop.), the closest city, is located 200 km to the northeast. The Project area covers 20,942 acres (8,513 hectares) of land within a private inholding of Lake Clark National Park.

The Project area is divided into two blocks; the south block is held in fee simple, including both surface and mineral estate, and the north block is held as mineral estate only. The Project is within the Chignit Mountains, as part of the Alaskan Range. Elevations range from 90 m to 1,200 m. The Project area is covered by topographic map sheet KENAI (A-8), Alaska.

The 8,513 hectares Project was conveyed to CIRI under the terms of the Alaskan Native Claims Settlement Act ("ANSCA") and the Cook Inlet Land Exchange. It consists of 4,626 hectares held fee-simple that includes both surface and mineral estate, and 3,887 hectares of mineral estate only. The Project area is an inholding surrounded by Lake Clark National Park. CIRI's right to transportation easements between the property and Cook Inlet (i.e. through the Park) as well as a port facility are established in law by an act of Congress.

The Lease Agreement between HighGold and CIRI has an "Initial Term" of 10-years, followed by a five-year "Development Term" to achieve a mine construction decision, and then a "Production Term" that will continue for so long as operations and commercial production are maintained. Minimum exploration expenditure and annual lease payments are required to maintain the lease until production. CIRI maintains certain NSR royalty rights and a back-in right for up to a 25% participating interest.

All necessary permits and authorizations are in place for the Company to conduct helicopter-supported drill exploration on both the North and South Tract portions of the Johnson Tract property.

In the Author's opinion, there are no significant environmental or social impediments to exploration and development of the Project, nor any significant existing environmental liabilities. Alaska state and federal regulations for mining and mineral exploration are well established and include a well-defined permitting process. Exploration permits have been successfully obtained historically without issue, and more recently by HighGold in 2019, 2020, 2021 and the first half of 2022.

## 1.3 Access & Infrastructure

The Project is located 200 km southwest of Anchorage, 15 km inland from Cook Inlet and tidewater. A gravel airstrip 800 m long and 30 m wide allows for fixed wing aircraft to access the Project. Snow-free access is generally open from mid June through to mid October. Helicopter is used to access the JT Deposit and surrounding prospects. A gravel road links the airstrip to the Johnson Camp.

## 1.4 History

In 1966, Detterman and Harstock of the United States Geological Survey undertook a regional mapping program, identifying the local lithologies and structures of the western side of Cook Inlet. From 1974 to 1975, Resource Associates of Alaska ("RAA") were contracted by CIRI to prospect the region and evaluate land for selection under the terms of the Alaskan Native Claims Settlement Act ("ANSCA") and the Cook Inlet Land Exchange. A single float boulder with anomalous zinc samples in 1974 led to follow-up work in 1975 tracing the source of the boulder two miles upstream to the Johnson Tract prospect (RAA, 1976).

In 1981, Anaconda and CIRI signed an agreement allowing Anaconda to explore the Johnson Tract Project. Detailed exploration work began in 1981 with rock and stream sediment sampling to delineate the source of gold and base metal anomalies. A breccia pipe and stockwork vein (Cu, Pb, Zn, Ag, Au and Ba) target was identified at Johnson along with an exploration target identified five km to the northeast at Difficult Creek (Wetherell and Ellis, 1982).

Early exploration work advanced the Project towards a maiden drill program in 1982. The discovery of the JT Deposit is accredited to diamond drillhole JM-82-004, which intersected 108.6 meters grading 10.39 g/t gold, 7.64% zinc, 0.71% copper, 2.01 % lead and 8.1 g/t silver, including 48 meters grading 21.1 g/t gold, 9.9% zinc, 0.88% copper, 2.9% lead and 12.3 g/t silver. Between 1982 and 1984, a total of 9,327.3 meters of drilling was completed at the JT Deposit.

During the field seasons of 1983 and 1984, exploration work was conducted at the Difficult Creek Prospect. Work included surface sampling, mapping, IP and magnetic geophysical surveys. In 1983, two (2) drillholes were completed totaling 138.6 meters of drilling. In 1984, seven (7) drillholes were completed at Difficult Creek totaling 1,205.2 meters of drilling. Drilling was successful at intersecting mineralization at depth along the Difficult Creek RAT breccia vein. Drillhole DC-83-002 intersected 36.6 meters of 3.57 g/t gold, 1.8% zinc, 0.2% copper, 0.4% lead and 15.5 g/t silver.

Between 1983 and 1984, project-wide exploration was conducted with detailed surface sampling, mapping and geophysical surveys (IP and magnetics) completed. The results of this work defined several prospects including Easy Creek, Kona, PS, and Double Glacier. From 1981 through to 1985, Anaconda was active in the area before ceasing all company operations globally in 1985.

In 1985, a private developer, Howard B. Keck, leased the Project from CIRI and contracted Hunt, Ware and Proffett ("HWP") to evaluate the Deposit and surrounding prospects. Between 1987 and 1992, a total of 11,414.8 meters of drilling was completed at the Johnson Tract Deposit. Exploration work also included detailed geological and alteration mapping, and airborne EM and magnetics surveys.

Subsequent drilling in 1990 and 1991 focused on defining the limits of the main mineralized body, and in 1992 focused northeast of the JT Deposit for fault offset extensions to the deposit. Mineralization was successfully intersected at the northeast offset ("NEO") that exhibits similar characteristics of the main mineralized body. However, intersections were deeper, narrower and lower grade in comparison to the main Johnson Tract.

In 1993, Keck obtained CIRI's approval to sublease the Project to Westmin Resources Ltd ("Westmin"). Between 1993 and 1995, a total of 5,232.4 meters of drilling was completed on the Project. Westmin carried out extensive economic and engineering studies that evaluated development of a high-grade mine at Johnson Tract (Westmin, 1994). The mine plan included a 900-meter long adit driven from the valley floor that would access the lowermost portion of the deposit. Mining method was a combination of transverse and longitudinal sublevel longhole stoping, and a modified Avoca-style cut and fill. The planed mine rate was 250,000 tonnes per year with all ore direct shipped by barge for milling at the Premier Mill, in British Columbia. Detailed engineering studies were also completed on the proposed 24-km long mine access road and marine ore terminal located in Tuxedni Channel, Cook Inlet. The economic and engineering studies by Westmin and the historical estimates upon which they were based were prepared prior to establishment of NI 43-101 guidelines and reporting standards.

Other work by Westmin included geotechnical, metallurgical and environmental studies, road and port studies, and ground Induced Polarization (IP) geophysical surveys over select targets. In March of 1997, the lease agreement between Keck, Westmin and CIRI was formally terminated. The Project was released to CIRI with no overarching rights or royalties associated with the lease.

Total drilling by all three previous operators (Anaconda, HWP, Westmin) between 1982 and 1995 was 87 drillholes totalling 27,412 meters.

After 1997, no significant field work was completed until HighGold acquired the Project in 2018.

## 1.5 Geological Setting & Mineralization

*Regional Geology*

The Johnson Tract Project lies within the Talkeetna Formation of the Alaska Peninsular Terrane, a 1,000 - 2,500 m thick assemblage of Early Jurassic, intermediate volcanic and volcaniclastic rocks (age based on the abundance of fossil megafauna, Detterman et al., 1966). Thrust onto the western edge of the Talkeetna Formation are plutonic rocks of the Alaska-Aleutian Range Batholith which are dominated locally by quartz diorite, quartz monzonite and tonalite phases with U-Pb zircon ages of 183 - 164 Ma (Rioux et al., 2007). These intrusive rocks are interpreted to be the contemporaneous, plutonic equivalent of the overlying Talkeetna Formation, and together they make up the uppermost part of the Talkeetna Arc.

Within the Project area, the Talkeetna Formation and intrusive rocks to the west are divided by the north-south striking Bruin Bay fault, a regional, transpressional fault system which was likely active in Early Paleogene time (Betka et al., 2017).

*Local Geology*

The Johnson Tract mineralization is hosted within southeast dipping tuffs and sediments of the lower Jurassic Talkeetna Formation, later overlain by middle to upper Jurassic sediments of the Tuxedni, Chinitna and Naknek formations (Rockingham, 1993). A dacite quartz porphyry intrusion that forms part of the Talkeetna Formation borders the southeast extent of the mineralized zone. The western margin of the Project is defined by the Bruin Bay Fault and diorite to quartz monzonite intrusive rocks further to the west.

*JT Deposit*

Mineralization at the main JT Deposit forms a tabular silicified body that contains a stockwork of quartz-sulphide veinlets and brecciation, cutting through and surrounded by a widespread zone of anhydrite alteration (Proffett, 1993). Drilling has defined silicification and mineralization from surface to a vertical depth of approximately 350 meters, over a total strike length in excess of 600 meters, and to a maximum true width of 55 meters. The main body of mineralization is bound on the east by the southeast dipping Dacite fault. The stockwork body consists of a complex system of high-angle 1-10 cm wide veins and breccia zones containing quartz, sphalerite, chalcopyrite, galena, anyhydrite, barite, iron-chlorite and native gold (Steefel, 1987). In addition to veins and diffuse breccias, mineralization is also characterized by massive structureless intergrowths of quartz and sulphides, commonly with very coarse-grained sulphide mineralogy. Veins show characteristics associated with epithermal styles of mineralization. Open fill texture is common and breccias consist of subrounded fragments hosted within a sulphide-silica matrix. Early and relatively minor base metal mineralization (sphalerite) formed with the pervasive anhydrite-chlorite-sericite alteration. Later base (sphalerite-galena-chalcopyrite) and precious metal mineralization formed over several mineralizing events within the silicified stockwork vein zone.

*Difficult Creek (DC) Prospect*

The DC Prospect is located four kilometers northeast of the JT Deposit and is characterized by a series of large gossan alteration zones similar in style to the JT Deposit that collectively extend over a 1.5 km x 3 km area. Gold mineralization and pervasive clay/anhydrite alteration are preferentially developed within dacitic to rhyolitic tuffaceous rocks that underly a shallowly-dipping sequence of lesser altered andesite that is host to a gold- and silver-rich vein field at higher elevations. The widespread extent of mineralization exposed in erosional windows through the andesite supports potential for a large and partially blind mineralized system linking the various DC Prospect zones together. Drilling by the Company at the Middle DC prospect in 2021 intersected significant new mineralization, including **577.9 g/t Au, 2,023 g/t Ag, 2.2% Zn and 0.3% Cu over 6.4 m in hole DC21-010** highlighting the potential of this area.

*Milkbone Prospect*

The Milkbone prospect is located one kilometer southwest of the MDC prospect and is characterized by structural complexity related to the property-scale Milkbone Fault and hosts epithermal-style veins similar to that observed at Upper DC and base metal-rich breccias similar to MDC. Surface sampling has returned values including **14.3 g/t Au**, 6.1% Zn, 4.4% Pb, 0.5% Cu and **11.1 g/t Au** and **68.7 g/t Ag** in vein grab samples, and **4.39 g/t Au** and **8.27 g/t Au** in soil samples immediately to the west of the Milkbone Fault.

*Kona Prospect*

The Kona prospect is located 2.5 kilometers north of the JT Deposit and is characterized by large (0.5 x 1.0 km) zone of sericite-pyrite (± quartz) alteration that is cored by a large quartz-pyrophyllite alteration zone. Mapped alteration closely correlates with a strong IP chargeability high with a smaller, circular magnetic high on its eastern margin.

### *Easy Creek Prospect*

The Easy Creek prospect is located four kilometers north of the Milkbone prospect along the trace of the Milkbone Fault. Alteration at the EC prospect is extensive and appears to show similarities with the Kona Creek prospect, both of which are associated with strong IP chargeability anomalies that extend over a large area. Mineralization is characterized by anomalous copper and gold values hosted within sericite-pyrite (± quartz) altered dacitic to rhyolitic volcanic and volcaniclastic rocks intruded by a quartz-diorite plug.

### *Other Prospects*

Seven (7) additional prospects occur over a 13-km long trend, located in and immediately adjacent to the Johnson Tract mineral holdings. All are hosted within the Talkeetna formation volcanic sequence, with many sharing similar alteration and metal assemblage attributes to the JT Deposit. Prior to 2019, most prospects had received little more than first-pass evaluation as 2021 field work saw continued extensive exploration sampling at DC, Milkbone, Kona, and EC prospects.

## 1.6 Deposit Types

A range of potential deposit models have been proposed for Johnson, from a feeder-zone beneath a sea-floor Volcanogenic Massive Sulphide deposit, to Epithermal, to the possibility of mineralization being significantly younger than the host volcanic rocks and instead related to regional intrusive activity and/or structures. Available data currently supports mineralization being roughly coeval with the volcanic stratigraphy whereby the JT Deposit formed in the sub seafloor in a shallow submarine environment, whereas some other prospects, such as the Difficult Creek, likely forming in a subaerial environment and exhibit more classic epithermal vein characteristics.

## 1.7 Exploration

Following the completion of the Johnson Tract Letter Agreement in June 2018, HighGold's subsidiary J T Mining carried out initial exploration activity focused on validating historic results by previous operators, digitizing historic data, familiarizing the Company with the Project area and geology, and making camp upgrades. Preliminary field programs in 2019 and 2020 focused on the JT Deposit area, known regional prospects and identifying new target areas through geological mapping, rock/soil/stream geochemical sampling, ground-based DCIP geophysical surveying, and property-wide photogrammetry.

In 2021, the Company completed surface exploration programs concurrent with the mineral resource expansion drill program at the JT Deposit with the objective of assessing the potential for new zones of high-grade mineralization across the district-scale JT property. Geological mapping and rock and soil geochemical sampling focused primarily on underexplored regional prospects including the Milkbone, greater Difficult Creek ("DC"), EC and Kona prospects. The Company also completed 31 line-km of ground-based direct-coupled induced polarization ("DCIP") geophysical surveys and 267 line-km of detailed airborne drone magnetic ("Drone Mag") surveys.

The 2021 surface exploration successfully outlined multiple priority target areas for future drilling related to the prospective six-km long regional Milkbone Fault system on the Northern Tract while also advancing the geological knowledge base for the Project. Encouraging assay results have been returned in both rock and soil sampling across the length and breadth of the Property. The Milkbone prospect and the plus one km long corridor between it and the bonanza-grade drill hole DC21-010 intercept at the Middle DC prospect to the northeast emerged as a priority target area for the Company with strong supporting surface geochemistry, including soils up to **8.3 g/t Au** and rock samples up to **184 g/t Au**. The Milkbone fault is also associated with gold mineralization at the Easy Creek prospect, located 6 km north of DC, where a large (1.5 x 2 km) and strong IP chargeability anomaly has been defined that is coincident with anomalous soil geochemistry, rock samples up to **29 g/t Au**, large-scale hydrothermal alteration and a circular magnetic anomaly (associated with an intrusive plug). The Kona prospect, bearing a similar geophysical signature to Easy Creek, is located somewhat lower stratigraphically than DC and the JT Deposit and may represent a portion of the deeper roots of the large-scale Johnson Tract mineralized system.

In summary, the surface exploration results generated by the Company from 2019 to 2021 have now identified widespread, robust and diverse styles of mineralization over an area several square kilometers in size across the Johnson Tract project area. Collectively, these emerging prospects define a mineralized district at Johnson Tract with the potential for multiple deposits.

## 1.8 DRILLING

The Company completed a nine (9) drillhole program totaling 2,247 meters in 2019 followed by a 37 drillhole program totalling 16,422 meters in 2020. The main focus for the initial two seasons was JT Deposit Infill and expansion, the NE Offset target, and the North Alteration Trend. Relogging and infill sampling of historic core was also completed currently during both field seasons.

In 2021, the Company completed a 44 drillhole program totalling 16,208 meters which focused on the JT Deposit Expansion (25 holes), the DC Prospect (seventeen (17) holes, and the Kona Prospect (two (2) holes). Relogging and infill sampling of historic core continued again in 2021.

The 2021 drill program was successful in demonstrating the impressive width and high-grade continuity of the JT Deposit. Infill and expansion drilling on the JT Deposit was successful in extending mineralization down-dip/down-plunge to the north-northeast. Holes JT21-124, 125 and 134 provided an opportunity to infill key portions of the JT Deposit and also collect necessary material for a metallurgical testwork program. Step-out drilling also expanded the portions of the JT Deposit, which remains open along strike and at depth. Hole JT21-123 on Section 525N intersected zinc-rich VMS-style mineralization and provided insight into new styles of mineralization.

The Au-Cu-Zn-Ag-Pb mineralization associated with the JT Deposit has now been defined over a total strike length of 600 meters and remains open along strike to the northeast and southwest, and at depth. The true thickness of the JT Deposit typically ranges from 20 to 55 meters. Highlights from the 2021 infill and expansion drilling on the JT Deposit included:

- **4.3m at 13.1 g/t Au**, 200 g/t Ag, 4.9% Zn, 2.0% Pb, and 0.35% Cu, in hole JT21-123,
- **56.6m at 18.7 g/t Au,** 2.4% Zn, and 0.47% Cu, in hole JT21-125, and
- **84.7m at 4.7 g/t Au,** 4.6% Zn, 1.6% Pb and 0.3% Cu, in hole JT21-134

Discovery of very high-grade Au/Ag mineralization at the Middle DC Prospect, four km north of the JT Deposit, has been an important new development for the Project, establishing a second center of high-grade mineralization at Johnson Tract and highlighting the potential for additional deposits on the greater property. Hole DC21-010, the first hole completed by the Company at the Middle DC Prospect, targeted a mineralized silicified breccia known as the "Rizzo Vein" and returned exceptional grades including

- **6.4m at 577.9 g/t Au**, **2,023 g/t Ag**, **2.15% Zn, and 0.30% Cu**

The potential for discovery of additional mineralization in the immediate area of the JT Deposit is considered very good and follow-up exploration drilling is clearly warranted. The JT Deposit is open to expansion and systematic step-outs down-plunge and along strike are recommended. Ongoing drill testing of the DC prospect and other property-wide prospects such as the Milkbone, Kona Creek and Easy Creek prospects is recommended.

Total drilling by the Company from 2019 to 2021 is 92 drillholes totaling 34,877 meters.

Total drilling by all Operators from 1982 to 2021 is 179 drillholes totaling 62,289 meters.

## 1.9 Sample Preparation & Analysis

Samples were prepared, collected and packaged by properly trained and supervised HighGold employees and contractors at a secure location on site. Sample security was undertaken in accordance with acceptable methods and standards used in the mineral exploration industry. The sampling methodology applied by HighGold is considered appropriate for the styles of mineralization identified at the Johnson Tract Project.

The 2021 drill program consisted of half-cut core for a total of 8,399 drill core samples, including 245 duplicates and 844 standards and blanks. The quality control program developed by HighGold for this Project is considered adequate and has been overseen by a qualified geologist. It is the Author's opinion the data acquired by HighGold for the Johnson Tract Project was acquired using industry best practices for an exploration stage project and are adequate for mineral resource estimation.

## 1.10 Data Verification

Verification of historic data included re-surveying drillhole collar locations, comparing drill core against drill log descriptions, review of downhole survey data, comparison of assay certificates to drill core and database, and re-sampling of historic drillholes. The Author was able to verify that the historic drill logs, assays data, collar location data, and downhole survey data are generally reliable and representative for use in mineral resource estimation.

## 1.11 METALLURGICAL TESTING

Metallurgical testwork on samples from the Johnson Tract Deposit has been carried out in several test programs since 1983. The most recent, at Blue Coast Research, was initiated in October 2021. The work focused on a master composite sample from two drill holes, JT21-125 and JT-134, in the mineralized zone completed in the 2021 campaign. The objectives of the program were to further develop the flowsheet and evaluate metal grades and recoveries of the potential end products.

The 2021 composite graded 11.9 g/t Au, 6.2 g/t Ag, 0.52% Cu, 1.3% Pb, and 5.1 % Zn. Mineralogical characterisation indicated that at a $P_{80}$ (80% passing size) of 100 µm the contained chalcopyrite and sphalerite were well liberated, whereas galena and pyrite were moderately liberated. Grindability testing revealed that the composite was moderately hard with a Bond Ball Work Index (BBWI) value of 16.6 kWh/t.

A flowsheet was developed consisting of a primary grind to a $P_{80}$ of 125 µm followed by sequential flotation of copper, lead, and zinc. The zinc rougher tailings would be reground to a $P_{80}$ of 55 µm to improve pyrite liberation prior to a final flotation step to recover a pyrite concentrate with gold credits. A locked cycle flotation test was conducted to evaluate the flowsheet under closed circuit conditions, with the projected final product streams summarized in **Table 1.1.** Overall gold recovery is estimated to be **97.3%.**

***Table 1.1 JT Deposit – Projected Metallurgy Based on the Results of the LCT-1 on Composite JT21MET-001***

| Product | Weight | Assays | | | | | Distribution, [%] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | [%] | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | Au | Ag | Cu | Pb | Zn |
| Cu Concentrate | 1.47 | **276** | 70.7 | **30.6** | 2.11 | 3.94 | **32.7** | 15.3 | **84.5** | 2.4 | 1.1 |
| Pb Concentrate | 1.51 | 220 | 94.9 | 1.42 | **62.1** | 15.1 | 26.9 | 21.1 | 4.0 | **72.4** | 4.3 |
| Zn Concentrate | 9.30 | 10.4 | 26.0 | 0.31 | 2.85 | **52.6** | 7.8 | 35.5 | 5.5 | 20.4 | **92.3** |
| Au (Py) Concentrate | 3.56 | **64.3** | 23.7 | 0.38 | 0.70 | 1.52 | **18.5** | 12.4 | 2.6 | 1.9 | 1.0 |
| Combined Tailings | 84.2 | 2.17 | 1.9 | 0.04 | 0.08 | 0.10 | 14.0 | 15.7 | 3.5 | 2.9 | 1.2 |
| **Calculated Head** | **100** | **12.4** | **6.8** | **0.53** | **1.30** | **5.29** | **100** | **100** | **100** | **100** | **100** |

The locked cycle test achieved good concentrate grades and recovery for all products. Cyanidation testwork was carried out on both the gold-pyrite concentrate and the pyrite rougher tailings and achieved gold extractions of 93% and 81%, respectively. Gravity concentration has also been demonstrated as an effective means to recover up to a quarter of the gold prior to flotation. Further testwork is recommended to optimize the flowsheet, the primary grind size, and the overall recovery of pay metals.

## 1.12 MINERAL RESOURCE ESTIMATES

The mineral resource estimate documented here is an update of the initial JT Deposit Resource dated June 15th, 2020. The initial estimate used data from 52 NQ and HQ sized diamond drill holes (15,930 m) in generating the geological model for the JT Deposit, 37 of which intersected the interpreted mineralized zones in 3,394 m of core with a total of 2,239 assays inside the mineralized solids.

This Johnson Tract Deposit updated resource estimate is based on assay data available as of April 6$^{th}$, 2022. A total of 120 NQ and HQ sized diamond drill holes (42,575 m) were used in generating the geological model for the JT Deposit, 75 of which intersected the interpreted mineralized zones in 7,633 m of core with a total of 5,078 assays inside the mineralized solids.

A total of 63 new holes (26,728 m) have been completed at the JT deposit area by HighGold since the initial 2020 resource, including 52 new holes (20,256 m) used in the geologic model and 29 holes (12,704 m) that intersect the resource domains. Additional holes by previous operators along strike to the northeast were also used in generating the new geological model and subsequent resource estimate.

Three new geologic domains were created (JT Deposit (JT)), Footwall Copper Zone (FCZ) and JT Extension (JT Ext) using Seequent Leapfrog Geo®'s Intrusion and Vein modeling software by Nathan Steeves, PhD, HighGold - Chief Exploration Geologist, and reviewed by Ian Cunningham-Dunlop, P.Eng., HighGold - Senior Vice President, Exploration. The JT and FCZ domains were further subdivided into 'higher grade' (JT HG and FCZ HG) and 'lower grade' (JT LG and FCZ LG) subdomains. Along strike to the northeast, the JT Extension (JT Ext) domain consists of six distinct thin tabular wireframes. Domain extents are limited to material that can be correlated within geologically continuous, definable zones. Wireframes are snapped to sample intervals or to logged lithologic intervals where no samples exist. Where not constrained by drilling or faulting, domains were extended approximately 25 meters from a drill hole, except where geology supports extension between holes in the trend of mineralization. The majority of the mineral resource is contained within the JT HG domain. The JT HG domain consists of a single solid that is a steeply dipping, 25 to 70 meters thick, and extends 125 to 200 meters along strike and 250 meters vertically, with a moderate to steep plunge to the northeast. This domain was defined using logged heavily veined and brecciated silicified intervals and refined using a 2 g/t AuEq cut-off.

Grade capping is used to control the impact of extreme, outlier high-grade samples on the overall resource estimate. Assay histograms and probability plots were examined to determine levels at which values are deemed outliers to the general population. Cap values were applied by metal, by mineralized zone prior to compositing.

Assays were composited to a target length of 1.5 meters within the bounds of the mineralized wireframes. A 1.5 m composite length was chosen based on the fact that that was the dominant sample length for assays in total as well as within most mineralized solids.

The JT HG and JT LG domains were the only mineralized zones with sufficient numbers of composites to calculate meaningful variograms. In these two domains, spatial continuity of capped composite data was analysed using Supervisor® software. For each metal, directions of continuity were determined from variogram maps. The nugget effect and sill contributions were derived from down-hole experimental variograms followed by final model fitting on directional variogram plots. Grades were estimated by ordinary kriging in the Johnson Domain and by inverse distance weighting in the other less densely drilled domains. Gold, silver, copper, lead and zinc grades were estimated using Geovia GEMS® software.

Six hundred and fifteen (615) density measurements were made on historic and 2019 Johnson Tract core samples, during the 2019 field season. Review of these data led to the decision to use an average of 2.84 $t/m^3$ for mineralized material included in this estimate.

Estimated grades for all elements were validated visually by comparing composite to block values in plan view and on cross-sections. There is good visual correlation between composite and estimated block grades for all modelled elements. Nearest neighbour (NN) validation models were also estimated for all metals using search parameters consistent with those used for resource estimation. In the Johnson Domain, where the resource estimate was by ordinary kriging (OK), inverse distance models were also estimated as a validation tool. Grade models were compared spatially using swath plots. The OK estimates are appropriately smooth in comparison to the nearest neighbor model. Globally, model average grades above zero cut-off compare very closely indicating no bias

The resource estimate for the JT Deposit is reported in both indicated and inferred categories. Estimated blocks were initially classified based on spatial parameters related to drill spacing and configuration – namely calculated drill density and the distance to the closest composite. Blocks were initially assigned as inferred if drilled at a maximum spacing of 100 m or within 30 m of the closest sample. Within that volume, blocks having a maximum drill spacing of 40 m were initially classified as Indicated Mineral Resource.

Measures were then taken to assess the contiguous nature of classified blocks at a range of cut-off grades, such that the resource has reasonable prospects of eventual economic extraction by underground mining methods. Blocks classified as mineral resource have a minimum contiguous volume corresponding to 10 6x6x6 m blocks - a volume deemed to be a reasonable selective mining unit in an underground mining scenario. The Indicated Mineral Resource is entirely within the JT Domain. Small volumes of the JT Extension and Footwall Copper Domains are included in the Inferred category.

The JT Deposit Mineral Resource and corresponding contained metal is presented **Table 1.2**. The resource estimate for the JT Deposit is reported in both indicated and inferred categories. There is no portion of the mineralized zones that is considered to comprise measured resources at this time.

The economic underground mining cut-off is calculated to be 2.5 g/t AuEq derived from assumed operating cost of $65/t for mining, $35/t processing and $20/t G&A and accounting for transport and smelter charges. HighGold elected to report this mineral resource at a higher cut-off grade of 3.0 g/t Au, given the high-grade nature of the deposit. The **3.0 g/t AuEq cut-off** is deemed appropriate to meet the test of reasonable prospects for eventual economic extraction based on costing for a hypothetical mining scenario that assumes underground ramp access, long hole mining methods, conventional milling and sequential flotation of concentrates followed by leaching of the tails. The mineral resource estimate is constrained to mineralization with adequate width, shape and continuity to support the assumed mining method and excludes isolated or discontinuous blocks.

*Table 1.2 JT Deposit - Mineral Resource Estimate by Domain (3.0 g/t AuEq Cut-Off)*

| Domain | Indicated | | | | | | | Inferred | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tonnes (1,000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) | Tonnes (1,000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) |
| JT Main | 3,489 | 5.33 | 6.0 | 0.56 | 0.67 | 5.21 | 9.39 | 405 | 1.86 | 4.5 | 0.32 | 0.35 | 4.29 | 4.94 |
| JT Ext'n | | | | | | | | 167 | 1.15 | 6.1 | 0.31 | 0.38 | 5.50 | 4.96 |
| Copper | | | | | | | | 134 | 0.14 | 26.5 | 1.74 | 0.08 | 2.20 | 3.95 |
| **Total** | **3,489** | **5.33** | **6.0** | **0.56** | **0.67** | **5.21** | **9.39** | **706** | **1.36** | **9.1** | **0.59** | **0.30** | **4.18** | **4.76** |

**Contained Metal**

| Domain | Indicated | | | | | | | Inferred | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Au (K oz) | Ag (K oz) | Cu (M lb) | Pb (M lb) | Zn (M lb) | AuEq (K oz) | | Au (K oz) | Ag (K oz) | Cu (M lb) | Pb (M lb) | Zn (M lb) | AuEq (K oz) |
| JT Main | | 598 | 673 | 43.1 | 51.5 | 400.8 | 1,053 | | 24 | 59 | 2.9 | 3.1 | 38.3 | 64 |
| JT Ext'n | | | | | | | | | 6 | 33 | 1.1 | 1.4 | 20.2 | 27 |
| Copper | | | | | | | | | 1 | 115 | 5.2 | 0.2 | 6.5 | 17 |
| **Total** | | **598** | **673** | **43.1** | **51.5** | **400.8** | **1,053** | | **31** | **207** | **9.2** | **4.7** | **65.1** | **108** |

*Notes*

1. *Includes all drill holes completed at JT Deposit, with drilling completed between 1982 and most recently as October 2021*
2. *Assumed metal prices are US$1650/oz for gold (Au), US$20/oz for silver (Ag), US$3.50/lb copper (Cu), US$1/lb lead (Pb), and US$1.50/lb for zinc (Zn)*
3. *Gold Equivalent ("AuEq") is based on assumed metal prices and payable metal recoveries of 97% for Au, 85% for Ag, 85% Cu, 72% Pb and 92% Zn from metallurgical testwork completed in 2022.*
4. *AuEq equals = Au g/t + Ag g/t × 0.01 + Cu% × 1.27 + Pb% × 0.31 + Zn% × 0.59*
5. *An average bulk density value of 2.84 used as determined by conventional analytical methods for assay samples*
6. *Capping applied to assays to restrict the impact of high-grade outliers*
7. *Preliminary underground constrains were applied, including the elimination of isolated or scattered blocks above cut-off grade to define the "reasonable prospects of eventual economic extraction" for the Mineral Resource Estimate*
8. *Mineral resources as reported are undiluted*
9. *Mineral resource tonnages have been rounded to reflect the precision of the estimate*
10. *Readers are cautioned that mineral resources that are not mineral reserves do not have demonstrated economic viability*

## 1.13 Interpretations & Conclusions

The Johnson Tract Project is an exploration stage project with a long history of exploration and project related work, most notably by Anaconda (1981 - 1985) and Westmin Resources (1993 -1995) followed by over 20 years of little to no work before HighGold re-initiated exploration and drilling activities in 2019. During the first three years (2019-2021) of exploration and drilling activities by the Company, historic results have been confirmed, the mineral resource inventory has grown, and detailed metallurgical studies have been completed.

Detailed geological field analysis along with 62 km of drilling between 1982 to 2021 have culminated in a robust understanding of the Johnson Tract "JT" project, centered around the high-grade gold-silver-zinc-copper-lead mineral resource at the JT Deposit. Mineralization at the JT Deposit forms a tabular silicified body that contains a stockwork of quartz-sulphide veinlets and brecciation, cutting through and surrounded by a widespread zone of anhydrite alteration. Mineralogy is relatively simple, consisting of sphalerite, galena, chalcopyrite, and pyrite at moderate to coarse grain sizes.

The 2021 surface exploration program continued to highlight the prospectivity of the six-km long Milkbone Fault system and associated splays with encouraging precious and base metal rock and soil geochemistry. Ongoing field investigations at the Difficult Creek, Milkbone, Kona Creek and Easy Creek prospects is warranted to advance these targets to the drilling stage.

The 2021 drill program was successful in demonstrating the impressive width and high-grade continuity of the high-grade Au-Cu-Zn-Ag-Pb JT Deposit which is now defined over a strike length of 600 meters and remains open along strike to the northeast and southwest, and at depth. The potential for the discovery of additional mineralization in the immediate area of the JT Deposit is considered very good and follow-up exploration drilling is warranted. Initial drilling at the Middle DC prospect returned 'bonanza grade results in hole DC21-010 and follow-up drilling at this target should be a top priority for 2022 along with further drill testing of other property-wide prospects such as the Milkbone, Kona Creek and Easy Creek prospect.

The 2021-2022 metallurgical testwork program projected an overall gold recovery of >97% with base metal recoveries ranging from 80-90% to separate copper, zinc and lead concentrates. The majority of the gold reports to the flotation concentrates with the remainder recovered from CIL leaching of the tails and the lead concentrate. Deleterious elements generally occur in low concentrations.

The Authors have reviewed the exploration data and geological model provided by the Company for the Johnson Tract Project, and this review suggests that the exploration data accumulated is generally reliable for the purposes of mineral resource estimation. Mineral resources for the JT Deposit have been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" Guidelines.

In the opinion of the Authors, the block model resource estimate and mineral resource classification reported herein are a reasonable representation of the gold-copper-zinc-silver-lead mineral resources found at the JT Project. After validation and classification, the Authors consider that the mineral resources are appropriately reported at a cut-off of 3.0 g/t AuEq considering the likely underground mining scenario envisioned for the Project. Mineral resources, however, are not mineral reserves and hence do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource documented in this report will be converted into a mineral reserve. The total mineral resources defined on the Project are classified as Indicated and Inferred. Additional infill drilling will continue to increase the confidence and classification of the mineral resources. All mineral resources are open, and there is very good potential for expansion of the deposit. The potential for discovery of additional deposits in other regions of the Project is considered to be excellent.

## 1.14 Recommendations

Based on the encouraging 2021 exploration and metallurgical results and the updated JT Deposit mineral resource, the Authors believe that additional drilling is warranted to continue to expand and refine the JT Deposit along strike and at depth coupled with ongoing testing for the potential faulted extension to the JT Deposit and the drilling of new property-wide prospects. The potential to discover additional mineralized zones within the greater Johnson Tract Project, especially at the MDC and Milkbone prospects, is considered excellent.

The recommended work plan should be phased, with an initial Phase 1 budget totalling **$9.76M USD** and including a minimum 13,000-meter diamond drill program testing both JT Deposit area targets and regional prospects, ongoing surface exploration to bring new targets to the drill-ready stage, additional metallurgical work to test JT Deposit variability, the initiation of preliminary environmental baseline and engineering studies, and ongoing stakeholder and community relations.

The scope and budget of a Phase 2 work plan would be conditional on the results of the Phase 1 work plan. For the purpose of conceptual level planning, it is assumed the plan would consist of a nominal **$15M USD** budget that includes an expanded exploration drill program and engineering and economic studies.

# 2 INTRODUCTION

The Johnson Tract Project ('the Project') is located 200 kilometers southwest of Anchorage, Alaska. The Project covers 20,942 acres of land within a private inholding of Lake Clark National Park (
) and includes port and transportation easement rights to Cook Inlet. The Project area is divided into two blocks; South Tract held in fee simple, and North Tract held as mineral estate only. Both blocks are held by Cook Inlet Region Incorporated ("CIRI"), an Alaskan Native corporation. On June 19th, 2018, Constantine Metals Resources Ltd. ("Constantine") entered into a letter agreement (the "Letter Agreement") with CIRI for the proposed lease rights to the Johnson Tract Project (Constantine, 2018). The Letter Agreement was replaced by an exploration and mining lease (the "Lease Agreement") with an effective date of May 17th, 2019. Following completion of a spin-out transaction by way of plan of arrangement under the British Columbia *Business Corporations Act* on August 1st, 2019*,* Constantine transferred its rights under the Lease Agreement and the ownership of its wholly owned US subsidiary J T Mining, Inc. ("J T Mining") to HighGold.

The Project was first drilled in 1982 by Anaconda Minerals Company ("Anaconda") resulting in discovery of a gold-silver-zinc-copper-lead deposit, now known as Johnson Tract. The discovery was followed by near-continuous exploration over a 13-year period, including definition of an historic mineral resource, engineering and economic studies, and the identification of multiple other prospects over a 12-kilometer strike length. The Project was last explored in the mid 1990's by Westmin Resources Ltd. ("Westmin") who evaluated direct shipping ore from Johnson to the Premier mill near Stewart, British Columbia, approximately 900 nautical miles to the south.

Since acquisition of the Project HighGold has completed three drill programs for a total of 18,667.6 meters of drilling, including nine (9) drillholes totaling 2,246.5 meters in 2019, 37 drill holes totalling 16,421.1 meters in 2020, and 44 drill holes totalling 16,208 meters in 2021. The 2019 drill results were combined with historic drill results to produce the initial mineral resource estimate for the JT Deposit.

This report updates and replaces a previous technical report dated August 9th, 2021. It incorporates new exploration completed since the last report, includes new metallurgical testwork and an updated mineral resource.

## 2.1 SOURCES OF INFORMATION

The historic material and data used in this report was collected and provided by CIRI. Most of the background information was derived from an internal engineering and economic modeling study completed by Westmin Resources (1994) and a summary report completed by CIRI in 1997. Located in Anchorage, CIRI has stored a catalogue of over 1,242 files relevant to the Johnson Project, collected over an approximately 20-year period of exploration and development (1975 to 1995). All of the current files were reviewed for the purpose of this report. All documentation reviewed and included as sources of information are listed in Section 27 (References).

Discussions were held with Dr. John M. Proffett, an independent consultant who has been involved with the Project since the late 1980's.

The Authors visited the site and reviewed the active drill program from September 11th to 13th, 2019, July 9th to 12th, 2020, August 11th to 14th, 2020, , June 28th to July 2nd, 2021, June 29th to July 1st, 2022, and July 29th to August 1st, 2022.

## 2.2 Units & Currency

Metric units are used throughout this Technical Report.

Assay and analytical results for trace elements and precious metals such as gold ("Au") and silver ("Ag") are quoted in grams per metric tonne ("g/t"), parts per million ("ppm"), or parts per billion ("ppb"). 1 g/t is the equivalent of 1 ppm and 1000 ppb. Analyses for major elements and base metals such as zinc ("Zn") and copper ("Cu") are reported in weight percent ("%"). 10,000 ppm or g/t is the equivalent to 1 %.

Unless otherwise specified, all dollar amounts are expressed in United States Dollars ("USD").
Unless otherwise specified, all coordinates are presented in **UTM NAD83 within zone 5N.**

***Table 2.1*** **List of Units used in this Report**

| Measurement Type | Unit | Abbreviation | Si Conversion |
|---|---|---|---|
| Area | acre | acre | 4,046.86 m2 |
| Area | hectare | ha | 10,000 m2 |
| Area | square kilometer | km2 | (100 ha) |
| Area | square mile | mi2 | 259.00 ha |
| Concentration | grams per metric ton | g/t | 1 part per million |
| Concentration | troy ounces per short ton | oz/ton | 34.2855 g/t |
| Length | foot | ft | 0.3048 m |
| Length | meter | m | Si base unit |
| Length | kilometer | km | Si base unit |
| Length | centimeter | cm | Si base unit |
| Length | mile | mi | 1,609.34 km |
| Length | yard | yd | 0.9144 m |
| Mass | gram | g | Si base unit |
| Mass | kilogram | kg | Si base unit |
| Mass | troy ounce | oz | 31.10348 g |
| Mass | metric ton | T, tonne | 1000 kg |
| Time | million years | Ma | million years |
| Volume | cubic yard | cu yd | 0.7626 m3 |
| Temperature | degrees Celsius | °C | Degrees Celsius |
| Temperature | degrees Fahrenheit | °F | °F=°C x 9/5 +32 |

*Table 2.2 List of Frequently used Abbreviations and Acronyms*

| Acronym | Name |
|---|---|
| AA | Atomic Absorption Spectrometry |
| Ag | Silver |
| ANCSA | Alaska Native Claims Settlement Act |
| As | Arsenic |
| Au | Gold |
| Ba | Barium |
| CIRI | Cook Inlet Region Incorporated |
| cpy | Chalcopyrite |
| cm | centimeter |
| COG | Cut-Off grade |
| DC | Difficult Creek |
| DCIP | Direct Current Induced Polarization |
| DDH | Diamond Drillhole |
| DG | Double Glacier |
| E | East |
| EC | Easy Creek |
| FA | Fire Assay |
| g/t | Grams per tonne; 31.1035 grams = 1 troy ounce |
| HC | Hungryman Creek |
| IC | Interim Conveyed |
| ICP | Inductively Coupled Plasma |
| JT | Johnson Tract |
| K | Thousand |
| K-Ar | Potassium-Argon |
| kg | Kilogram = 2.205 pounds |
| km | Kilometer = 0.6214 mile |
| LDC | Lower Difficult Creek |
| LOD | Limit of Detection |
| m | Meter = 3.2808 feet |
| Ma | Million years old |
| MB | Milkbone |
| MDC | Middle Difficult Creek |
| Mo | Molybdenum |
| µm | Micron = one millionth of a meter |
| N | North |
| NN | Nearest Neighbour |
| NSR | Net Smelter Royalty |

| | |
|---|---|
| OK | Ordinary Kriging |
| oz | Troy ounce (12 oz to 1 pound) |
| Pb | Lead |
| ppm | Parts per million |
| ppb | Parts per billion |
| PS | PS Prospect |
| py | Pyrite |
| QA/QC | Quality Assurance/Quality Control |
| S | South |
| sph | Sphalerite |
| SV | South Valley |
| t | metric tonne |
| UDC | Upper Difficult Creek |
| UTM | Universal Transverse Mercator |
| W | West |
| Zn | Zinc |

# 3 RELIANCE ON OTHER EXPERTS

The Author has not performed an independent verification of land title and tenure information or the legality of any underlying agreements that may exist concerning the Johnson Tract Project as summarized in Section 4 of this report, but has relied on Stoel Rives LLP, as expressed in a title report provided to J T Mining, Inc. on October 27th, 2021. This title report specifically relates to CIRI Lands in T1N R21W and T1S R21W, SM (the "Lands"), which constitute the entirety of the Project. Effort was made to review the information provided for obvious errors and omissions; however, the Author is not responsible for any errors or omissions relating the legal status of the Lands described within this report. The reliance applies solely to the legal status of the rights disclosed in Section 4.1 and legal agreements in Section 4.3.

The Author was informed by HighGold that there are no known litigations potentially affecting the Property.

# 4 PROPERTY DESCRIPTION AND LOCATION

The Project is located in southcentral Alaska, 15 km west of Tuxedni Bay, Cook Inlet approximately centred at a longitude of 152 58’ 40” West and latitude of 60 07’ 00” North. The Alaska Native village of Ninilchik (900 pop.) is the closest community to the Project, located 60 km away on the opposite side of Cook Inlet. Anchorage (300,000 pop.), the closest city, is located 200 km to the northeast.

The Project area covers 20,942 acres of land within a private inholding of Lake Clark National Park ( ). The Project area is divided into two blocks; the south block is held in fee simple, and the north block is held as mineral rights only. The Project is within the Chigmit Mountains, as part of the Alaskan Range. Elevations range from 90 m to 1,200 m. The Johnson Tract deposit is located at a surface elevation of 535 m. The Project area is covered by topographic map sheet KENAI (A-8), Alaska.

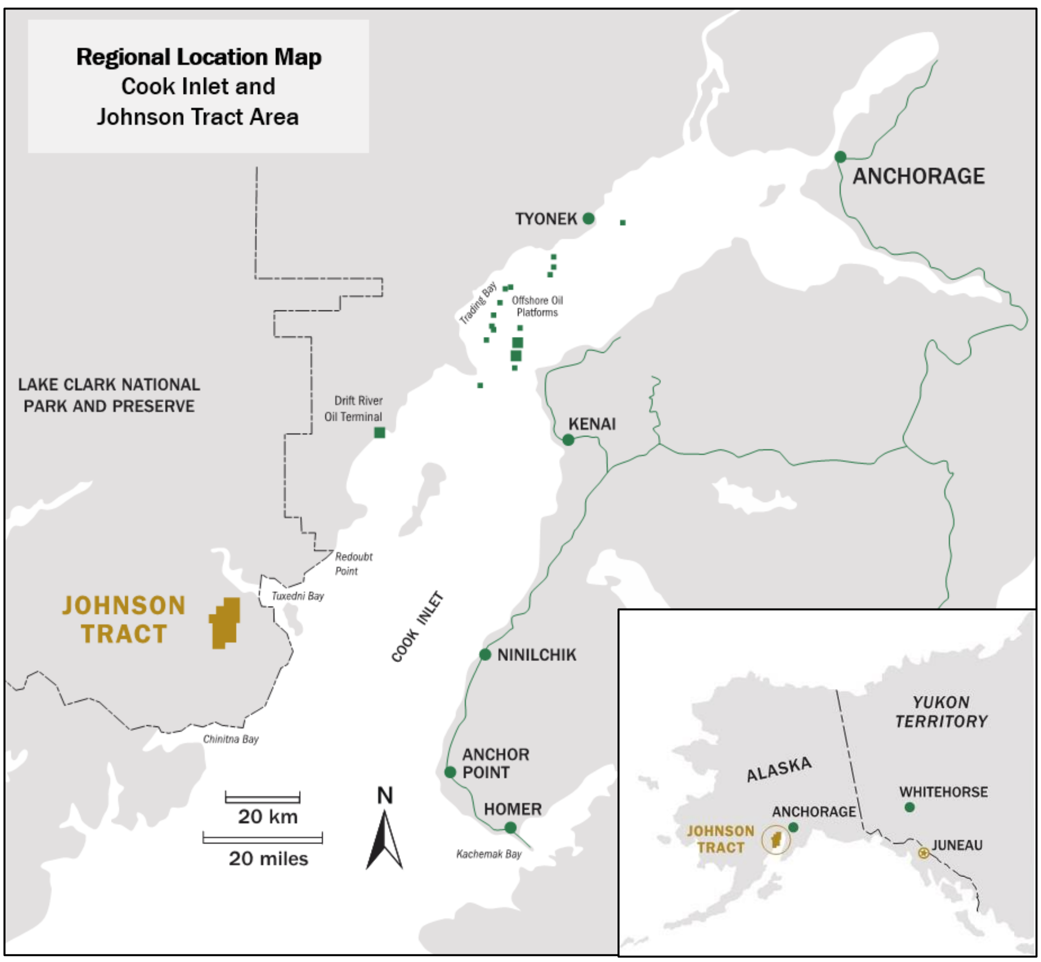


*Figure 4.1 Location of the Johnson Tract Project*

## 4.1 LAND STATUS

The 8,513-hectare (20,942 acre) Project is composed of two adjacent area blocks as shown in **Figure 4.2**:

- The southern block (South Tract) totals 4,626 hectares (11,342 acres) of a fee simple land package, hosting the known JT Deposit, the existing airstrip and camp, and
- The northern block (North Tract) totals 3,887 hectares (9,600 acres) of mineral estate and hosts several prospects.

The Project area is an inholding in Lake Clark National Park and the property was conveyed to CIRI under the terms of the Alaskan Native Claims Settlement Act ("ANSCA") and the Cook Inlet Land Exchange. Ratified by an act of Congress and approved by the Alaska Legislature in 1976, CIRI is entitled to mutually agreed upon transportation and port easements through Park lands for mineral extraction. **Table 4.1** summarizes the characteristics of the North and South Tracts (the "Lands").

South Tract Area Description (Fee Simple, Surface and Mineral Estate)
Seward Meridian, Alaska, T1S, R21W
Township 1 South Range 21 West
Sections 3 to10, inclusive,
Sections 15 to 22, inclusive,
Sections 29 and
Section 30,

North Tract Area Description (Mineral Estate Only)
Seward Meridian, Alaska, T1N, R21W
Township 1 North, Range 21 West
Sections 13, 14, and 15,
Sections 22 to 28, inclusive, and
Sections 32 to 36, inclusive

***Table 4.1 Johnson Tract Properties***

| Tract | Land Status | Area (hectare) |
|---|---|---|
| **North** | Mineral Estate | 3,887 |
| **South** | Surface & Mineral Estate | 4,626 |
| Total | | **8,513** |

A title report titled ***"Title Report on CIRI Lands in T1N R12W and T1S R21W, SM"*** was completed by Stoel Rives LLP for J T Mining, Inc. on October 27th, 2021 (Monroe, 2021) that confirms ownership and status of the Johnson Tract properties.

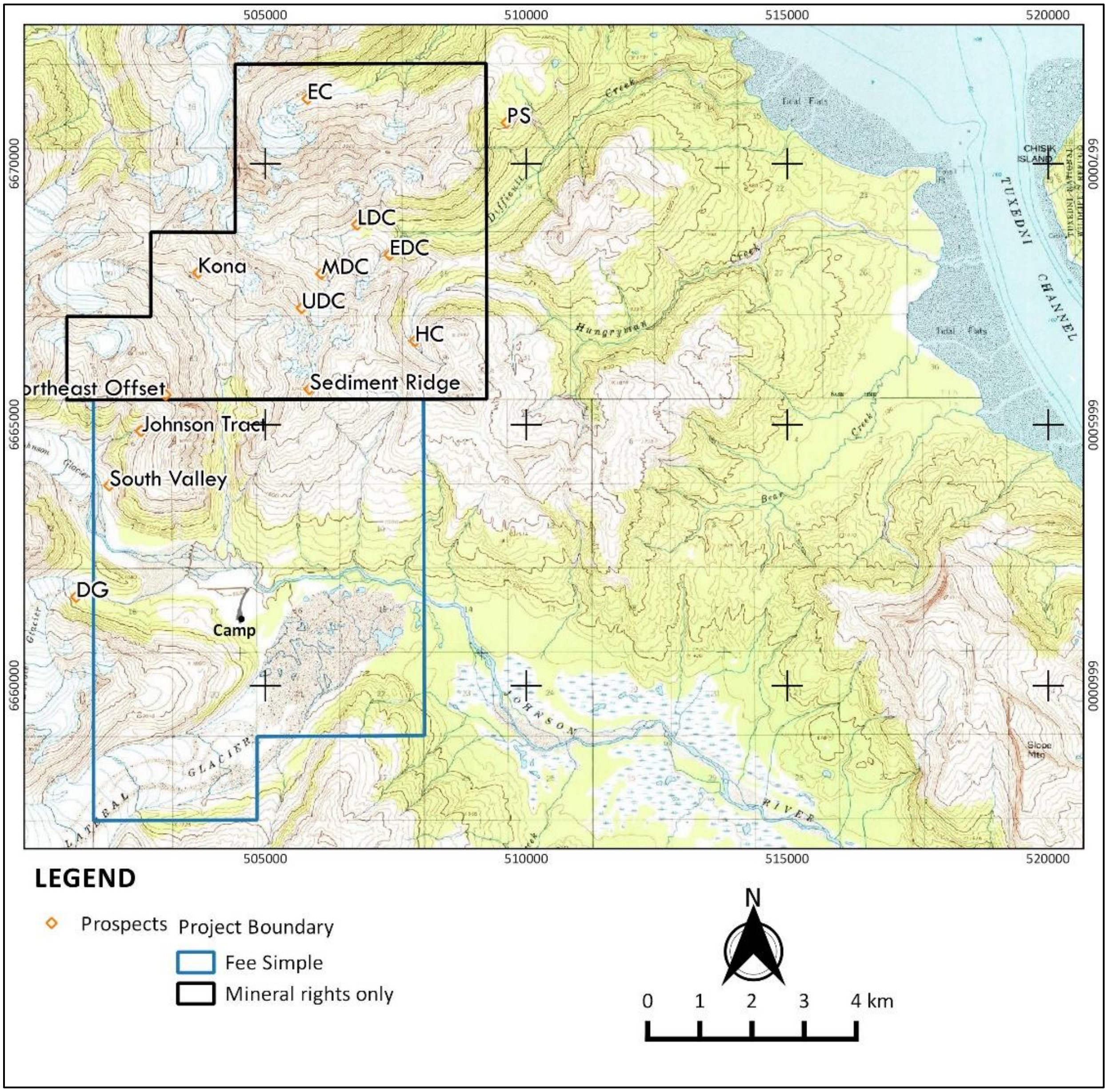


***Figure 4.2 Claim Map of the Johnson Tract Project***

## 4.2 LAND STATUS HISTORY

The Johnson Tract is owned by Cook Inlet Region, Inc. (CIRI) and is situated within the broader Cook Inlet region. CIRI's traditional lands encompass some of the most developed lands in Alaska. Consequently, the mechanism established by the Alaska Native Claims Settlement Act (ANCSA) in 1971 for Native land selections did not work in the region. Much of the land in the area was occupied by private ownership, municipalities, and boroughs, or had been prior selected by the State of Alaska. Much of what remained was mountaintops and glaciers. Seeking fair treatment, CIRI worked through the courts to remedy the lack of available selections of "customary and traditional lands". A long negotiation process followed between the United States Department of Interior, the State of Alaska, and CIRI, culminating in the Cook

Inlet Land Exchange, the largest land exchange agreement in American history. The Terms and Conditions for Land Consolidation and Management in the Cook Inlet Area ("the Agreement") were enacted into federal law in January of 1976 (PL 94-204) and approved by the Alaska Legislature in March 1976.

Among other things, the Agreement facilitated the creation of Lake Clark National Park and conveyance to CIRI of a well-known mineral prospect within Park boundaries. This prospect, known as Johnson Tract, was divided into two blocks of roughly equal size: The North Tract and the South Tract. CIRI received subsurface title to the North Tract, and both surface and subsurface title to the South Tract. In the North Tract, it was agreed that surface use for the purpose of exploration and extraction would occur pursuant to a surface use plan approved by the Department of Interior. The South Tract agreement was subject to a covenant that the surface estate could only be used for purposes incident to mining and mineral extraction. The North and South Tracts were conveyed to CIRI by the Bureau of Land Management on May 14th, 1979 and March 10th, 1982, respectively.

Enabled by the Cook Inlet Land Exchange, Congress formally established Lake Clark National Park and Preserve in 1980 pursuant to Section 201(7) of ANILCA, significantly expanding the land base as compared to the original Park proposal. The expansion was made possible because CIRI and its villages relinquished selections previously made under ANCSA for significantly less acreage in different, sometimes less desirable areas. The creation of the Park specifically excluded privately owned lands such as those held by CIRI. The surface lands of the North Tract are to be administered by the Park in a manner consistent with CIRI's ownership of the subsurface estate.

Details on the conveyance and restrictive covenants can be found in Sections I.D.(2) and (3) of the December 10th, 1975 Terms and Conditions for Land Consolidation and Management in the Cook Inlet Area agreed between CIRI and the Federal Government and ratified by Congress on January 2nd, 1976 by enactment of Section 12 of PL 94-204.

Revenues CIRI receives from any commercial mineral production in the Johnson Tract will be subject to the 7(i) and 7(j) provisions of ANCSA which provides for the sharing of such revenues among other Alaska regional and village corporations.

## 4.3 JOHNSON TRACT LEASE AGREEMENT

HighGold, through it's wholly owned US subsidiary J T Mining, holds a Lease Agreement with CIRI with an effective date of May 17th, 2019.

The Lease Agreement is for the Lease Rights to the Project area totaling 20,942 acres, as defined in Section 4.1. The Lease Agreement is for an initial 10-year term ("Initial Term"), followed by a five-year term ("Development Term") to achieve a mine construction decision, and a production term that will continue for so long as operations and commercial production are maintained. Terms of the Lease Agreement include annual lease payments of US$ 75,000 for the first five (5) years, increasing to US$ 150,000 for year six (6) and onward, until production is achieved. A pre-feasibility study or feasibility study of the Project must be completed by the tenth anniversary of the effective date of the Lease Agreement. A commitment of US$ 10 million in expenditures is required within the Initial Term, including at least US$ 7.5 million spent within the first six (6) years.

During the Development Term, a commitment of US$ 2 million in expenditures per year is required until a mine construction decision is achieved. Certain accrual and carry-forward provisions for excess expenditures are included in both the Initial Term and Development Term.

To May 17th, 2022, the second anniversary of the Lease Agreement, HighGold has reported **US$ 20,355,957** in total exploration expenditures on the Project.

Upon completion of a feasibility study and a decision to construct a mine, CIRI has the one time right to back-in to the Project and participate to a maximum 25% interest. CIRI will also receive NSR royalties of 2% (pre-Payback) to 3% (post-Payback) on base metals and a gold price adjusted NSR royalty of: 2.5% (<$1,250/oz Au); 3.0% (<$1,500/oz Au); 3.5% (<$2,000/oz Au); or 4% (>$2,000/oz).

## 4.4 PERMITTING

Permitting for the Project varies between the North and South Tracts owing to different landowners. They are discussed separately here and summarized in Error! Reference source not found.**.**

Certain authorizations from the State of Alaska apply to both the North and South Tracts, including a Temporary Water Use Authorization (**TWUA F2018-113)(Amendment #2)** that authorizes withdrawal of water to support drilling and **Alaska Permit to Mine Application #3253** that approves the operations permitted under the approved reclamation plan. Both authorizations are valid until December 31st, 2022. The Company has filed for **Amendment #3** to allow for additional water sources on the North Tract to support drilling activities and approval is currently pending at the time of writing of this report. The TWUA is also supported by **Fish Habitat Permit FH22-II-0099** which is valid until December 31st, 2026.

### 4.4.1 PERMITTING - SOUTH TRACT

Both the mineral and surface estates are owned by CIRI on the South Tract. Access and exploration of the South Tract are authorized in the Lease Agreement between CIRI and J T Mining. The South Tract includes the camp, airstrip and the currently defined JT Deposit Mineral Resource. The Company holds various annual permits related to the JT camp kitchen and associated wastewater disposal systems.

### 4.4.2 PERMITTING – NORTH TRACT

For the North Tract, the mineral estate is owned by CIRI and the surface estate is public land administered by the Department of Interior National Park Service. As a result, surface land use permits are required from the Park Service for work on the North Tract. The Park Service permits certain helicopter-supported exploration activities, including geochemical sampling geologic mapping and geophysics through a Special

Use Permit that is applied for on an annual basis. The Park Service issued **Special Use Permit 2022-LACL-SUP-004** on July 8th, 2022 with expiry of October 31st, 2022 for these activities.

For drill activities, the Park Service permits access through a Right of Way Certificate of Access ("RWCA"). An environmental assessment under the National Environmental Policy Act was completed for HighGold's RWCA application submitted in September 2020. The Park Service issued a **RWCA Permit LACL-21-001** on April 26th, 2021 for drilling activities on the North Tract. The RWCA Permit authorizes up to 150 drill pad sites and is valid until October 31st, 2028. A reclamation bond of US$ 145,547 has been posted as a condition of the RWCA permit.

***Table 4.2 JT Project – Summary of Active Permits***

| Permit/Authorization | Number | Duration | Issused Date | Expiry Date |
|---|---|---|---|---|
| | | | | |
| Hardrock Exploration & Reclamation - Mining Application | APMA #3253 | 4 Years | 25-Jun-18 | 31-Dec-22 |
| | | | | |
| Special Use Permit (SUP) - North Tract | 2022-LACL-SUP-004 | 1 Year | 10-Jul-22 | 31-Oct-22 |
| | | | | |
| ANILCA 1100(b) Right of Way Certificate of Access Permit (RWCA) | LACL-21-001 | 7 Years | 26-Apr-21 | 28-Oct-28 |
| | | | | |
| Temporary Water Use Authorization (TWUA) | Amendment # 2 | 1 Year | 8-Sep-21 | 31-Dec-22 |
| Temporary Water Use Authorization (TWUA) | Amendment # 3 | | Pending | |
| | | | | |
| Fish Habitat Permit (FHP) | FH22-II-0099 | 4 Years | 22-Jun-22 | 31-Dec-26 |
| | | | | |
| Alaska Food Code 2022 Establishment Permit | 10376 | 1 Year | 30-Jun-22 | 31-Dec-22 |
| Construction & Operation Certificate for Wastewater Disposal Systems | ADEC File No.: 2636.45.001 | 2 years | 29-Jun-22 | 29-Jun-24 |
| | | | | |
| Johnson Tract Project Tier I Spill Prevention Control & Countermeasure | JT Tier 1 SPCC | 1 Year | NA | NA |
| | | | | |

## 4.5 Project Land Use Requirements and Plans

Exploration and mining are consistent with known land use requirements and plans. In the North Tract, surface use for the purpose of exploration and extraction would occur pursuant to a surface use plan approved by the Department of Interior. The South Tract is subject to a covenant that the surface estate could only be used for purposes incident to mining and mineral extraction.

## 4.6 Project Port and Transportation Easements

Section I.D. (3) of the December 10th, 1975 Terms and Conditions for Land Consolidation and Management in the Cook Inlet Area agreed between CIRI and the Federal Government and ratified by Congress in Section 12 of PL 94-204 provides:

> *"The Secretary shall also convey to CIRI, an easement for a port which shall reasonably provide for receiving, shipping, storage and incidental handling, and incidental facilities thereto, of the minerals extracted from the lands conveyed under subparagraphs I.D.(2) and I.D.(3). The Secretary shall also convey to CIRI a transportation easement to provide for transportation by road, rail or pipeline, of the minerals from the above described lands to the port easement. The Secretary and CIRI shall mutually agree upon the location of these two easements."*

## 4.7 NATURAL HAZARDS

Johnson Tract is located within an area prone to subduction zone related seismic activity. Engineering of any future mine facilities will require seismic analysis. The Project also lies within the Aleutian volcanic arc, which extends 2,500 km from near Anchorage to the western Aleutian Islands. The 3,053m peak of the Mount Illiamna stratovolcano is located 12 km south-southwest of the JT Deposit.

Except for summit fumarolic activity, it is uncertain and perhaps unlikely that Iliamna Volcano has been historically active (Miller, 1998). Although no historic (i.e., within the last 200 years) eruptions can be confirmed, recent studies have identified coastal lahars containing juvenile clasts that originated from Iliamna Volcano ~300 years ago and are overlain by 250-year-old trees. These deposits record the most recent eruptive activity from the volcano (Miller, 1998).

## 4.8 ENVIRONMENTAL LIABILITIES

Limited environmental work has been completed on the Project. Minor environmental baseline study work was completed as part of the access road and port site evaluation by Westmin (1993) and baseline geochemistry of the Johnson River was performed by the United States Geological Survey (Brabets and Riehle, 2003). The Author is not aware of any federally listed endangered species present on the property or other potential environmental issues or concerns.

The Johnson Tract Project is an early stage exploration project and based on the Author's observation of the site, there do not appear to be any significant environmental liabilities associated with the Project.

## 4.9 LAND TITLE RISKS AND DESIGNATION

A legal title report titled **"*Title Report on CIRI Lands in T1N R12W and T1S R21W, SM*"** was completed by Stoel Rives LLP for J T Mining, Inc. on October 27th, 2021 (Monroe, 2021). No land title risks or designations that would impede the ability to develop the Johnson Tract Project were identified in the report.

## 4.10 SOCIAL OR COMMUNITY RISKS

The Project area is remote and uninhabited. The closest community is the village of Ninilchik, population 900, located approximately 60 km to the east on the other side of Cook Inlet. As an inholding to Lake Clark National Park, the Project may attract public interest. Comprised of 4 million acres, Lake Clark Park is one of the largest National Parks in the United States and public use is limited due to its relatively inaccessible location. Brown bear viewing along the coastline is the main public use near to the Project, concentrated at Silver Salmon creek 20 km to the southeast.

In the Author's opinion, there are no significant social impediments to exploration and development of the Project. Should a mine be developed on the Project, royalty and other Project revenues collected by CIRI would be to the benefit of CIRI and its shareholders, which includes the native peoples living within the CIRI region. Resource revenue sharing also occurs amongst the 12 Alaska-based regional corporations pursuant to provisions of ANCSA.

# 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

## 5.1 ACCESSIBILITY

The Project is located 200 km southwest of Anchorage, 15 km inland from Cook Inlet and tidewater. A gravel airstrip 800 m long and 30 m wide allows for fixed wing aircraft to access the Project. Snow-free access is generally open from mid June through to mid October. Helicopter is used to access the JT Deposit and surrounding prospects. A gravel road links the airstrip to the Johnson Camp (**Figure 5.1**).

## 5.2 CLIMATE

The area is located within a transitional zone influenced by both maritime and continental climates. The Alaska Mountain Range to the north shields the region from the extreme temperatures of the Alaskan interior (National Wetland Inventory). The climate is generally described as mild winters with up to 5 m of snowfall and wet, moderate summers. Long periods of precipitation are known to occur from weather systems passing through Cook inlet, with the most precipitation occurring from July through to October. Average summer temperatures range from 5 to 20°C. Average winter temperatures range 0 to -15°C. Annual precipitation totals 464 mm with the highest levels of precipitation during September averaging 83 mm. (NOAA)

## 5.3 LOCAL RESOURCES

The majority of resources can be sourced in Anchorage and transported to site via fixed wing aircraft or via barge from Homer, AK and then helicopter into camp. Anchorage has a population of approximately 300,000 and is home to numerous service companies tailored for mining and mineral exploration. Daily flights out of Anchorage International Airport connect Anchorage to Seattle, Washington and Vancouver, British Columbia. The closest centre of population, Ninilchik (900 pop.), is located on the east side of Cook Inlet 60 km away.

## 5.4 INFRASTRUCTURE

As previously mentioned, the Project has a functioning gravel airstrip large enough for mid-sized aircraft such as a Skyvan (1,900 kg payload) to access the area. A gravel road links the airstrip to the historic Johnson Camp. The Camp was first established in the early 1980's and rehabilitated to a functioning capacity in the summer of 2018 (**Figure 5.1**). A 50-kw diesel generator provides electricity to the Camp. Water is sourced from a well. Buildings include a kitchen with mess hall and shower house, an office, five (5) core storage containers, a core cutting shack, a generator shack and a mechanical shop (**Figure 5.2**). Tents are erected during the summer field seasons for sleeping quarters and drill core logging.

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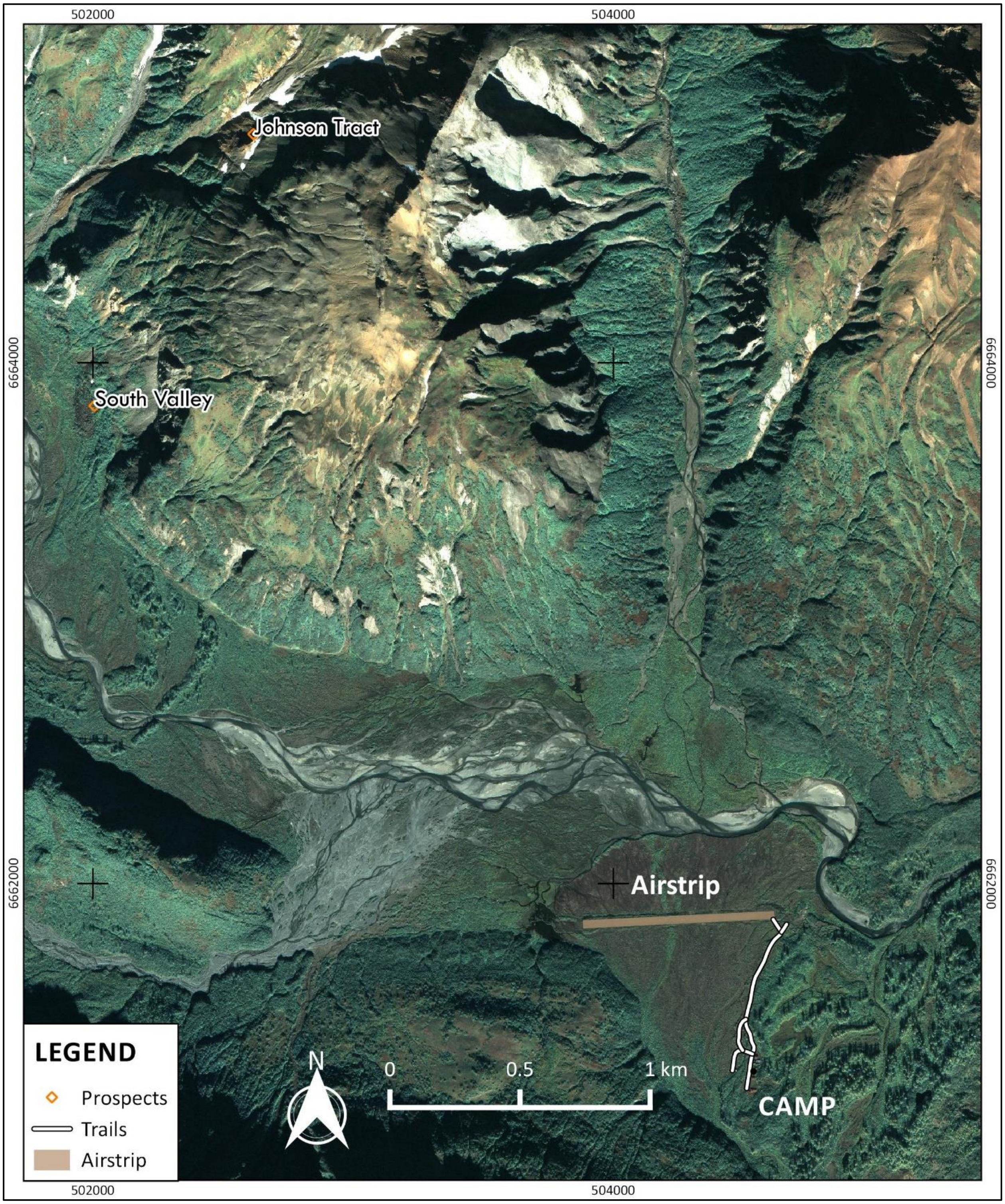



*Figure 5.1 Map of Southern Project area with Johnson Camp and the Airstrip*

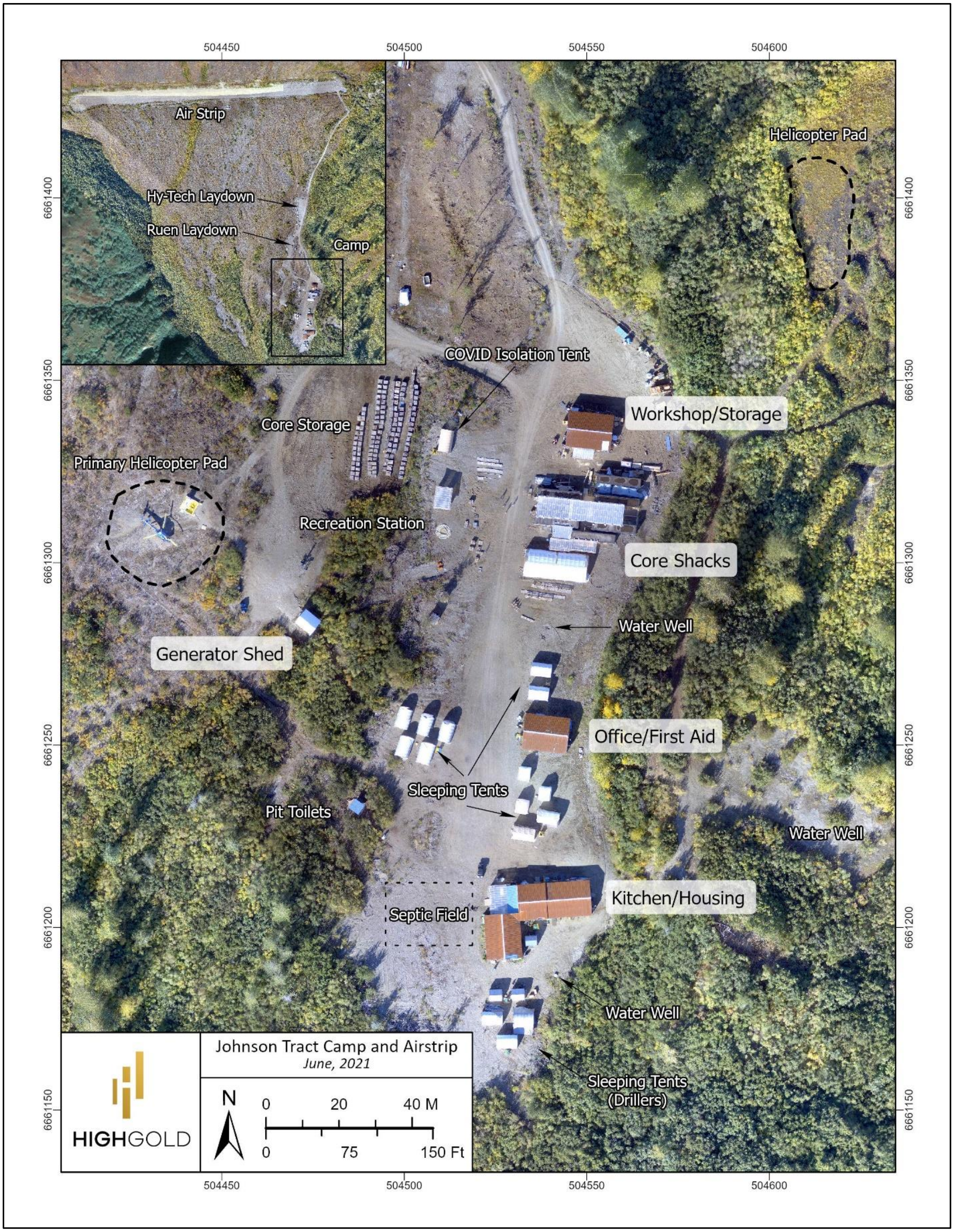



***Figure 5.2 Layout of the Johnson Camp***

## 5.5 PHYSIOGRAPHY

The Project area is part of the coastal Alaskan Range within the Chigmit Mountains. Elevations range from 90 m to 1,200 m. Vegetation can be separated into three main categories: meadow-like areas; dense shrub thickets; and an open forest shrub complex (Westmin, 1993). Streams flow with annual runoff from the mountains east towards Cook Inlet (**Plate 5.1).** Portions of two major drainages are located within the Project area: the Johnson River and Bear Creek. Areas surrounding the drainages consist of broad valleys with moderate to steep slopes, benches formed above active floodplains are common, variably incised secondary drainages are formed from the mountain slopes. The ocean tidal range of Cook Inlet has a mean range at Anchorage of nine meters and a mean tidal range of six meters at Kenai.

The lowlands of the Project area towards the inlet is largely covered in forest, ponds, lakes, and peatlands. Evergreen, white and black spruce, birch, aspen and balsam poplar, make up the upland forests. The base of the mountain ranges contains a zone of western hemlock and Sitka spruce. Above 2,500 feet (760 m), an alpine tundra environment dominates with higher elevations having little to no vegetation. The alpine vegetation is composed primarily of birch, willow and Labrador tea. Wedged between the tree line and the alpine tundra is a shrub zone of mainly alder (Westmin, 1993). The location of most historic exploration activity at Johnson and Difficult Creek is within the alpine tundra zone.

***Plate 5.1 View of Johnson River Valley looking east towards Cook Inlet***

# 6 HISTORY

## 6.1 HISTORY PRIOR TO ANACONDA (1966 - 1980)

In 1966, Detterman and Harstock of the United States Geological Survey undertook a regional mapping program, identifying the local lithologies and structures of the western side of Cook Inlet. From 1974 to 1975, Resource Associates of Alaska (“RAA”) were contracted by CIRI to prospect the region and evaluate land for selection under the terms of the Alaskan Native Claims Settlement Act (“ANSCA”) and the Cook Inlet Land Exchange. A single float boulder with anomalous zinc samples in 1974 led to follow-up work in 1975 tracing the source of the boulder two miles upstream to the Johnson Tract prospect (RAA, 1976). Regional stream sediment sampling during this time also led towards the initial discovery of the Difficult Creek prospect (McClelland, 1982). No further work was completed until the acquisition of the Project by Anaconda Minerals Company (“Anaconda”) took place in 1981 (CIRI, 1997).

## 6.2 ANACONDA MINERALS WORK HISTORY (1981 – 1985)

In 1981, Anaconda and CIRI signed an agreement allowing Anaconda to explore the Johnson Tract Project. Detailed exploration work began immediately with rock and stream sediment sampling to delineate the source of gold and base metal anomalies. A four-person exploration team was assigned to work on the Johnson prospect. A breccia pipe and stockwork vein (Cu, Pb, Zn, Ag, Au and Ba) target was identified at Johnson along with an exploration target identified five kilometers to the northeast at Difficult Creek (Wetherell and Ellis, 1982).

Early exploration work advanced the Project towards a maiden drill program in 1982. The discovery of the JT Deposit is accredited to diamond drillhole JM-82-004, which intersected **108.6 meters grading 10.39 g/t gold, 7.64% zinc, 0.71% copper, 2.01 % lead and 8.1 g/t silver,** including **48 meters grading 21.1 g/t gold, 9.9% zinc, 0.88% copper, 2.9% lead and 12.3 g/t silver**. Between 1982 and 1984, a total of 9,331 meters of drilling were completed in 26 drillholes at the JT Deposit.

During the field seasons of 1983 and 1984, exploration work was conducted at the Difficult Creek Prospect. Work included surface sampling, mapping, IP and magnetic geophysical surveys. In 1983, two (2) drillholes were completed totaling 139 meters of drilling. In 1984, seven (7) drillholes were completed at Difficult Creek totaling 1,205 meters of drilling. Drilling was successful at intersecting mineralization at depth along the Difficult Creek RAT breccia vein. Drillhole DC-83-002 intersected **36.6 meters of 3.57 g/t gold, 1.8% zinc, 0.2% copper, 0.4% lead and 15.5 g/t silver.**

Between 1983 and 1984, project-wide exploration was conducted with detailed surface sampling, mapping and geophysical surveys (IP and magnetics) completed. The results of this work defined several prospects including Easy Creek, Kona, PS, and Double Glacier. The details of each are noted in Section 7 of this report.

From 1981 through to 1985, Anaconda was active in the area before ceasing all company operations globally in 1985.

## 6.3 HUNT, WARE, AND PROFFETT WORK HISTORY (1985 - 1993)

In 1985, a private developer, Howard B. Keck, leased the Project from CIRI and contracted Hunt, Ware and Proffett ("**HWP**") to evaluate the Deposit and surrounding prospects. Between 1987 and 1992, a total of **11,416 meters of drilling in 34 drillholes** was completed at the JT Deposit. Exploration work also included detailed geological and alteration mapping, and airborne EM and magnetics surveys.

Economic and engineering studies modelled the installation of an underground drive and mill to process ore (Hughes, 1988). The studies concluded that the economics were sensitive to ore grade and tonnage and that the definition of additional mineral resources was important. Subsequent drilling in 1990 and 1991 focused on defining the limits of the main orebody (Proffett 1990), and in 1992 focused on the northeast extension of the JT Deposit, thought to be offset by faulting. Mineralization was successfully intersected at the northeast offset that exhibits the same characteristics of the main orebody. However, intersections were deeper, narrower and lower grade in comparison to the main Johnson Tract (Crafford, 1992).

## 6.4 WESTMIN RESOURCES WORK HISTORY (1993 – 1997)

In 1993, Keck obtained CIRI's approval to sublease the Project to Westmin Resources Ltd ("Westmin"). Westmin acquired the Project for its potential to supply ore to the Premier Mine and Mill facility located approximately 900 nautical miles to the south near Stewart, British Columbia.

Between 1993 and 1995, a total of **5,231 meters of drilling in 18 drillholes** was completed on the Project. Westmin carried out extensive '*pre-feasibility*' economic and engineering studies that evaluated development of a high-grade mine at Johnson Tract (Westmin, 1994). The mine plan included a 900-meter long adit driven from the valley floor that would access the lowermost portion of the deposit. The mining method proposed was a combination of transverse and longitudinal sublevel longhole stoping, and a modified Avoca-style cut and fill. The planed mine rate was 250,000 tonnes per year with all ore direct shipped by barge for milling at the Premier Mill, in British Columbia. Detailed engineering studies were also completed on the proposed 24-km long mine access road and marine ore terminal located in Tuxedni Channel, Cook Inlet. The economic and engineering studies by Westmin and the historical estimates upon which they were based were prepared prior to establishment of NI 43-101 guidelines and reporting standards.

Other work by Westmin included geotechnical, metallurgical and environmental studies, road and port studies, and ground Induced Polarization ("IP") geophysical surveys over select targets.

In March of 1997, the lease agreement between Keck, Westmin and CIRI was formally terminated. The Project was released to CIRI with no overarching rights or royalties associated with the lease.

## 6.5 CIRI WORK HISTORY (1997 TO 2017)

After 1997, no significant field work was completed. In 2003, the USGS completed a study on the water quality of the Johnson River basin. In 2004, Alaska Earth Sciences ("AES") completed a data compilation and created a 3D model of the Johnson Tract Deposit in Gemcom GEMS™ software.

## 6.6 WORK HISTORY SUMMARY (1966-2017)

A general summary of historic work, pre-HighGold acquisition, is provided in **Table 6.1** below. A summary of the historic drilling is provided in **Section 6.6.1.** A summary of historic surface geochemical sampling is provided in **Section 6.6.2**. A summary of historic geophysical surveys is provided in **Section 6.6.3**.

***Table 6.1 Summary of Historic Work completed within the Johnson Tract Area***

| Date Range | Operator | Work Activities |
|---|---|---|
| **1966 – 1979** | USGS; CIRI | Mapping, Prospecting |
| **1980 – 1985** | Anaconda Minerals | Mapping, Geochemistry, Geophysics, Drilling, Metallurgy |
| **1985 – 1993** | Keck (HWP) | Mapping, Geochemistry, Geophysics, Drilling, Metallurgy |
| **1993 – 1997** | Westmin Resources | Mapping, Geochemistry, Geophysics, Geophysics, Metallurgy, Prefeasibility Report; Engineering Studies |
| **1997 - 2017** | CIRI | Data Scanning; Gemcom 3D model; Summary Report |

### 6.6.1 HISTORIC DRILLING

Drilling activities were completed by three separate operators between 1982 and 1995 (**Table 6.2).** A total of **87 drillholes were completed totalling 27,412 meters**. A complete summary of the historic drilling activities is provided in Section 10, including major drill intersections. Using a current all-in drill cost estimate of US$ 450 per meter, inclusive of helicopter and camp, total historic drill expenditures are estimated at US$ 12,290,000.

The following summarizes the historic drill programs completed on the Project:

- Drilling was first completed at Johnson Tract in 1982 by Anaconda leading to the discovery hole JM-82-004.
- Drilling by Anaconda continued through to the 1984 field season with the majority of drilling (26 holes totaling 9,331 meters) focused on the Johnson Tract deposit.
- From 1983 through to 1984, a total of nine (9) drillholes were completed at Difficult Creek by Anaconda totaling 1,344 meters.
- From 1987 to 1992, HWP completed 34 drillholes totaling 11,416 meters, further defining the Johnson Tract deposit and testing the extent of mineralization at the Northeast Offset and towards the South Valley prospect.
- From 1993 to 1995, Westmin completed 18 drillholes totalling 5,321 meters.

A summary of historic drilling completed can be found below in **Table 6.2** with drillhole locations shown in **Figure 6.1** and **Figure 6.2**. A summary of major drill intersection can be found in **Table 6.3 and Table 6.4**.

***Table 6.2 Summary of Historic Drilling completed within the Johnson Tract Area***

| Operator | Year | Prospect | Collar ID | # of Holes | # of Meters (m) |
|---|---|---|---|---|---|
| Anaconda | 1982-1984 | Johnson Tract | JM-82-001 – JM-84-027 | 26 | 9,331 |
| Anaconda | 1983-1984 | Difficult Creek | DC-83-001 – DC-84-009 | 9 | 1,344 |
| Keck (HWP) | 1987-1992 | Johnson Tract | JM-87-028 – JM-92-063 | 34 | 11,416 |
| Westmin | 1993-1995 | Johnson Tract | JM-93-064 – JM-95-081 | 18 | 5,321 |
| | | | **Total** | **87** | **27,412** |

*[Page Left Intentionally Blank]*

### *Table 6.3 Summary of Major Drill Intersections at the Johnson Tract Deposit*

*True widths are 40% to 90% of drilled widths*

| Drill Hole | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| **JR82-001** | 4.6 | 30.2 | 25.6 | 1.72 | 3.81 | 0.28 | 5.2 | 0.17 |
| **JR82-003** | 194 | 244 | 50 | 2.14 | 7.01 | 0.56 | 10.23 | 1.18 |
| **JR82-004** | 155.4 | 264 | 108.6 | 10.39 | 8.07 | 0.71 | 7.64 | 2.01 |
| Incl | 196 | 244 | 48 | 21.1 | 12.33 | 0.88 | 9.93 | 2.86 |
| Incl | 200 | 212 | 12 | 67.43 | 18.6 | 0.87 | 9.3 | 2.64 |
| **JR83-007** | 182 | 218 | 36 | 13.41 | 3.57 | 0.41 | 2.01 | 0.2 |
| **JR83-009** | 2.9 | 24.8 | 21.9 | 0.29 | 12.18 | 0.19 | 9.47 | 0.25 |
| **JR83-012** | 178.5 | 205.7 | 27.2 | 15.16 | 7.05 | 1.23 | 11.51 | 0.2 |
| Incl | 178.5 | 188.4 | 9.9 | 40.65 | 11.52 | 1.8 | 24.76 | 0.01 |
| **JR84-015** | 307.5 | 327.5 | 20 | 0.39 | 0.79 | 0.16 | 6.39 | 0.42 |
| **JR84-028** | 141.3 | 248.7 | 107.4 | 1.92 | 4.48 | 0.37 | 7.15 | 0.27 |
| Incl | 210.8 | 246.6 | 35.8 | 3.38 | 7.63 | 0.47 | 13.46 | 0.34 |
| Incl | 233.7 | 239.7 | 6 | 17.69 | 7.87 | 0.43 | 19.95 | 0.12 |
| **JR87-029** | 65.7 | 164.5 | 98.8 | 2.02 | 4.09 | 0.39 | 7.12 | 0.71 |
| Incl | 100.4 | 159 | 58.6 | 3.25 | 5.06 | 0.56 | 8.13 | 0.92 |
| **JR87-031** | 67.4 | 128.7 | 61.3 | 4.94 | 6.54 | 0.48 | 7.48 | 0.45 |
| Incl | 75.2 | 83.8 | 8.6 | 22.34 | 12.97 | 1.34 | 7.68 | 0.01 |
| **JR87-032** | 173.9 | 207.8 | 33.9 | 2.36 | 9.22 | 1.79 | 14.69 | 0.73 |
| Incl | 177.4 | 185.1 | 7.7 | 7.79 | 7.62 | 3.05 | 27.22 | 0.03 |
| **JR87-033** | 43.1 | 87.7 | 44.6 | 1.34 | 3.24 | 0.27 | 4.77 | 0 |
| **JR88-034** | 246.7 | 318.1 | 71.4 | 20.94 | 9.81 | 1.23 | 5.21 | 1.51 |
| Incl | 257.6 | 266.5 | 8.9 | 88.48 | 22.12 | 5.61 | 9.21 | 0.12 |
| Incl | 277.5 | 281 | 3.5 | 34.47 | 14.42 | 2.89 | 15.09 | 2.46 |
| Incl | 307.8 | 312.3 | 4.5 | 49.51 | 7.99 | 0.85 | 6.58 | 2.77 |
| **JR90-040** | 243.7 | 284.4 | 40.7 | 1.81 | 5.39 | 0.68 | 7.78 | 0.65 |
| **JR90-042** | 259 | 318.4 | 59.4 | 4.55 | 2.89 | 0.26 | 2.39 | 0.39 |
| Incl | 301.2 | 304.5 | 3.3 | 29.07 | 8.05 | 0.26 | 3.06 | 0.56 |
| **JR93-064** | 197.7 | 245 | 47.3 | 6.11 | 3.3 | 0.53 | 3.8 | 0.62 |
| Incl | 222 | 235 | 13 | 19.42 | 7.38 | 0.96 | 7.05 | 2.15 |
| Incl | 224 | 226 | 2 | 52.12 | 20.57 | 1.5 | 12.19 | 7.81 |
| And | 266 | 296.3 | 30.3 | 9.14 | 9.52 | 1.37 | 4.89 | 2.05 |
| Incl | 279 | 289 | 10 | 26.57 | 17.93 | 2.05 | 11.03 | 5.94 |
| Incl | 279 | 281 | 2 | 129.82 | 26.58 | 4.1 | 3.38 | 0.08 |
| **JR93-065** | 150 | 249.7 | 99.7 | 10.07 | 6.68 | 0.9 | 6.34 | 1.27 |
| Incl | 154.2 | 168 | 13.8 | 26.99 | 10.84 | 1.53 | 3.55 | 1.31 |
| Incl | 155 | 160 | 5 | 52.8 | 10.29 | 0.87 | 3.67 | 0.73 |
| Incl | 180 | 183 | 3 | 32.82 | 10.17 | 0.75 | 10.3 | 2.62 |
| Incl | 189 | 193.4 | 4.4 | 32.46 | 14.73 | 1.44 | 9.91 | 4.01 |
| Incl | 239 | 246.7 | 7.7 | 28.59 | 9.93 | 0.97 | 5.13 | 0.28 |
| **JR93-066** | 268 | 278 | 10 | 11.17 | 3.53 | 0.36 | 2.09 | 0.47 |
| **JR93-067** | 139 | 276.7 | 137.7 | 11.28 | 3.95 | 0.47 | 2.38 | 0.54 |
| Incl | 219 | 276.7 | 57.7 | 21.65 | 5.05 | 0.46 | 2.44 | 0.66 |
| Incl | 250 | 257 | 7 | 45.58 | 9.99 | 0.39 | 1.44 | 1.93 |
| Incl | 270 | 272 | 2 | 172.51 | 28.86 | 2.31 | 1.54 | 0.16 |

***Table 6.4 (Continued) Summary of Major Drill Intersections at the Johnson Tract Deposit***

*True widths are 40% to 90% of drilled widths*

| Drill Hole | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| **JR93-068** | 140.8 | 253 | 112.2 | 10.34 | 6.35 | 0.66 | 5.01 | 1.48 |
| **Incl** | 187 | 208 | 21 | 19.59 | 11.05 | 1.26 | 8.48 | 2.59 |
| Incl | 187 | 195 | 8 | 39.22 | 12.73 | 1.1 | 9.61 | 2.45 |
| Incl | 187 | 189 | 2 | 165.75 | 58.81 | 5 | 43.37 | 10.94 |
| Incl | 242 | 251 | 9 | 26.65 | 16.65 | 1.38 | 8.88 | 5.74 |
| **JR93-069** | 173 | 232 | 59 | 14.2 | 9.13 | 0.98 | 4.37 | 2.24 |
| Incl | 179 | 206 | 27 | 22.49 | 15.11 | 1.36 | 6.75 | 4.35 |
| Incl | 179 | 188 | 9 | 51.6 | 22.21 | 3.04 | 6.94 | 0.88 |
| Incl | 185 | 188 | 3 | 109.85 | 36 | 3.75 | 8.09 | 1.74 |
| Incl | 222 | 224 | 2 | 48.6 | 8.4 | 0.6 | 3.19 | 0.01 |
| **JR93-070** | 103 | 133 | 30 | 4.8 | 4.86 | 0.46 | 6.14 | 0.55 |

***Table 6.5 Summary of Major Drill Intersections at the Difficult Creek Prospect***

*True widths are 40% to 90% of drilled widths*

| Drill Hole | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| DC-83-001 | 16.2 | 24.0 | 7.8 | 4.29 | 17.4 | 0.09 | 0.87 | 2.69 |
| Including | 18.4 | 20.1 | 1.7 | 10.56 | 34.0 | 0.02 | 0.09 | 0.04 |
| And | 41.7 | 54.0 | 12.3 | 0.48 | 3.8 | 0.05 | 0.74 | 0.35 |
| DC-83-002 | 39.0 | 75.6 | 36.6 | 3.57 | 15.5 | 0.19 | 1.77 | 0.37 |
| Including | 39.0 | 48.1 | 9.1 | 5.27 | 20.7 | 0.36 | 3.12 | 0.63 |
| Including | 55.4 | 61.9 | 6.5 | 8.01 | 39.2 | 0.37 | 3.26 | 0.46 |
| DC-84-003 | 105.2 | 111.3 | 6.1 | 0.22 | 1.1 | 0.03 | 1.08 | 0.39 |
| DC-84-004 | No Significant Assays | | | | | | | |
| DC-84-005 | 83.2 | 111.3 | 28.1 | 0.39 | 2.6 | 0.05 | 0.57 | 0.15 |
| Including | 20.1 | 21.0 | 0.9 | 0.41 | 0.8 | 0.41 | 0.01 | 0.00 |
| DC-84-006 | No Significant Assays | | | | | | | |
| DC-84-007 | 89.9 | 93.0 | 3.1 | 0.89 | 10.2 | 0.02 | 0.92 | 0.11 |
| DC-84-008 | No Significant Assays | | | | | | | |
| DC-84-009 | No Significant Assays | | | | | | | |

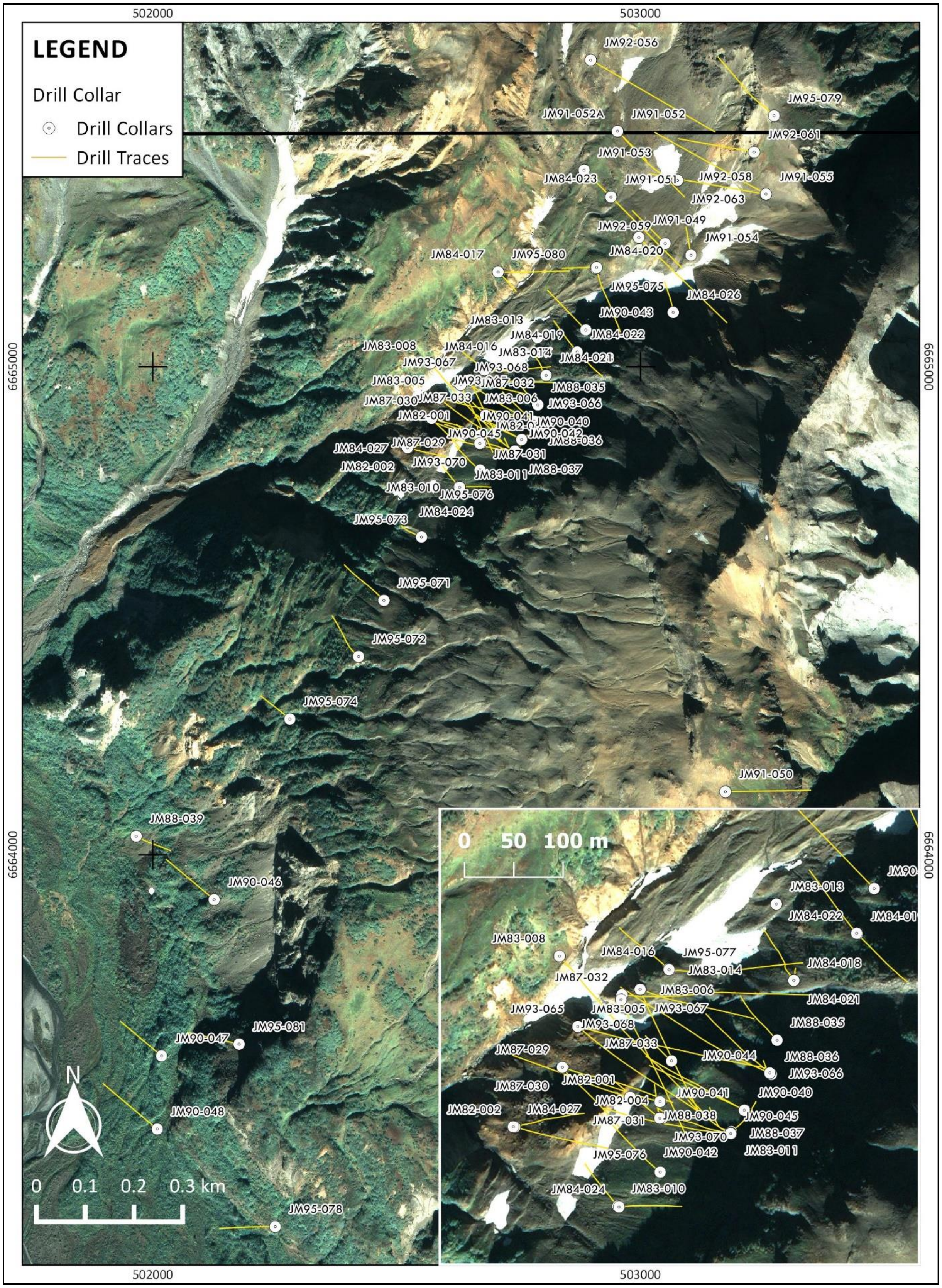



***Figure 6.1 Map of Historic Drill Collar Locations at the Johnson Tract Deposit***

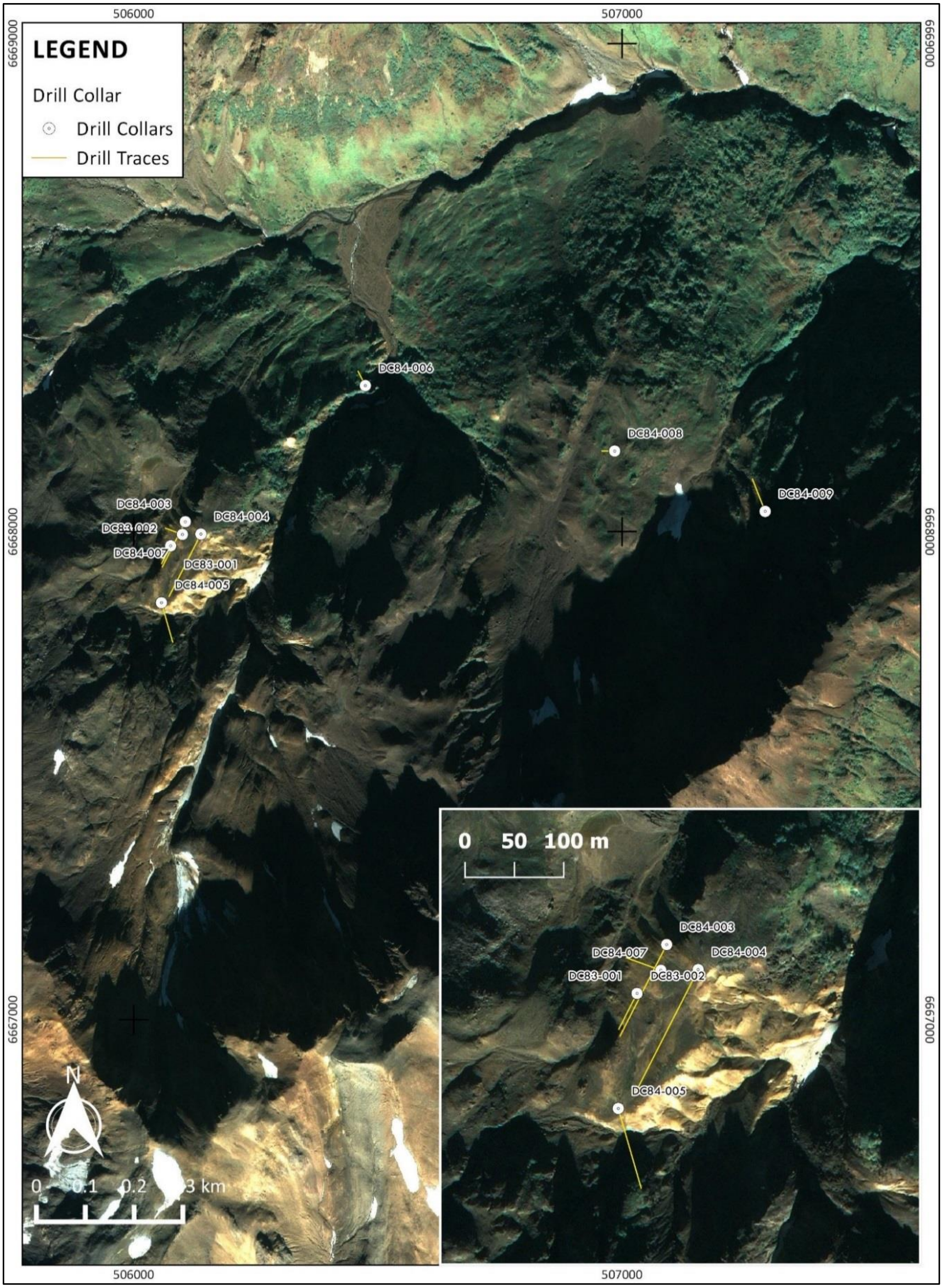



*Figure 6.2 Map of Historic Drill Collar Locations at the Difficult Creek Prospect*

### 6.6.2 HISTORIC SURFACE SAMPLING

Historic sample locations were captured by HighGold staff by registering maps and digitizing each location with a sample number (**Figure 6.3**). The assay values for each were then located in historic tables and merged with the location data. A complete audit of the surface sampling was completed to confirm all samples have been captured and the assay values for each are correct. The historic sample compilation across the entire Project area returned:

- 259 Stream Sediment Samples;
- 240 Soil Samples
- 1,597 Rock Chip, Grab or Channel Samples

Stream sediment samples were collected from 1981 to 1984 and in 1993. From 1981 to 1984, stream samples were analysed for Au, Ag, Cu, Pb, Zn, and Ba by Bondar-Clegg in Vancouver. Chemex Labs in Vancouver analysed the stream samples collected in 1993 for Au (FA) and multi-element ICP. Surface rock samples were analyzed for Au, Ag, Cu, Pb, Zn, Mo, Mn, F, Hg, W and Ba by Bondar-Clegg in Vancouver.

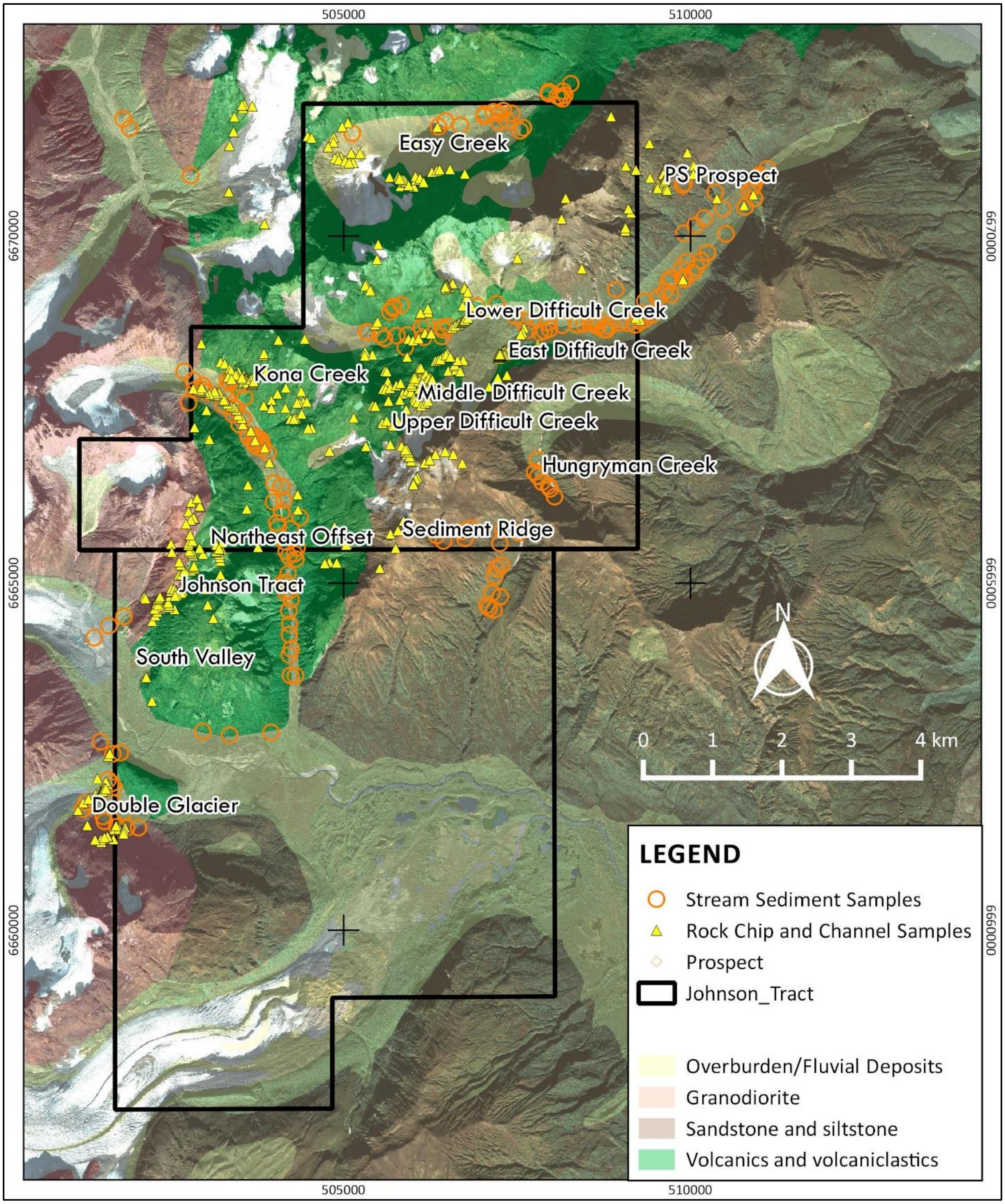



***Figure 6.3 Location of Historic Stream sediment, Rock chip and Rock channel samples at Johnson Tract***

### 6.6.3 HISTORIC GEOPHYSICS

**Table 6.6** summarizes the geophysical surveys completed by past operators. From 1983 to 1984, Anaconda completed airborne magnetics, airborne EM, ground IP and ground magnetics surveys over the Project area and select targets. In 1992, HWP contracted Aerodat Ltd. to complete an airborne EM and magnetics survey totaling 480-line kilometers. In 1995, Scott Geophysics was contracted by Westmin to complete 6.65-line kilometers of ground-based IP surveys.

***Table 6.6 Summary of Historic Geophysical Surveys completed within the Johnson Tract Area***

| Operator | Year | Surveyor | Prospect | Survey Type | Line km | CIRI Reference File |
|---|---|---|---|---|---|---|
| Anaconda | 1983 | Ertec Airborne Systems Inc. | Johnson Tract | Airborne Magnetics | 700-line km | 050.053.209-Johnson Tract, Aeromagnetic, Box 1 of 2; 050.053.209-Operational Report for a Helicopter Aeromagnetic Survey of the Johnson Prospect |
| | | | JT, DC | Ground IP | ~4-line km | Ellis, 1983 |
| | | | | Ground Magnetics | 250-line km | 050.053.209-Operational Report for a Helicopter Aeromagnetic Survey of the Johnson Prospect |
| | 1984 | Aerodat Ltd | JT, DC, Kona | Airborne EM & Magnetics | 188-line km | 050.053.208-Report on Combined Helicopter-Borne Magnetic, Electromagnetic & VLF Survey; 050.053.209-Johnson Tract, Preliminary Report on the Helicopter-Borne Electromagnetic and Magnetic Survey of the Johnson River Region; Crebbs, 1984 |
| | | | JT, DG, Kona, PS | Ground Magnetics & Downhole | | 050.053.209-Johnson Tract, 1984 Johnson Prospect, Ground Magnetics and Max-Min; Ellis, 1984 |
| | | | | Ground EM | | 050.053.209-Operational Report for a Helicopter Aeromagnetic Survey of the Johnson Prospect |
| Keck (HWP) | 1992 | Aerodat Ltd | DG, SV, JT, HC | Airborne EM & Magnetics | 480-line km (300 miles) | 050.053.208-1992 Johnson Helicopter Electromagnetic maps, Memos and Data Disks |
| Westmin | 1995 | Scott Geophysics | JT, SV | Ground IP | 6.65-line km | 050.053.208-Johnson Tract, I.P. and Resistivity Surveys |

# 7 GEOLOGICAL SETTING AND MINERALIZATION

## 7.1 REGIONAL GEOLOGY

The JT Project is hosted by the Talkeetna Formation of the Alaska Peninsular Terrane, a 1,000 - 2,500 m thick assemblage of Early Jurassic, intermediate volcanic and volcaniclastic rocks (age based on the abundance of fossil megafauna, Detterman et al., 1996). Thrust onto the western edge of the Talkeetna Formation are plutonic rocks of the Alaska-Aleutian Range Batholith which are dominated locally by quartz diorite, quartz monzonite and tonalite phases with U-Pb zircon ages of 183 - 164 Ma (Rioux et al., 2007). These intrusive rocks are interpreted to be the contemporaneous, plutonic equivalent of the overlying Talkeetna Formation, and together they make up the uppermost part of the Talkeetna Arc.

Within the Project area, the Talkeetna Formation and intrusive rocks to the west are divided by the north-south striking Bruin Bay fault (**Figure 7.1**), a regional, transpressional fault system which was likely active in Early Paleogene time (Betka et al., 2017), but may have been responsible for the unroofing of the Talkeetna Arc as early as the Middle-Late Jurassic (cf. Wartes et al., 2013). Most work on the Talkeetna Arc has focussed on the section exposed north east of Anchorage, in the Chugach and Talkeetna mountains, where geochemical and isotopic analysis of intermediate – felsic plutonic rocks suggest an intra-oceanic island arc setting (Clift et al., 2005, Rioux et al., 2007) with little to no input of continental crust material. However, a lack of evidence for mid-ocean ridge lavas, and thermobarometry requiring crustal thicknesses in excess of 30 km (Hacker et al., 2008) suggest that the Talkeetna Arc was likely a 'mature' island arc. South of the Project area are Quaternary volcanics associated with the active Iliamna stratovolcano.

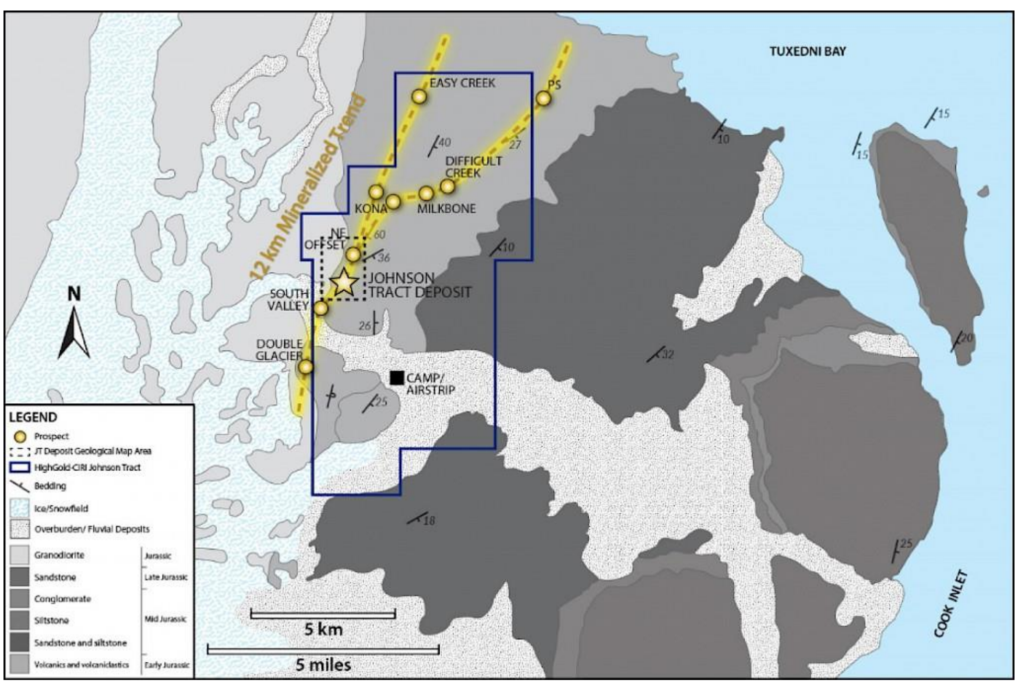



*Figure 7.1 Regional Geology of the Johnson Tract Project (Highgold, 2021)*

## 7.2 LOCAL GEOLOGY – JT DEPOSIT AREA

Johnson Tract mineralization is hosted within southeast dipping volcanic and volcaniclastic rocks of the early Jurassic Talkeetna Formation, overlain by middle to late Jurassic sedimentary rocks of the Tuxedni, Chinitna and Naknek formations (**Figure 7.2).** To the west of the deposit, the regional west-dipping Bruin Bay Fault juxtaposes diorite to quartz monzonite intrusive rocks against Talkeetna formation host rocks (**Figure 7.3**). The main stratigraphic units associated with the JT Deposit are described in detail below, from oldest to youngest, and listed in Error! Reference source not found. and shown in stratigraphic column in **Table 7.2** . The Talkeetna Formation unit descriptions are from recent mapping and compilation by Proffett (2019, 2020) and earlier work by Anaconda geologists (Steefel 1985 and 1987; Millholland and McClelland, 1985).

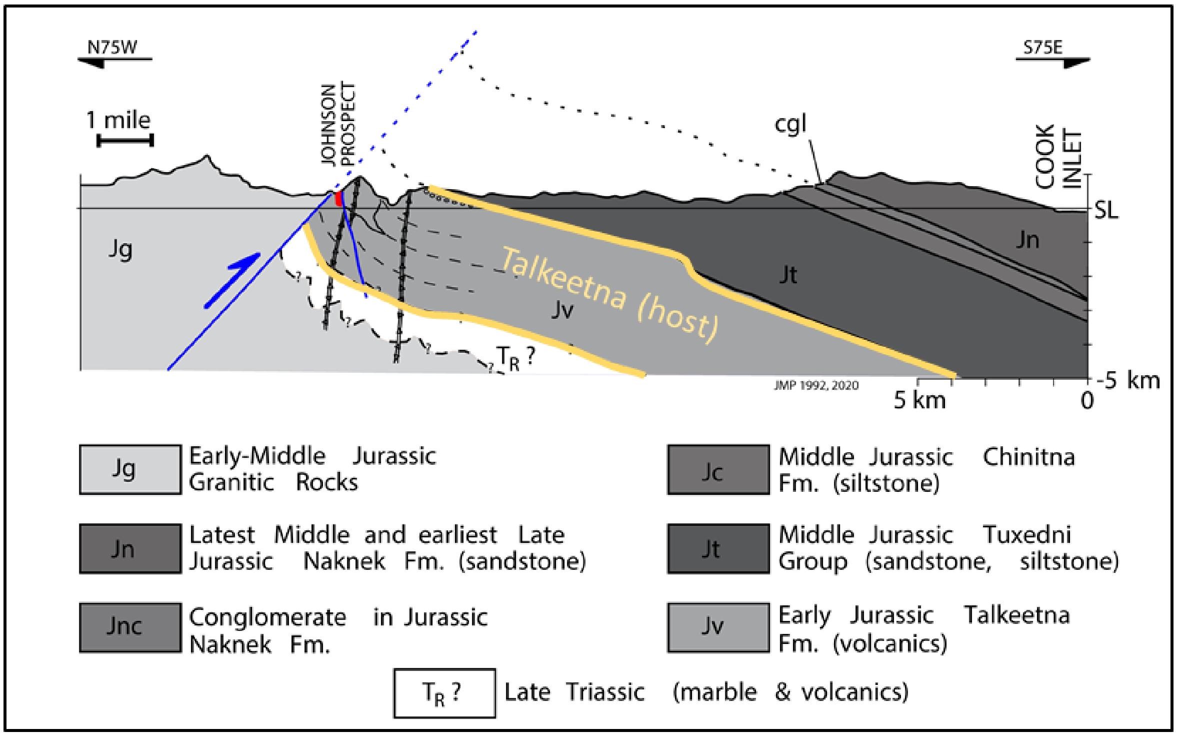



***Figure 7.2 Schematic cross-section of the regional geology of the Johnson Tract*** *(Modified from Proffett, 2021)*

### 7.2.1 MAIN STRATIGRAPHIC UNITS - JT DEPOSIT AREA

*Lower Andesite – Andesitic Lithic Tuff & Tuff Breccia*

The stratigraphically lowest member of the Jurassic host rock package is dark grey to dark green andesitic tuff and volcanic breccia with interbedded volcanic sandstone. The unit includes the **Terrazzo Tuff Breccia (TTB),** one of two main marker units. It is a distinctive heterolithic fragmental unit with subangular, multi-coloured, mostly andesitic clasts in a fine-grained matrix. Clasts are typically 2 mm to 2 cm, although clasts greater than 10 cm are locally present (Westmin, 1994). The unit is normally graded, poorly bedded, and poorly sorted. Reverse grading is identified near the top of the unit. Unit thickness is poorly constrained, though up to 215 m is exposed at surface.

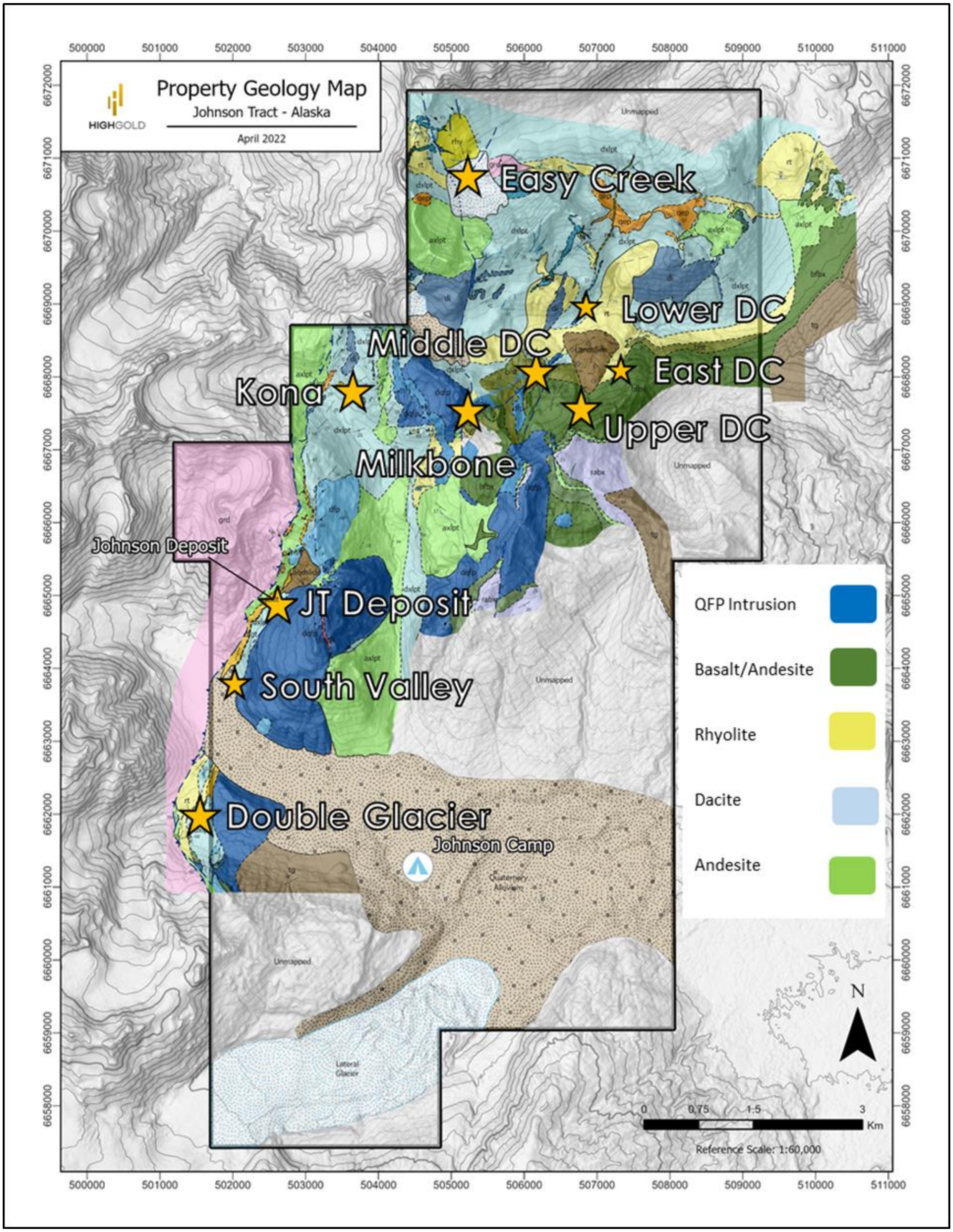



*Figure 7.3 Geology Map of the Johnson Tract Project (Highgold, 2022)*

*Table 7.1 Legend to Accompany Geology Map of the Johnson Tract Project )Highgold 2022)*

## List of Map Units

| Unit | Description |
|---|---|
| **Limited Mapping/Unmapped** | |
| **Landslide** | |
| **Quaternary Alluvium** | |
| **Ice / Snow** | Ice fields/glaciers, permanent snow pack. |
| **Tuxedni Group Sediments (tg)** | Fossiliferous, light- to dark-gray and green marine graywacke, conglomerate, siltstone, and shale (Detterman and Hartsock, 1966) |
| **Rhyolite Andesite Breccia (rabx)** | Multi-coloured, heterolithic, poorly sorted breccia to sandstone. Clasts are angular to rounded and include flow banded rhyolite, porphyritic andesite, and rare granitic clasts in a sandy, feldspar crystal-rich and tuff matrix. Variably stratified from bedded sandstone to poorly sorted breccia and typified by intervals with up to 1 m clasts. |
| **Dacite Dyke (ddk)** | Small intrusive bodies of fine- to medium-grained, hornblend-phyric dacite that post-date mineralization. May be flow banded. |
| **Andesite Dyke (adk)** | Magnetic andesite dykes. Includes aphyric, pyroxene-, feldspar-, and hornblende-phyric dykes. |
| **Rhyolite Dyke (rdk)** | Rhyolite dyke minor quartz phenocrysts. Locally flow banded. |
| **Breccia Dyke (bxdk)** | Colourful heterolithic pebble dyke with subangular to subrounded clasts. Clasts include dacite QFP, massive andesite, tuffs, and rare granitic clasts. |
| **Andesite Flow / Breccia (afbx)** | Magnetic, variably feldspar-phyric andesite flows and breccias. |
| **Andesite Volcaniclastics (axlt)** | Variably lithic-, pumice-, and feldspar crystal-rich andesite tuffs with local well-bedded and cross-bedded sandstones and poorly to well-sorted conglomerates. |
| **Dacite Flow / Breccia (dfbx)** | Plagioclase-phyric dacite flows and breccia. Typically flow banded. |
| **Dacite Volcaniclastics (dxlpt)** | Variably lithic-, pumice-, and crystal-rich dacite tuffs. Contains local mudstone horizons with tube worm fossils Main host to mineralization at the main Johnson deposit. |
| **Dacite Quartz-Feldspar Porphyry (Quartz-Poor) (dfp)** | Porphyritic dacite intrusive with 15-30% feldspar phenocrysts and up to 5% quartz phenos. Massive to brecciated and columnar jointed. Cross-cuts quartz-rich Dacite QFP. |
| **Dacite Quartz-Feldspar Porphyry (Quartz-Rich) (dqfp)** | Porphyritic dacite with up to 10% quartz phenocrysts and common dark green dark xenoliths up to 30 cm. Dominantly massive but may be brecciated and columnar jointed. |
| **Massive Dacite (Undifferentiated) (di)** | Fine-grained, massive, undifferentiated dacite intrusive rock. |
| **Basalt Volcaniclastics (blst)** | Poorly to moderately well-sorted lithic scoriaceous basalt tuffs. |
| **Basaltic Andesite Flow / Breccia (bfbx)** | Scoracious pyroxene-phyric and feldspar±pyroxene-phyric massive to brecciate flows and pillowed flows. |
| **Dark Fine-Grained Tuff (dfgt)** | Dark grey, locally fossiliferous tuffaceous mudstone/siltstone. Common cm- scale bivalve fossils. |
| **Quartz-Eye Dacite Volcaniclastic (qexlt)** | Light grey, interfingering arkosic sandstones and polymict conglomerates with abundant large quartz-eyes in the matrix and common rounded clasts of Quartz Eye Porphyry (qep). |
| **Quartz-Eye Porphyry (QEP)** | Quartz- and feldspar-phyric intrusion with 5-15% distinctive round quartz phenocrysts up to 1 cm in diameter. |
| **Rhyolite Volcaniclastics (rt)** | Weakly bedded to mass very fine-grained rhyolite ash tuffs. Local centimeter-scale resitive nodules. |
| **Massive Rhyolite (Undifferentiated) (rhy)** | Fine-grained massive siliceous rhyolite. |
| **Granitoid (grd)** | Fine-grained diorite intruded by medium-grained granodiorite. Local biotite in the Easy Creek granodiorite. |

### Contacts

- Concealed,Major
- Inferred,Major
- Observed,Major

### Faults

- Concealed, Major, Reverse
- Concealed, Major, Unknown
- Concealed, Minor, Reverse
- Concealed, Minor, Unknown
- Inferred, Major, Normal
- Inferred, Major, Reverse
- Inferred, Major, Unknown
- Inferred, Minor, Normal
- Inferred, Minor, Reverse
- Inferred, Minor, Unknown
- Observed, Major, Normal
- Observed, Major, Reverse
- Observed, Major, Unknown
- Observed, Minor, Unknown

### Alteration

- **Quartz-Sericite-Pyrite**

### *Quartz-Eye Dacites*

The white to gray and green quartz-eye dacite unit was historically referred to as "rhyolitic crystal tuffs and lithic tuffs". This unit consists of quartz and feldspar crystal-rich pumice and lithic lapilli tuff, sandstone, and conglomerate. An intrusive rock of similar composition occurs locally. The distinguishing feature for this unit regardless of texture is the presence of quartz-eyes.

***A) Volcaniclastic rocks***

The unit consists primarily of light-coloured lapilli tuffs interbedded with finer-grained tuffs and tuffaceous sandstones. The tuffs contain white pumice clasts within a finer grained matrix of the same composition. The pumice fragments can contain plagioclase and quartz phenocrysts up to a few millimeters in size. In places large quartz-eyes have weathered out, resembling rounded pebbles. Where present this unit was referred to as the "quartz pebble conglomerate" (QPC).

***B) Intrusive rocks***

A quartz-eye porphyry intrusion of similar composition to the quartz-eye dacite tuff unit occurs west or down stratigraphy from the tuff unit.

### *Dark Fine-Grained Tuff (DFGT) (marker horizon)*

Directly overlying the QPC unit is a dark gray to black mudstone to locally siltstone and sandstone referred to as the '**Dark Fine-Grained Tuff (DFGT)'** unit. Soft-sediment deformation and carbonaceous worm burrows are common. Sulphides and graded bedding occur locally. This unit can be used as a marker horizon, though worm tubes are also observed in the overlying dacite volcaniclastic rocks.

### *Plagioclase-Phyric Dacites*

Overlying the DFGT is a package of feldspar-phyric dacitic flows, breccias, intrusions, and volcaniclastics.

***A) Dacitic volcaniclastic rocks***

The majority of the known JT Deposit mineralization is hosted within a sequence of interbedded dacitic feldspar crystal-rich, pumice- and lithic-rich lapilli tuffs and tuffaceous sediments. At JT Deposit this unit is approximately 150 meters thick. A few 1–2 m-thick tuffaceous siltstone intervals have worm tube structures and can be correlated between drillholes. These beds are historically referred to as the **Worm Tube Tuff (WTT)**.

***B) Dacitic Flows & Breccia***

Exposed along the ridge to the northeast (900 m) of the JT Deposit and stratigraphically overlying the dacitic volcaniclastics is a ~120 m thick massive to flow-banded coherent plagioclase-phyric dacite unit. Breccias are also present with subangular to angular blocks of similar composition to the flows and are interpreted as an autobreccia facies. Overlying and interlayered with the flows are breccias up to 70 meters thick. Above the breccias is a 30-meter thick unit of pumice tuffs and tuffaceous sediments.

***C) Dacitic Intrusive rocks***

Five hundred meters north-northeast of the JT Deposit lies an irregular mass of intrusive dacite similar in composition to the dacites described above.

*Upper Andesite - Andesite-Dacite Breccia and Tuff-Breccia*

Overlying the plagioclase-phyric dacites is a sequence of andesitic and dacitic volcanic breccias. This unit is mainly massive to poorly bedded, unsorted lithic tuff with abundant subangular dacitic to andesitic clasts in a dark green andesitic matrix. Dacite clasts have 5–20% feldspar phenocrysts and closely resemble the underlying dacite units. In places, fragments of jasper and more silicic volcanic rock are present. Locally a few black wood fragments are observed, suggesting a subaerial origin. No mineralization or significant alteration has been recorded in the Upper Andesite unit (Steefel, 1987).

*Dacite Quartz-Feldspar Porphyry Intrusion*

Located immediately southeast of JT Deposit is a one-kilometer thick dacite quartz-feldspar porphyry unit intruding the feldspar-phyric dacite sequence at low angles to bedding. The unit extends over a two-kilometer strike length trending northeast-southwest and is characterized by 10–15%, <4 mm subhedral plagioclase phenocrysts, 5–10% <4mm subhedral to rounded quartz phenocrysts, <5% mafic phenocrysts, local minor fine-grained magnetite, and common mafic xenoliths up to 20 cm. The upper and lower contacts with the feldspar-phyric dacite sequence are at low angles to bedding. The unit is often brecciated near the upper contact. The same unit has been recorded to the northeast in Kona Creek and to the south in a low ridge between the Johnson River and the Double Glacier prospect. A quartz-poor unit of similar composition and texture occurs in the saddle NE of the deposit, in contact with the main intrusion and with the Upper Andesite package.

*Andesite Dykes*

Along the ridge to the north of the JT Deposit the plagioclase-phyric dacite unit is cut by a few small andesitic dykes. The dykes are very fine-grained, dark brown to dark grey with plagioclase phenocrysts, and in places contain what appear to be amygdules filled with chlorite and silica.

*Granitic Rocks*

***A) Diorite***

A few hundred meters north of the JT Deposit a grey fine-grained hornblende diorite is exposed along the northwest limit of the detailed mapping area.

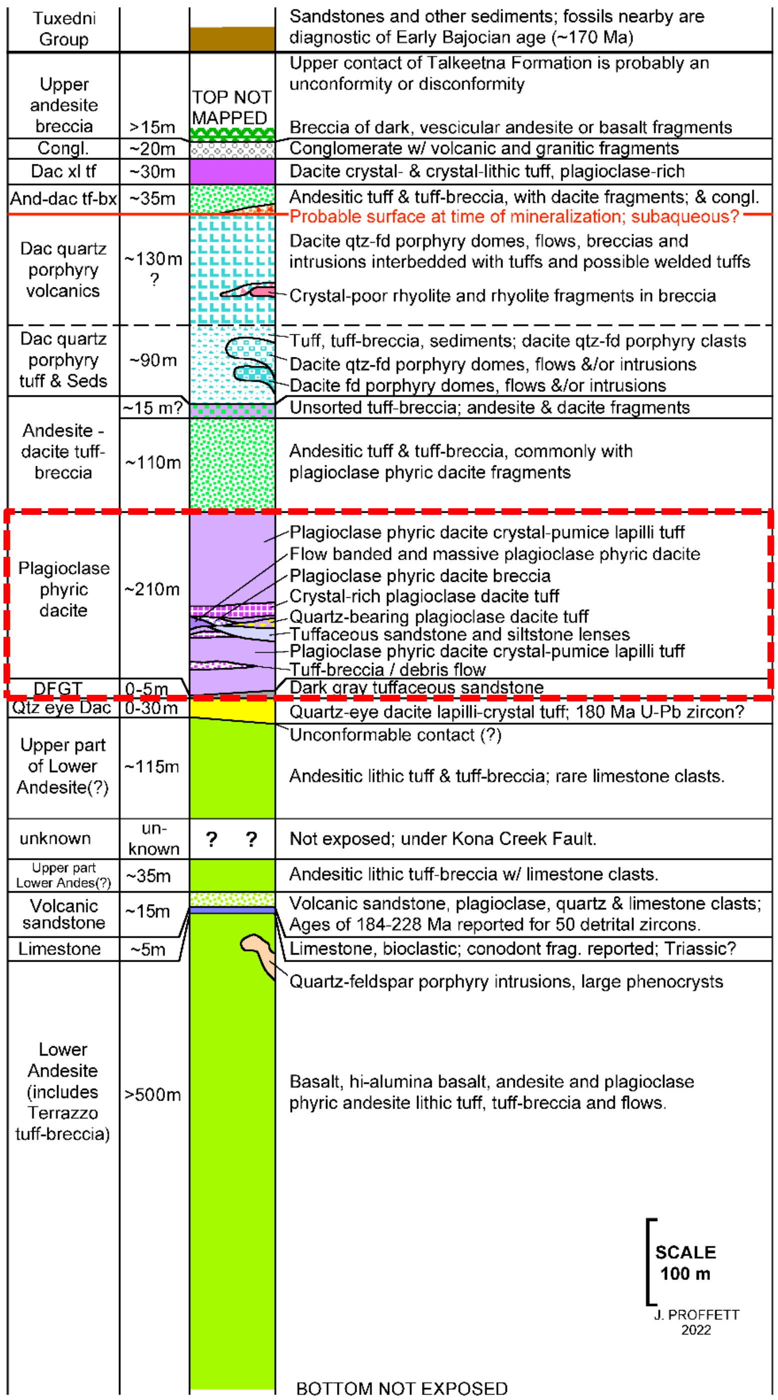
***B) Granodiorite***

East of the diorite unit and adjacent to the Bruin Bay fault is a coarse-grained, biotite-hornblende granodiorite. The unit contains xenoliths of the fine-grained diorite. Fifteen (15) kilometers north of JT Deposit, a concordant age of 170 Ma has been recorded (Detterman et al., 1966).

*Breccia Dykes*

A north-south trending breccia dyke cutting the dacite quartz porphyry has been recorded ranging from 20 to 50 meters wide. The dyke is composed of fine-grained chloritic material similar to the andesite - dacite tuff breccia and includes breccia fragments of dacite quartz porphyry and the coarse-grained granodiorite. In places, the breccia dyke is altered with pyrite and silicification. Some fragments of granodiorite are clay altered with limonite, while other fragments of granodiorite only show altered rims, indicating mineralization likely occurred concurrently to the formation of the breccia dyke unit.

***Table 7.2 Local Stratigraphy, from Proffett (2022) with units known to host mineralization at the JT Deposit highlighted in red***




**Appendix 3** Generalized stratigraphic section of the Talkeetna Formation in the Johnson region. Based on mapping in 1992, 2020 and 2021. The Lower Andesite could possibly correlate with a unit older than the Talkeetna Formation, such as the Kamishak Formation or the Kakhonak or Tlikakila Complex (see USGS SIM3340, geologic map of Alaska, 2016).

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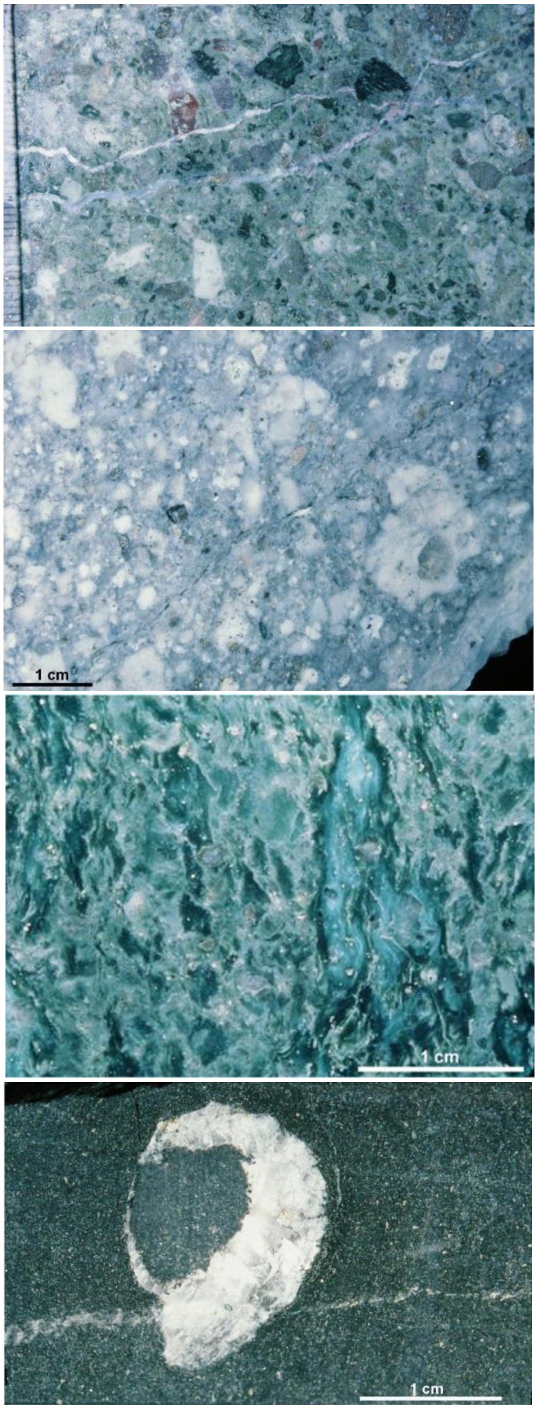
***Plate 7.1 Photos of the Key Lithologies at Johnson Tract (Proffett, 2019)***




*A - "Terrazzo" Tuff Breccia (TTB) from lower andesitic unit*

*B - Dacite quartz-eye lapilli tuff (DLT)*

*C - Dacite pumice lapilli tuff (DLT), host to mineralization*

*D - Dark fine-grained tuff (DFGT) with fossil replaced by anhydrite*

## 7.3 Structure

Recent work by the USGS has interpreted the dominant deformation in the Johnson Tract project area is from southeast sinistral transpression resulting in open to gentle folds and oblique left-lateral reverse and left-lateral strike-slip faults (Betka et al., 2017). The major structure in the area is the Bruin Bay fault zone (BBFZ). Most other faults in the Johnson area are related to the BBFZ and record shallowly northeast- or southwest-plunging displacement (Betka et al., 2017).

### 7.3.1 Faulting

*Bruin Bay Fault Zone (BBFZ)*

The Bruin Bay fault zone is a major regional fault extending over 450 kilometers along the east flank of the Aleutian Range, separating the Iliamna and Chignik subterranes of the Peninsular terrane, and defining the northwest tectonic boundary of the Cook Inlet forearc basin (Nokleberg et al., 1994; Betka et al., 2017). South of the project area, the fault juxtaposes the upper member of the Talkeetna formation in the hanging wall against the lower member of the Naknek formation in the footwall and is estimated to have up to three km of throw (Detterman et al., 1966; Wartes et al., 2016; Betka et al., 2017).

At Johnson Tract, the BBFZ is west-dipping and exposed 300 meters to the west of the JT Deposit, where Jurassic intrusive rocks in the hanging wall are in contact with Lower Jurassic lower Talkeetna formation host rocks (**Figure 7.4**). Mapping in 2019 covered 600 meters along the Bruin Bay fault zone. The prominent north-trending limonite-pyrite alteration zone crosses the fault, suggesting that the majority of displacement on the BBFZ occurred prior to at least some local alteration. Previous work on the composition of plutonic clasts and detrital zircons in the Late Jurassic Naknek Formation indicates a Talkeetna Arc source (Wartes et al., 2013). Granitic boulders, apparently from west of the BBFZ, occur in the uppermost Talkeetna Formation in vicinity of the Johnson Deposit (Proffett 2020), suggesting that reverse motion on the BBFZ initiated as early as the Early – Middle Jurassic. Other recent work, indicating oblique left-lateral reverse to left-lateral strike slip motion on the BBFZ, concluded that most displacement occurred significantly later, in the Paleocene to Eocene (Betka et al., 2017).

*Dacite Fault*

The Dacite Fault is an important, 5 to 10 m thick, steeply southeast-dipping brittle and gougy fault which bounds and likely offsets the southeast side of the JT Deposit. Locally, the Dacite Fault is pyritic, indicating some stages of the fault developed during local mineralization. At surface, the Dacite fault dips steeply and juxtaposes the strongly altered and mineralized core of the JT Deposit with relatively unaltered dacite quartz-feldspar porphyry. At depth, drilling suggests that the Dacite Fault splits into several distinct splays, with 50 to 100 meters or more of down-dropping to the east (i.e. normal faulting) observed on the west-most splays based on offsets to key stratigraphic units such as the dark fine-grained tuff and quartz-eye dacite volcaniclastic rocks. The sense and magnitude of lateral displacement is unknown. Work is ongoing by HighGold to resolve the displacement as part of its exploration for the fault offset continuation of the JT Deposit.

### *Cuervo Fault*

The Cuervo Fault is a steeply west-dipping, northeast trending, left-lateral strike-slip fault exposed along the southern end of mineralized outcrop at JT Deposit. Over a ten-meter width, the fault consists of several branches 10 to 100 centimeters wide, which narrow to the north along trend. Fault gouge is composed of black to dark green chlorite with pyrite and locally sphalerite and chalcopyrite, indicating deformation occurred during mineralization. Slickensides generally plunge gently southwest. Displacement is thought to be between 50 to 80 meters. The fault pinches out or jogs at depth. Multiple fault strands are identified in drill core in the subsurface. Originally modeled as sharp hanging wall to the JT Deposit, recent drilling in 2019 to 2021 has identified mineralization on both sides of the fault.

### *HW and FW Saddle Faults*

Approximately 900 meters northeast of the JT Deposit, two fault structures are exposed in the saddle of the ridgeline. These two faults are referred to as the **hanging wall Saddle Fault** and the **footwall Saddle Fault**. Along the ridge, both faults dip approximately 65 degrees to the northwest. Historic drilling northeast of the deposit indicate these faults could flatten at depth to as much as 40 degrees. Interpretation of 2020 drilling suggests reverse motion (or thrusting) on the Saddle faults, with a combined displacement of between 150 and 300m; they also appear to truncate the earlier steeply-dipping Dacite Fault. The Saddle Faults are similar in orientation to the regional BBFZ and show a similar sense of displacement. Movement on the BBFZ has been interpreted as oblique, left-lateral reverse (Betka et al., 2017) and if the Saddle faults are synthetic to the BBFZ, some left-lateral movement is also likely.

### *Local Cross Faults*

Northwest to west-northwest striking cross faults are noted by historic workers, displacing the Dacite, Cuervo, and other northeast-striking faults. One cross fault with seven meters of apparent displacement was confirmed during mapping by Proffett (2019); however detailed UAV imagery to the southwest of the JT Deposit and recent mapping indicate that several other cross faults could be present. These cross-faults have similar orientation to right-lateral strike slip faults noted in the area (Betka et al., 2017).

### *Kona Creek Fault*

The "Kona Creek Fault", originally mapped by Anaconda in the early 1980's, is a steeply west-dipping, fault crossing the western part of the Kona Prospect and is exposed on both sides of Kona Creek and at a site 200 m south of Kona Creek (Proffett, 2021). In all these places, an eastern strand of the Kona Creek Fault forms the contact between intensely altered and pyritized rocks to the east and non-pyritized rocks to the west. This strand consists of a few cm of fault clay and up to a meter or so of fractured rock; it does not appear to be a major fault on the scale of the Bruin Bay Fault, and the rocks on both sides appear to be part of the Lower andesite unit, but there was clearly enough displacement along it to truncate the large zone of alteration and mineralization to the east of it. A second strand occurs a few meters to the west. Surface mapping shows that the main Quartz Eye Dacite Tuff unit is apparently truncated by the Kona Creek Fault under valley fill within 200 meters south of Kona Creek on the east side of the Fault. The Kona Creek Fault may merge with the Bruin Bay Fault based on its projection to the south but has not been traced to the north beyond the property boundary.

*Milkbone Fault*

The Milkbone Fault is a six-kilometer long north-south fault that may represent an important regional gold-bearing structure in the northern portion of the Johnson Tract project. It is separate and distinct from the main JT Deposit area located several kilometers to the southwest and it and related subsidiary faults appear to have an important control on mineralization. The Milkbone Fault dips steeply to the west and, in the Milkbone Prospect area, it places fresh andesite on the east side against pyritized dacitic volcaniclastic rocks on the west side. The Milkbone Fault can be traced four kilometers northwards to the Easy Creek Prospect.

*Rizzo Fault*

The Rizzo Fault is a north-northeast trending, west-dipping fault immediately west of the Middle Difficult Creek prospect area in a prominent gully. It has been intersected in holes DC21-013, DC21-015, DC21-017, and is observed on surface in the creek. It appears largely as a ~1m gougy, pale clay/sericite altered strongly foliated fault zone with minor anhydrite veining, but with little pyrite. No other mineralization is observed related to this fault and the fault may offset mineralization.

*Central Fault*

The Central Fault is north-northeast-trending, steeply west-dipping fault located east of the Middle Difficult Creek prospect within a creek gully and juxtaposes unaltered andesite to the east against QSP-altered rocks to the west. This fault has been intersected in holes DC21-018, DC21-022, and DC21-026, where they intersected sericitic and pyritic gouge up to 5 m true width and altered wall rock. It extends southwards in the Upper Difficult prospect.

### 7.3.2 FOLDING & TILTING

East of the Bruin Bay fault, the volcanic and sedimentary rocks of the Talkeetna Formation are tilted to the east. Drag along the Bruin Bay fault appears to steepen and overturn the Talkeetna Formation within several hundred meters of the fault. The dip of the Cuervo fault is known to flatten out by ten degrees at depth, while the Dacite fault appears to show no change. Proffett (2019) interprets this to indicate early strike-slip faulting along Cuervo and Dacite faults could have occurred during reverse faulting.

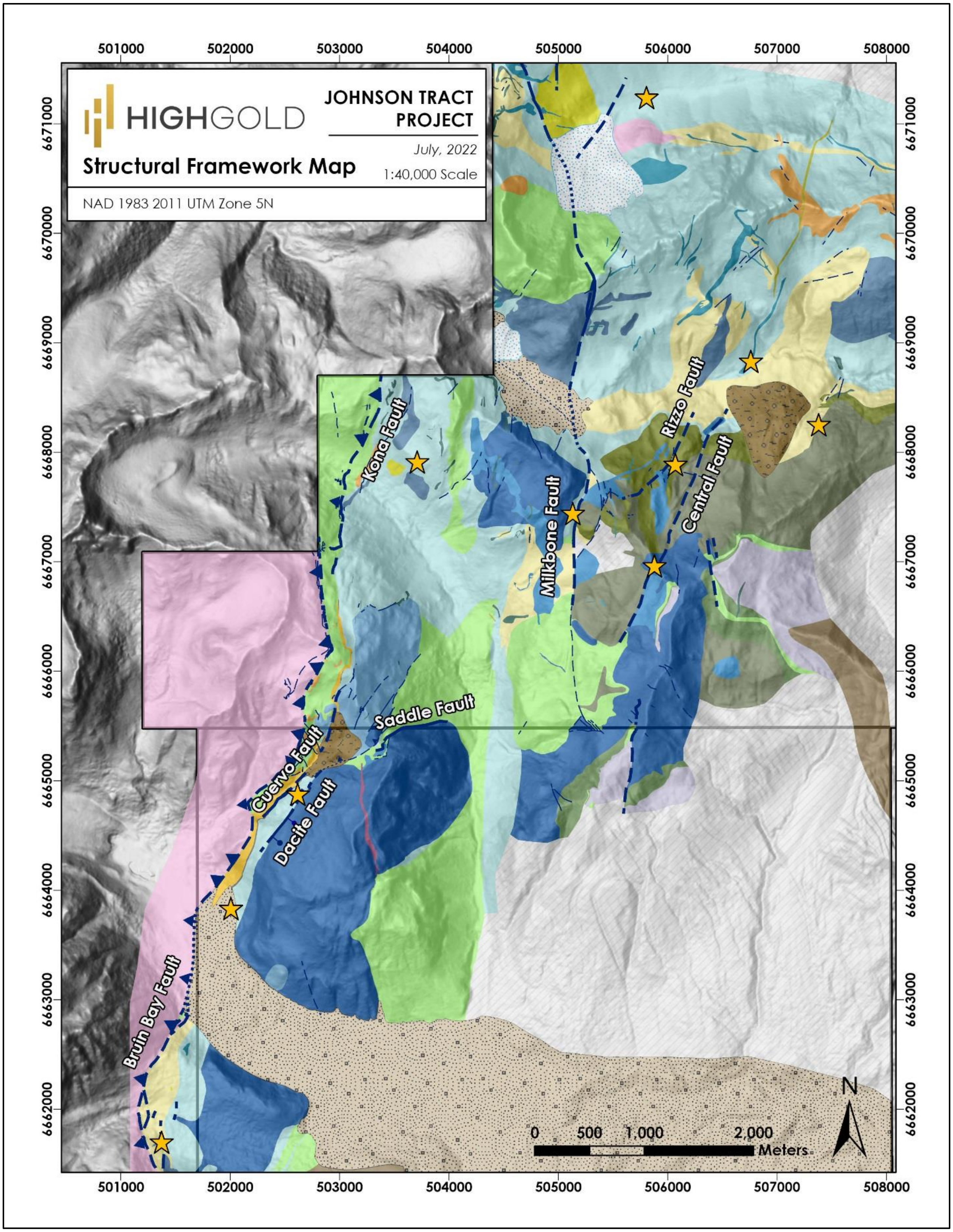



*Figure 7.4 Geology Map of the Johnson Tract Project with Major Faults (Highgold, 2022)*

## 7.4 ALTERATION

Proffett (2019) summarized the concentric alteration and mineralized zones recorded at Johnson Tract, below provides a summary starting with the outermost of the four zones (**Figure 7.5**).

### 7.4.1 OUTER SERICITE ZONE

A broad irregular zone that contains up to a few percent anhydrite and pyrite, with sericite, chlorite, and clay alteration of wallrock. Although most mineralization is recorded in the plagioclase-phyric dacite volcaniclastic rock, the Outer Sericite Zone alteration is seen in rock units stratigraphically above and below.

### 7.4.2 ANHYDRITE ZONE

Most notable surrounding the JT Deposit, zones of anhydrite-chlorite-pyrite alteration, commonly exceeding 20 percent anhydrite, are recorded. Anhydrite forms nodules with interstitial chlorite-pyrite which is locally replaced by sericite or clays (**Plate 7.2.A**). Small irregular veins of anhydrite are common throughout. Minor sphalerite is present higher up in some anhydrite-altered zones, either disseminated or as sparse anhydrite-sphalerite veins. Weakly anomalous gold is also known to occur within anhydrite-altered zones, proximal to the inner silicified zone.

### 7.4.3 SILICIFIED ZONE

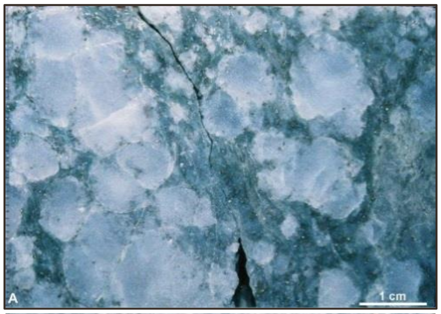
Within the Anhydrite Zone, a northeast plunging, tabular body of strongly silicified tuffs hosts the majority of mineralization. This zone is defined by abundant quartz-sulfide veining, and the replacement of wall rocks with fine-grained quartz. Relict nodular texture is observed locally, replaced by silica (**Plate 7.2.B**), suggesting that silicification may have overprinted earlier anhydrite alteration. Strong silicification and sericite-alteration is also closely associated with the more copper-rich 'footwall' zone, suggesting that this may represent a feeder to the overlying gold and zinc rich mineralization. Silicified rocks commonly contain >80 wt.% $SiO_2$, compared to ~65 wt.% $SiO_2$ in unaltered dacite tuffs. The silicified zone also contains abundant disseminated pyrite (1-5%), anomalous to high-grade gold throughout, and elevated base metals, commonly outboard of the main Au-rich mineralization.

### 7.4.4 VEINS & BRECCIA VEINS

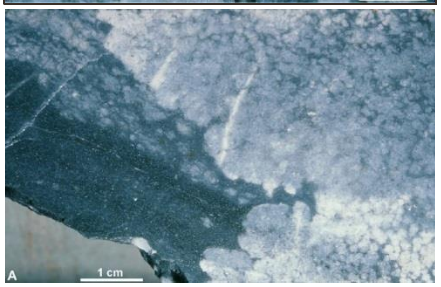
Several vein and breccia vein types cross-cut the Silicified Zone:

- Quartz-pyrite-sphalerite +/- chalcopyrite veins with no obvious open-space textures (**Plate 7.2.C**)
- Breccia veins with open-space textures (coliform) (**Plate 7.2.D/E)**
  - high-grade gold is common
  - appear to dip steeply to west – northwest
- White quartz, dark chlorite, coarse-grained chalcopyrite, pyrite +/- sphalerite
  - appear to cross-cut open-spaced breccia veins (**Plate 7.2.F**)
  - high-grade gold is found in the walls, rarely recorded in the veins

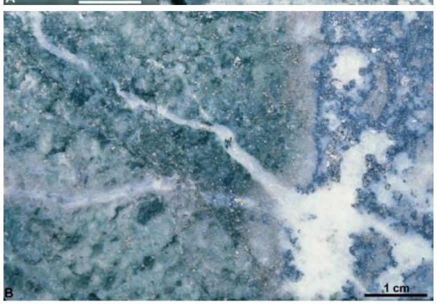
***Plate 7.2 Photos of the Key Alteration and Mineralization at Johnson Tract (Proffett, 2019)***



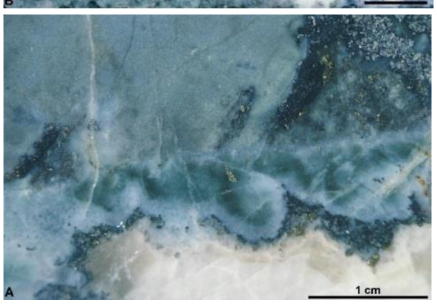

A - Nodular Anhydrite replacing plagioclase-phyric dacite lapilli tuff



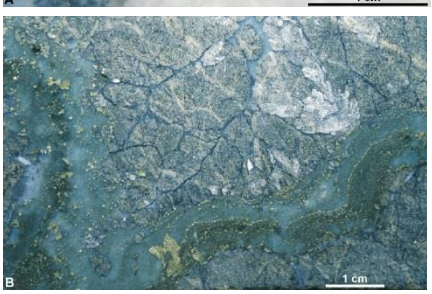

B – Silicification replacing Nodular Anhydrite Alteration




C – Silicified Dacite Tuff with relict anhydrite cut by Qtz-Py-Sph Veining




D – Qtz Veins in Silicified Dacite Tuff. Early Sph-Py-Qtz veins cut by open-space filling coliform veining with Qtz-Sph-Py and late anhydrite (Hole 4/200.8m/214 g/t Au)




E – Coliform Layers of Coarse Sph followed by Qtz-Py-Cpy-Sph Veining (Hole 12/184.2m/14.2 g/t Au)


F – Silicified Breccia cut by late Qtz-Chl-Py-Cpy Vein

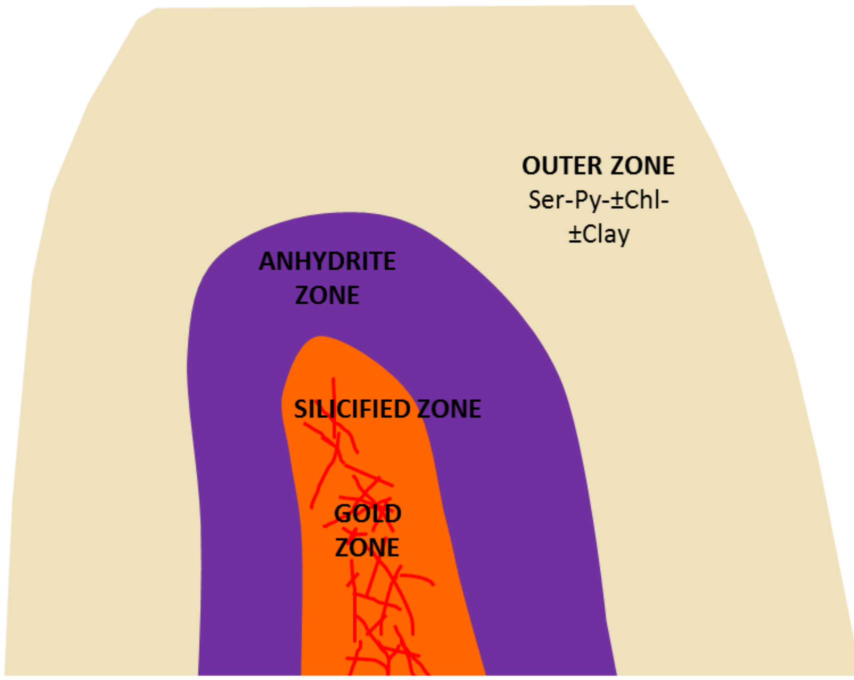



*Figure 7.5 JT Deposit – Zoned Alteration Model for JT Deposit (Highgold 2021)*

## 7.5 MINERALIZATION

### 7.5.1 JT DEPOSIT

Mineralization at Johnson Tract forms a steeply southeast dipping, tabular silicified body that contains a stockwork of quartz-sulphide veinlets and brecciation, cutting through and surrounded by a widespread zone of anhydrite alteration (Proffett, 1993). Drilling has defined silicification and mineralization from surface (**Plate 7.3**) to a vertical depth of approximately 350 meters, over a total strike length in excess of 600 meters, and to a maximum true width of 55 meters. The main body of mineralization, the **JT Deposit**, is bound on the east by the southeast dipping Dacite fault (**Figure 7.6**).

The JT Deposit consists of a complex stockwork system of high-angle, 1-10 cm wide veins and breccia zones containing quartz, sphalerite, chalcopyrite, galena, anyhydrite, barite, Fe chlorite and native gold (Steefel, 1987) (**Plate 7.4., Plate 7.5, Plate 7.6**). In addition to veins and diffuse breccias, mineralization is also characterized by massive structureless intergrowths of quartz and sulphides, commonly with very coarse-grained sulphide mineralogy. Veins show characteristics associated with epithermal styles of mineralization. Open-space fill texture is common and breccias consist of subrounded fragments hosted within a sulphide-silica matrix.

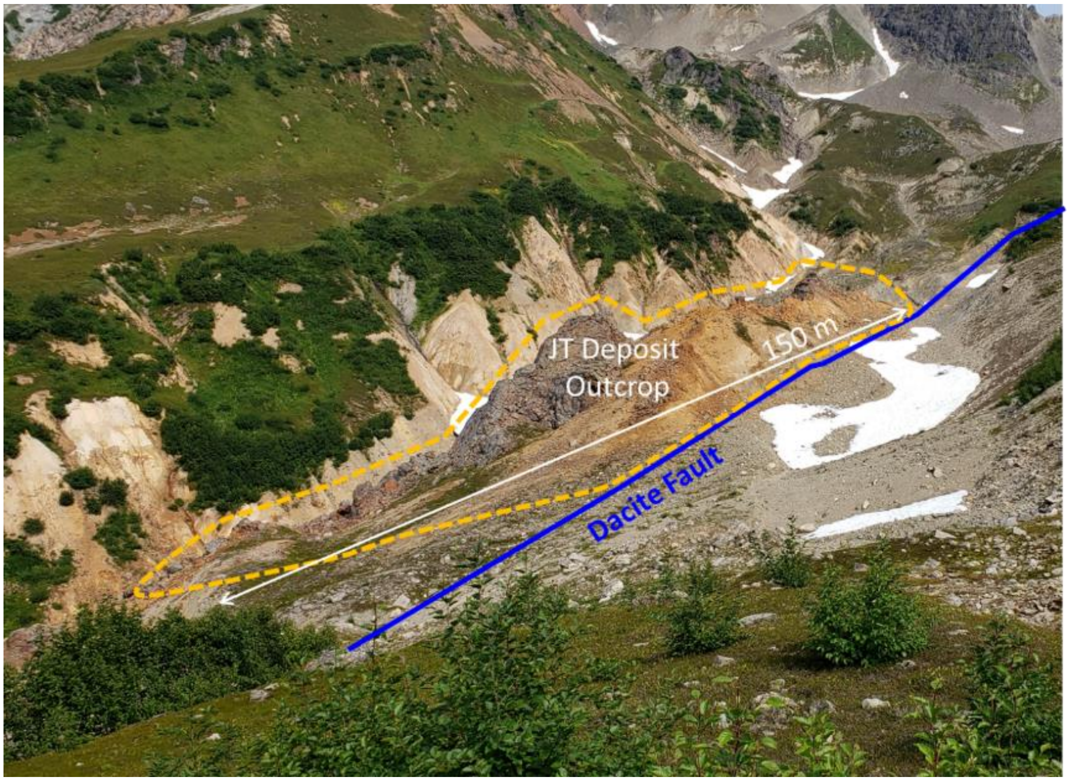



***Plate 7.3 Photo of the JT Deposit surface outcrop looking northwest***

Early and relatively minor base metal mineralization (sphalerite) formed with the pervasive anhydrite-chlorite-sericite alteration. Later base (sphalerite-galena-chalcopyrite) and precious metal mineralization formed over several mineralizing events within the silicified stockwork vein zone. The genetic and temporal relationship between base metal deposition and precious metal deposition is not well understood (Rockingham, 1993). Re-Os dating of a bulk-sulfide separate, containing both chalcopyrite and pyrite from the footwall zone produced an age of 186 ± 6Ma for mineralization. This suggests that mineralization was contemporaneous with Talkeetna Arc volcanism and the deposition of Talkeetna Formation host rocks (earliest Jurassic, Detterman et al. 1996), and is consistent with the shallow sub-seafloor setting for mineralization proposed by Steefel (1987).

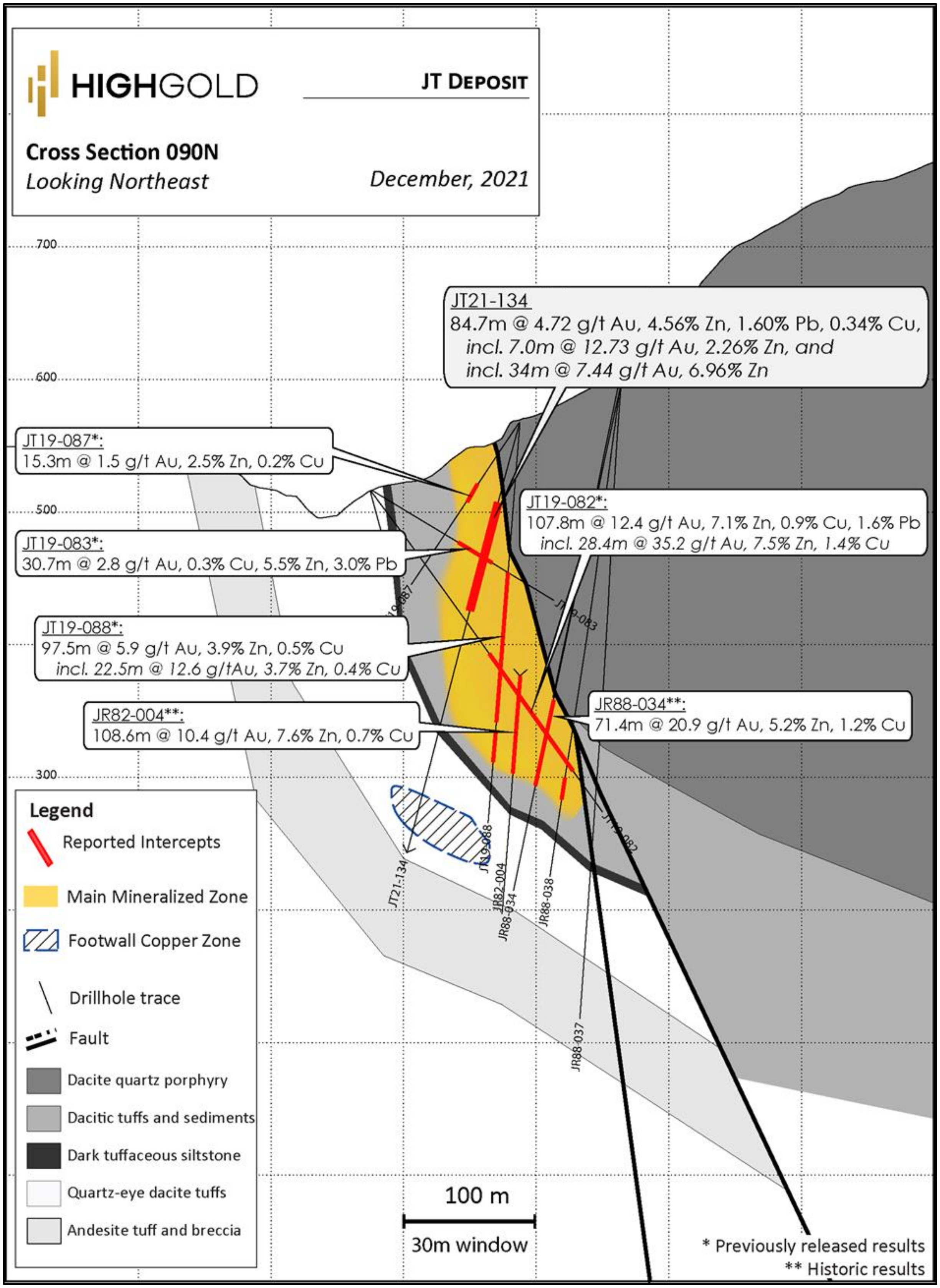



*Figure 7.6 JT Project – Cross-Section of the JT Deposit Significant Drill Hole Intersections*


***Plate 7.4 JT Deposit – Example of Mineralized Drill Core from Hole JT20-92***

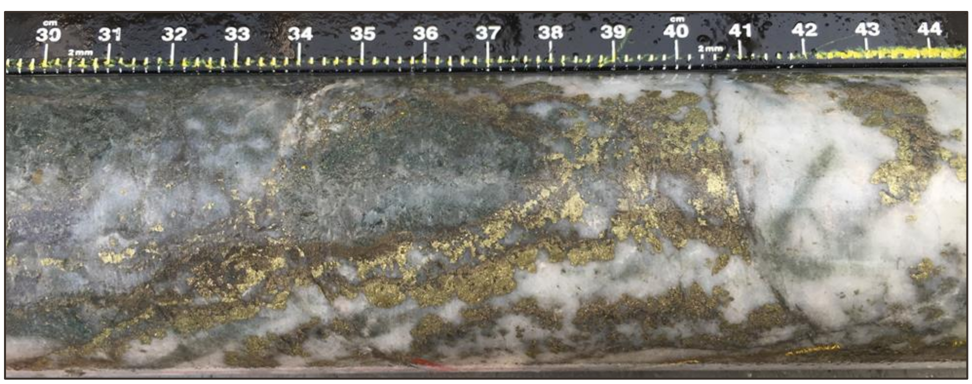


***Plate 7.5 Qtz-Py-Cpy-Chl-Anh Veins in Hole JT20-92***
*(28.5 g/t Au, 2.0% Cu, 32.1 g/t AuEq) (Highgold 2021)*

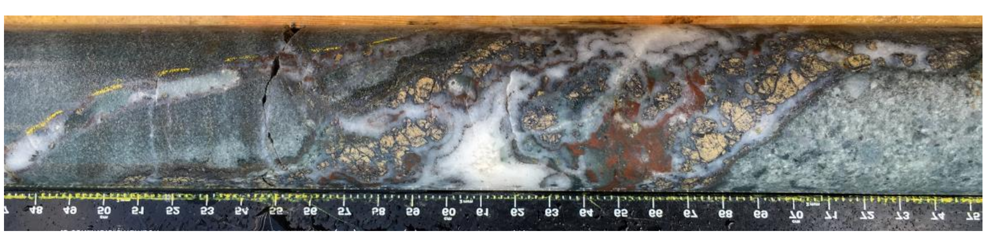


***Plate 7.6 Crustiform Qtz Veins with Coarse Sph, Jasper, Tr Cpy/Gal in Hole JT20-92***
*(80.9 g/t Au, 6.1% Zn, 85.3 g/t AuEq) (Highgold 2021)*

### 7.5.2 NORTHEAST OFFSET (NEO)

The NEO prospect is centered approximately 600 meters northeast of the JT deposit (**Figure 7.6**). It was previously thought to represent the northeast fault offset continuation of the JT Deposit (Proffett, 1991) until drilling in 2020 updated the geological model. It is now interpreted to represent a separate zone of mineralization along strike of the JT Deposit and to be on the same western side of the Dacite Fault as the JT Deposit.

NEO is a zone of steeply dipping, north-northeast trending silicification with quartz and sulphide veins, starting at downhole depths of 300 to 400 meters (**Figure 7.7**). The character of alteration and mineralization is similar to the JT Deposit area, albeit not as wide or rich. Significant drill intersections from nine (9) holes completed prior to HighGold include:

- 11.4 meters at 3.5 g/t gold, in hole JR-92-055,
    - Including 3.1 meters at 11.25 g/t gold, and
- 14.7 meters at 1.3 g/t gold, in hole JR-92-056

Base metal rich mineralization with VMS-like characteristics has also been intersected at the NEO area in drilling by HighGold in 2020. Significant intersections include:

- 7.8 meters at 6.1% Zn, 1.6% Pb, 0.2% Cu, 0.7 g/t Au, 36 g/t, in hole JT20-114,
    - Including 3.9 meters at 9.1% Zn, 2.3% Pb, 0.3% Cu, 0.8 g/t Au, 47 g/t Ag

Reinterpretation of the geological model at NEO includes the recognition that the Saddle Fault is separate and distinct from the Dacite fault, and that the Dacite Fault projects beneath the Saddle Fault (**Figure 7.7** and **Figure 7.8**). These advancements in understanding highlight the potential for mineralization anywhere within the key Dacite Tuff host stratigraphy northeast of the JT Deposit and also indicate that the potential fault displaced continuation of the JT Deposit lies further east than the areas that have been tested to date.

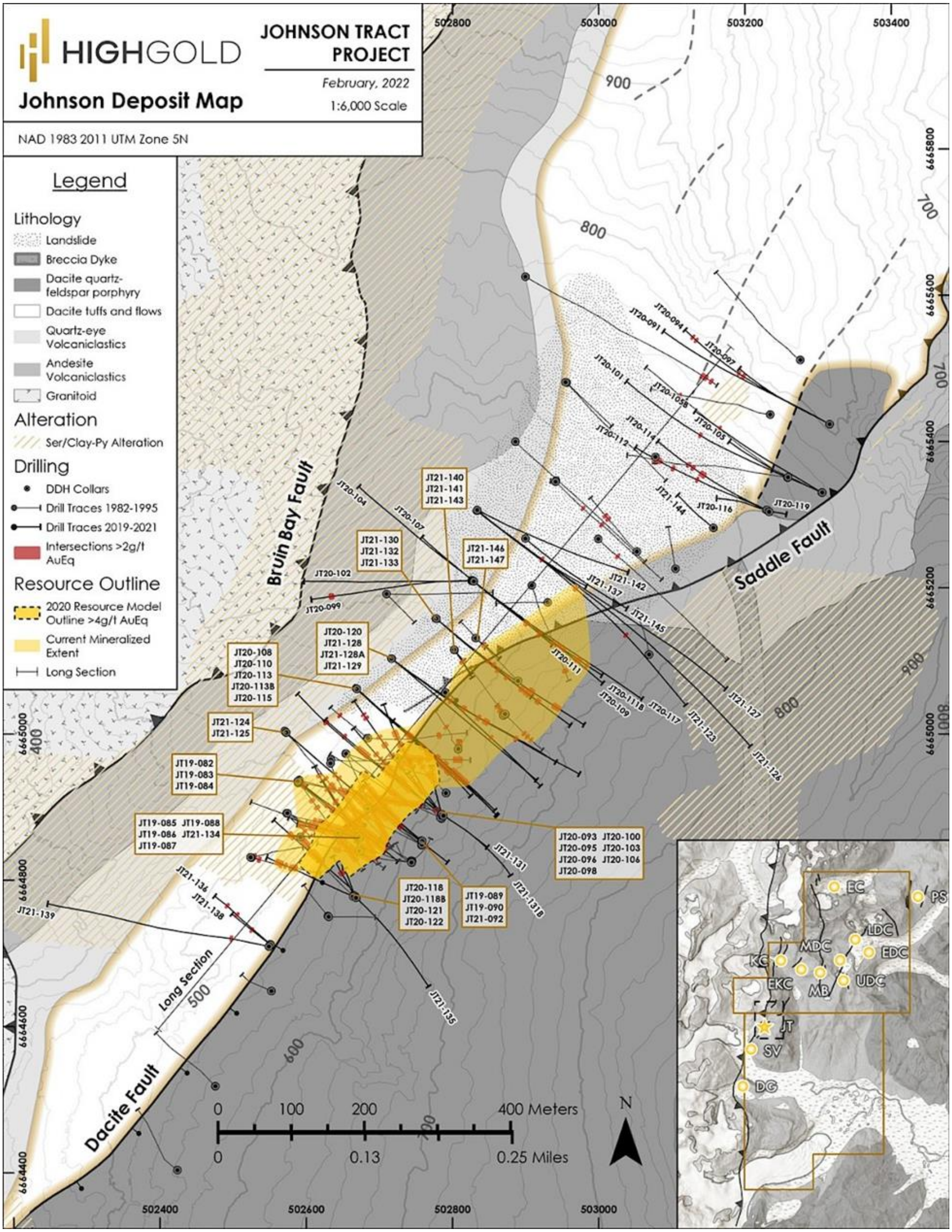



*Figure 7.7 Geological Map of JT Deposit and NEO Target along strike to Northeast*

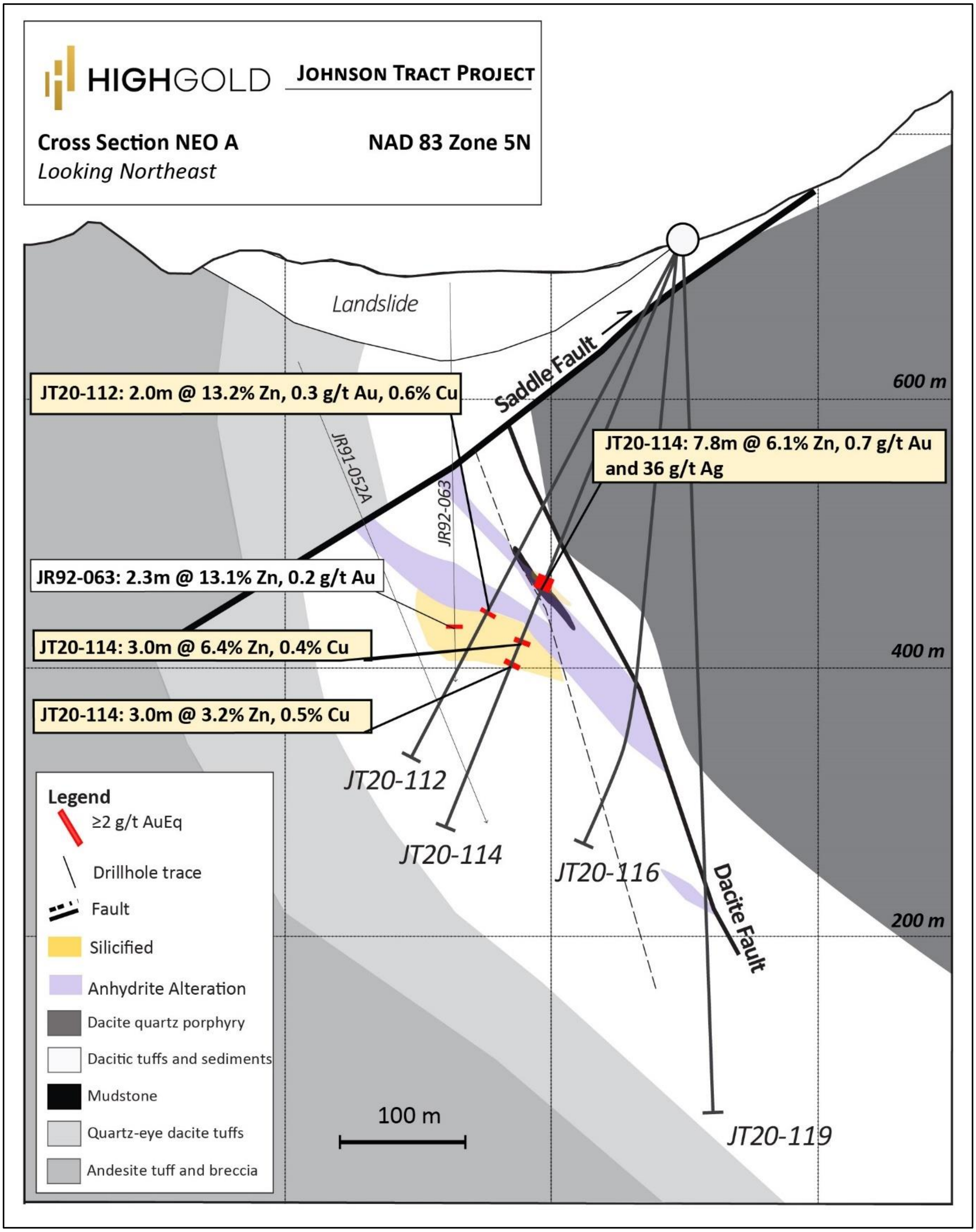



*Figure 7.8 JT Project – Cross-Section of NEO Target*

### 7.5.3 Footwall Copper Zone (FWCZ)

One drill hole by the Company in 2019 was extended outside the modeled extents of the JT Deposit and discovered a new style of mineralization within the footwall at a depth of 300 meters below surface (**Figure 7.9**). Mineralization in hole JT19-089 consisted of an anastomosing swarm of silver, copper, zinc-rich quartz veins (**Plate 7.7**). The hole returned **20.7m grading 2.38% Cu, 31.8 g/t Ag, 0.18 g/t Au, 4.86% Zn, and 0.10% Pb**. Subsequent drill holes completed in 2020 and 2021 have intersected similar zones in the footwall to the JT Deposit. This dominantly Cu-Ag style is geochemical distinct from the main JT Deposit above and sits at a deeper stratigraphic level.


***Plate 7.7 JT Deposit – Footwall Copper Zone (FWCZ) in Hole JT19-089***
*(20.7m @ 2.38% Cu, 31.8 g/t Ag, 4.86% Zn)*

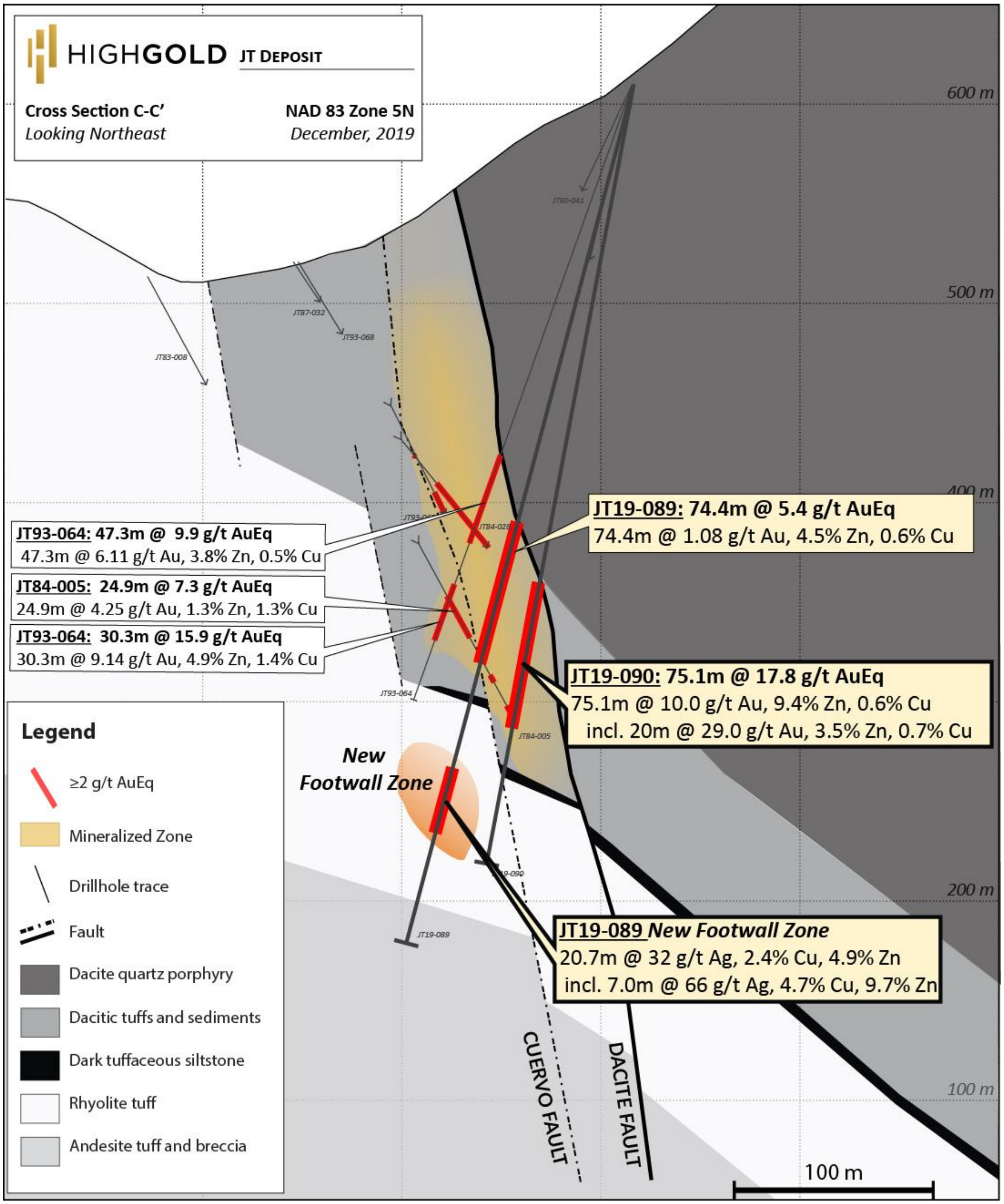



*Figure 7.9 Typical JT Deposit Cross-Section*

## 7.6 OTHER PROSPECTS

Nine (9) additional prospects occur over a 13-km long trend, located in and immediately adjacent to the Johnson Tract mineral holdings (**Figure 7.10**Error! Reference source not found.). The prospects were identified during property-wide reconnaissance exploration by Anaconda and HWP, consisting of stream sediment sampling, prospecting, mapping and geophysics. All are hosted within the Talkeetna formation volcanic sequence, with many sharing similar alteration and metal assemblage attributes to the JT Deposit. Prior to 2019, most prospects had received little more than first-pass evaluation. 2021 saw continued extensive exploration sampling at DC, Milkbone, Kona, and EC prospects.

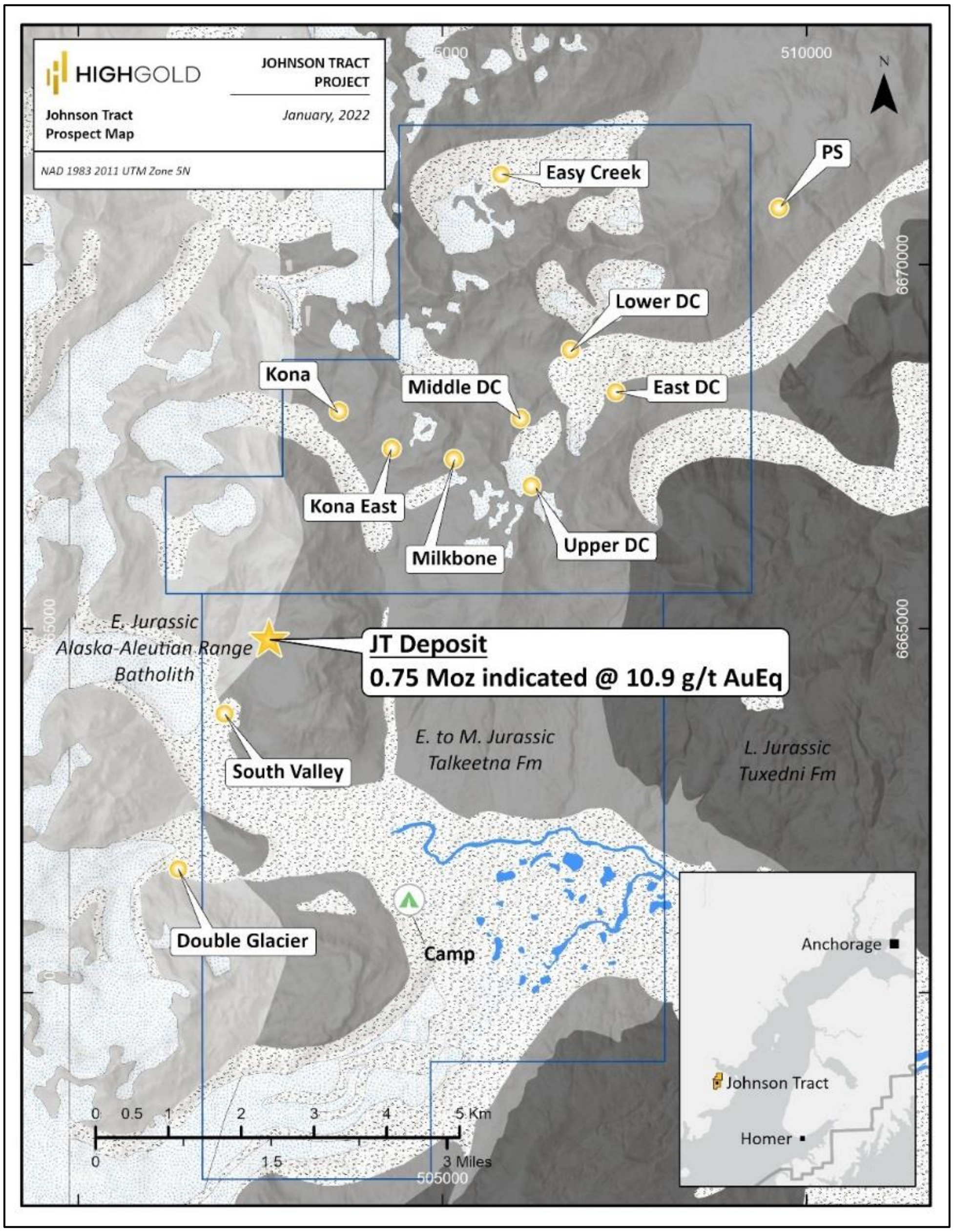



*Figure 7.10 Prospects of the Johnson Tract Project*

### 7.6.1 Difficult Creek (DC) Prospect

The Difficult Creek (DC) prospect is located four (4) km northeast of the JT Deposit (**Figure 7.10**) (**Plate 7.8**). DC is characterized by a series of large gossanous and clay altered zones that collectively extend over a 1.5km x 3.0km area and are similar in style to the JT Deposit .

Stratigraphically from lowest to highest, the DC prospect is underlain by dacitic pumice tuff, rhyolitic tuff, and tuffaceous sediments and a series of andesitic and dacitic volcanic and volcaniclastic rocks that dip shallowly to the south-southwest. All the units are cross-cut by a dacite porphyry intrusion, dacitic and andesitic dikes, and by synvolcanic and post-volcanic faults.

Alteration at the DC Prospect is similar in style to the JT Deposit area, with early sulfate-chlorite and sericite-pyrite alteration cut by later silica alteration (CIRI, 1997). Two main types of alteration are present; propylitic alteration which is common with a chloritic groundmass, strong calcite replacement and minor amounts of disseminated to veinlet-controlled pyrite (<3%) (Nieman, 1984); and argillic alteration that is locally restricted to structures and characterized by a strong coating of goethite on surfaces and fractures, gray to white texture destructive clay alteration and minor pyrite (Nieman, 1984).

Mineralization at the DC Prospect occurs as base metal- and sulphide-rich quartz-carbonate veins and breccias within pervasively sericite-pyrite ± clay/anhydrite altered, shallowly dipping dacitic volcaniclastic rocks that underly a capping sequence of less altered andesitic volcaniclastic rocks, intruded by quartz-feldspar porphyries. These capping rocks host silver- and gold-rich epithermal-style veins at higher elevations. Mineralization is generally localized within steeply dipping, tabular zones and fine laminated sulphides within tuffaceous rocks. Higher concentrations of gold are reported to be associated with clay and sulphate altered rocks later cross-cut by silicification (Millholland et al., 1985).

The widespread extent of mineralization and pervasive alteration exposed along structures and in erosional windows through the andesite supports the potential for a large and partially blind mineralized system linking the various prospects. Mineralization is, in part, controlled by anastomosing north to north-northeast trending fault systems, roughly parallel with, and to the east of, the Milkbone Fault.

The DC prospect area is divided into four main zones:

- Upper Difficult Creek (UDC)
- Middle Difficult Creek (MDC)
- Lower Difficult Creek (LDC)
- East Difficult Creek (EDC)

***Plate 7.8 Difficult Creek Prospect – View from Upper DC looking north at surface alteration at MDC***

The DC Prospect was discovered by initial stream sediment sampling in the early 1980's and follow-up work in 1982 identified mineralized veins and intrusive breccia at surface which were later tested with 1,343.8 m of drilling in 1983-1984. The drilling was successful at intercepting mineralization at depth along the Difficult Creek 'RAT breccia vein'. The RAT breccia vein is characterized by abundant galena with chalcopyrite hosted within a quartz vein striking 45° northwest and dipping 50° to 60° to the north (Ellis et al., 1983). Of note, drillhole DC-83-002 intersected **36.6 meters of 3.57 g/t gold, 1.8% zinc, 0.2% copper, 0.4% lead and 15.5 g/t silver**. Work at DC also consisted of rock channel sampling, IP surveys and detailed mapping.

In 2019, two zones of significant mineralization were identified, the historic prospect referred to as the RAT breccia vein (*now referred to as Rizzo Vein*) and a new vein zone 850m to the south-east. Across Middle Difficult Creek and Upper Difficult Creek, a total of 89 rock chip, grab and float samples were collected. Chip samples taken from the Rizzo Vein showing returned up **to 22.1 g/t Au, 178 g/t Ag, 1.1% Cu and 20% Pb over 1.5m**. Grab samples collected from the new vein zone returned up to 2.58 g/t Au and 102 g/t Ag. 29 soil samples were collected across the Rizzo Vein showing identifying a 100m long zone of over 100 ppb Au with values up 3.06 g/t Au. 12 silt samples were collected from the drainages above Middle Difficult Creek.

In 2020, a total of 276 rock chip, grab and float samples were collected. A new Au-Ag vein field was defined at UDC, with anomalous gold values ranging from 0.5 g/t to 7.9 g/t Au and anomalous silver values ranging from 30 g/t to 1,800 g/t Ag over a 500m x 100 area (**Figure 7.12**).

## *Middle Difficult Creek (MDC)*

The MDC prospect hosts the steeply north dipping, east-west trending **Rizzo Vein** widening to the west and thinning to the east. A surface sample from Anaconda returned 1.2 opt gold over a 1.5 meters length. Trenching yielded 0.25 opt gold over 5 meters, and later drilling intersected **36.6 meters of 3.57 g/t gold, 1.8% zinc, 0.2% copper, 0.4% lead and 15.5 g/t silver** in drillhole DC-83-002 (Proffett, 1992)(**Figure 7.11**). The north-south Rizzo Fault system, situated immediately west of the MDC prospect, is known to host pyrite, base metals and anomalous gold values. Another mineral occurrence lies just west of this fault zone offset to the north and a quartz stockwork zone with jasperoid veinlets, pyrite, sericite and anomalous gold is known further north of the known gold-base metal occurrence (Proffett, 1992). Detailed mapping at 1:2,500 and 1:1,000 scale was completed in 1983 (Ellis, 1984).

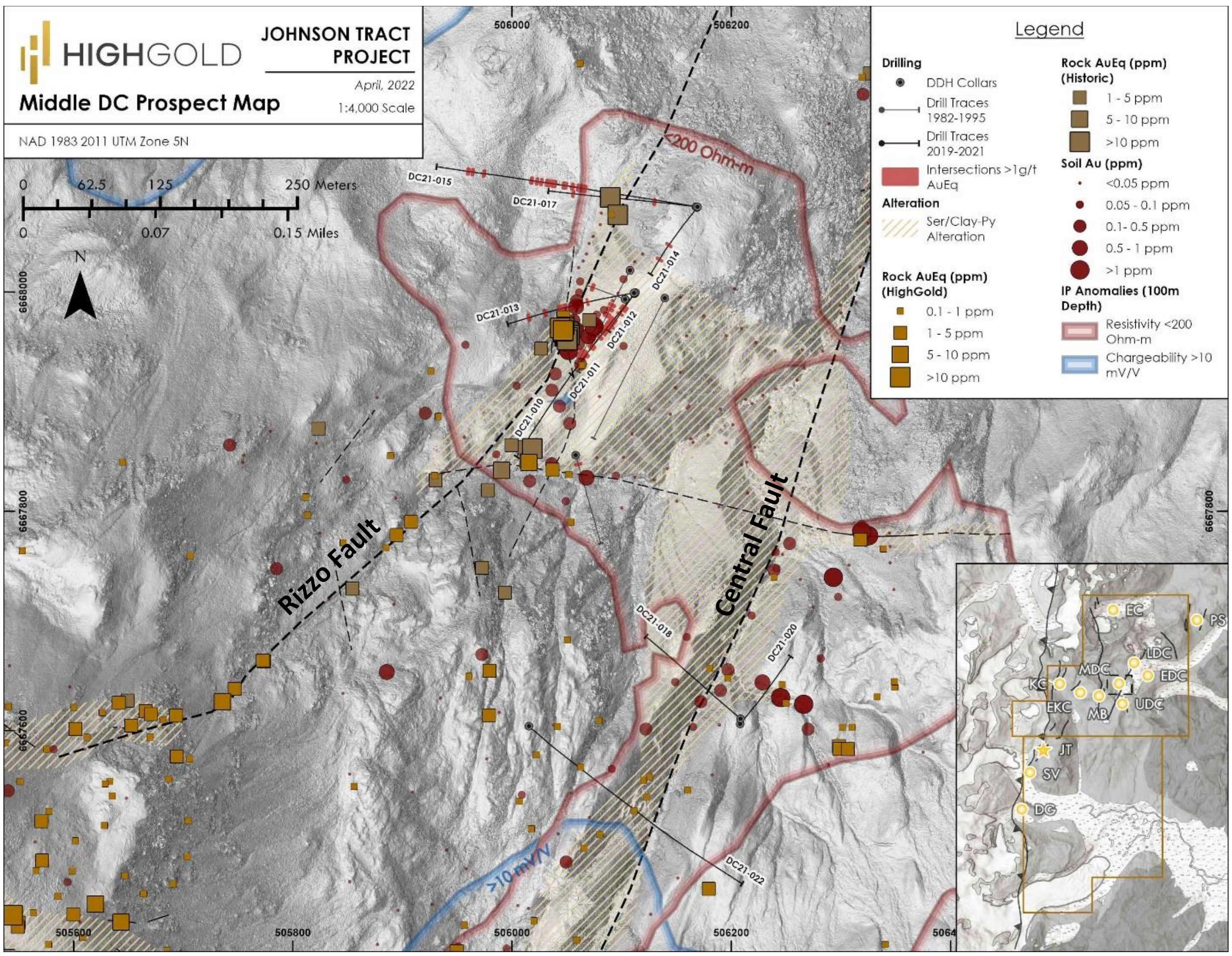



*Figure 7.11 JT Project – Middle DC Prospect Compilation Map*

### *Upper Difficult Creek (UDC)*

Mapping and sampling completed by Proffett in 1992 indicates that the Central fault zone continues to the south into UDC. UDC is characterized by separate quartz and pyrite-sericite stockworks associated with base metal and gold mineralization. Both MDC and UDC are hosted within andesitic volcanics and a dacite quartz porphyry, thought to be stratigraphically higher than the mineralization seen at Johnson Tract.

In 2020, a new Ag-Au vein field was defined at UDC by mapping and sampling over a 500m x 1000m area (**Figure 7.12**). The new Ag-rich vein field was discovered through follow-up of positive results generated during a short reconnaissance program in late 2019. It consists of multiple sets of epithermal crustiform quartz veins, vein swarms, and siliceous breccias. The vein field is centered approximately 1 km south of the MDC showing area and 200-300m higher in elevation. Individual quartz veins typically range from 20 cm to 1.0 m in width, are steeply dipping, and have been traced on surface for up to 250 m along strike with several vein structures interpreted to project beyond their current mapped extent beneath talus and scree cover. Dominant vein orientations are north-northwest, east-west, and north-south.

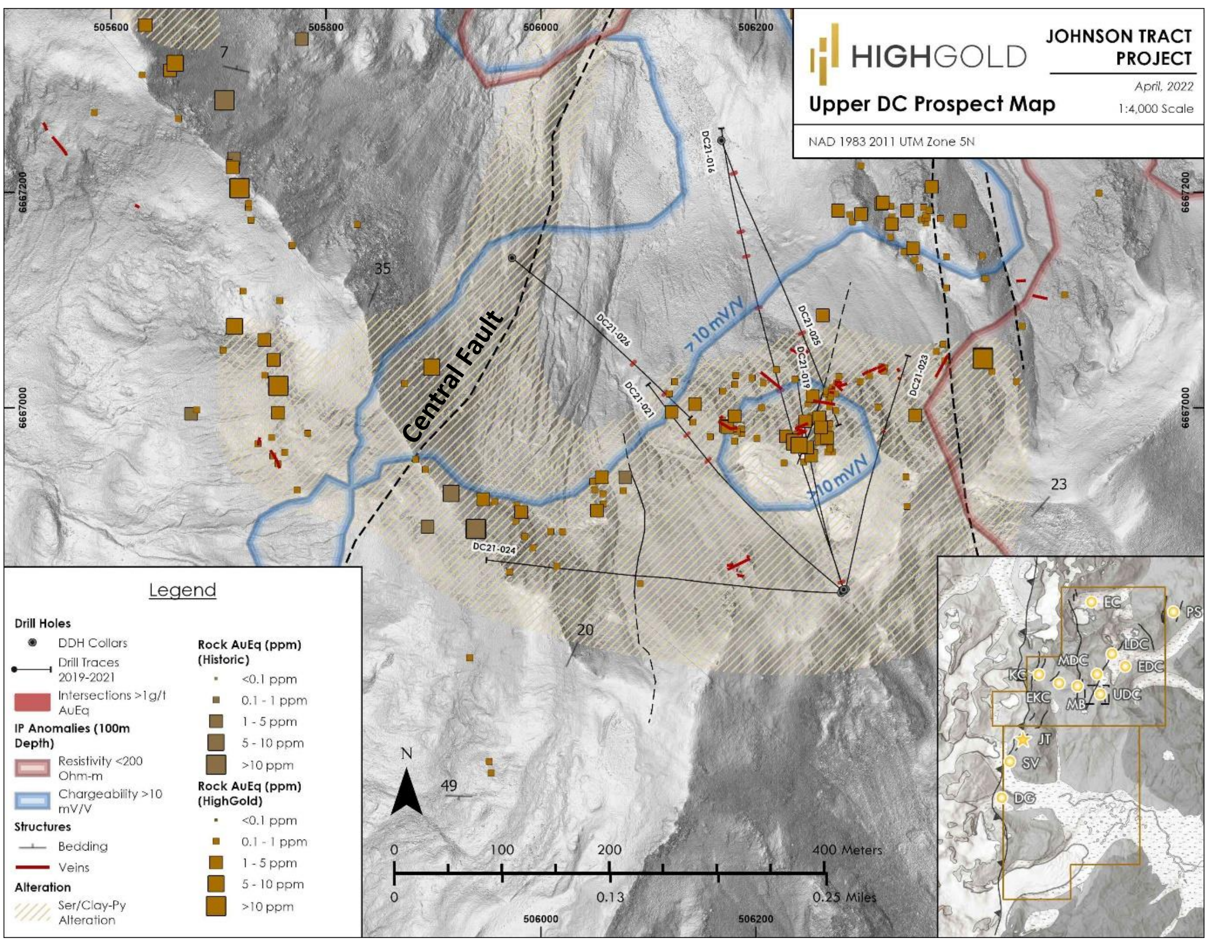



*Figure 7.12 JT Project – Upper DC Prospect Compilation Map*

Veins within the new vein field have significantly higher silver to gold ratios than the main DC Prospect gold showing area, with multiple samples in excess of 100 g/t Ag (ranging from 30 g/t to 1800 g/t). The veins are at higher elevation and higher in the stratigraphic sequence than the main DC Prospect, which has returned grab samples up to 50.1 g/t Au. It is interpreted that the veins represent the high-level silver rich uppermost part of a large epithermal mineral system at the DC Prospect. In addition to their potential for high-grade silver, these veins are important targets at depth where they project into underlying dacite tuffs that host most of the high-grade gold mineralization elsewhere on the Property.

*Lower Difficult Creek (LDC)*

At LDC, mineralization is associated with a northeast striking fault cross-cutting a quartz-rich dacite dyke. Mineralization is characterized by sphalerite, pyrite +/- chalcopyrite hosted within veins. Locally alteration consist of silicification grading into argillic alteration with the surrounding host rocks partially replaced by a chlorite-calcite-pyrite assemblage (Nieman, 1984). LDC has been mapped in detail down to 1:1,000 scale.

In 2020, sampling confirmed the existence of a historic copper anomaly (Grab sample containing 8.8% Cu). Mineralization consists dominantly of semi-massive to massive pyrite and chalcopyrite with minor bornite and chalcocite, hosted by highly silicified and gossanous rock.

*East Difficult Creek (EDC)*

A quaternary-age landslide separates MDC and EDC. 1:2,500 scale mapping at EDC was completed in 1983 by Millholland, Carter and McClelland (Ellis, 1984) defining an area of anomalous gold and base metal mineralization 200 by 500 meters in area. Millholland (1984) describes the mineralization at EDC, "*as the most extensive and strongly developed area of silicification and base metal mineralization recognized at surface within the Difficult Creek area*". However, surface chip sampling to date have not returned any significant gold or base metal values. Host rocks to mineralization are described as well bedded, felsic tuffs and volcaniclastic sandstones and conglomerates. These mineralized rock units are thought to overlie the aphanitic felsic unit that outcrops at the headwaters of Difficult Creek and the lower portion of the MDC prospect. Mineralization is characterized by disseminations and stockwork veins of quartz, sphalerite, chalcopyrite, pyrite and barite in chloritic tuffs and sediments with bedded siliceous layers traced over 300 meters further east of the EDC prospect (Ellis, 1984). Silicified zones and quartz veins range from one to five meters thick and extend over 200 meters into the overlying andesitic debris flows. (Ellis, 1984).

### 7.6.2 Milkbone (MB) Prospect

The Milkbone prospect is located 3.2 km northeast of the JT Deposit and consists of a zone of clay-carbonate alteration centered on the namesake Milkbone fault, a major north-south striking, west dipping structure which can be traced for at least 6 km to the north. At the Milkbone prospect, the Milkbone fault juxtaposes quartz-rich flows and volcaniclastics to the west and dominantly andesitic-basaltic flows and flow breccias to the east (**Figure 7.13**). Reconnaissance sampling in 1991-1992 identified vein and stockwork mineralization to the east of the Milkbone fault, similar in character to MDC. Mineralization occurs as epithermal-style quartz-sulphide (± carbonate) extensional and fault-fill veins related to faults and splays and as meter-scale base metal and sulphide-rich quartz-carbonate breccias within faults.

In 2020 and 2021, detailed mapping and surface sampling returned rock samples grading up to 14.3 g/t Au, 6% Zn, 4.3% Pb and 0.5% Cu and suggested that mineralization is associated with a set of north to northeast striking faults, sub-parallel to the Milkbone fault. Surface sampling also identified a significant soil Au anomaly (including two soil samples grading 4.39 g/t Au and 8.27 g/t Au)(**Figure 7.12**) immediately west of the Milkbone fault, and a float boulder grading **184 g/t Au, 20 % Pb and 2 % Zn** on the trace of the Milkbone fault, ~0.4 km to the southwest of previously identified mineralization.

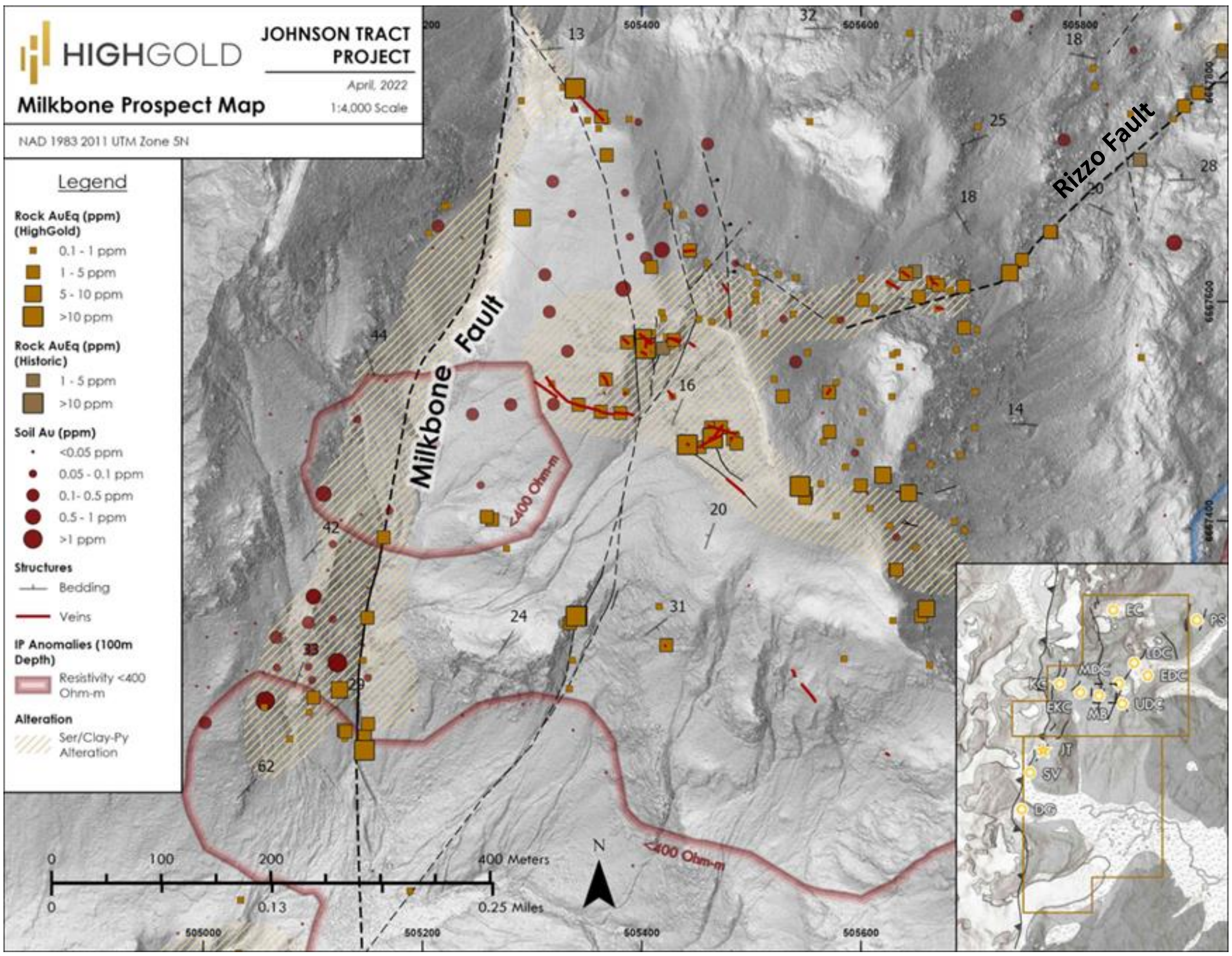



*Figure 7.13 JT Project – Milkbone Prospect Compilation Map*

### 7.6.3 KONA CREEK (KC) PROSPECT

Approximately three kilometers north-northeast of the JT Deposit, the Kona Creek prospect consists of a 0.4km x 0.8km zone of sericite-clay-pyrite alteration, cored by a smaller zone of pyrophyllite-quartz alteration. Alteration is hosted in a series of dacitic tuffs, tuff-breccias, and flows, laterally equivalent to those hosting the Johnson Deposit, and is focused on a small quartz-porphyry stock. The zone of alteration is coincident with high chargeability and low resistivity anomalies identified by IP surveys (2020 and 2021) and with soil anomalies in pathfinder elements including Te, Se and Bi. The volcaniclastic stratigraphy at the Kona prospect dips 30° - 40° to the southeast and alteration, geophysical anomalies and soil anomalies are all truncated to the west by the Kona Creek fault, a northwest dipping reverse fault.

The Kona prospect was first mapped and sampled in 1984 (Carter, 1984) and was remapped in detail in 2021 by HighGold geologists.

In 2019, a total of 100 soil samples and 26 rock samples were collected from Kona. Separate rock samples returned up to 150 ppb Au, 0.11% Zn and 0.25% Cu. Soil samples returned up to 199 ppb Au with 20 of the 100 samples at or above 5 ppb Au. In 2020, a total of 241 soil samples and 83 rock samples were collected from Kona. Rock samples returned up to 31 ppb Au, 1.3% Zn and 0.27% Cu. Soil samples returned values from <LOD to 208 ppb Au and 1 ppm to 3,280 ppm Cu. A chargeability high (20 to 35 mV/V) over an 800-meter strike was defined by a DCIP survey (**Figure 7.14**).

In 2021, initial drill testing of the Kona Creek prospect consisted of two (2) holes totaling 995m which intersected intense advanced argillic alteration (pyrophyllite – quartz ± dickite) to a depth of at least 400m below surface. Within this zone of alteration, hole KN21-001 intersected 0.7 meters grading 0.46 g/t Au hosted in a faulted, strongly clay altered dacite tuffs.

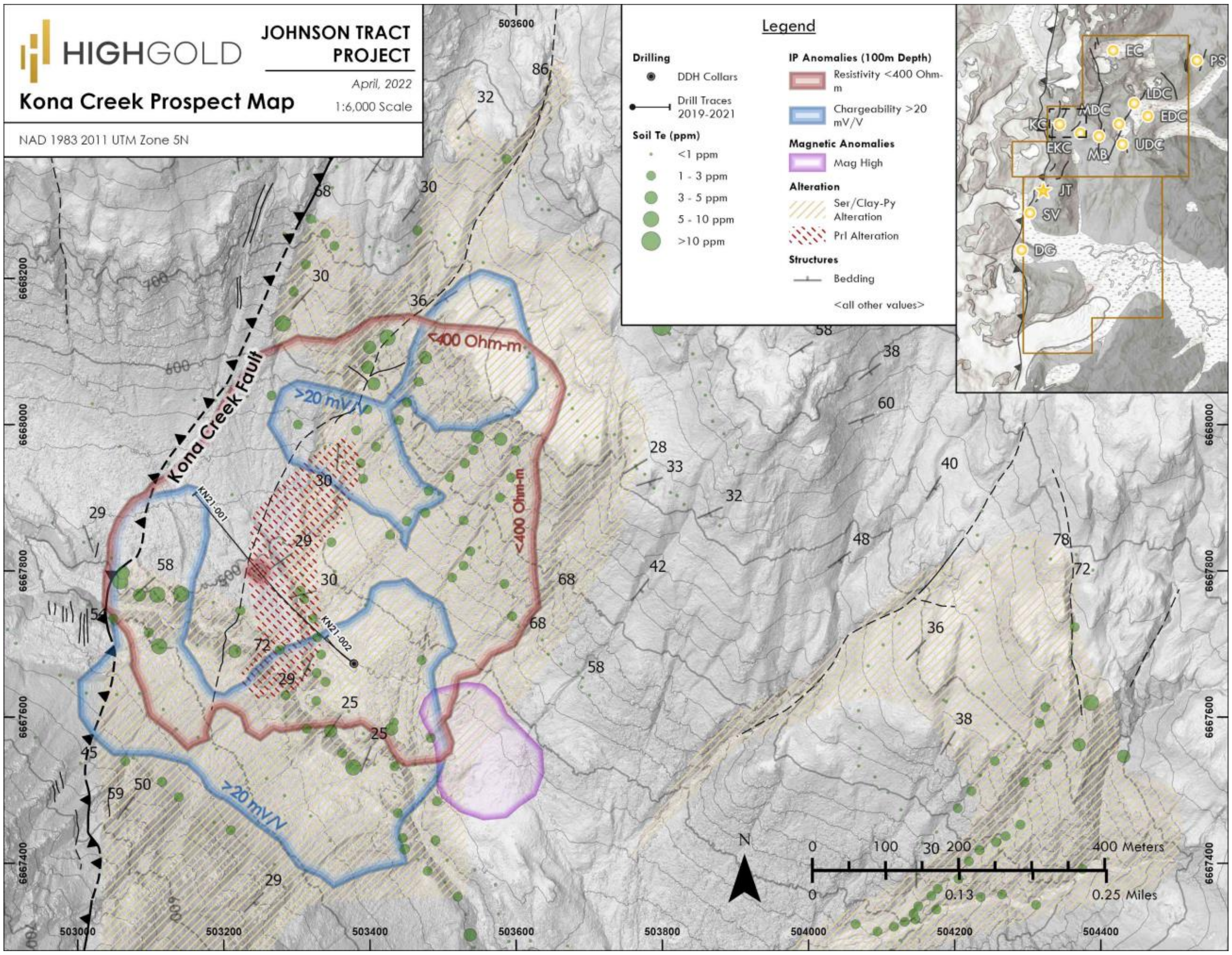



*Figure 7.14 JT Project – Kona Prospect Compilation Map*

## 7.6.4 Easy Creek (EC) Prospect

Easy Creek (EC) is located over 6.5 km north of the JT Deposit. Lithic tuffs to dacite crystal tuffs are mapped in the southeastern extent of the prospect, while lithic tuffs to rhyolite flows are mapped at the head of the creek to the west. The western geology is thought to be underlain by quartz-feldspar rhyolite intrusives, cross-cut by later monzonite and quartz-feldspar porphyry dykes (Ellis, 1984). In 1992, reconnaissance sampling by Hunter and Ware in the upper Easy Creek area identified additional zones of anomalous gold hosted in dacitic to rhyolitic volcanics with quartz-sericite-pyrite veinlets. Alteration is structurally controlled with 3 to 5% magnetite and silicification present locally. Mineralization is characterized by anomalous copper and gold values hosted within silicified volcanic and volcaniclastic rocks (McClelland, 1982).

In 2019-2021, soil sampling conducted by HighGold indicated that alteration is coincident with both elevated Au and Cu in soils (up to 1.6 g/t Au and 0.18 % Cu), as well as a range of pathfinder elements (Mo, Bi, Hg, Sb, Te)(**Figure 7.15**). Geophysical surveys carried out in 2020-2021 have identified strong ~1km x 1km DCIP chargeability highs and resistivity lows at Easy Creek, centered around a magnetic high thought to be related to a quartz-diorite intrusion and a zone of secondary magnetite. Surface rock samples include a historic 1m chip channel sample at 2.9 g/t Au and a 2021 boulder discovery which returned **29.1 g/t Au** close to the projected trace of the Milkbone fault.

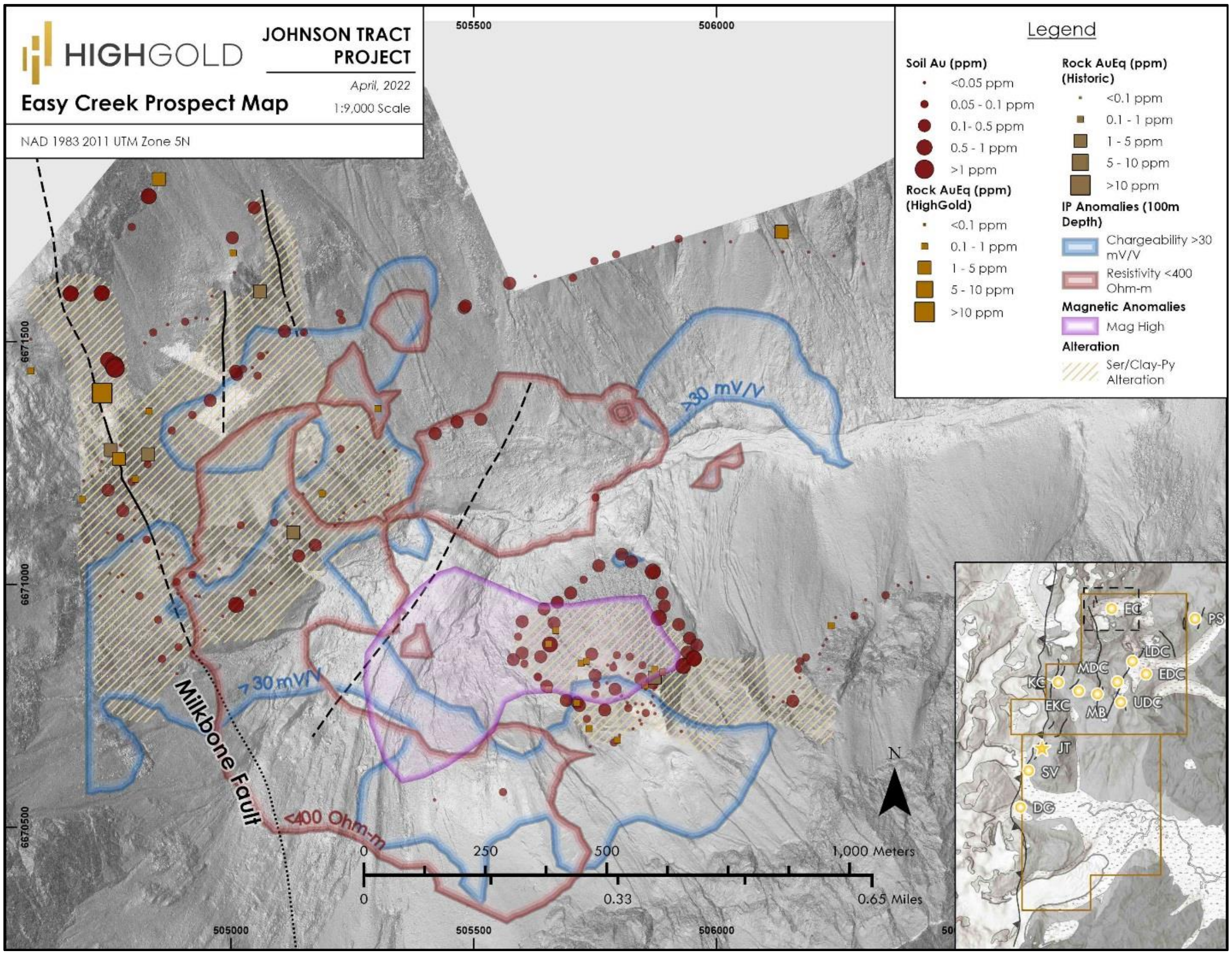



*Figure 7.15 JT Project – Easy Creek Prospect Compilation Map*

## 7.6.5 South Valley (SV) Prospect

The South Valley prospect is located 1.2 km southwest of the JT Deposit. The prospect was identified from an airborne geophysical survey, as an area of EM anomalies and magnetic lows under alluvium cover. Six (6) drillholes have been completed on the prospect between 1988 to 1995. Drillholes JM-88-039 and JM90-046 intersected strong anhydrite alteration with silicification and weakly anomalous base metals and gold (Proffett, 1991). Magnetic lows located between drillholes 39-40 and 47-48 were identified as targets (Proffett, 1992) but no follow-up work has been completed to date.

### 7.6.6 DOUBLE GLACIER (DG) PROSPECT

Double Glacier (DG) is located 400 m to the west of the property boundary, covering an area of 200 m by 300 m. Mineralization is characterized by a Zn-Cu-Pb stockwork vein system cross-cutting weakly silicified massive to fragmental rhyolites (lower stockwork). A cherty exhalative horizon with pyrite occurs 300 to 500 m north and approximately 150 m stratigraphically higher than DG. This chert horizon has also been cross-cut by a stockwork vein system containing sphalerite-chalcopyrite-pyrite (upper stockwork). Stratigraphic packages mapped correlate with the rock types seen at the main JT Deposit (Ellis, 1984). 1:5,000 scale mapping conducted in 1984 identified a sequence of Johnson-type rocks overturned and truncated by the Bruin Bay Fault. Weakly mineralized 1 to 2 m thick exhalative horizons were mapped at the base and halfway up the DG cliff. Compared to the other prospects in the region, DG has the highest mean values in copper and zinc (Millholland et al., 1985). Detailed mapping (1:1,000 scale) over the stockwork zone indicated that:

- mineralization is localized around the periphery of a shallow rhyolite intrusive;
- mineralization occurs within fragmental rhyolites that accumulated at nearly the same time as the rhyolite; and
- mineralization includes at least three sphalerite-bearing episodes (Ellis, 1984).

In 1991, an airborne geophysical survey identified magnetic lows and associated EM anomalies that correlate to known mineralization and areas under cover along a north-south to north-northeast trend (Proffett, 1992).

### 7.6.7 PS PROSPECT

The PS prospect is located on Park lands 0.5 km due east of the property boundary on the north side of lower Difficult Creek. PS was discovered from follow-up of an aerial survey identifying a gossanous zone covering an area 50 m by 100 m. Mineralization is hosted in a stockwork zone of <3 cm wide quartz veins with sphalerite selvedges cross-cutting a rhyolite. Veins of sphalerite-chalcopyrite are present up to 10 cm thick (Ellis et al., 1993). In 1984, 1:5,000 scale mapping identified zinc and copper mineralization at the foot of scarp with strong argillic alteration. Quartz veining is prominent north of the scarp and weak argillic alteration locally destroys texture in a host dacite tuff that is widespread west and north of the main prospect (Nieman, 1984). EM surveys over the prospect produce some of the strongest conductors in the district, likely caused from clay alteration along mineralized north-south striking structures (Millholland and McClelland, 1984). Zoning of mineralization at PS suggests it is related to the peripheral or upper section of a sulphide stockwork system similar to Johnson Tract (Millholland et al., 1985).

Mapping in 1992 by Ellis, provided more detail in identifying host rocks, alteration and the extent of mineralization. Mineralization is hosted within a fine dacitic to andesitic tuff overlain by a tuffaceous sandstone. A 600 m by 400 m zone was defined with gold mineralization hosted within a partially silicified quartz vein stockwork. Sulphides have been leached out at higher elevations with pyrite, chalcopyrite and sphalerite visible at lower exposures. The stockwork zone is surrounded by a zone of weaker alteration, barite, quartz veinlets, base metals mineralization and localized gold concentrations in a 750 m by 450 m area. The local erratic gold anomalies in the outer zone are associated with strong clay-pyrite alteration and an outer shell of chlorite and anhydrite. (Proffett, 1992)

### 7.6.8 SEDIMENT RIDGE & HUNGRYMAN CREEK PROSPECTS

The Sediment Ridge and Hungryman Creek prospects are located approximately four km east of the JT Deposit. The contact between Lower Jurassic volcanics and overlying Middle Jurassic sediments and tuffs has been mapped across Sediment Ridge and Hungryman Creek areas (Proffett, 1992). Upper volcanic units consist of felsic to intermediate volcanics all dipping gently to the east. Overlying sediments are interbedded with crystal-rich dacite tuffs with pyrite rich beds, likely the cause of geophysical anomalies along Sediment Ridge (Proffett, 1992). No geochemical anomalies were found from initial sampling at Sediment Ridge and Hungryman Creek. However, mapping has identified pyritic tube structures that may indicate the local stratigraphy was near to the paleosurface or seafloor, with the potential for vein hosted gold mineralization increasing with depth (Proffett, 1992).

# 8 DEPOSIT TYPES

## 8.1 JOHNSON TRACT GENETIC MODEL

Previous operators have suggested a range of potential deposit models for Johnson, from feeder zone beneath a sea-floor Volcanogenic Massive Sulphide deposit ("VMS"), to Epithermal within coeval volcanic stratigraphy, to the possibility of mineralization being significantly younger than the host volcanic rocks and instead related to regional intrusive activity and/or structures (Proffett, 1993).

VMS-like aspects include submarine volcanic host rocks, widespread and crudely stratabound anhydrite alteration similar to some Kuroko-type VMS, and strong base metal grades coincident with gold mineralization, whereas deposit morphology at Johnson, consisting of a quartz-sulphide stockwork and breccia body, and vein textures are more consistent with those found in epithermal-type deposits.

A description and genetic model for the JT Deposit is presented in Economic Geology by Carl Steefel (1987). In it, Johnson is described as *"an unusually well-preserved Jurassic example of gold-rich sea-floor mineralization accompanied by extensive anhydrite".* Steefel argues that the discordant stockwork bodies formed contemporaneously with volcanism and just below the seafloor. Initial precipitation of anhydrite was followed by large volumes of silica, which caused the hydrothermal system to become sealed to cold seawater, allowing precipitation from unmixed metal-bearing fluids in late veins and hydrothermal breccias (**Figure 8.1.1**). Crosscutting relationships indicate that the quartz-sulphide mineralization transgressed over the earlier nodular anhydrite mineralization.

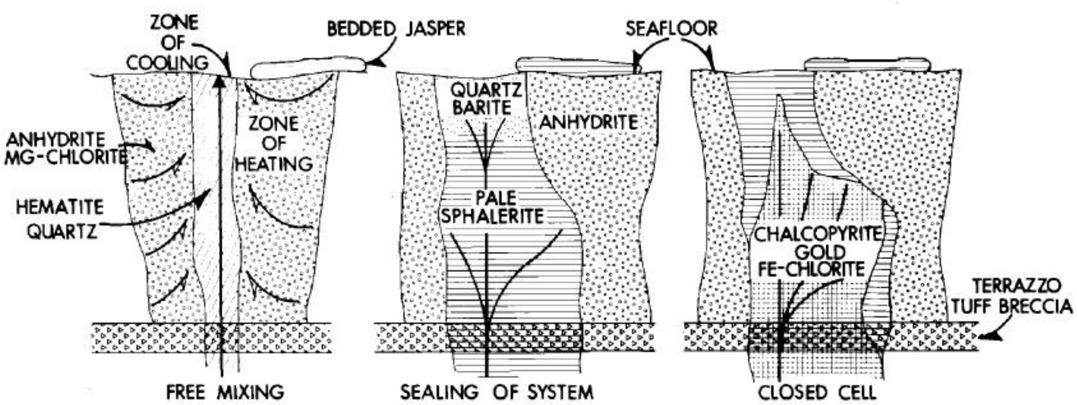



***Figure 8.1 Genetic model of the hydrothermal system at the Johnson Tract deposit from Steefel (1987)***

Unlike typical Kuroko-type VMS, the JT Deposit mineralization appears to be sub-seafloor with no development of stratiform massive sulphide lenses. A note from Proffett (1993) mentions fossilized wood has been mapped above the ore horizon and suggests the volcanics just above the stockwork zone erupted on land, further supporting a link to an epithermal type deposit.

Further review and comparison of the epithermal type model and the key characteristics of the JT Deposit suggests a likeness to the intermediate sulphidation model as described by Wang et al., 2019 (**Figure 8.2**).

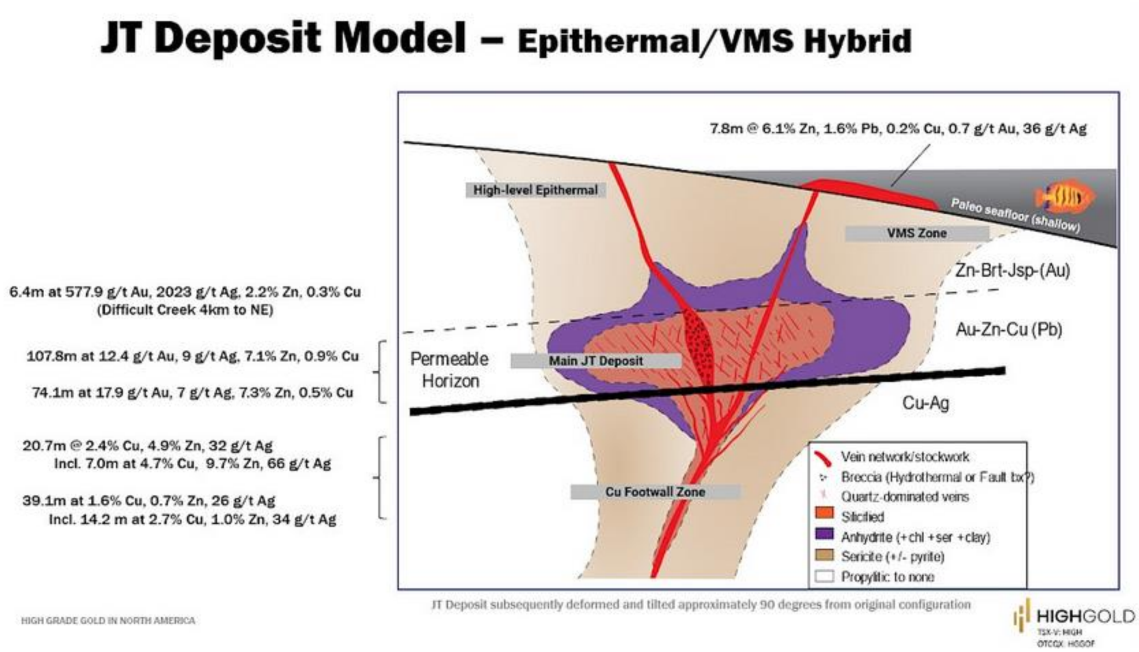



***Figure 8.2 JT Deposit Model – Epithermal/VMS Hybrid from Highgold (2021)***

## 8.2 GOLD-RICH VOLCANOGENIC MASSIVE SULPHIDE DEPOSIT MODEL

For reference, a deposit model description is provided for gold-rich volcanogenic massive sulphide ("VMS") deposit as outlined below by Galley et al, 2007 and shown in **Figure 8.3**.

*"Volcanogenic massive sulphide (VMS) deposits, also known as volcanic-associated, volcanic-hosted, and volcano-sedimentary-hosted massive sulphide deposits, are major sources of Zn, Cu, Pb, Ag, and Au, and significant sources for Co, Sn, Se, Mn, Cd, In, Bi, Te, Ga, and Ge. They typically occur as lenses of polymetallic massive sulphide that form at or near the seafloor in submarine volcanic environments, and are classified according to base metal content, gold content, or host-rock lithology. There are close to 350 known VMS deposits in Canada and over 800 known worldwide. Historically, they account for 27% of Canada's Cu production, 49% of its Zn, 20% of its Pb, 40% of its Ag, and 3% of its Au. They are discovered in submarine volcanic terranes that range in age from 3.4 Ga to actively forming deposits in modern seafloor environments. The most common feature among all types of VMS deposits is that they are formed in extensional tectonic settings, including both oceanic seafloor spreading and arc environments. Most ancient VMS deposits that are still preserved in the geological record formed mainly in oceanic and continental nascent-arc, rifted arc, and back-arc settings. Primitive bimodal mafic volcanic-dominated oceanic rifted arc and bimodal felsic-dominated siliciclastic continental back-arc terranes contain some of the world's most economically important VMS districts. Most, but not all, significant VMS mining districts are defined by deposit clusters formed within rifts or calderas. Their clustering is further attributed to a*

*common heat source that triggers large-scale subseafloor fluid convection systems. These subvolcanic intrusions may also supply metals to the VMS hydrothermal systems through magmatic devolatilization. As a result of large-scale fluid flow, VMS mining districts are commonly characterized by extensive semi-conformable zones of hydrothermal alteration that intensifies into zones of discordant alteration in the immediate footwall and hanging wall of individual deposits. VMS camps can be further characterized by the presence of thin, but a really extensive, units of ferruginous chemical sediment formed from exhalation of fluids and distribution of hydrothermal particulates." – Galley et al., 2007*

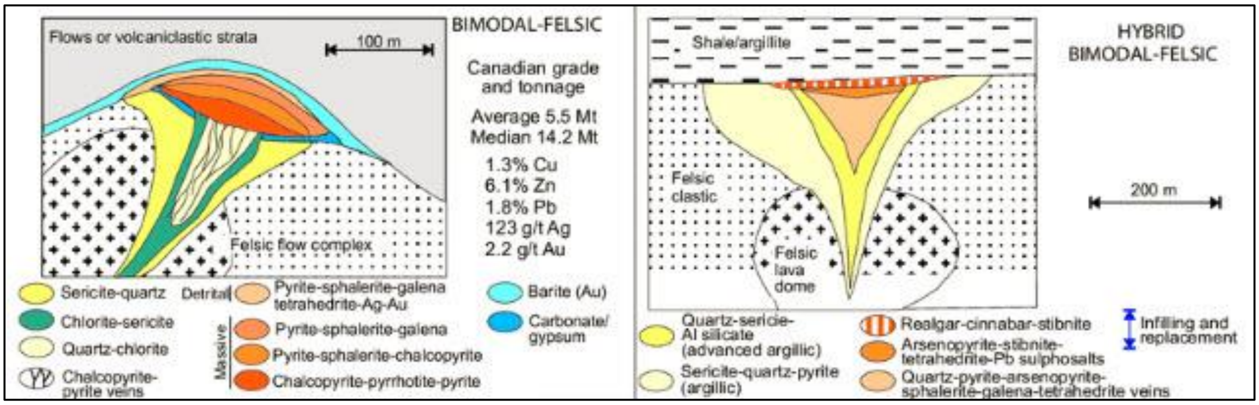



***Figure 8.3 VMS Deposit Model from Gallery et al., 2007.***

## 8.3 EPITHERMAL DEPOSITS

For reference, a deposit model description is provided for epithermal deposits as outlined by Taylor (2007), followed by a short description of intermediate sulphidation veins as summarized by Wang et al. (2019) and shown in **Figure 8.4**.

"*Epithermal Au (±Ag) deposits form in the near-surface environment, from hydrothermal systems typically within 1.5 km of the Earth's surface. They are commonly found associated with centres of magmatism and volcanism but form also in shallow marine settings. Hot-spring deposits and both liquid- and vapour-dominated geothermal systems are commonly associated with epithermal deposits. Epithermal Au deposits are commonly considered to comprise one of three subtypes: high sulphidation, intermediate sulphidation, and low sulphidation, each denoted by characteristic alteration mineral assemblages, occurrences, textures, and, in some cases, characteristic suites of associated geochemical elements (e.g. Hg, Sb, As, and Tl). Base metal (Cu, Pb, and Zn) and sulphide minerals may also occur in addition to pyrite and native Au or electrum. In some epithermal deposits, notably those of the intermediate-sulphidation subtype, base metal sulphides may comprise a significant ore constituent.*" *– Taylor, 2007*

*"Intermediate sulphidation (IS) is one of the subtypes of epithermal deposits formed in subduction-related arc settings or post-collisional orogenic belts. The economic and scientific significance of IS deposits has been highlighting importance in Ag-Au-Pb-Zn exploration and study of porphyry-*

*epithermal systems. This epithermal clan of deposits typically have a close relationship with andesitic-dacitic volcanic -subvolcanic rocks, and formed at a depth of ∼0.3 to as much as 1+km. The presence of Mn-carbonate such as rhodochrosite and manganocalcite (locally Mn-silicate, e.g., rhodonite, helvite) typically in mid to late hydrothermal stages is a common diagnostic feature to discern IS from low-sulphidation (LS) deposits. In addition, the occurrence of intermediate-sulphidation state sulphides such as pyrite, chalcopyrite, sphalerite, galena, and tetrahedrite/tennantite associations are another indicator of the IS type; light-colored (Fe-poor) sphalerite is typical of IS deposits, consistent with relatively oxidized fluids." – Wang et al., 2019*

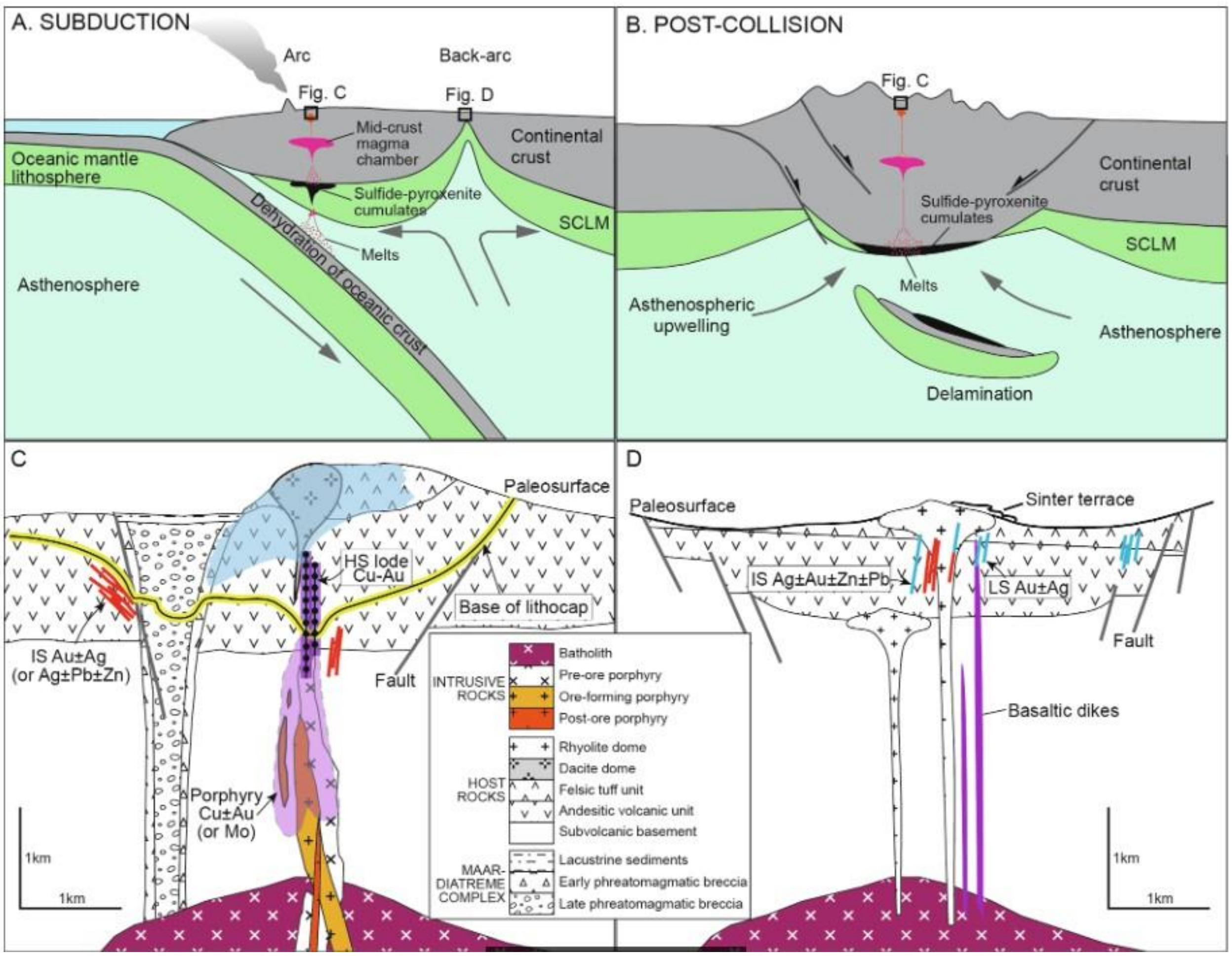



***Figure 8.4 Schematic diagram showing the setting of intermediate sulphidation subtypes from Wang et al., 2019***

# 9 EXPLORATION

## 9.1 Previous Exploration Programs by the Company (2018-2020)

### 9.1.1 2018 Exploration

Following the completion of the Johnson Tract Letter Agreement in June 2018, HighGold's subsidiary J T Mining, Inc. carried out initial exploration activity focused on validating historic results, digitizing historic data, familiarizing the Company with the Project area and geology, and making camp upgrades.

### 9.1.2 2019 Exploration

In 2019, exploration work included infill sampling of historic drill core, geological mapping, surface rock and soil sampling, and a nine (9) drillhole program totaling 2,246.5 meters that set the stage for the 2020 exploration program.

### 9.1.3 2020 Exploration

In 2020, exploration work continued with geological mapping, surface rock chip and grab sampling, IP geophysical surveying, and a 37 drillhole program totalling 16,421.1 meters. Encouraging surface results were returned from the "New Vein Field' at Upper DC over a 500m x 1000m area. The new Ag-Au rich vein field consists of multiple sets of epithermal crustiform quartz veins, vein swarms, and siliceous breccias. Multiple samples returned in excess of 100 g/t Ag (ranging from **30 g/t to 1800 g/t**) (**Figure 9.1**).

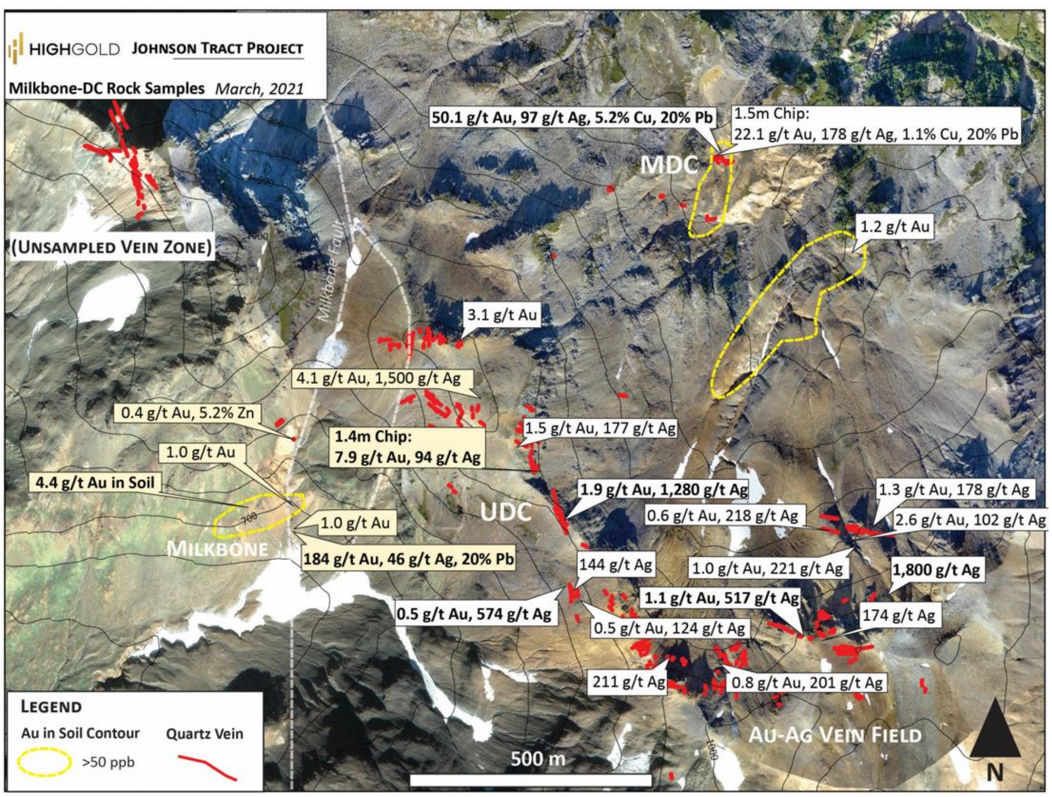



*Figure 9.1 JT Project – Plan View of Difficult Creek Prospect and 2020 Surface Sampling*

## 9.2 2021 Exploration Program

Between June 19th and October 27th, 2021, HighGold completed a field program consisting of geological mapping, rock chip and grab sampling, soil sampling, silt sampling, and ground IP geophysical surveying. Relogging and infill sampling of historic core was also completed at the same time as the field program.

### 9.2.1 Re-Logging & Infill Sampling of Historic Core

During the 2021 drill program, re-logging of historic drill core was completed on select drillholes throughout the project. Infill sampling of select drillholes was also completed to fill gaps in the historic database where no previous sampling was completed. A total of 340 infill samples were taken from 22 drillholes throughout the deposit area and DC.

### 9.2.2 Geological mapping

Geological mapping at Johnson Tract was led by consultant, John M. Proffett, and HighGold geologists. Mapping was conducted between June 19th through to September 29th. An updated property scale geology map was produced by HighGold and merged with Proffett and historic mapping. 2021 mapping led to a significantly better understanding of local geology and identified potential new targets.

### 9.2.3 Rock Sampling

During the 2021 field program, rock chip and rock grab samples were collected across the JT Deposit, Kona, DC, Milkbone and Easy Creek prospects. A total of **767 rock samples** were collected in 2021 (Error! Reference source not found.). Rock chip and grab samples were collected by HighGold geologists using a rock hammer, with sample material sealed in a poly bag. Sample locations were recorded by tablet and external GPS. Each sample consisted of one to three kilograms of rock. All rock samples were shipped to ALS Fairbanks, AK for preparation with later analysis by ALS Vancouver, BC. All samples were analyzed for multi-elements by four-acid digestion ICP (ALS method ME-ICP61) and gold by fire assay fusion with atomic absorption spectroscopy (AAS) finish on a 50 g sub-sample (ALS method Au-AA26). 207 samples were analyzed for whole rock lithogeochemistry (ALS method ME-MS81).

### 9.2.4 Soil & Stream Sediment Sampling

A total of **249 soil samples and 22 stream sediment samples** were collected during the 2021 field program (**Figure 9.2**). Sample locations were recorded by tablet and external GPS. Soil samples were collected at JT Deposit, Kona, DC, Milkbone, Sediment Ridge and Easy Creek prospects. Sample spacing varied between ten (10) to forty (40) meters, depending on terrain and target area. Soil sample lines followed elevation contours and were spaced between twenty (20) to 200 meters apart. Soil samples were collected using a geotul to dig a hole down to the B-horizon or where a B-horizon is not available, to the C-horizon. In some cases where no soil horizon had developed, talus fines were collected. All soil samples were submitted to ALS for gold and multi-element analysis (ALS method AuME-TL43). Silt samples were collected in natural traps in flowing perennial streams. All silt samples were sent ALS for gold and multi-element analysis (ALS method AuME-TL43).

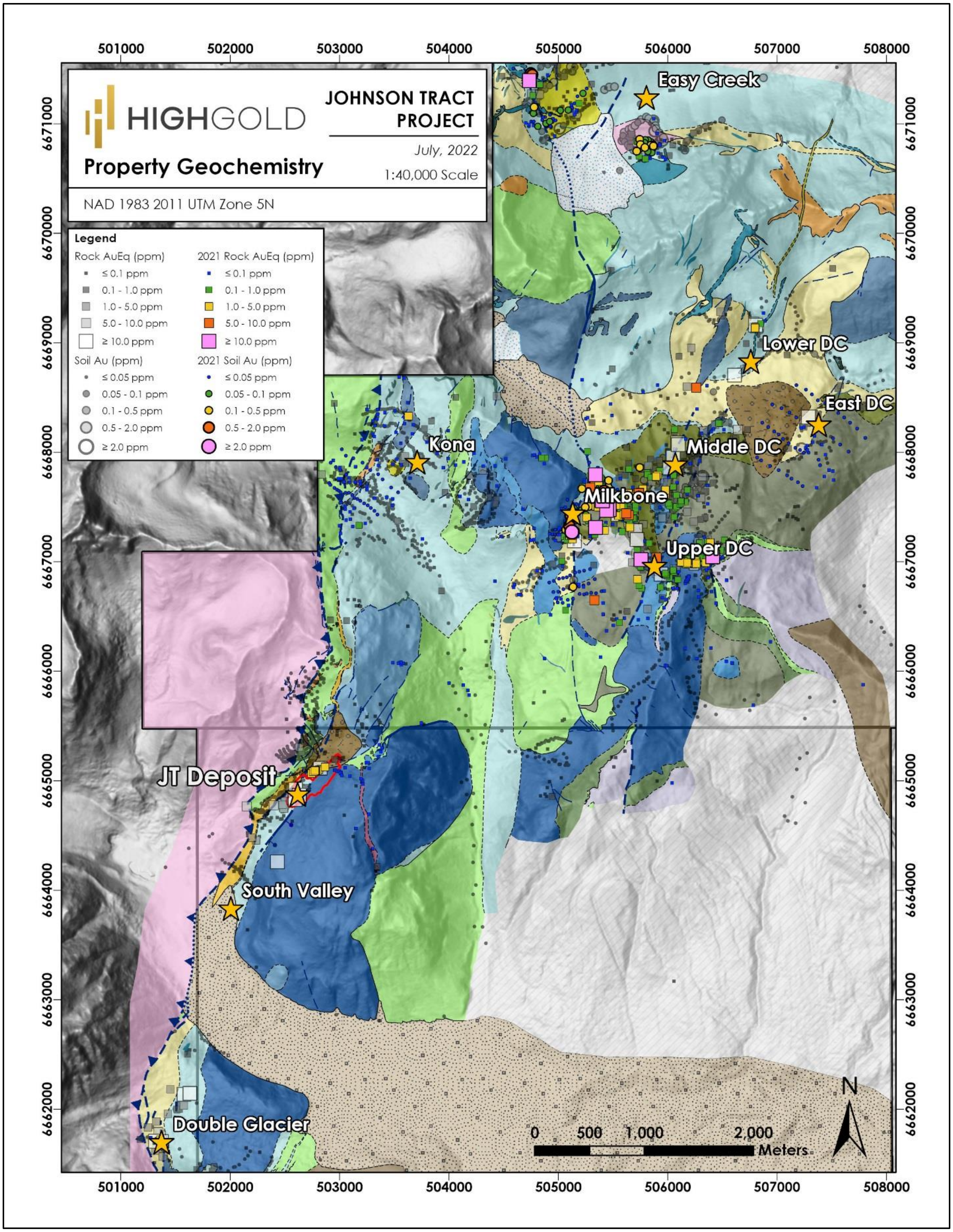



*Figure 9.2 JT Project – Location of 2021 Rock and Soil/Silt Sampling*

### 9.2.5 Geophysical Surveys

#### *9.2.5.1 Ground IP Surveys*

Between July 29th and September 15th, 2021, a total of 31.1 line-kilometers of Direct Current Induced Polarization (DCIP) geophysics was completed at the JT Deposit, Kona, DC, Milkbone and EC Prospects (**Figure 9.3**). The survey was conducted by Discovery Geophysics of Saskatoon, Canada (Discovery, 2021). Pole-pole and pole-dipole arrays were deployed to capture data with a 50-meter injection interval and a 100-meter dipole interval. For the survey, DIAS32 single-channel receivers were connected in a mesh network with a single DIAS GS5000 25kW, 5kV transmitter providing the current input. (Discovery, 2021). Inversions of processed pole-pole data from the survey were provided by geophysical consultants Campbell & Walker Geophysics Ltd of Edinburgh, Scotland. The results showed compelling resistivity and chargeability at all three target areas (**Figure 9.3**).

#### *9.2.5.2 Airborne Drone Magnetic Surveying*

Between September 14th to September 19th, 2021, Pioneer Exploration Consultants Ltd. (Pioneer) completed a total of 270 line-km of airborne magnetic surveying using an Unmanned Aerial Vehicle (UAV) over four prospects (JT, DC, Kona, and EC) at Johnson Tract (**Figure 9.4**). Equipment included a Matrice M600 Pro UAV and a Gem Systems Canada GSMP-35U airborne sensor (Pioneer, 2021). Data collection was conducted at 25 m line spacing with 250 m spaced tie lines. The nominal magnetic sensor altitude above ground level (AGL) was set to 35 m. Elevation from the terrain varied depending on the tree line and obstacles on the flight route. Airborne LIDAR data was used to create a high resolution DSM to assist the UAV terrain following procedure and to minimize the possible topographic effects on the magnetic data. The nominal production groundspeed was 9 m/s for flat topography with no wind. The survey speed varied depending on the terrain and environmental conditions. Final data processing was done using Geosoft Oasis Montaj, Python and Microsoft Excel software. Final deliverables included Total Magnetic Intensity, First Vertical Derivative, and 3D Analytic Signal. Final data was also reviewed by geophysical consultants Campbell & Walker Geophysics Ltd of Edinburgh, Scotland. The data showed a magnetic low (mag destruction zone) associated with the main JT deposit, and bullseye magnetic anomalies worthy of follow-up at Kona, and also associated with a quartz-diorite plug at EC (**Figure 9.4**).

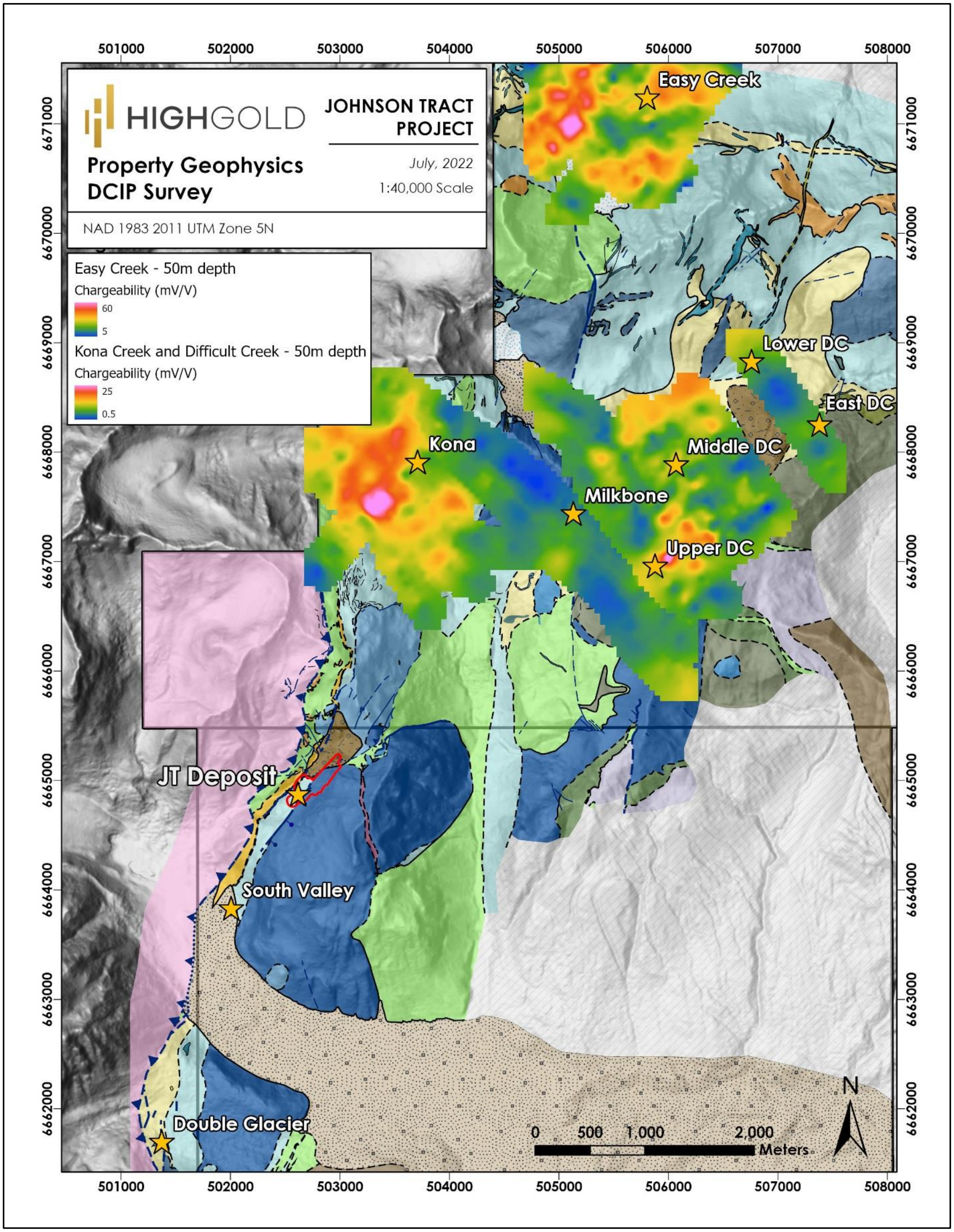



*Figure 9.3 JT Project – Location of 2021 DCIP Geophysical Survey Grids*

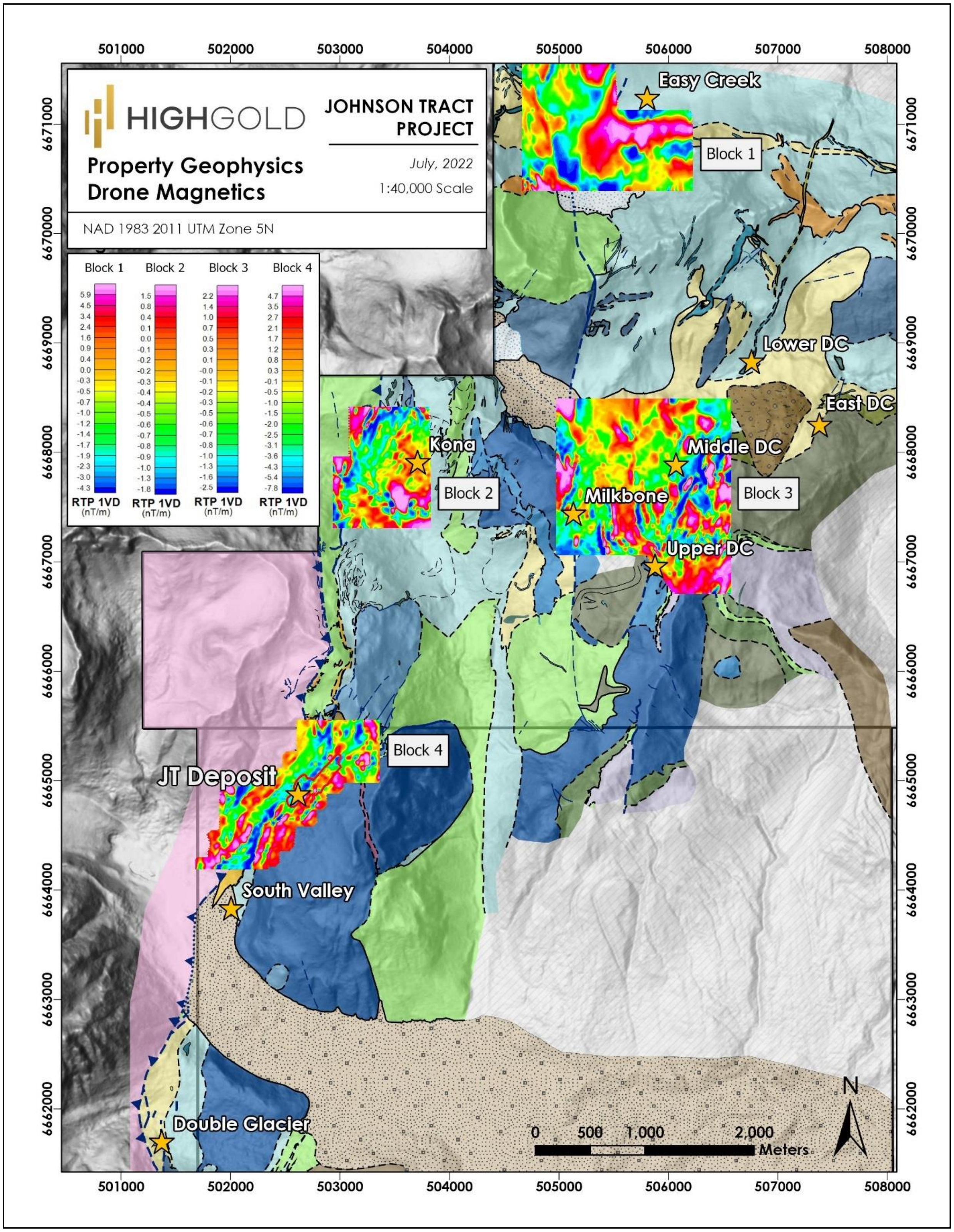



*Figure 9.4 JT Project – Location of 2021 Drone-Magnetic Geophysical Survey Grids*

### 9.2.6 PHOTOGRAMMETRY

Eighty-seven (87) flights were flown during the summer field seasons in 2020 and 2021. 52,485 drone images in total were captured using a Delair fixed-wing drone Model UX11 UAV. Ten (10) ground control points (GCPs) were used for better accuracy, which were distributed near edges of the Johnson Tract property area across the different elevations. Low-quality drone images were fixed in real time in field by changing flight settings. Both GNSS data and drone images were further uploaded into Delair After Flight for PPK processing (post-processed kinematic). ASCII Rinex data were downloaded for each flight from the CORS (Continuously Operating Reference Stations) base station map provided by NOAA/National Geodetic Survey. Low-quality drone images were further investigated in the Delair After Flight software and excluded from the PPK exports.

PPK processed drone images together with their location files, and GCPs were further uploaded into Pix4DMatic to create accurate point clouds, DSMs and orthomosaics. Blurry and overlapping drone images were excluded from the interested project areas. Eight projects with average 10,000 images for each were processed during 2020 and 2021, four projects were finalized during the winter of 2021 to cover the entire Johnson Tract property area. Final DSMs and orthomosaics were merged using ArcGIS pro.

Final coordinate for the DSMs and orthomosaics is in NAD83(2011) / UTM Zone 5 - EPSG:6334 + NAVD 88 height – EPSG: 26935 + 5703 [GEIOD 12B].

### 9.2.7 ORIENTED CORE ANALYSIS

Consulting geologist, Chris Brown, of Oriented Target Solutions (OTS) completed oriented structural data processing, analysis and first-pass 3D modeling for 37 oriented core holes drilled at Johnson Tract during the 2020 drill campaign. Quality assurance (QA) data related to the core orientation process were reviewed, corrected (when justified) and joined to the point structural database. Structural data for select orientation domains were plotted in relation to core hole axis plots, and core orientation error-indicative beta randomization was observed mainly in unvalidated orientation intervals (Interval quality (IQ) with a score of ≤3). Bamboo Diagrams were used to visualize, identify and correct symmetrical lock angle error between adjacent locking runs of oriented core. When justified, corrective orientation line rotations were applied to select records within the orientation log, resulting in adjusted beta values in the point structural log. OTS proprietary software was used to complete this task.

Mr. Brown's key findings based on his fault and veining modeling were that the Highgold Dacite fault model was supported by the oriented core structural data from the 2020 drilling. This project-scale fault forms a sharp boundary to mineralization and alteration while also representing a continuous lithological contact with barren and relatively unaltered Dacite porphyry to the east. In the immediate footwall of the Dacite fault, a series of Dacite fault-sympathetic steep SE dipping faults were modelled using oriented core structural data from recent drilling (Brown, 2020).

### 9.2.8 AGE DATING

The Company provided sulfide-bearing drill core samples from the Footwall Copper Zone in hole JT19-089, interval 371.0-373.0m, to the University of Alberta for Re-Os isotope analysis and age dating. The results of six analyses of bulk sulfide from the two drill core pieces indicated an approximate age of **186 +/- 6Ma** (University of Alberta, 2021).

### 9.2.9 EXPLORATION RESULTS

In 2021, the Company completed surface exploration programs concurrent with the mineral resource expansion drill program at the JT Deposit with the objective of assessing the potential for new zones of high-grade mineralization across the district-scale JT property. Geological mapping and rock and soil geochemical sampling focused primarily on underexplored regional prospects including the Milkbone, greater Difficult Creek ("DC"), EC and Kona prospects. The Company also completed 31 line-km of ground-based direct-coupled induced polarization ("DCIP") geophysical surveys and 267 line-km of detailed airborne drone magnetic ("Drone Mag") surveys.

The 2021 work successfully outlined multiple priority target areas for future drilling related to the prospective 6-km long regional Milkbone Fault system on the Northern Tract while also advancing the geological knowledge base for the Project. Encouraging assay results have been returned in both rock and soil sampling across the length and breadth of the Property.

The Milkbone prospect and the 1.2 km long corridor between it and the bonanza-grade drill hole DC21-010 intercept at the Middle DC prospect to the northeast emerged as a priority target area for the Company with strong supporting surface geochemistry, including soils up to **8.3 g/t Au** and rock samples up to **184 g/t Au**.

The Milkbone fault is also associated with gold mineralization at the Easy Creek prospect, located 6 km north of DC, where a large (1.5 x 2 km) and strong IP chargeability anomaly has been defined that is coincident with anomalous soil geochemistry, rock samples up to **29 g/t Au**, large-scale hydrothermal alteration and a circular magnetic anomaly (associated with an intrusive plug). Taken collectively, these multiple layers of supporting data significantly enhance the priority of Easy Creek targets.

The Kona prospect, bearing a similar geophysical signature to Easy Creek, is located somewhat lower stratigraphically than DC and the JT Deposit and may represent a portion of the deeper roots of the large-scale Johnson Tract mineralized system.

Rock sampling highlights from the key prospects can be found below and in **Table 9.1** and **Figure 9.5**.

*JT Deposit Area - Brodie's Boulders*

- Highgold geologists identified a new zone of 25-30 mineralized boulders in late September immediately south of 'Brodie's Boulder' from 2020 (**26 g/t Au/4.1% Cu/4% Zn**) and approximately 250m northeast of JT at the toe of the landslide at the head of the valley

- The new boulder field extends for 140m along the creek in an erosional channel that was recently exposed by melting snow. All the boulders as well as mineralized/altered subcrop was sampled.
- Assays values ranging up to **7.5% Zn** were returned from the mineralized boulder train.

***Table 9.1 JT Project – Highlights of 2021 Surface Rock Sampling***

| Sample | Prospect | Sample Type | Chip Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) |
|---|---|---|---|---|---|---|---|---|---|
| D376989 | Johnson Tract | Float | | 0.24 | 2.60 | 0.02 | 0.07 | 7.52 | 4.91 |
| W815994 | Lower Difficult Creek | Grab | | 0.03 | 29.30 | 3.24 | 0.00 | 0.01 | 4.99 |
| D379701 | Middle Difficult Creek | Grab | | 0.02 | 8.80 | 4.45 | 0.00 | 0.05 | 6.48 |
| D379953 | Middle Difficult Creek | Grab | | 0.09 | 7.60 | 0.84 | 0.04 | 6.12 | 5.12 |
| D379957 | Middle Difficult Creek | Float | | 4.43 | 16.80 | 0.03 | 0.15 | 0.31 | 4.94 |
| D379726 | Upper Difficult Creek | Float | | 0.61 | 3,480.00 | 0.06 | 0.34 | 0.76 | 42.57 |
| D379715 | Upper Difficult Creek | Chip | 1.0 | 7.98 | 1,450.00 | 0.05 | 1.34 | 1.09 | 26.58 |
| W815968 | Upper Difficult Creek | Grab | | 14.30 | 13.70 | 0.51 | 4.38 | 6.09 | 21.12 |
| W815971 | Upper Difficult Creek | Grab | | 4.53 | 38.60 | 1.40 | 18.60 | 4.36 | 19.08 |
| W815978 | Upper Difficult Creek | Grab | | 11.10 | 68.70 | 0.05 | 0.05 | 0.06 | 12.04 |
| D379681 | Upper Difficult Creek | Chip | 1.5 | 4.86 | 226.00 | 0.02 | 0.10 | 0.19 | 7.73 |
| D379771 | Upper Difficult Creek | Float | | 5.39 | 13.10 | 0.01 | 0.05 | 0.02 | 5.60 |
| W815969 | Upper Difficult Creek | Grab | | 2.01 | 20.10 | 1.45 | 0.18 | 1.95 | 5.58 |
| W815976 | Upper Difficult Creek | Grab | | 4.79 | 27.40 | 0.02 | 0.09 | 0.12 | 5.27 |
| C323964 | Upper Difficult Creek | Chip | 1.0 | 1.05 | 353.00 | 0.01 | 0.04 | 0.01 | 5.27 |
| C321815 | Milkbone | Grab | | 7.85 | 599.00 | 0.03 | 0.13 | 0.41 | 15.31 |
| D379853 | Milkbone | Grab | | 0.13 | 20.10 | 1.44 | 7.56 | 10.05 | 12.38 |
| D379851 | Milkbone | Grab | | 0.10 | 20.60 | 1.13 | 6.57 | 8.62 | 10.55 |
| D379852 | Milkbone | Grab | | 0.25 | 18.50 | 1.63 | 5.52 | 7.19 | 9.97 |
| D379179 | Milkbone | Chip | 1.0 | 0.05 | 11.90 | 4.97 | 0.00 | 0.09 | 7.31 |
| C321813 | Milkbone | Float | | 3.34 | 129.00 | 0.02 | 0.08 | 0.20 | 5.06 |
| D379981 | Milkbone | Float | | 0.01 | 34.30 | 3.79 | 0.00 | 0.00 | 5.81 |
| D376979 | Milkbone | Grab | | 2.39 | 230.00 | 0.02 | 0.03 | 0.03 | 5.18 |
| E270558 | Easy Creek | Float | | 29.10 | 3.90 | 0.12 | 0.00 | 0.02 | 29.34 |
| D376971 | Double Glacier | Grab | | 0.01 | 8.60 | 0.75 | 0.06 | 30.00 | 19.50 |

*Note: AuEq is calculated using nominal current spot metal prices of $1780/oz gold, $24/oz silver, $4.25/lb copper, $1.35/lb zinc, $1.05/lb lead and assumed recovery of 90% for all metals.*

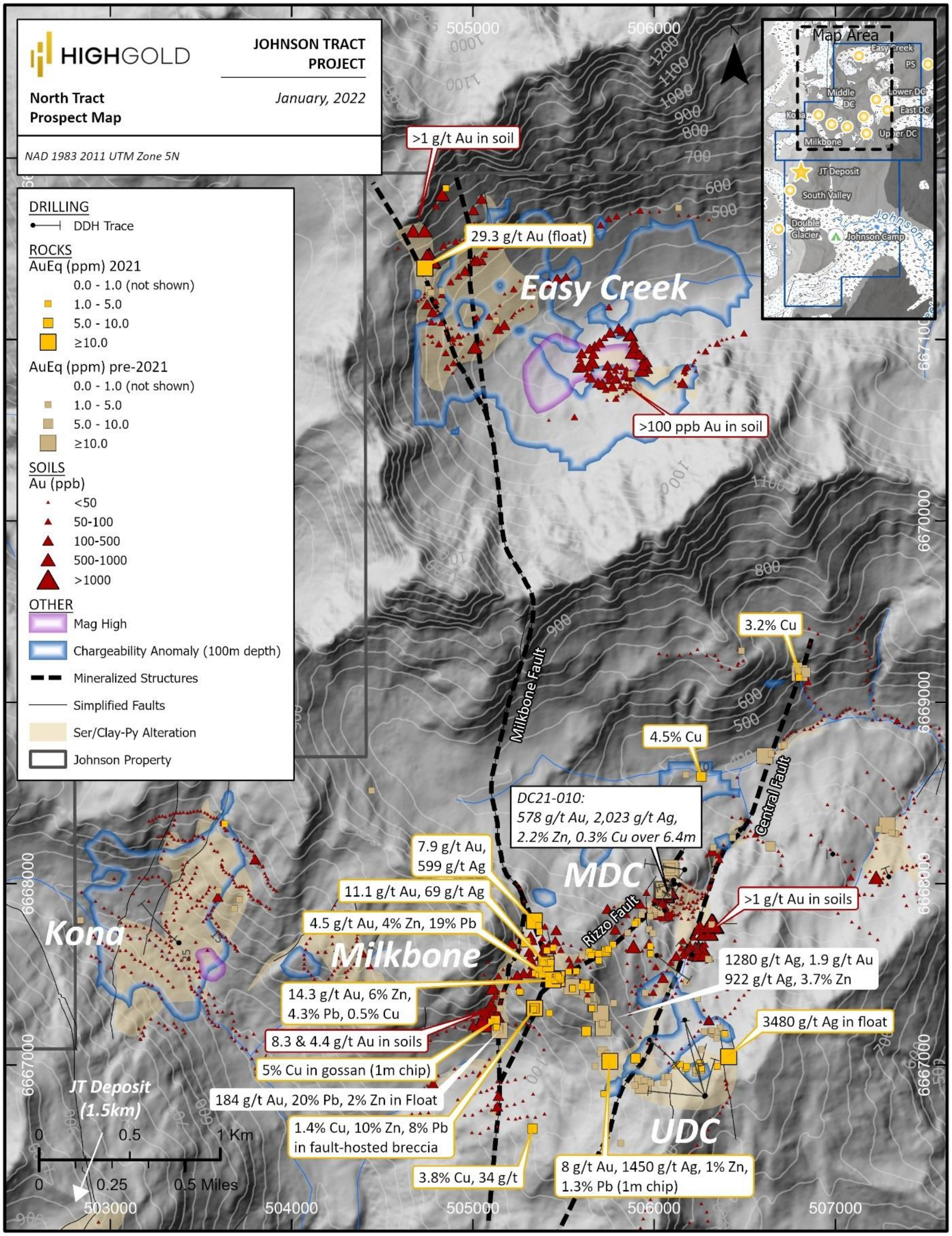



***Figure 9.5 JT Project – North Tract Prospect Map showing Milkbone/UDC/MDC Prospects and 2020-2021 Sampling Highlights***

### *Difficult Creek Prospect (Middle and Upper)*

In 2021, rock sampling carried out by the Company from Middle DC to Upper DC, in an area cut by northeast-trending and northwest-trending faults and/or splays related to the Milkbone Fault system, returned **3,480 g/t Ag and 0.61 g/t Au** (float sample), **1,450 g/t Ag and 7.98 g/t Au over 1m** (chip sample), and 11.10 g/t Au and 69 g/t Ag (grab sample); all in epithermal-style quartz veins. Rock sampling of quartz-sulphide veins returned highs of 4.30 g/t Au, 6.1% Zn, 4.4%Pb, 0.5% Cu (grab sample), **and** 4.53 g/t Au, 38.6 g/t Ag, 18.60% Pb, 4.36% Zn, 1.40% Cu (grab sample) (**Figure 9.6**).

Upper DC Prospect Sample Highlights

- **3,480 g/t Ag and 0.61 g/t Au** in low sulphidation quartz vein (rock float sample*)
- **1,450 g/t Ag and 7.98 g/t Au** in low sulphidation quartz vein (1m rock chip sample)

**Note - grab samples are by their nature are selective and not necessarily representative of the mineralization hosted on the Property.*

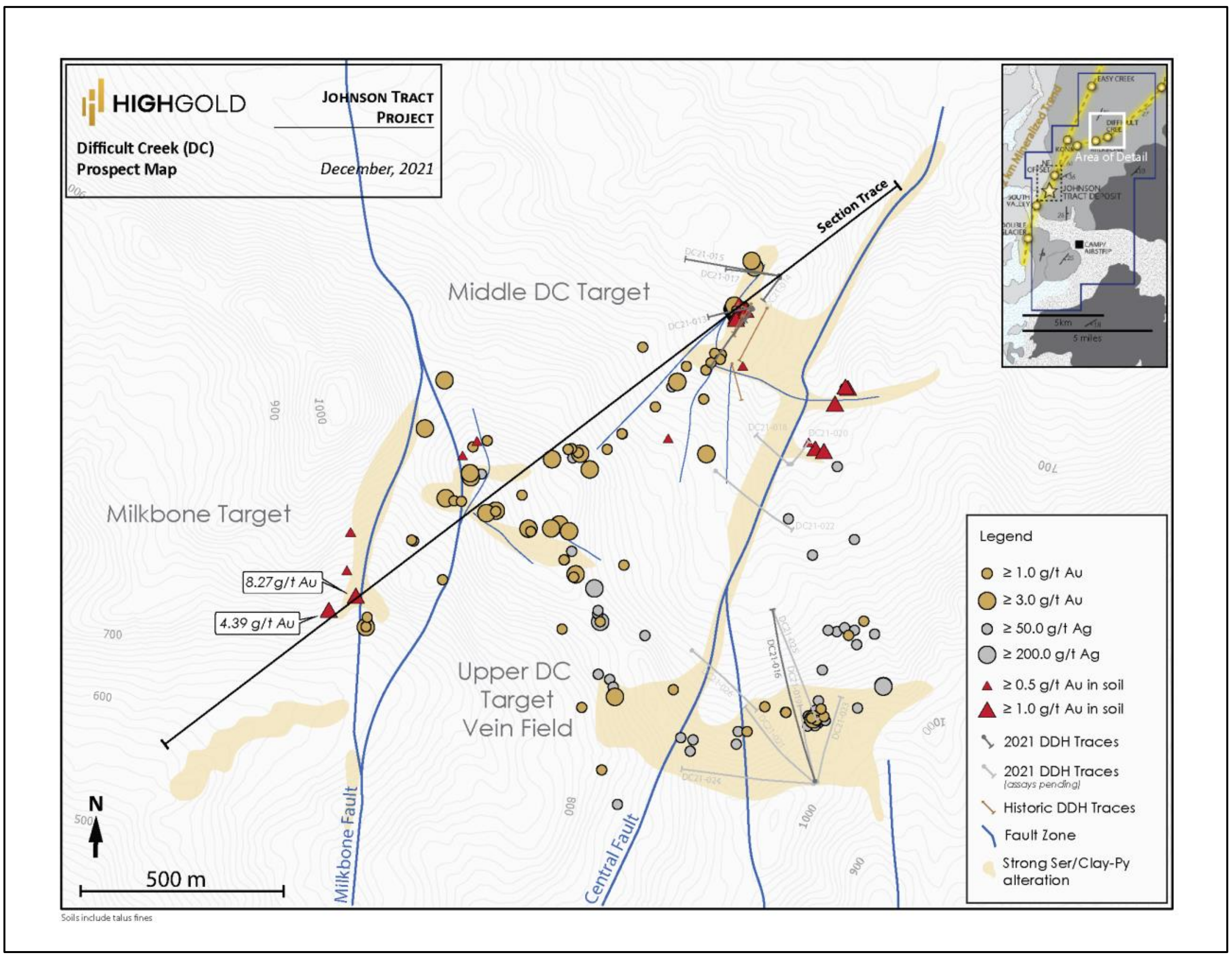



***Figure 9.6 Plan Map of 2020 and 2021 DC and Milkbone surface sampling results***

***Plate 9.1 Highgold geologist at Upper DC Prospect during the 2021 Field Program***

### *Milkbone Prospect*

In 2020, rock sampling by the Company returned anomalous gold (up to **184 g/t** in float) and zinc values (up to **5.2%).** Soil sampling returned anomalous gold values (up to **4,390 ppb or 4.39 g/t**). A 150m wide gold-in-soil anomaly was defined with values >70 ppb Au.

In 2021, follow-up rock sampling by the Company returned up to **7.85 g/t Au and 599 g/t Ag** in quartz vein breccia along with high base metals to **5.0% Cu over 1m** (chip sample) and **10.05% Zn, 7.56% Pb and 1.44% Cu** (grab sample). Follow-up soil sampling immediately north of the 4.39 g/t Au-in-soil collected in 2020 returned a very encouraging **8.38 g/t Au-in-soil** over the trace of the Milkbone Fault.

These results for the Milkbone represent both the highest-grade soil sample (**8.38 g/t Au**) and the highest-grade rock sample (**184 g/t Au**) within the entire Johnson Tract surface database. Plans are being designed to test this highly prospective target during the 2022 drill program that will include testing the main Milkbone fault, which is obscured from direct observation due to overburden cover, as well the +1km long corridor that is defined by elevated gold in surface sampling between Milkbone and Middle DC. This drilling will be in addition to systematic follow-up drilling planned at Middle DC.

Milkbone Prospect Highlights

- **7.85 g/t Au and 599 g/t Ag** in quartz vein breccia (grab sample*)
- **8.38 g/t and 4.4 g/t Au-in-soil sample**; near the **184 g/t Au** float sample returned in 2020
- **14.30 g/t Au**, 6.1% Zn, 4.4%Pb, 0.5% Cu in quartz-sulphide vein (grab sample)
- **11.10 g/t Au** and 68.7 g/t Ag in low sulphidation quartz vein (grab sample)
- 4.53 g/t Au, 38.6 g/t Ag, **18.60% Pb**, 4.36% Zn, **1.40% Cu** in quartz-sulphide vein (grab sample)
- 5.0% Cu in quartz-sulphide vein (1m rock chip sample)
- 3.8% Cu and 34.3 g/t Ag in quartz-sulphide vein (float sample)
- Quartz-carbonate-sulphide fault breccia zone (grab samples) including:
  - **10.1% Zn, 7.6% Pb and 1.4% Cu**
  - 8.6% Zn, 6.6% Pb and 1.1% Cu, and
  - 7.2% Zn, 5.5% Pb, 1.6% Cu

**Note - grab samples are by their nature are selective and not necessarily representative of the mineralization hosted on the Property.*

### *Kona Creek Prospect*

Geological mapping and limited rock sampling were carried out in 2021 to refine the drill targets.

### *Easy Creek Prospect*

In 2019 and 2020, limited rock sampling returned gold values up to **1.3 g/t Au**. Soil samples returned anomalous values ranging up to **1.6 g/t Au** and up to **0.18% Cu.**

The 2021 program included additional rock and soil sampling, geological mapping, and airborne drone magnetic and ground IP geophysical surveying to advance to the drill ready stage for 2022. The 2021 work followed up 2020 results that defined a **1,500-meter by 1,000-meter gold-in-soil anomaly** (20 ppb to 1,610 ppb gold) +/- copper +/- molybdenum. Rock sampling by the Company in 2021 discovered a strongly oxidized boulder along the trace of the Milkbone Fault system which returned **29.10 g/t Au**. The Drone Mag survey identified a 'bullseye' magnetic high associated with the quartz diorite plug, ringed by DCIP chargeability and resistivity anomalies and Au-Cu soil anomalies.

Highlights from the 2021 sampling included:

- **29.3 g/t Au** in oxidized gossanous boulder (rock float sample*)
- >1 g/t Au in five soil samples near the Milkbone Fault

**Note - grab samples are by their nature are selective and not necessarily representative of the mineralization hosted on the Property.*

### *Summary*

The 2021 surface exploration program at Johnson Tract successfully completed ground and airborne geophysical surveys, and geological mapping and geochemical sampling programs to advance regional prospects to the drill ready stage for the 2022 field season.

***Plate 9.2 Highgold geotechnician at the EC Prospect during the 2021 Field Program***

# 10 DRILLING

The Company has completed successive drill programs on the JT Project in 2019, 2020 and 2021 with 92 drillholes completed totaling 34,877 meters.

Total drilling to date by all operators from 1982 to 2021 is 179 drillholes totaling 62,289 meters (**Table 10.1**).

***Table 10.1 JT Project – Total Drilling by All Operators***

| Operator | Year | Prospect | Collar ID | # of Holes | # of Meters (m) |
|---|---|---|---|---|---|
| Anaconda | 1982-1984 | Johnson Tract | JM-82-001 – JM-84-027 | 26 | 9,331 |
| Anaconda | 1983-1984 | Difficult Creek | DC-83-001 – DC-84-009 | 9 | 1,344 |
| Keck (HWP) | 1987-1992 | Johnson Tract | JM-87-028 – JM-92-063 | 34 | 11,416 |
| Westmin | 1993-1995 | Johnson Tract | JM-93-064 – JM-95-081 | 18 | 5,321 |
| | | | **Total** | **87** | **27,412** |
| **Operator** | **Year** | **Prospect** | **Collar ID** | **# of Holes** | **# of Meters (m)** |
| HighGold | 2019 | Johnson Tract | JT19-082 - JT19-090 | 9 | 2,247 |
| HighGold | 2020 | Johnson Tract | JT19-090 EXT, JT20-091 to JT19-122 (incl. JT20-105B, 111B, 113B and 118B) | 37 | 16,422 |
| HighGold | 2021 | Johnson Tract | JT21-123 to JT21-147 (incl. JT21-128A and JT21-131B) | 27 | 9,920 |
| HighGold | 2021 | Difficult Creek | DC21-010 to DC21-026 | 17 | 5,293 |
| HighGold | 2021 | Kona | KN21-001 and KN21-002 | 2 | 995 |
| HighGold | 2021 | All | All | 46 | 16,208 |
| | | | **Total** | **92** | **34,877** |
| **All** | **1982-2021** | **All** | **Grand Total** | **179** | **62,289** |

## 10.1 PREVIOUS DRILLING BY THE COMPANY

### 10.1.1 2019 DRILL PROGRAM

From August 24th to September 30th of 2019, HighGold completed **nine (9) drillholes totaling 2,246.5 meters** on the JT Prospect. Seven (7) holes were designed to infill the zone and two (2) holes twinned historic holes in order to advance the zone to a compliant NI 43-101 mineral resource stage.

The 2019 drill program was successful in demonstrating the large width and high-grade continuity of the JT Deposit. Key findings included:

- A new discovery of distinctive mineralization was also made in the footwall to the JT Deposit, extending the known mineralized system deeper (Footwall Copper Zone or “FWCZ”).

- Step-out drilling which expanded the highest-grade portions of the JT Deposit and showed it to open along strike and at depth.
- Infill drilling primarily which focused on the upper portion of the JT Deposit and provided increased confidence in the overall width of the JT Deposit and the distribution of grade.
- A summary of the significant assay intersections is found below in **Table 10.2**.

***Table 10.2 2019 Drill Program – JT Area - Significant Assay Intercepts***

| Drill Hole | From (meters) | To (meters) | Length (meters) | ETW* (meters) | Gold (g/t) | Silver (g/t) | Copper % | Zinc % | Lead % |
|---|---|---|---|---|---|---|---|---|---|
| JT19-082** | 153.2 | 261 | 107.8 | 53.9 | 12.42 | 8.9 | 0.88 | 7.11 | 1.64 |
| Incl. | 156.2 | 184.6 | 28.4 | 14.2 | 35.15 | 17 | 1.4 | 7.45 | 3.13 |
| JT19-083 | 75.9 | 106.6 | 30.7 | 23 | 2.75 | 8.8 | 0.29 | 5.47 | 3 |
| JT19-085** | 67.8 | 127 | 59.2 | 31.4 | 8.16 | 5.9 | 0.39 | 8.8 | 0.72 |
| Incl. | 68.6 | 79.5 | 10.9 | 5.8 | 33.06 | 9.7 | 0.57 | 6.37 | 0.02 |
| JT19-086 | 48.1 | 95.7 | 47.6 | 33.7 | 2.36 | 4.8 | 0.4 | 9.68 | 0.13 |
| JT19-088 | 128 | 225.5 | 97.5 | 48.8 | 5.93 | 4.2 | 0.46 | 3.86 | 0.62 |
| Incl. | 135.5 | 158 | 22.5 | 11.3 | 12.59 | 4.9 | 0.36 | 3.65 | 1.07 |
| JT19-090 | 253.9 | 329 | 75.1 | 40.6 | 10.01 | 6 | 0.57 | 9.36 | 1.11 |
| Incl. | 308 | 328 | 20 | 10.8 | 29.02 | 7.3 | 0.67 | 3.53 | 1.22 |

* Estimated True Width ("ETW") measured from drillhole cross sections
** Twin of historic drillhole for validation purposes

Following the receipt of the final 2019 drill assay results, the first mineral resource estimate for the JT Deposit prepared under the guidelines and reporting standards of NI 43-101 was completed based on both 2019 and historic drill data.

### 10.1.2 2020 Drill Program

From July 4$^{th}$ through to October 27$^{th}$ of 2020, HighGold completed **37 drillholes totalling 16,421.1 meters.** The 2020 program consisted of:

- twenty-four (24) expansion holes to the northeast and southwest of JT Deposit;
- nine (9) holes testing the NEO target; and
- four (4) holes to test a northerly trending zone of alteration (NA) north of the JT Deposit.

The 2020 drill program was successful in demonstrating the impressive width and high-grade continuity of the JT Deposit. Continued definition of the footwall to the JT Deposit was successful in extending the mineralization at depth. Step-out drilling expanded the JT Deposit along strike to the northeast. Drilling at the NEO intersected zinc rich VMS-style mineralization and provided insight for a new drill targeting (the 'New Offset Target'). A summary of the significant assay intersections is found below in **Table 10.3**.

*Table 10.3 2020 Drill Program – JT Area - Significant Assay Intercepts*

| Drill Hole | From (meters) | To (meters) | Length (meters) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| **JT20-092** | 269.40 | 343.50 | 74.10 | 17.89 | 7.1 | 0.48 | 7.28 | 1.31 |
| Including | 317.50 | 331.50 | 14.00 | 53.22 | 8.1 | 0.19 | 2.34 | 0.59 |
| **JT20-093** | 256.90 | 300.40 | 43.50 | 1.35 | 12.1 | 1.98 | 8.45 | 0.80 |
| Including | 256.90 | 275.00 | 18.10 | 1.22 | 11.7 | 2.47 | 14.91 | 1.14 |
| **JT20-095** | 245.00 | 286.00 | 41.00 | 1.82 | 5.9 | 1.04 | 3.82 | 0.32 |
| **JT20-096** | 204.90 | 225.00 | 20.10 | 11.51 | 3.6 | 0.49 | 3.10 | 0.01 |
| Including | 221.00 | 225.00 | 4.00 | 43.70 | 6.9 | 0.76 | <0.01 | 0.57 |
| And | 329.10 | 343.30 | 14.20 | 0.14 | 34.2 | 2.66 | 1.01 | 0.11 |
| **JT20-100** | 199.20 | 216.50 | 17.30 | 0.19 | 1.0 | 0.12 | 6.13 | 0.02 |
| And | 285.50 | 294.50 | 9.00 | 0.10 | 6.9 | 1.44 | 2.77 | 0.16 |
| **JT20-103** | 214.10 | 227.60 | 13.50 | 1.00 | 1.2 | 0.15 | 2.38 | 0.30 |
| And | 259.90 | 263.90 | 4.00 | 0.11 | 3.0 | 0.82 | 7.23 | 0.00 |
| And | 283.60 | 286.60 | 3.00 | 3.14 | 46.2 | 1.26 | 6.44 | 1.08 |
| And | 298.00 | 304.00 | 6.00 | 0.07 | 22.9 | 0.94 | 4.47 | 0.04 |
| **JT20-106** | 246.40 | 304.30 | 57.90 | 0.58 | 3.3 | 5.58 | 1.31 | 0.61 |
| Including | 249.40 | 266.80 | 17.40 | 3.93 | 4.9 | 0.57 | 7.58 | 1.78 |
| And | 278.30 | 288.40 | 10.10 | 0.14 | 4.1 | 0.71 | 3.66 | 0.12 |
| And | 294.50 | 302.00 | 7.50 | 0.09 | 16.4 | 2.01 | 0.78 | 0.03 |
| **JT20-108** | 237.60 | 239.60 | 2.00 | 0.74 | 94.4 | 1.58 | 0.63 | 0.14 |
| **JT20-110** | 334.90 | 393.50 | 58.60 | 0.22 | 20.6 | 1.04 | 0.39 | 0.09 |
| Including | 334.90 | 336.20 | 1.30 | 2.02 | 44.0 | 3.14 | 6.32 | 0.12 |
| And | 351.90 | 363.90 | 12.00 | 0.17 | 50.5 | 2.83 | 0.21 | 0.09 |
| **JT20-111B** | 434.40 | 442.30 | 7.90 | 0.05 | 18.0 | 1.97 | 1.65 | 0.23 |
| Including | 435.40 | 436.50 | 1.10 | 0.06 | 48.1 | 5.11 | 4.74 | 0.22 |
| **JT20-113B** | 217.10 | 239.90 | 22.80 | 0.26 | 12.1 | 0.42 | 0.35 | 0.03 |
| And | 279.20 | 288.20 | 9.00 | 0.12 | 18.7 | 1.33 | 0.09 | 0.01 |
| **JT20-115** | 181.00 | 237.10 | 56.10 | 0.42 | 1.5 | 0.06 | 1.97 | 0.32 |
| Including | 220.10 | 237.10 | 17.00 | 0.40 | 1.3 | 0.07 | 2.56 | 0.40 |
| **JT20-120** | 304.50 | 318.70 | 14.20 | 0.03 | 6.9 | 1.82 | 0.23 | 0.31 |
| Including | 306.00 | 317.00 | 11.00 | 0.17 | 2.0 | 0.35 | 8.59 | 0.04 |
| **JT20-121** | 98.70 | 117.00 | 18.30 | 0.56 | 64.5 | 0.11 | 5.92 | 0.12 |
| Including | 111.00 | 115.00 | 4.00 | 0.56 | 278.0 | 0.24 | 9.50 | 0.02 |
| And | 156.00 | 168.20 | 12.20 | 0.14 | 5.2 | 0.03 | 2.77 | 0.18 |
| **JT20-122** | 154.20 | 178.20 | 24.00 | 0.14 | 5.31 | 0.06 | 2.81 | 0.19 |
| Including | 163.50 | 175.00 | 11.50 | 0.23 | 8.41 | 0.10 | 3.84 | 0.15 |

*Note: Length-weighted intervals are uncapped and calculated based on a 1 g/t gold equivalent ("AuEq") cut-off and less than 5 meters (drill length) of dilution of below cut-off grade. Gold Equivalent ("AuEq") is calculated based on metal prices of $1250/oz gold, $16/oz silver, $3/lb copper, $1/lb lead, and $1.20/lb zinc and 90% recovery for all metals.*

*Table 10.4 2020 Drill Program – NEO Target - Significant Assay Intercepts*

| Drill Hole | From (meters) | To (meters) | Length (meters) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| **JT19-094** | 492.20 | 498.90 | 6.70 | 0.72 | 1.33 | 0.48 | 0.02 | 0.00 |
| Including | 492.20 | 493.20 | 1.00 | 3.52 | 3.30 | 1.16 | 0.02 | 0.00 |
| And | 794.30 | 795.50 | 1.20 | 0.82 | 173.00 | 15.15 | 0.11 | 0.01 |
| **JT20-101** | 369.00 | 369.70 | 0.70 | 0.09 | 1.60 | 0.03 | 31.17 | 0.01 |
| **JT20-105B** | 419.90 | 420.70 | 0.80 | 3.03 | 7.40 | 2.00 | 3.11 | 0.00 |
| **JT20-112** | 309.00 | 311.00 | 2.00 | 0.34 | 5.35 | 0.62 | 13.18 | 0.18 |
| Including | 310.00 | 311.00 | 1.00 | 0.50 | 8.60 | 1.09 | 19.35 | 0.14 |
| **JT20-114** | 266.40 | 285.00 | 18.60 | 0.43 | 32.44 | 0.11 | 3.29 | 0.83 |
| Including | 268.90 | 276.70 | 7.80 | 0.69 | 36.39 | 0.21 | 6.09 | 1.64 |
| And | 317.60 | 321.90 | 4.30 | 0.31 | 2.95 | 0.32 | 4.73 | 0.01 |
| And | 336.00 | 339.00 | 3.00 | 0.46 | 3.75 | 0.51 | 3.20 | 0.01 |

*Note: Length-weighted intervals are uncapped and calculated based on a 1 g/t gold equivalent ("AuEq") cut-off and less than 5 meters (drill length) of dilution of below cut-off grade. Gold Equivalent ("AuEq") is calculated based on metal prices of $1250/oz gold, $16/oz silver, $3/lb copper, $1/lb lead, and $1.20/lb zinc and 90% recovery for all metals.*

## 10.2 2021 Drill Program

### 10.2.1 Introduction

A US10 million, minimum 16,000-meter drill program was planned for the Johnson Tract Project for the 2021 field season. The Program was designed to test the JT Deposit area plus additional property-wide targets and prospects including:

- Infill and expansion drilling of the main JT Deposit, both down-plunge and along strike to the northeast and southwest; step outs down-plunge would be on 75-100 meters centers.
- Testing of the sparsely drilled 200-meter area immediately northeast of the JT Deposit;
- Follow-up on the 2020 drilling results at the NE Offset target (including the new VMS zone);
- Expanding the Footwall Copper Zone along strike and at depth;
- Evaluating the stratigraphy southwest of the JT Deposit; and
- Testing the North Tract and following up on strong 2020 geochemical, geophysical and geological findings at Middle DC, Upper DC and the Kona Prospect.
- The Program would be supported by three diamond drills (Hy-Tech (2) and Ruen (1)), two helicopters (B3 and 500), and approximately 40 to 45 exploration staff.

From June 22nd through to October 18th of 2021, the Company completed **44 drillholes totalling 16,208 meters.** The 2021 program consisted of:

- Twenty-five (25) holes totaling 9,931 meters to the northeast & southwest of the JT Deposit;
- Seventeen (17) holes totaling 5,293 meters at the DC prospect; and
- Two (2) holes totaling 995 meters testing the Kona Prospect chargeability anomaly.

Drill hole locations are shown in **Figure 10.1 and Figure 10.2** with collar details in **Appendix A**.

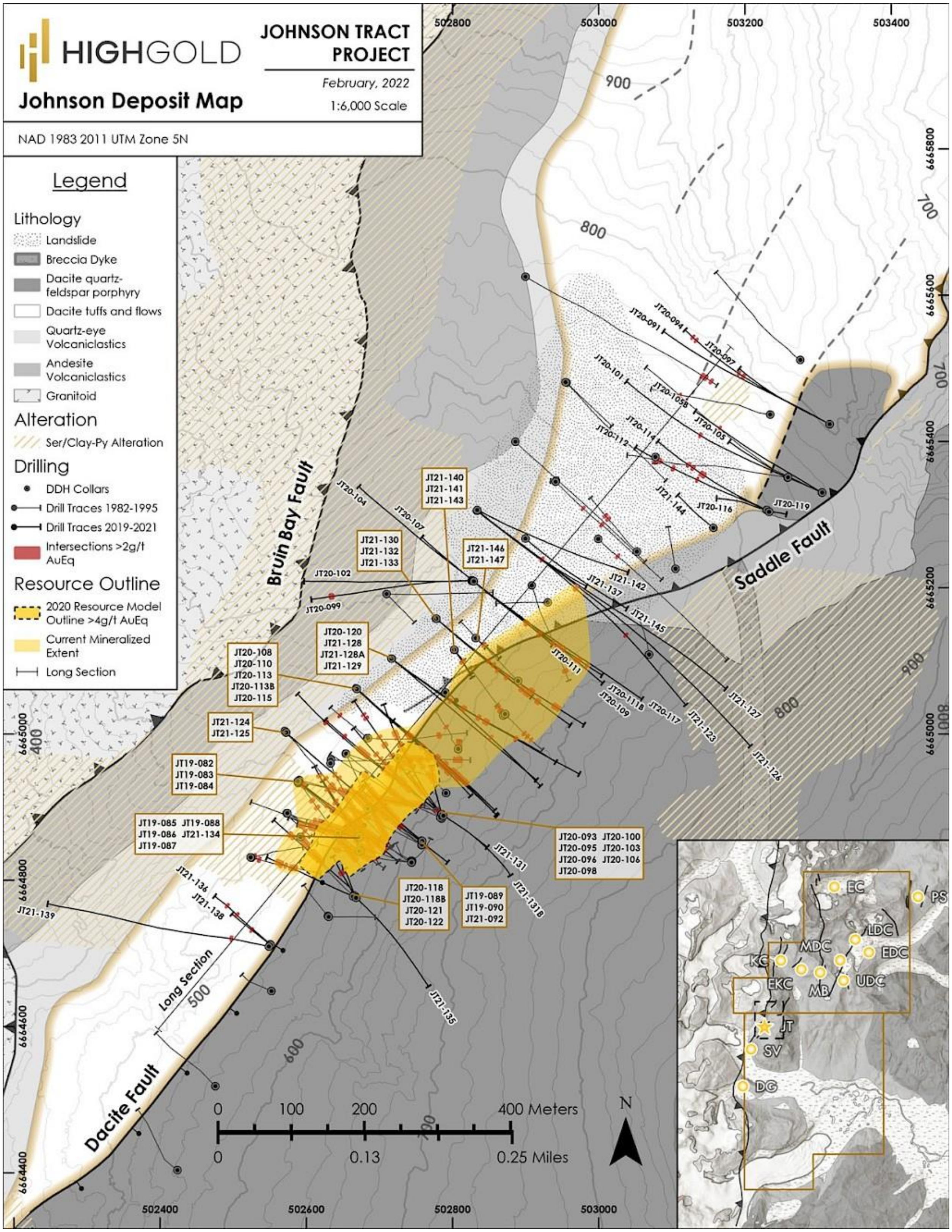



*Figure 10.1 JT Deposit Area – DDH Plan Map with 2020 and 2021 Drill Hole Locations*

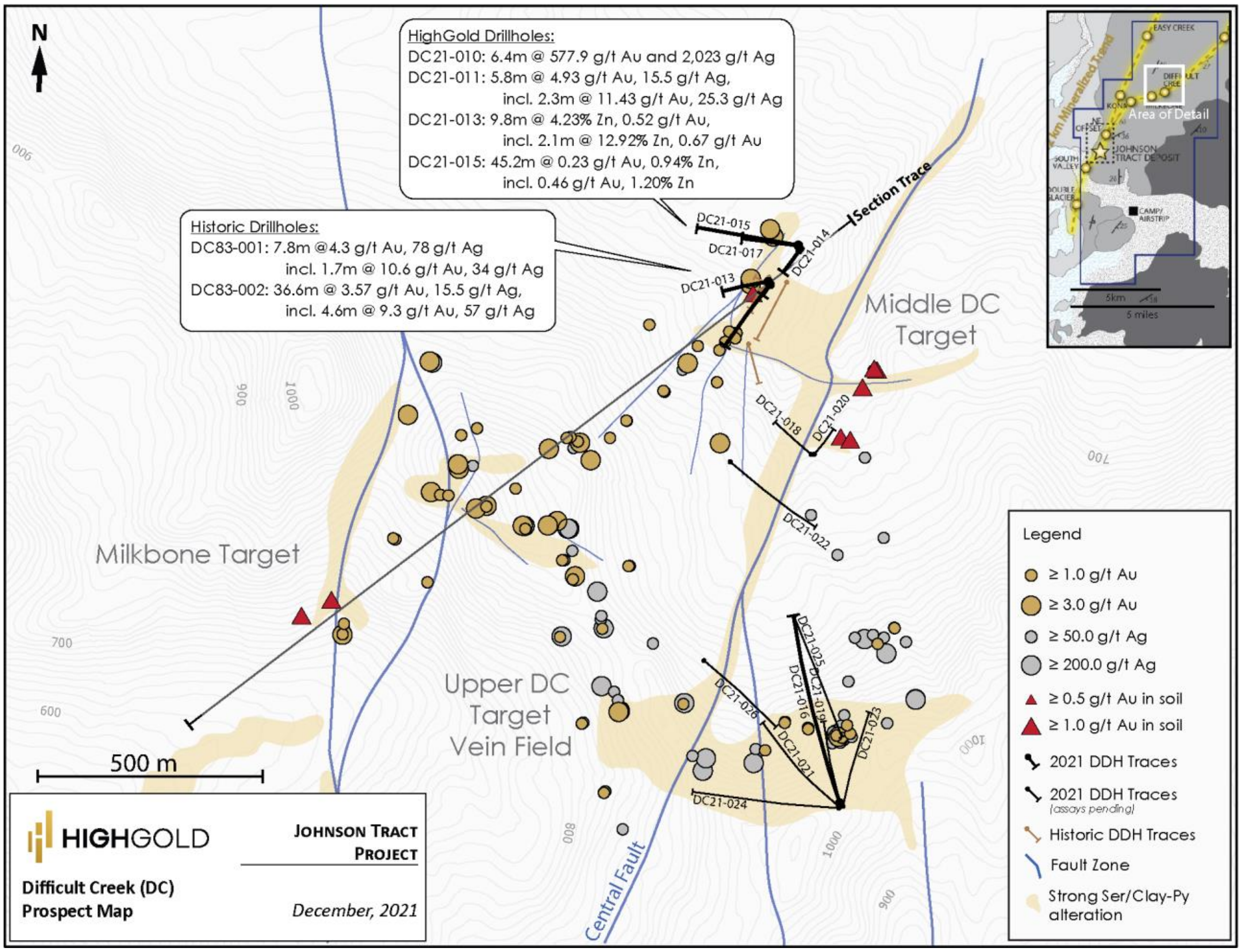



***Figure 10.2 Difficult Creek Area – DDH Plan Map with 2021 Drill Hole Locations.***
*Note - Rock samples are shown as circles; soil samples are shown as triangles.*

## 10.2.2 Drilling Methods

### *Equipment*

In 2021, drilling was contracted by Hy-Tech Drilling USA Inc. ("Hy-Tech") and Ruen Drilling Inc ("Ruen"). Two helicopter-portable TECH5000 hydraulic drill rigs were used by Hy-Tech to produce 63.5 mm (HQ) diameter and 47.6 mm (NQ) diameter core with double tube core barrels. One modified Longyear LF-70 drill rig was used by Ruen to produce 61.1 mm (HQ3) and 45.1 mm (NQ3) diameter core with triple tube core barrels. Drills and supporting materials were transported between drill sites by an AS350B3 helicopter provided by Soloy Helicopters of Wasilla, AK.

### *Collar Surveying and Coordinates*

Drill pad locations were identified by geologists using a Trimble R1 receiver. Final collar coordinate surveys were performed using a Trimble R2 receiver which achieved cm-scale survey precision. Coordinates were collected in NAD83 (2011) UTM Zone 5N.

***Plate 10.1 Hy-Tech's TECH5000 Drill Rig at Upper Difficult Creek***

***Plate 10.2 Ruen's Modified Longyear LF-70 Drill Rig on Hole DC21-010 at Middle Difficult Creek***

### *Drill Pads*

Drill pads were constructed by trained mountain crews using rough-sawn timbers and planks to create a flat level deck approximately 30 ft by 30 ft size.

### *Downhole Surveying*

Once the drill pad was built and the drill rig mobilized, the azimuth and dip were confirmed by a TN14 gyrocompass provided by REFLEX of Vancouver, BC. After the initial runs of coring were complete, and casing was established in the hole, the attitude and depth were confirmed using a survey tool (either a REFLEX EZ-GYRO or an Axis Champ Gyro).

During drilling, surveys were taken by drillers at 50 m intervals to confirm the hole was on target. Prior to hole termination, an end of hole survey was completed by the driller using either a REFLEX EZ-Gyro or an Axis Champ Gyro with survey shots at 30-50m intervals.

### *Units*

Holes drilled by Ruen were drilled in feet, and depths converted into meters at the drill and recorded on wooden meterage blocks. Holes drilled by Hy-Tech were drilled in meters. All holes were surveyed in meters. All geotechnical and geological data, including RQD, lithologic data and sampling data, were collected in meters.

### *Core Handling and Transport*

Drill crews placed the core into 80 cm wooden core boxes at the drill rig. Wooden meterage blocks were placed by the drill crew at the end of the core in the box each time the core barrel was pulled. Each wooden core box was labelled with its hole and box number before being transported away from the drill. Core boxes were transported by helicopter once or twice daily from the drill site to the logging facility at the JT camp. Box numbers and depth markers were checked at the JT camp by a geotechnician.

### *Core Photos*

High-resolution photographs of fresh, wet core in each core box were captured by a geotechnician prior to logging and sampling. A portable photo station with a Nikon D7500 DSLR digital camera was used to standardize core box photos. Detailed photos of all whole rock characterization samples were also collected. Detailed photographs of significant textures, geologic structures, mineralization, and/or alteration were also taken at the discretion of the core logging geologist.

### *Rock Quality Designation (RQD)*

Detailed drill core geotechnical data were collected in all drill holes, and from 30m above the mineralized zone to the end of the hole for resource infill drill holes. Q-system (RQD, Jn, Jr, Ja) and total core recovery (TCR) data were collected and recorded in "GeoSpark" database management software supplied by GeoSpark Consulting Inc.. Data was collected by geo-technicians on a three (3) m run by run basis, supervised by core logging geologists.

### *Geological Logs*

Lithology, alteration, mineralization and structure were recorded by HighGold geologists and geologic logs were reviewed by two geologists, including one senior geologist, for accuracy. Intervals for sampling were marked by a HighGold geologist. Core logging and sample interval data were entered directly into Geospark software. Core logging procedures and standards are continually evolving and should be thoroughly reviewed prior to the next drill program.

*Oriented Core*

Core samples were oriented using the Reflect ACT III RD orientation tool. Core recovered by Hy-Tech was marked with orientation marks at the drill, and orientation lines were drawn on reconstructed core by a geotechnician at the JT camp. Core recovered by Ruen Drilling using a split tube was marked with both orientation mark and an orientation line at the drill prior to being transported to the JT Camp.

*Hole Closure*

Holes with mineralized intercepts were cemented through the mineralized zones with a 30 m buffer. Holes were plugged with displacement plugs and ~3 m of bentonite at the collar and directly above the static water table, where it was intersected. Casing was left at ground level with an aluminum cap stamped with the drillhole ID, azimuth and dip

*Core Storage*

All core was catalogued and stored on pallets at the Johnson Tract exploration camp in Alaska.

***Plate 10.3 Core Yard at Johnson River Camp***

### 10.2.3 Drilling Results

*JT Deposit Infill and Northeast Expansion*

Twenty-five (25) holes tested the JT Deposit as infill and resource expansion holes (JT21-123 to JT21-147). The breakdown includes:

- Twelve (12) holes, JT21-123/126/127/128A/129/130/132/133/137/142/144/145, to infill and expand the JT Deposit along strike and down-plunge
- Three (3) holes, JT21-124/125/134, as dual-purpose infill and metallurgical holes through the Upper and Lower portions of the JT Deposit

- Two (2) holes, JT21-131B and JT21-135, testing the eastern side of the Dacite Fault for potential offsets to the main JT Deposit
- Three (3) holes, JT21-136/138/139, as step-outs off the southwest end of the JT Deposit
- Five (5) holes, JT21-140/141/143/146/147, as a shallow test of the Brodie's Boulder Field

The 2021 drill program was successful in demonstrating the impressive width and high-grade continuity of the JT Deposit. Continued definition of the footwall to the JT Deposit was successful in extending mineralization down-dip/down-plunge. Holes JT21-124, 125 and 134, provided an opportunity to infill key portions of the deposit and also collect necessary material for a metallurgical testwork program. Step-out drilling also expanded the portions of the JT Deposit, which remains open along strike and at depth. Hole JT21-123 on Section 525N intersected zinc-rich VMS-style mineralization and provided insight into new styles of mineralization.

Highlights from JT Deposit area drilling are shown in **Figures 10.3 to Figure 10.5** and include:

- **4.3m at 13.1 g/t Au**, 200 g/t Ag, 4.92% Zn, 2.04% Pb, and 0.35% Cu, in hole JT21-123, including:
  - 2.8m at 19.0 g/t Au, 242 g/t Ag, 7.10% Zn, 2.91% Pb, and 0.50% Cu
- 7.0m at 1.35% Cu, 0.33% Zn, 18 g/t Ag, in met hole JT21-124, including
  - 2.0m at 3.77% Cu, 0.77% Zn, 55 g/t Ag (FWCZ)
- **56.6m at 18.7 g/t Au,** 2.4% Zn, and 0.47% Cu in met hole JT21-125, including
  - 32.9m at 31.7 g/t Au, 1.8% Zn, and 0.58% Cu, including
    - 5.0m at 64.7 g/t Au, 1.5% Zn, and 0.53% Cu, and
    - 4.9m at 114.4 g/t Au, 3.5% Zn, and 0.33% Cu
- 8.7m at 3.97% Zn, 0.16% Cu, in hole JT21-130**,** including
  - 3.0m at 8.35% Zn, and 0.23% Cu
- 4.5m at 3.60 g/t Au, 1.48% Zn, 0.53% Pb (4.9 g/t AuEq), in hole JT21-133
- 8.0m at 6.32% Zn, 0.14% Pb, in hole JT21-133
- 9.2m at 1.41% Cu, 0.48% Zn, 36 g/t Ag, in hole JT21-133
- **84.7m at 4.7 g/t Au, 4.6% Zn, 1.6% Pb and 0.3% Cu,** in met hole JT21-134 including:
  - 7.0m at 12.73 g/t Au, 2.26% Zn, 0.05% Pb, and 0.29% Cu, and
  - 34.0m at 7.44 g/t Au, 6.96% Zn, 3.57% Pb, and 0.38% Cu

The 2021 results successfully expand the JT Deposit along strike and down-dip/down-plunge and confirm the continuity of higher-grade gold mineralization. The Au-Cu-Zn-Ag-Pb mineralization associated with the JT Deposit has now been defined over a total strike length of 600 meters and remains open along strike to the northeast and southwest, and at depth. The true thickness of the JT Deposit typically ranges from 20 to 55 meters.

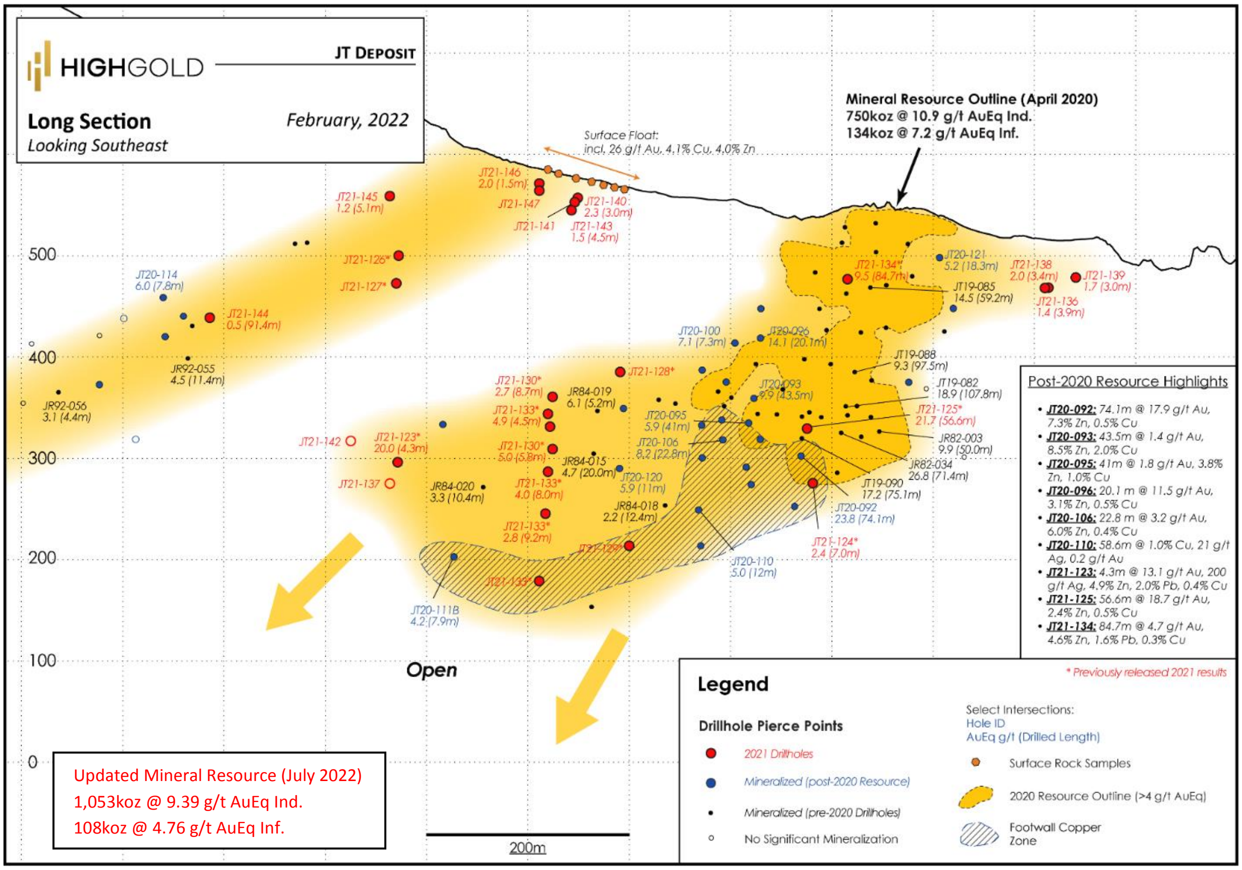


*Figure 10.3 JT Deposit – Longitudinal Section with 2021 DDH Intersections*

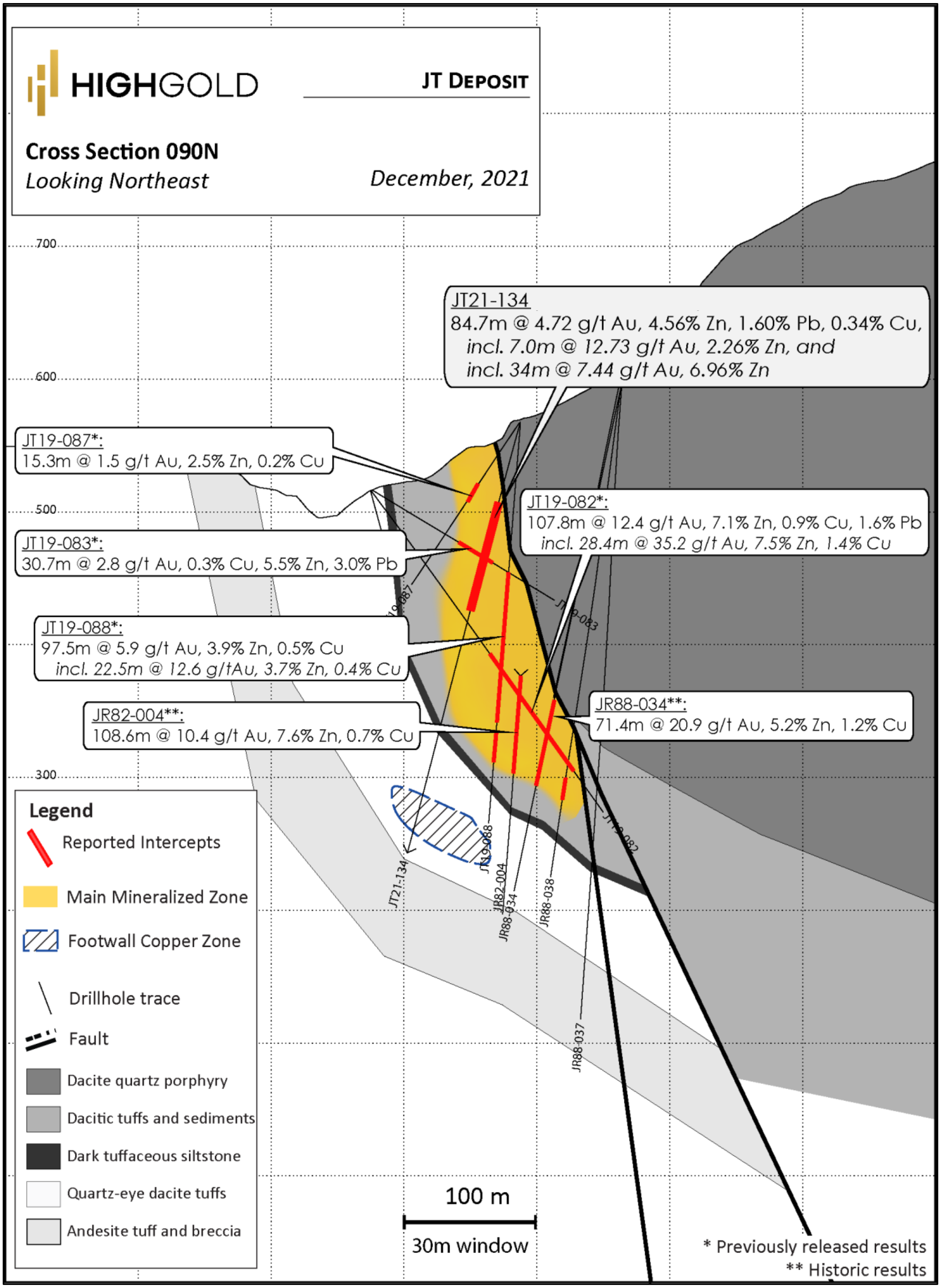



*Figure 10.4 JT Project - Cross-Section 090N from 2021 Drill Program*

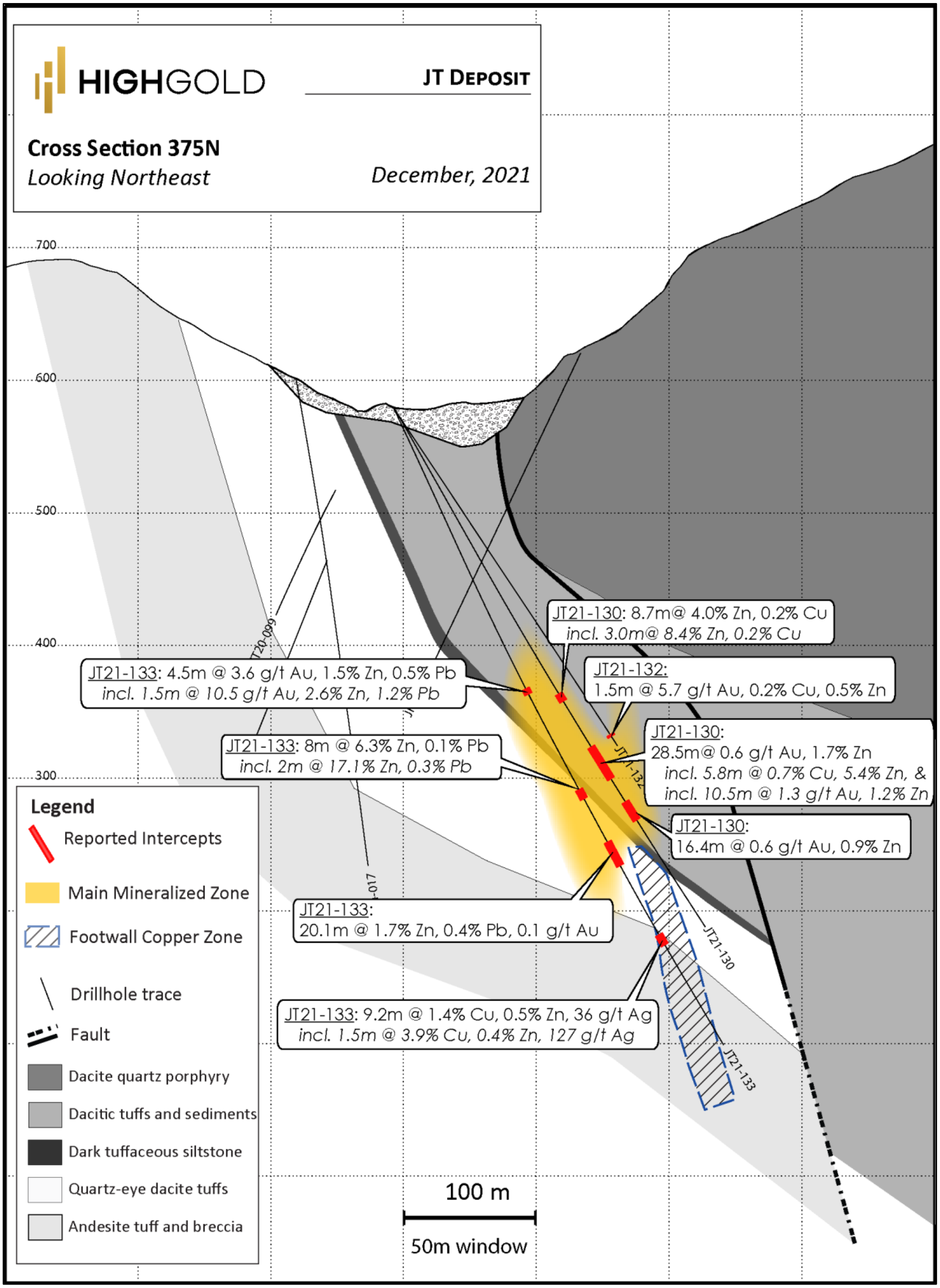



***Figure 10.5 JT Project - Cross-section 375N from 2021 Drill Program***

*JT Deposit Southwest Expansion*

Three (3) holes,JT21-136/138/139, were drilled as a nominal 100-meter step-out off the southwestern end of the JT Deposit under an area of encouraging surface geochemistry and alteration. All three holes returned anomalous levels of zinc over short core lengths suggesting that they drilled into the periphery of the main JT-style mineralization.

*Brodie's Boulders*

Five (5) short holes, JT21-140/141/143/146/147, were drilled as shallow tests of Brodie's Boulder Field. The holes largely intersected mineralized sph-rich boulders in the overburden and no compelling mineralization was intersected in the underlying bedrock. The assay results returned a maximum of 9.0 m at 1.34% Zn in hole JT21-140. The source of the boulders most likely occurs in the drainage at high elevations and under cover of the landslide.

*Difficult Creek*

Discovery of high-grade mineralization at the DC Prospect has been an important development for the Project, establishing a second center of high-grade mineralization at Johnson Tract and highlighting the potential for additional deposits on the greater property.

Seventeen (17) holes tested a variety of vein, structural, geochemical and geophysical targets at MDC and UDC (**Figure 10.6**). The breakdown included:

- Seven (7) holes, DC21-010 to DC21-015, DC21-017, testing the Rizzo Vein and other nearby targets at the Middle DC Prospect.
- Three (3) holes, DC21-018/020/022, testing the north-south Central Fault and a >1 g/t Au soil anomaly.
- Seven (7) holes, DC21-016/019/021/023/024/025/026, testing the New Vein Field discovered in 2020 at the Upper DC Prospect.

Hole DC21-010 was the first hole completed by HighGold at the DC Prospect and targeted the down-dip potential of a mineralized silicified breccia (the "**Rizzo Vein**") where surface sampling retuned 22.1 g/t Au and 178 g/t Ag over a 1.5m chip sample. Limited drilling in 1983 by a previous operator yielded 36.3m grading 3.57 g/t Au, 1.8% Zn, 0.2% Cu 0.4% Pb and 15.5 g/t Ag in hole DC83-002, including 4.6 m grading 9.3 g/t Au, 57 g/t Ag and 4.5% Zn. Hole DC21-010 intersected the Rizzo Vein at a shallow depth, confirming continuity of the mineralized zone and demonstrating the presence of bonanza gold and silver grades (**Figure 10.6 and 10.**7). Highlights from the 2021 drilling at the DC prospect included:

- **6.40m at 577.9 g/t Au**, **2,023 g/t Ag**, 2.15% Zn, and 0.30% Cu, in hole DC21-010**,** including
  - **3**.76m at 982.7 g/t Au, 3,436 g/t Ag, 2.80% Zn, 0.44% Cu, including
    - 1.26m at 2,860 g/t Au, 9,990 g/t Ag, 5.04% Zn, 0.88% Cu
- 5.8m at 4.93 g/t Au, 15.5 g/t Ag, 0.24% Cu, in hole DC22-011**,** including
  - 2.30m at 11.43 g/t Au, 25.3 g/t Ag, 1.46% Zn, 0.54% Cu
- 9.8m at 4.23% Zn, 0.52% Au, in hole DC21-013, including

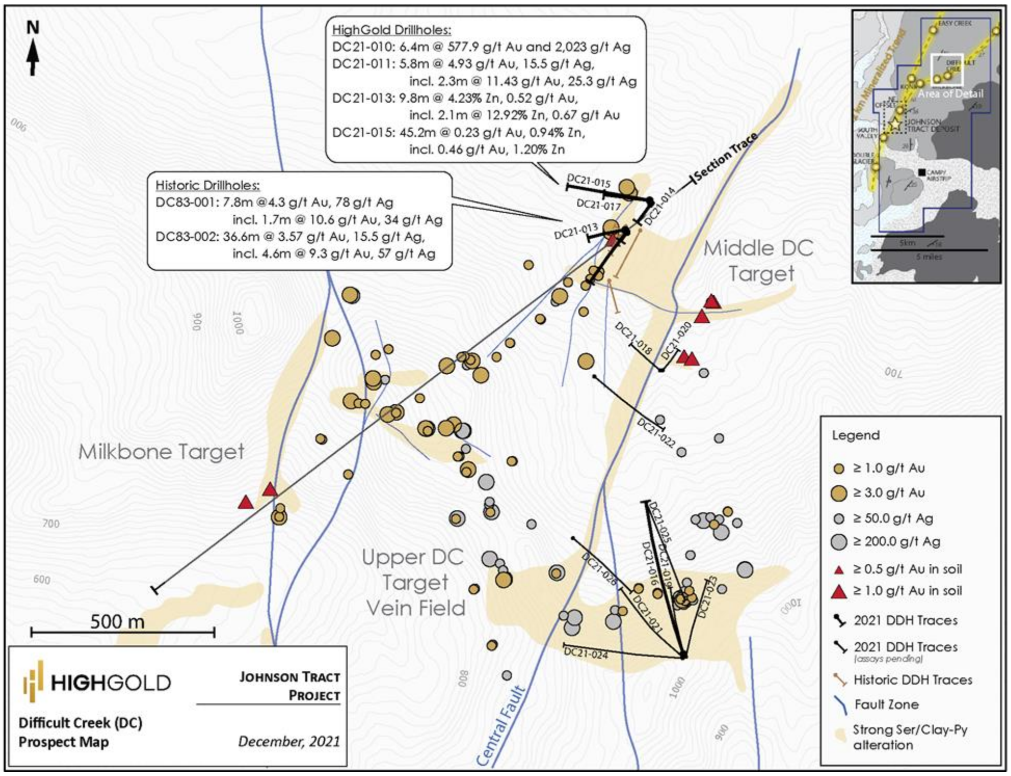



***Figure 10.6 DC Prospect Area – 2021 DDH plan Map with Hole DC21-010***

*Note - Rock samples are shown as circles; soil samples are shown as triangles.*

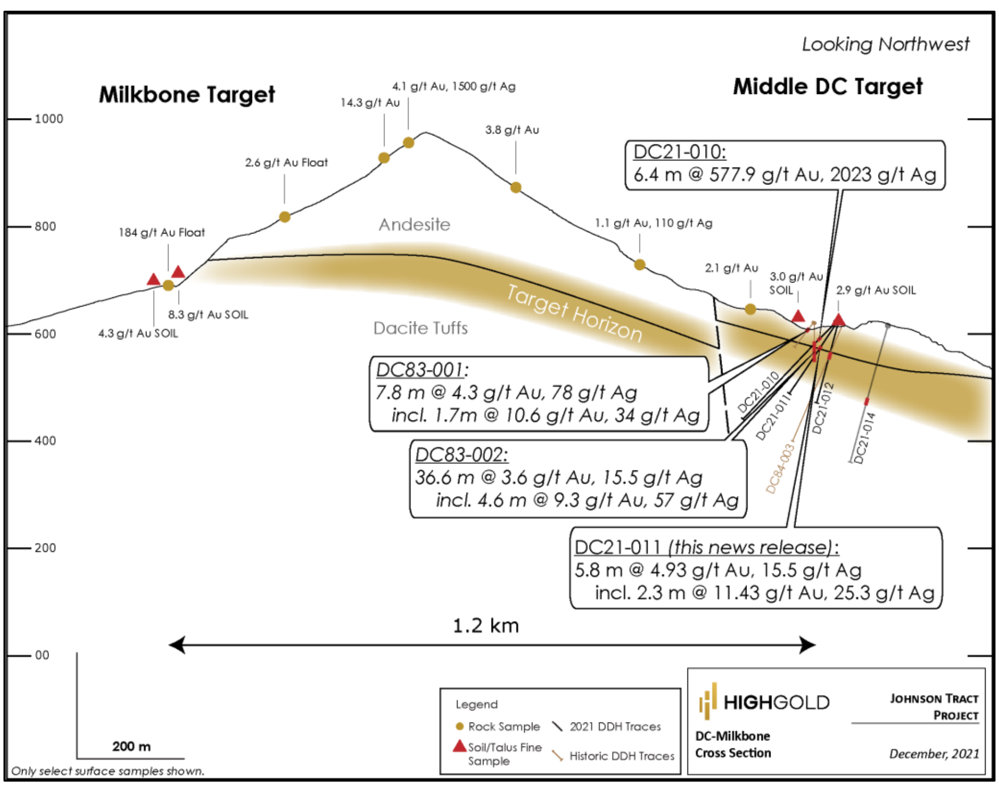



***Figure 10.7 Milkbone to Middle DC Cross-Section – Looking Northwest***

- 2.10m at 12.92% Zn, 0.67 g/t Au within the northeast trending Rizzo fault structure
- Broad zones of lower grade gold and base metal mineralization intersected in reconnaissance drilling 140m to the northwest of DC21-010, consisting of 91.7m grading 0.17 g/t Au, 0.75% Zn in hole DC21-015, including 10.50m grading 0.46 g/t Au, 1.20% Zn; this mineralization is blind at surface beneath relatively unaltered cover rocks, highlighting the potential under cover elsewhere along trend.

Ten (10) scout drill holes (DC21-017 to DC2-026) tested the Central Fault (3 holes) and Upper DC vein field (7 holes), which represent separate targets located 300 to 1000 meters away from the previously reported high-grade mineralization discovered at the Middle DC target.

The Central Fault drill holes tested below clay-anhydrite alteration at surface that is associated with a topographic lineament. These holes intersected broad intervals (10s of meters) of alteration associated with elevated to anomalous gold values (50 ppb to 600 ppb Au) around a large fault structure (Central Fault).

Upper DC drill holes tested beneath Ag-rich epithermal-style veins sampled during the 2020 field season. These drill holes intersected numerous 15 cm to 1.5 m wide epithermal-style veins within andesite volcanics and quartz-feldspar porphyry intrusives; however, were generally unable to replicate the high silver grades obtained from 2020 surface sampling in the area.

Significant new drill intersections include:

- 1.10m at 110 g/t Ag and 0.60m at 5.18 g/t Au, 4.04% Zn in separate quartz-carbonate veins intersected in hole DC21-016
- 1.5m at 127 g/t Ag, in hole DC21-017
- 0.5m at 4.53 g/t Au, 11.5 g/t Ag and 1.94% Zn, in hole DC21-021
- 4.0m at 1.75 g/t Au and 42.2 g/t Ag, in hole DC21-021
- 4.0m at 0.29 g/t Au and 15.7 g/t Ag, in hole DC21-022
- 1.5m at 40.3 g/t Ag over 1.5m, in hole DC21-023

Data collected during the 2021 surface exploration and scout drill program within the greater DC and Milkbone prospect areas indicates that precious metal mineralization is best developed at deeper stratigraphic levels than the Upper DC target, most notably at or near to the upper contact of the dacite volcaniclastic unit and appears to favor proximity to the Milkbone fault and related fault splays. This knowledge will be critical to vectoring and prioritizing targets as the Company prepares its drill plans for 2022.

*Kona Creek Prospect*

Two (2) drill holes, KN21-001 and KN21-002, totaling 995m were completed near the end of the 2021 season, following the completion of airborne drone magnetic and infill Induced Polarization ("IP") geophysical surveying. No significant assay results were received from the two holes; however, the scale, intensity and character of the alteration intersected in drill core suggests the presence of a large magmatic hydrothermal system with potential for gold and copper mineralization to depth. Given the alteration scale, Kona remains a high priority target for the Company and data gained from these two holes will be used to design follow-up drilling.

*Summary*

A summary of all 2021 drillholes is provided in **Tables 10.5** and **10.6** and **Appendices A** and **B.**

**Table 10.5 2021 Drill Program – JT Area - Significant Assay Intercepts**

| Hole_ID | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) |
|---|---|---|---|---|---|---|---|---|
| JT Deposit - Infill and Expansion | | | | | | | | |
| **JT21-123** | 379.70 | 400.60 | 20.90 | 2.79 | 42.60 | 0.12 | 0.43 | 1.05 |
| Including | 381.20 | 384.00 | 2.80 | 19.03 | 241.50 | 0.50 | 2.92 | 7.10 |
| And | 575.20 | 576.10 | 0.90 | 0.04 | 0.10 | 2.77 | 0.00 | 0.02 |
| **JT21-124 MET** | 252.80 | 259.80 | 7.00 | 0.03 | 17.83 | 1.35 | 0.07 | 0.33 |
| Including | 257.80 | 259.80 | 2.00 | 0.04 | 55.15 | 3.77 | 0.17 | 0.77 |
| **JT21-125 MET** | 206.50 | 209.50 | 3.00 | 1.09 | 4.43 | 1.26 | 0.00 | 1.36 |
| And | **236.70** | **293.30** | **56.60** | **19.30** | **3.94** | **0.47** | **0.36** | **2.43** |
| Including | 251.40 | 293.30 | 41.90 | 25.90 | 4.64 | 0.56 | 0.45 | 2.04 |
| Including | 273.40 | 278.40 | 5.00 | 69.52 | 7.44 | 0.53 | 0.88 | 1.49 |
| And Including | 288.40 | 293.30 | 4.90 | 116.60 | 10.51 | 0.33 | 0.01 | 3.51 |
| **JT21-126** | 182.80 | 195.50 | 12.70 | 0.06 | 3.63 | 0.03 | 0.11 | 1.33 |
| **JT21-127** | 198.00 | 199.00 | 1.00 | 4.67 | 2.40 | 0.05 | 0.01 | 0.29 |
| **JT21-128/128A** | 224.10 | 226.60 | 2.50 | 0.06 | 2.34 | 0.12 | 0.35 | 3.85 |
| **JT21-129** | 220.80 | 222.40 | 1.60 | 0.02 | 7.70 | 3.41 | 0.00 | 0.05 |
| And | 375.50 | 383.00 | 7.50 | 0.17 | 13.89 | 0.41 | 0.14 | 0.19 |
| And | 479.60 | 482.60 | 3.00 | 0.03 | 5.65 | 0.77 | 0.08 | 0.15 |
| **JT21-130** | 246.10 | 254.80 | 8.70 | 0.05 | 1.48 | 0.16 | 0.03 | 3.97 |
| Including | 249.00 | 252.00 | 3.00 | 0.05 | 1.90 | 0.23 | 0.07 | 8.35 |
| And | 295.00 | 323.50 | 28.50 | 0.56 | 1.20 | 0.17 | 0.16 | 1.73 |
| Including | 298.20 | 304.00 | 5.80 | 0.33 | 3.97 | 0.71 | 0.67 | 5.39 |
| And Including | 313.00 | 323.50 | 10.50 | 1.26 | 0.43 | 0.04 | 0.05 | 1.15 |
| And | 343.70 | 360.10 | 16.40 | 0.56 | 0.71 | 0.02 | 0.02 | 0.85 |
| **JT21-131/131B** | No Significant Assays | | | | | | | |
| **JT21-132** | 295.00 | 296.50 | 1.50 | 5.70 | 1.20 | 0.19 | 0.12 | 0.48 |
| **JT21-133** | 209.60 | 238.00 | 28.40 | 0.80 | 9.31 | 0.06 | 0.20 | 0.58 |
| Including | 211.10 | 218.70 | 7.60 | 0.51 | 19.89 | 0.09 | 0.12 | 0.39 |
| And Including | 229.00 | 238.00 | 9.00 | 1.86 | 3.00 | 0.05 | 0.41 | 1.22 |
| Including | 236.50 | 238.00 | 1.50 | 10.05 | 5.20 | 0.01 | 1.17 | 2.62 |
| And | 313.50 | 330.50 | 17.00 | 0.06 | 1.21 | 0.02 | 0.15 | 3.44 |
| Including | 324.20 | 325.20 | 1.00 | 0.05 | 2.80 | 0.10 | 0.34 | 18.25 |
| And | 364.40 | 384.50 | 20.10 | 0.13 | 1.63 | 0.06 | 0.41 | 1.65 |
| Including | 365.90 | 376.40 | 10.50 | 0.04 | 1.60 | 0.08 | 0.61 | 2.13 |
| And | 444.60 | 460.30 | 15.70 | 0.03 | 25.07 | 1.04 | 0.11 | 0.57 |
| Including | 446.00 | 447.50 | 1.50 | 0.03 | 127.00 | 3.88 | 0.35 | 0.42 |

*Note: Length-weighted intervals are uncapped and calculated based on a 1 g/t gold equivalent ("AuEq") cut-off and less than 5 meters (drill length) of dilution of below cut-off grade. Gold Equivalent ("AuEq") is calculated based on metal prices of $1350/oz gold, $16/oz silver, $2.80/lb copper, $1.00/lb lead, and $1.20/lb zinc and 90% recovery for all metals.*

| Hole_ID | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) |
|---|---|---|---|---|---|---|---|---|
| **JT21-134 MET** | 66.30 | 151.00 | 84.70 | 5.29 | 6.67 | 0.34 | 1.60 | 4.56 |
| Including | 80.00 | 87.00 | 7.00 | 12.77 | 5.36 | 0.29 | 0.50 | 2.26 |
| and Including | 96.00 | 130.00 | 34.00 | 7.45 | 11.29 | 0.38 | 3.57 | 6.96 |
| And | 169.60 | 183.00 | 13.40 | 0.11 | 8.88 | 0.22 | 0.15 | 1.09 |
| Including | 181.80 | 183.00 | 1.20 | 0.00 | 5.00 | 2.29 | 0.01 | 2.25 |
| And | 211.60 | 214.60 | 3.00 | 1.01 | 27.20 | 0.01 | 0.01 | 0.40 |
| And | 295.70 | 297.90 | 2.20 | 0.11 | 7.50 | 1.41 | 0.01 | 0.27 |
| And | 371.70 | 378.50 | 6.80 | 0.06 | 21.09 | 0.74 | 0.02 | 0.06 |
| **JT21-135** | No Significant Assays | | | | | | | |
| **JT21-136** | 85.60 | 89.50 | 3.90 | 0.05 | 15.50 | 0.02 | 0.23 | 1.69 |
| Including | 88.30 | 89.50 | 1.20 | 0.06 | 3.90 | 0.02 | 0.09 | 3.42 |
| And | 106.10 | 117.60 | 11.50 | 0.00 | 9.16 | 0.01 | 0.25 | 0.82 |
| Including | 115.50 | 116.10 | 0.60 | 0.01 | 24.90 | 0.03 | 2.35 | 3.46 |
| **JT21-137** | No Significant Assays | | | | | | | |
| **JT21-138** | 70.20 | 73.60 | 3.40 | 0.05 | 15.30 | 0.01 | 0.04 | 2.80 |
| Including | 71.20 | 72.20 | 1.00 | 0.07 | 19.80 | 0.01 | 0.02 | 4.63 |
| And | 103.60 | 113.70 | 10.10 | 0.01 | 8.13 | 0.01 | 0.05 | 0.48 |
| Including | 103.60 | 105.00 | 1.40 | 0.00 | 35.50 | 0.02 | 0.30 | 0.42 |
| And | 125.90 | 140.40 | 14.50 | 0.01 | 4.83 | 0.02 | 0.07 | 0.79 |
| **JT21-139** | 72.50 | 75.50 | 3.00 | 0.01 | 46.50 | 0.02 | 0.35 | 1.50 |
| Including | 74.00 | 75.50 | 1.50 | 0.00 | 47.20 | 0.03 | 0.52 | 2.41 |
| And | 337.90 | 339.40 | 1.50 | 0.29 | 37.60 | 0.04 | 0.00 | 0.01 |
| **JT21-140** | 23.40 | 32.40 | 9.00 | 0.29 | 3.89 | 0.08 | 0.02 | 1.34 |
| Including | 26.40 | 29.40 | 3.00 | 0.56 | 4.20 | 0.06 | 0.02 | 2.67 |
| **JT21-141** | 14.40 | 26.40 | 12.00 | 0.18 | 3.61 | 0.09 | 0.05 | 0.55 |
| Including | 22.60 | 23.40 | 0.80 | 0.09 | 6.80 | 0.10 | 0.11 | 1.45 |
| **JT21-142** | 452.70 | 462.40 | 9.70 | 0.06 | 1.53 | 0.00 | 0.00 | 0.18 |
| **JT21-143** | 11.40 | 26.40 | 15.00 | 0.38 | 4.71 | 0.16 | 0.03 | 0.60 |
| Including | 18.90 | 23.40 | 4.50 | 0.63 | 5.53 | 0.23 | 0.02 | 0.73 |
| **JT21-144** | 248.40 | 339.80 | 91.40 | 0.15 | 1.26 | 0.03 | 0.03 | 0.46 |
| Including | 248.40 | 297.00 | 48.60 | 0.12 | 1.32 | 0.04 | 0.04 | 0.54 |
| And | 336.80 | 339.80 | 3.00 | 0.94 | 1.20 | 0.01 | 0.03 | 0.07 |
| **JT21-145** | 89.70 | 94.80 | 5.10 | 0.03 | 13.89 | 0.02 | 0.32 | 1.26 |
| **JT21-146** | 7.50 | 25.50 | 18.00 | 0.10 | 1.86 | 0.04 | 0.02 | 0.59 |
| Including | 19.50 | 21.00 | 1.50 | 0.04 | 1.20 | 0.03 | 0.01 | 3.16 |
| **JT21-147** | 6.90 | 22.00 | 15.10 | 0.10 | 1.98 | 0.05 | 0.01 | 0.54 |
| Including | 17.50 | 22.00 | 4.50 | 0.06 | 2.10 | 0.09 | 0.03 | 1.10 |
| And | 51.70 | 53.50 | 1.80 | 0.38 | 23.75 | 0.01 | 0.07 | 0.16 |

*Note: Length-weighted intervals are uncapped and calculated based on a 1 g/t gold equivalent ("AuEq") cut-off and less than 5 meters (drill length) of dilution of below cut-off grade. Gold Equivalent ("AuEq") is calculated based on metal prices of $1350/oz gold, $16/oz silver, $2.80/lb copper, $1.00/lb lead, and $1.20/lb zinc and 90% recovery for all metals.*

**Table 10.6 2021 Drill Program – DC & Kona Prospects - Significant Assay Intercepts**

| Hole_ID | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) |
|---|---|---|---|---|---|---|---|---|
| **Difficult Creek - Middle and Upper** | | | | | | | | |
| **DC21-010** | **46.30** | **52.70** | **6.40** | **577.92** | **2,023.19** | **0.30** | **0.23** | **2.15** |
| Including | 47.50 | 51.26 | 3.76 | 982.65 | 3,435.66 | 0.44 | 0.18 | 2.80 |
| Including | 47.50 | 48.76 | 1.26 | 2,860.00 | 9,990.00 | 0.88 | 0.25 | 5.04 |
| And | 85.50 | 89.30 | 3.80 | 0.32 | 13.02 | 0.04 | 0.80 | 1.09 |
| **DC21-011** | 54.20 | 99.00 | 44.80 | 0.85 | 6.95 | 0.05 | 0.46 | 0.15 |
| Including | 54.20 | 56.50 | 2.30 | 11.43 | 25.30 | 0.54 | 1.46 | 0.03 |
| **DC21-012** | 61.80 | 97.30 | 35.50 | 0.21 | 5.78 | 0.04 | 0.47 | 0.94 |
| Including | 69.30 | 75.00 | 5.70 | 0.47 | 15.06 | 0.09 | 1.79 | 1.03 |
| **DC21-013** | 77.10 | 89.30 | 12.20 | 0.02 | 4.72 | 0.12 | 0.50 | 1.51 |
| Including | 83.10 | 88.20 | 5.10 | 0.03 | 6.31 | 0.18 | 0.70 | 2.12 |
| And | 102.50 | 112.30 | 9.80 | 0.52 | 2.74 | 0.22 | 0.30 | 4.23 |
| Including | 106.50 | 108.60 | 2.10 | 0.67 | 4.18 | 0.57 | 0.53 | 12.92 |
| **DC21-014** | 150.90 | 158.40 | 7.50 | 0.20 | 4.64 | 0.03 | 0.07 | 0.53 |
| And | 208.80 | 213.30 | 4.50 | 0.01 | 0.33 | 0.02 | 0.00 | 1.21 |
| **DC21-015** | 135.40 | 227.10 | 91.70 | 0.17 | 0.59 | 0.05 | 0.75 | 0.09 |
| Including | 145.00 | 155.50 | 10.50 | 0.46 | 1.30 | 0.10 | 1.20 | 0.34 |
| And | 270.80 | 300.90 | 30.10 | 0.02 | 0.35 | 0.09 | 1.03 | 0.03 |
| Including | 293.40 | 300.90 | 7.50 | 0.01 | 1.18 | 0.10 | 1.68 | 0.04 |
| **DC21-016** | 9.80 | 10.90 | 1.10 | 0.11 | 110.00 | 0.01 | 0.02 | 0.02 |
| And | 377.40 | 382.00 | 4.60 | 0.46 | 0.95 | 0.02 | 0.08 | 0.32 |
| And | 441.10 | 441.70 | 0.60 | 5.18 | 6.70 | 0.22 | 0.12 | 4.04 |
| And | 469.30 | 471.90 | 2.60 | 0.34 | 4.65 | 0.06 | 0.07 | 0.78 |
| **DC21-017** | 92.60 | 94.10 | 1.50 | 0.02 | 127.00 | 0.01 | 0.09 | 0.22 |
| | 268.80 | 270.30 | 1.50 | 0.02 | 0.60 | 0.00 | 0.00 | 1.71 |
| **DC21-018** | No Significant Assays | | | | | | | |
| **DC21-019** | No Significant Assays | | | | | | | |
| **DC21-020** | No Significant Assays | | | | | | | |
| **DC21-021** | 246.90 | 247.50 | 0.60 | 1.75 | 42.20 | 0.06 | 0.22 | 0.21 |
| And | 290.50 | 291.00 | 0.50 | 4.53 | 11.50 | 0.05 | 0.14 | 1.94 |
| **DC21-022** | No Significant Assays | | | | | | | |
| **DC21-023** | No Significant Assays | | | | | | | |
| **DC21-024** | No Significant Assays | | | | | | | |
| **DC21-025** | 46.00 | 47.30 | 1.30 | 0.29 | 2.60 | 0.02 | 0.02 | 1.09 |
| And | 284.90 | 285.90 | 1.00 | 0.02 | 0.70 | 0.13 | 0.12 | 3.13 |
| **DC21-026** | 200.00 | 201.50 | 1.50 | 2.66 | 4.00 | 0.01 | 0.32 | 0.31 |
| And | 251.30 | 252.30 | 1.00 | 0.10 | 1.70 | 0.21 | 0.03 | 8.82 |
| **Hole_ID** | **From (m)** | **To (m)** | **Length (m)** | **Au (g/t)** | **Ag (g/t)** | **Cu (%)** | **Pb (%)** | **Zn (%)** |
| **Kona Prospect** | | | | | | | | |
| **KN21-001** | 241.80 | 242.50 | 0.70 | 0.46 | -0.50 | 0.00 | 0.00 | 0.00 |
| **KN21-002** | No Significant Assays | | | | | | | |

*Note: Length-weighted intervals are uncapped and calculated based on a 1 g/t gold equivalent ("AuEq") cut-off and less than 5 meters (drill length) of dilution of below cut-off grade. Gold Equivalent ("AuEq") is calculated based on metal prices of $1350/oz gold, $16/oz silver, $2.80/lb copper, $1.00/lb lead, and $1.20/lb zinc and 90% recovery for all metals.*

# 11 SAMPLE PREPARATION, ANALYSIS & SECURITY

## 11.1 SAMPLE COLLECTION

Sample intervals were selected based on logged geological contacts. Interval lengths were on average 1.5 meters through unaltered or weakly mineralized zones and on average one meter through mineralized zones. No sample interval was less than 0.5 meters. The core was cut by a rock saw into even halves, with the same half being placed into a labelled plastic sample bag with sample tag. A corresponding sample number tag was placed in the core box.

## 11.2 SAMPLE PREPARATION AND SECURITY

Sample preparation was conducted by appropriately trained and qualified personnel of the Company. Individual sealed plastic sample bags were placed in sealed woven rice bags for shipment to the analytical laboratory. Samples were flown directly from site to Anchorage under the custody of an appropriately trained contractor for secure delivery to a commercial transportation company to deliver the samples to Reno, Nevada, USA into the custody of ALS Laboratories.

## 11.3 ANALYTICAL TECHNIQUE

A total of 8,399 drill core samples, including 245 duplicates and 844 standards and blanks, were analyzed during the 2021 drill program. A total of 17,492 analyses were conducted, including 8,399 Au, 8,399 ICP, 457 ore-grade for Ag, Cu, Pb, and Zn, 17 metallic screening, 44 very high-grade Au, one very high-grade Ag, and 175 whole rock characterization. All samples were prepared and analyzed by ALS Minerals in Reno, Nevada, USA.

The raw samples were crushed in an oscillating steel jaw crusher (>70% of the sample passing through a 2mm screen), a 500 g riffle split was then pulverised to 85% passing through a 75-micron screen.

Four acid digestion ICP (ALS method ME-ICP61) was performed for analysis of 33 elements: Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W, and Zn. The method utilizes inductively coupled plasma-atomic emission spectrometry (ICP-AES) conducted on 0.25 g of prepared sample digested in perchloric, nitric, hydrofluoric and hydrochloric acids. For samples in which Cu, Zn, Pb, or Ag values exceeded the ME-ICP61 upper detection limit, ALS method OG62 was utilized – a four-acid ICP-AES technique calibrated for ore grade mineralization. For samples in which Ag exceeded the OG62 upper detection limits, Ag by fire assay and gravimetric finish (Ag-GRA21) was used.

Gold analyses were performed on a 50 g sub-sample using ALS method Au-AA26; fire assay fusion with atomic absorption spectroscopy (AAS) finish. For samples that exceeded the upper detection limit of Au-AA26, ALS method Au-GRA22 was utilized – fire assay with gravimetric finish. For samples containing coarse Au, ALS method Au-SCR24, metallic screening at 100 microns on 1kg pulp with duplicate assay on screen undersize, was used.

## 11.4 Specific Gravity Testing

Specific gravity (SG) measurements were taken in the core facilities by a HighGold geologist. SG measurements were done on 615 historic and 2019 drill core samples using the standard weight-in-air/weight-in-water method. One to three representative pieces of half-core from each sample were measured and results were averaged. Generally, every fifth sample from within mineralized or silicified zones was measured for SG. Field SG measurements yield an average value of 2.79 $t/m^3$, a median of 2.72 $t/m^3$, and values range from 2.44 $t/m^3$ to 4.28 $t/m^3$.

As a comparison, ALS laboratories measured SG using a pycnometer on pulps for 635 samples. Samples measured by pycnometer yielded an average SG of 2.83 $t/m^3$, with a median of 2.81 $t/m^3$, across a range from 2.56 to 3.85. For 170 out of the 244 samples (69.7%) that received both a field and a lab SG measurement, the pycnometer result was higher than the field result (**Figure 11.1**). Pycnometer results are higher than field measurements by an average of 4.9%. Relative percent difference was calculated for each of the 244 pairs of measurements and the average absolute relative percent difference between the field and the lab measures is approximately 5.3%. In general, the data show a moderately high level of precision for field compared to lab SG, indicated by clustering of data points below 10% absolute relative difference. 21 pairs of measures (8.6% of the set) have an absolute relative difference of 10% or greater, and only 3 pairs of measures (1.2% of the set) display low precision. A factor potentially contributing to the differences in results between the two methods is that micro-void spaces internal to piece of halved core are included in the measured SG, whereas the generally higher pycnometer measurements conducted on pulps don't have the effect of void spaces and vugs. However void space is not commonly observed and an alternate explanation for the variance may be human bias when selecting core for the field measurements, in which pieces selected may have contained lower sulphide content than the average across the sample interval. For all samples ≥2 g/t gold equivalent, the average SG by pycnometer was 2.84 $t/m^3$ and the median was 2.81 $t/m^3$. Based on the average of SG data for samples with over 2 g/t gold equivalent, using pycnometer values HighGold concluded that a constant SG value of 2.84 $t/m^3$ should be applied for the resource estimate.

Past studies include three SG test programs by Anaconda that included SG determination by mass balance from X-Ray diffraction, and an air compression pycnometer. This work yielded an average SG of 3.04 $t/m^3$, with a range from 2.94 $t/m^3$ to 3.16 $t/m^3$.

Westmin conducted an SG test program on 60 samples of drill core which yielded an average SG value of 2.877 $t/m^3$. The work was carried out on fresh un-split core from drillholes JM-93-064, 65, 66 and 67. The ends of the core were squared off with a core saw and the volume of the core determined by measurement of length and diameter, using an average of six separate measurements taken with either a tape measure for the length or a micrometer for the diameter. The samples were weighed on a triple beam balance to a tenth of a gram and then dried in an oven at 105 degrees Celsius for three hours. After cooling down, they were re-weighed and the moisture content, un-dried specific gravity and dried specific gravity were calculated (Westmin, 1994).

No SG samples were collected during the 2021 drilling program.

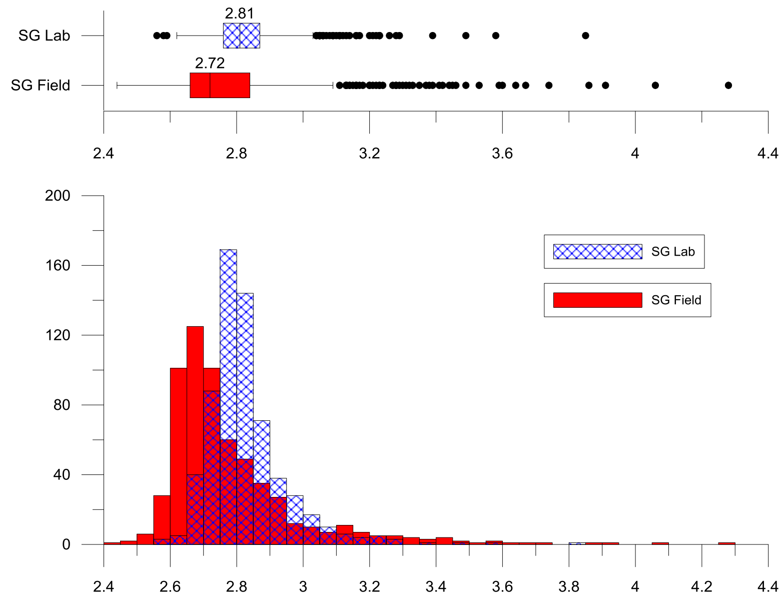



*Figure 11.1 Histogram and Box and whisker plots showing all Lab and Field SG data.*

## 11.5 2019 Twin Drillhole Comparison

A total of two (2) drillholes in 2019 were twins of historic drillholes. The location and extent of mineralization intersected in JT19-082 correlates well with historic JT93-065; however, both the width and the grade are significantly greater in JT19-082 (**Table 11.1**). The 2019 drilling was completed with HQ size drill core which is larger diameter than the NQ size drilled in the past. The larger diameter core provides for a larger and more representative sample and may, in part, be responsible for the higher grades observed in JT19-82 over JT93-65.The sample differences may also be due to natural grade variations.

*Table 11.1 Comparison of JT19-082 assay intersections against twinned historic drillhole JT93-065*

| Drillhole | From (meters) | To (meters) | Length (meters) | Au (g/t) | Ag (g/t) | Cu % | Zn % | Pb % |
|---|---|---|---|---|---|---|---|---|
| JR87-065 | 150.0 | 249.7 | 99.7 | 10.07 | 6.7 | 0.90 | 6.34 | 1.27 |
| JT19-082 | 153.2 | 261.0 | 107.8 | 12.42 | 8.9 | 0.88 | 7.11 | 1.64 |

Drillhole JT19-085 was completed as a twin of historic drillhole JT87-031 for NI 43-101 validation purposes. The location and extent of mineralization intersected in JT19-085 correlates well with JT87-031; however, the overall grade is significantly greater in JT19-085 (Table **11.2**).

*Table 11.2 Comparison of JT19-085 assay intersections against twinned historic drillhole JT93-031*

| Drillhole | From (meters) | To (meters) | Length (meters) | Au (g/t) | Ag (g/t) | Cu % | Zn % | Pb % |
|---|---|---|---|---|---|---|---|---|
| JR87-031 | 67.4 | 128.7 | 61.3 | 4.94 | 6.5 | 0.48 | 7.48 | 0.45 |
| JT19-085 | 67.8 | 127 | 59.2 | 8.16 | 5.9 | 0.39 | 8.8 | 0.72 |

In summary, the 2019 program drilled larger diameter HQ core than historic holes, which provides for a 78% larger and more representative sample. Higher grades notwithstanding, the 2019 twin drillholes generally demonstrate very good correlation with the original historic holes and support the use of historic drill data in mineral resource estimation work.

## 11.6 2021 Assaying Quality Assurance and Quality Control (QA-QC)

Assay results for the external quality control samples were evaluated by HighGold geologists to verify the reliability and trustworthiness of the Johnson Tract database. In general, performance of the standard control samples are good, with most assay results falling within three standard deviations from the certified mean and showing no evidence of bias. Re-assaying was deemed necessary for subsets of four sample batches. Gold metallic screening was performed for subsets of two sample batches to verify the reliability of high gold assay values. Poor fusion issues due to the geological matrix of the standards were detected by the laboratory which caused consistent low gold values for three batches. These issues were addressed with lab by performing at a lower fusion weight. Any sample prep contamination issues detected for precious or base metals within the field blanks were traced back to carryover from highly mineralized samples preceding in the sequence. Review of duplicate assay pairs shows generally high levels of precision and reproducibility for lab results. The data indicate sulphide mineralization is relatively homogeneous in field duplicate samples.

In the opinion of the Author, Ray C. Brown, CPG, the analytical quality control program developed by HighGold for this project is mature and is overseen by appropriately qualified geologists. The exploration data was acquired using adequate quality control procedures that generally meet industry best practices for a drilling-stage exploration project, and the data are adequate for the purposes of mineral resource estimation.

### 11.6.1 Types of QA-QC Data

Quality control data for the Johnson Tract include both internal and external quality control measures. ALS Minerals Canada Ltd. included internal laboratory quality control measures consisting of blank, certified reference material, and duplicate pulp samples within each batch of samples submitted for assay. Industry-standard quality control measures were also implemented by HighGold Mining Inc.

*Standards*

Certified reference material control samples (“standards”) allow monitoring of the precision and accuracy of laboratory assay data. Three different polymetallic standards (CDN-ME-1414, CDN-ME-1704, CDN-ME-1802) and one gold standard (CDN-GS-37) were professionally prepared and supplied by CDN Resource Laboratories Ltd. of Langley, BC for the 2021 exploration program. Standards were selected based on expected grades of mineralization.

Polymetallic standards were inserted into the sample sequence every 20 samples, for those sample numbers ending in 00, 20, 40, 60, and 80. Gold standards were inserted into the sample sequence every

20 samples, for those sample numbers ending in 01, 21, 41, 61, and 81. Certified values are shown in **Table 11.3.**

*Table 11.3 Certified mean values for standards used at the Johnson Tract project*

| Standard | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) |
|---|---|---|---|---|---|
| CDN-GS-37 | 37.08 | | | | |
| CDN-ME-1414 | 0.284 | 18.2 | 0.219 | 0.105 | 0.732 |
| CDN-ME-1704 | 0.995 | 11.6 | 0.692 | 0.049 | 0.8 |
| CDN-ME-1802 | 1.255 | 75 | 0.51 | 2.6 | 6.11 |

Scatter plots for each standard marked with second and third standard deviations for each certified element were generated. Results that exceeded the second standard deviation were considered unreliable and subjected to further investigation.

*Blanks*

Field blanks are used to monitor:

- contamination introduced during laboratory sample preparation;
- analytical accuracy of the laboratory; and
- sample sequencing errors.

Blank material consisted of dacitic porphyry; a post-mineralization intrusion found on the property. The material was thoroughly checked to ensure no base and/or precious metal mineralization was present in the blanks. Field blanks were inserted into the sample sequence every 20 samples, for those sample numbers ending in 10, 30, 50, 70, and 90. Assay results for blanks were plotted on control charts marked with 5x lower limit of detection for Au and Ag, or third standard deviation for Cu, Pb, and Zn, as warning levels.

*Duplicates*

Duplicate samples and/or assays are collected to monitor the reproducibility of assay results generated by the laboratory, as well as the homogeneity of samples submitted for assaying. Duplicates were collected every 33 samples, for those sample numbers ending in 33, 66, and 99. To obtain duplicate samples, the core cutter would collect quartered core.

Assay results from duplicate pairs were plotted against each other, applying a linear regression and $R^2$ value for reference. Duplicate precision estimates were based on these equations of the linear regressions and the $R^2$ values.

### 11.6.2 Standards QA-QC Results and Analysis

*Gold Standards –High-grade*

Of the 13 standalone high-grade gold standard (CDN-GS-37) samples analyzed, usable values were returned for four samples; six of the samples were found to have insufficient material to complete the analysis. Three of the returned assay values were outside the 3rd standard deviation for Au (**Figure 11.2**). Extra materials were sent to the lab for additional re-assay and gold metallic screens (ALS code: Au-SCR24). Re-assays were performed for selected subsets of two batches.

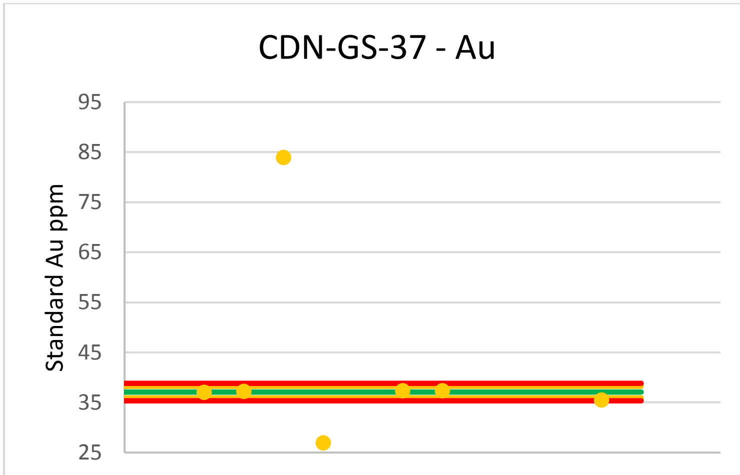



***Figure 11.2 Control charts for high-grade gold standard CDN-GS-37. Mean value is potted as green lines, second standard deviations are yellow, third standard deviations are red***

*Polymetallic Standard – Low-grade CDN-ME-1704*

Of the 346 low-grade polymetallic standard (CDN-ME-1704) samples analyzed, 324 usable values were returned for Au-AA24, and 316 usable sets of results were returned for ME-ICP61. Twenty-two (22) of the Au results were outside the 3rd standard deviation (**Figure 11.3).** Five of the fails occurred consecutively in the sample sequence. Re-assays were performed for subsets of these sample batches. In other cases, no corrective action was necessary for Au results of polymetallic standards, as the fails are isolated or in the not reportable, non-mineralized zones. Five of the Ag results were outside the 2nd standard deviation. In all cases, no action was necessary for Ag results. Sixteen (16) low-grade polymetallic standards had Cu outside the 3rd standard deviation including three consecutive fails in one sample batch; corrective re-assays were performed for that sample batch. Five low-grade polymetallic standards reported Zn outside the 3rd standard deviation; no corrective action was necessary. Four isolated low-grade polymetallic standards reported Pb fall near the 3rd standard deviation; no corrective action was necessary.

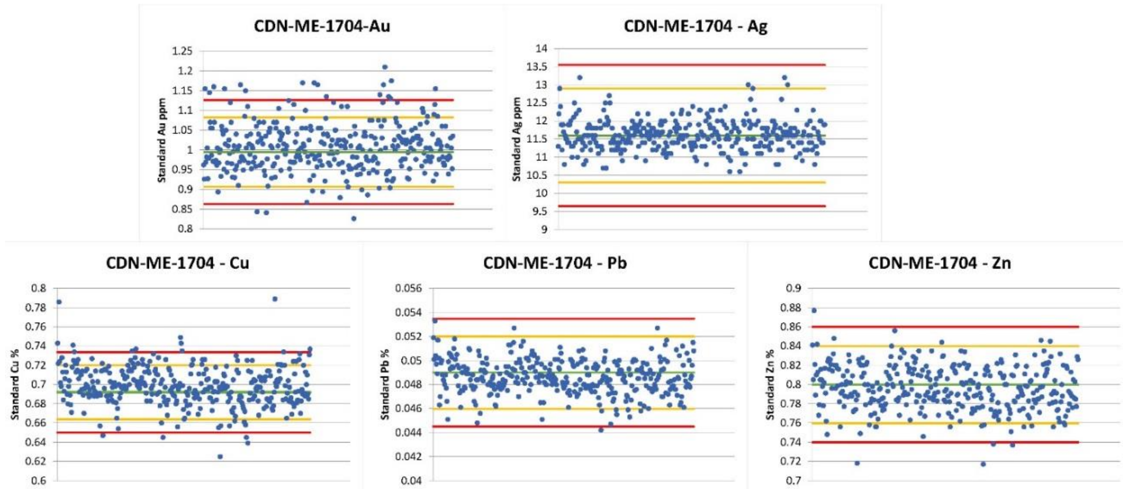



***Figure 11.3 Control charts for low-grade polymetallic standard ME-1704. Mean value is plotted as green lines for each element, second standard deviations are yellow, third standard deviations are red.***

*Polymetallic Standard – Low-grade ME-ICP-1414*

Of the 28 low-grade polymetallic standard (CDN-ME-1414) samples analyzed, 18 usable values were returned for Au-AA24 and 21 complete sets of results were returned for ME-ICP61 and ore-grade assays. Six samples were found to have insufficient material to complete the re-run analysis. Two Au values were outside the 2nd standard deviation, and two Au values were outside the 3rd standard deviation (**Figure 11.4**). No corrective action was taken for the isolated standard deviation fails. Two values for Ag were outside the 2nd standard deviation, with three Ag values were outside the 3rd standard deviation and occurring as isolated fails. Five Zn values were outside the 3rd standard deviation, whose Cu values were also commonly outside the 2nd standard deviation. Re-assays were performed for two sets of corresponding samples. No action was necessary for isolated fails since the adjacent standards passed QC.

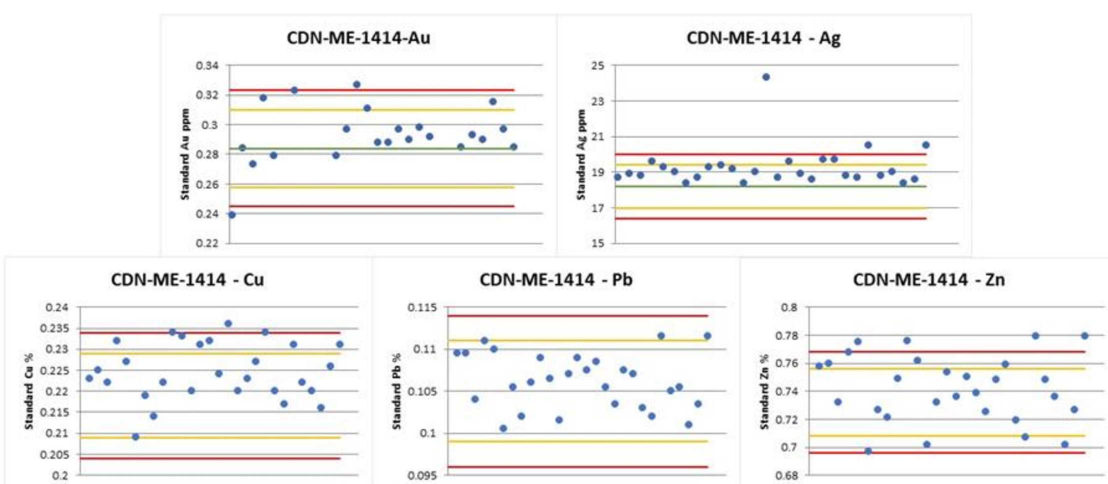



***Figure 11.4 Control charts for low-grade polymetallic standard ME-1414. Mean value is plotted as green lines for each element, second standard deviations are yellow, third standard deviations are red.***

*Polymetallic Standard – High-grade ME-ICP-1802*

Of the 25 high-grade polymetallic standard (CDN-ME-1802) samples analyzed, 11 usable values were returned for Au-AA24 and 24 complete sets of results were returned for ME-ICP61 and ore-grade assays. Seven of these samples had insufficient materials for completing second run gold analysis and seven of the samples showed consistent low gold values due to fusion issues including incomplete digestion and lead shot (**Figure 11.5)**. Metallic screens were completed for selected subsets of three sample batches. One of returned Ag values were outside the 2nd standard deviation. Four values for Cu were outside the 2nd standard deviation. Four of returned Pb values were outside the 2nd standard deviation, while one of the Pb values was outside the 3rd standard deviation. One of Zn values was outside the 2nd standard deviation; no action was necessary for the isolated 2nd standard deviation fails. Extra low-grade polymetallic standards were sent to ALS for re-assays.

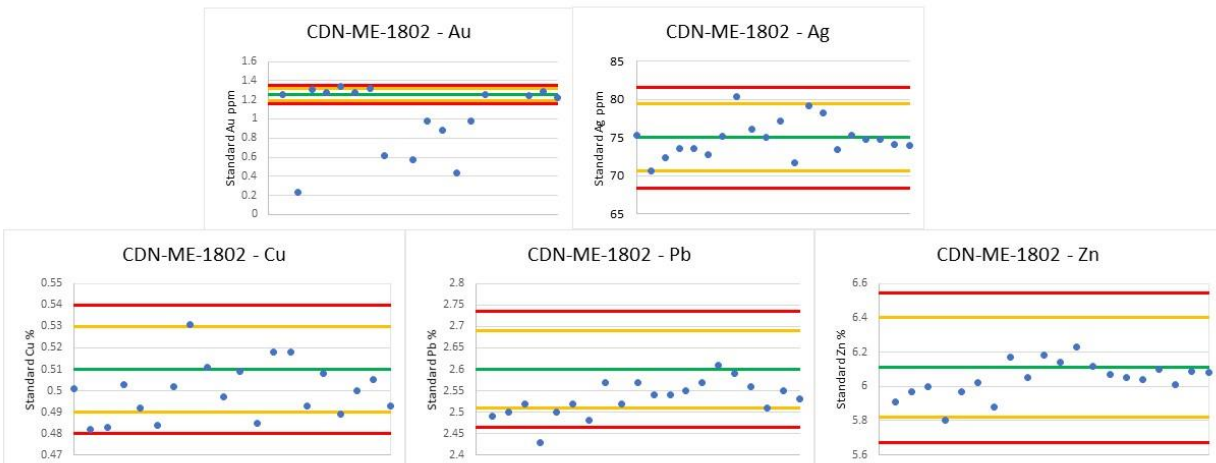



***Figure 11.5 Control charts for low-grade polymetallic standard ME-1802. Mean value is plotted as green lines for each element, second standard deviations are yellow, third standard deviations are red.***

## 11.6.3 BLANKS QA-QC RESULTS AND ANALYSIS

Of the 376 usable blank samples that were analyzed over the course of the 2021 exploration program, there were four instances of Au results exceeding the warning level of five times the lower limit of detection (LLD). There were five instances of metal results exceeding the 2nd standard deviation, and 12 instances exceeding the 3rd standard deviation for those elements (**Figure 11.6**). Three of the Pb and Zn values fails occurred consecutively in the sample sequence. Based on past conversations with ALS laboratories, it is understood that up to 10% carryover can occur between samples, and the source of all blank assay with elevated results can be traced back to high-grade preceding samples in the sequence

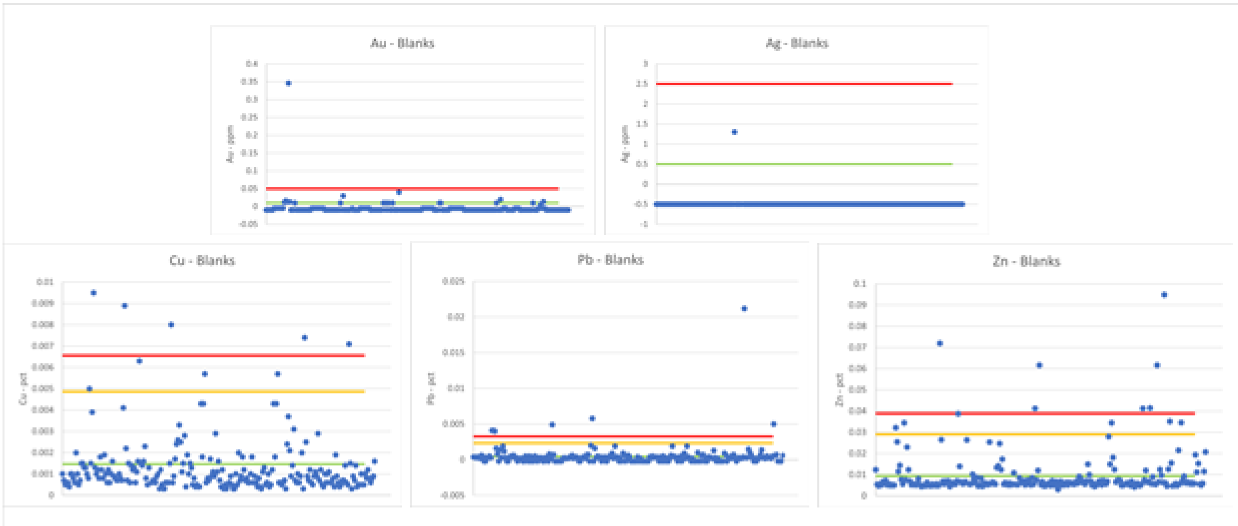



***Figure 11.6 Control charts for blanks. For Au and Ag, LLD is green, warning level of 5x LLD is red. For Cu, Zn, and Pb, mean is green, second standard deviation is yellow, third standard deviation is red.***

### 11.6.4 Duplicates QA-QC Results and Analysis

Review of the 218 duplicate pairs that were analyzed during the 2021 exploration program indicates a strong 1:1 correlation in assay results, based on the slopes of linear regression equations and $R^2$ values for those regressions (**Figure 11.7**). Generally, slopes of close to one and $R^2$ values close to one indicate a high level of precision in the 2021 results. Little skew is observed in the dataset and significant differences in duplicate results. Two duplicate pairs reporting Au and Ag show considerable low precisions, which are believed to be caused by heterogeneous mineralization in quartered core pieces

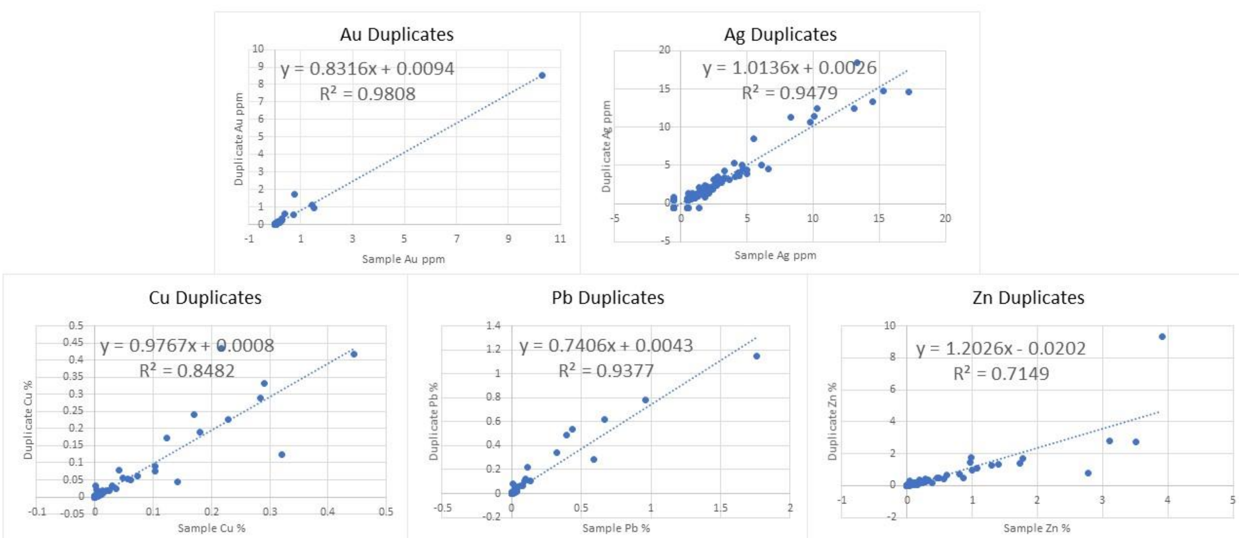



***Figure 11.7 1:1 plots of duplicate assay pairs. Linear regression equations and $R^2$ values are shown on the plots.***

# 12 DATA VERIFICATION

The Authors performed verification of exploration data relevant to the Johnson Tract Project including all information from the historic and recent drill campaigns. The Authors are confident that the resulting data was acquired using adequate quality control procedures that generally meet industry best practices for a drilling-stage exploration project, and the data are adequate for purposes of mineral resource estimation.

Exploration work completed by Highgold Mining Inc. is conducted using documented procedures and involves detailed verification and validation of data prior to being considered for geological modelling and mineral resource estimation. During drilling, experienced geologists implement best practices designed to ensure the reliability and trustworthiness of the exploration data. Other than the limitations with respect to the inability to find all original assay certificates, there were no limitations on or failure by the Authors to conduct data verification.

The database used in the creation of the 2022 Johnson Tract mineral resource estimate was subjected to data verification protocols to ensure reliability of the dataset for estimation purposes. Data verification protocols were built into HighGold customized version of Geospark database including eliminating data falling beyond EOH; confirming ranges in lithologies, alteration, and mineralogy tables; and eliminating interval overlaps. Each table of Geospark database has specific formats to ensure consistency in the quality of the data. External queries were built for checking missing fields and assays. A selection of historic drill collars was resurveyed as part of the 2018 field program. During the same 2018 program, resampling significant intersections of historic core successfully replicated original assay results. Qualified HighGold staff compared 10% of the assays and downhole surveys in the resource database to original documentation to check for errors in data entry. Results of the data verification efforts indicate that the data from 2018 to 2021 field programs are high quality and suitable for resource estimation.

## 12.1 Site Visit

In accordance with NI 43-101 guidelines, the Authors visited the Johnson Tract Project on various occasions between September 2019 and August 2022. These visits were undertaken by James N. Gray, P.Geo. and Ray C. Brown, CPG, accompanied by HighGold staff.

The site visits by Mr. Gray and Mr. Brown took place during active drilling and they reviewed and discussed all aspects that could materially impact the integrity of the data informing the mineral resource estimates for the Project (core logging, sampling, analytical results, and database management) with HighGold staff. The Authors interviewed exploration staff to ascertain exploration and production procedures and protocols, and also examined drill core from selected holes and confirmed that the logging information accurately reflects actual core.

Mr. Brown also designed the oriented core logging procedures for the Project and reviewed results with HighGold technical staff while on site.

## 12.2 Drillhole Database

Original drill logs for 10% of the Project drillholes were randomly selected and compared against the records in the database. No significant issues were noted and the lithology codes in the drill logs matched the records in the database.

Barry W. Smee, Ph.D., P.Geo of Smee and Associated Consulting Ltd. was retained to perform an external audit of the JT quality control data, in conjunction with the examination completed by Company staff (Smee, 2022). A selection of the most important drill hole analytical data was compared against the ALS pdf assay certificates to verify that the data importation was accurate. There were no discrepancies found between the analytical certificates and the database.

## 12.3 Drillhole Collar Surveys

The Authors reviewed the Company's collar location survey procedures, which included use of a Trimble DGPS and antenna to survey historic and HighGold drill holes. The Authors are confident that the Company has made best efforts to confirm all existing drillhole collar surveys and that the resulting data was acquired using adequate quality control procedures that generally meet industry best practices for a drilling-stage exploration project, and the data are adequate for purposes of mineral resource estimation.

A total of 37 survey points was taken on the property over two days in September 2018 to identify any variance between the historic collar locations and present day using a survey-grade Trimble DGPS receiver and Zephyr antenna. Twenty-one (21) of the points surveyed were of historic drill collars still visible on surface. A comparison of the historic surveys with the 2018 survey points shows the easting is consistently different by about 0.28 meters and the northing is consistently different by about 2.52 meters. This slight variance is considered acceptable given the terrain and difference in methodologies used during different eras. Comparison of the old and new elevation data does show a consistent elevation difference of 4.5 meters. The source of this discrepancy is thought to be due to a sea-level datum (high, median, or low tide) used for the historical surveys. The elevation data collected by HighGold staff are consistent with a recent airborne IFSAR survey completed across the region in 2016 by the Alaskan government.

## 12.4 Drillhole Downhole Surveys

The Authors reviewed the Company's procedures for downhole surveys and are confident that the Company has made best efforts to confirm all existing drillhole downhole surveys and that the resulting data were acquired using adequate quality control procedures that meet industry best practices for a drilling-stage exploration project, and the data are adequate for purposes of mineral resource estimation.

## 12.5 Drillhole Geological Logging

The Authors reviewed drill core from selected drillholes from each year's drill campaign and compared those against logged lithologies in the database and concurs with the descriptions.

## 12.6 Drillhole Hole Assays

An export of the database was provided to the Authors for auditing purposes, with particularly emphasis on historical data. This audit consisted of checking the digital data against source documents to ensure proper data entry, as well as, data integrity checks (checking for overlapping intervals, data beyond total depth of hole, unit conversion, etc.).

Original assay certificates were randomly selected for 10% of the Project drillholes and compared against the values in the records in the database and no significant data entry errors were found. Minor errors identified during this review were corrected within the master database and passed back to the Company. To date, not all of the original assay certificates have been found and catalogued for historic drillholes within the main area of mineralization.

The review included evaluation of the 2018 resampling program, in which a total of 293 quarter-core samples duplicated historic sample intervals and were treated as check assays for the original results. Review of the data indicated a strong 1:1 correlation of assay values and a generally high level of precision (**Figure 12.1**).

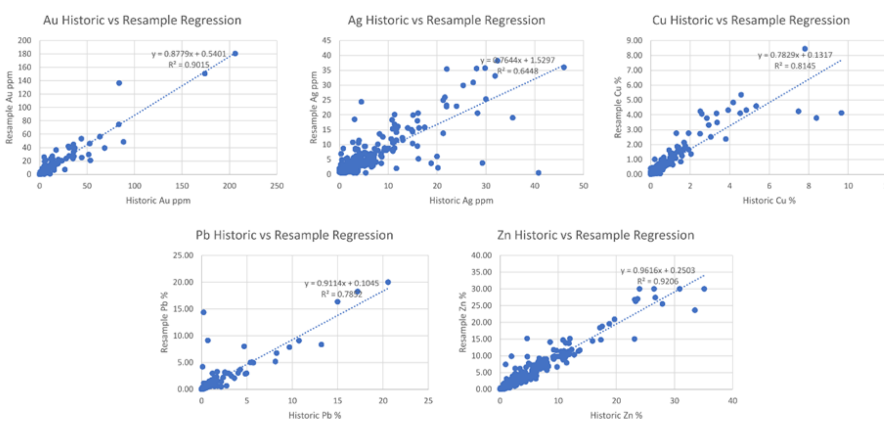



***Figure 12.1 2018 Resampling Program – One-to-One Plots of Historic vs. Resample Assay Pairs***

## 12.7 Analytical Quality Control Data

The Authors reviewed the available analytical quality control data provided by HighGold for the Johnson Tract Project to confirm that the analytical results from the Project were reliable for informing mineral resource estimates. All data were provided to the Authors by HighGold in Microsoft Excel format as both tabulated data and charts from HighGold.

Barry W. Smee, Ph.D., P.Geo of Smee and Associated Consulting Ltd. was retained to perform an external audit of the JT quality control data, in conjunction with the examination completed by Authors and Company staff (Smee, 2022). Recommendations were made to add additional base metal standards until HighGold has its own material made into specific standards, and given the lack of check assays done to-date at a secondary laboratory, that 3-4% of existing pulp samples with the expected resource envelope be selected and sent to a secondary laboratory for analysis.

# 13 MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical characterization of composite samples from the Johnson Tract deposit has been carried out by Anaconda, Hazen, and Westmin historically, with the most recent phase of testwork conducted at Blue Coast Research Ltd. ("BCR") in 2021 and 2022 (Hall, 2022). Flowsheet development has focused primarily on the production of separate flotation concentrates for copper, zinc, and lead, with the potential for cyanidation of the lead concentrate and flotation tailings to achieve additional gold recovery. The BCR testwork program includes head assays and mineralogical characterization, comminution, flotation (including locked cycle testing), and cyanidation.

## 13.1 PRIOR METALLURGICAL TESTWORK PROGRAMS (1983-1994)

### 13.1.1 ANACONDA (1983-1985)

A testwork program conducted by Anaconda focused on the production of a bulk copper-lead concentrate, followed by sequential flotation of a zinc concentrate. The flotation tails were then leached with cyanide. Total gold recovery reported by this program was 87.9% (combined recovery to flotation concentrate plus cyanide leach of tails).

### 13.1.2 HAZEN (1988)

This metallurgical testwork program included flotation and cyanide leach testwork conducted by Hazen Research, and mineralogical analysis conducted by C. Gasparrini (Shaw, 1988; Gasparrini, 1988). The Hazen testwork reported gold recoveries up to 96.5% with a leach residence time of 36 hours.

### 13.1.3 WESTMIN/BRENDA (1994)

The metallurgical testwork program directed by Westmin, executed by Brenda Process Technology, was primarily conducted on a high gold, high base metal composite (Westmin, 1994). The flowsheet primarily focused on production of a bulk copper-lead-precious metal concentrate, followed by production of a zinc concentrate. Final flotation tails were forwarded to cyanide leaching for additional gold and silver recovery. The Westmin report indicated that a primary grind $P_{80}$ (80% passing size) of 75 µm was required. Locked cycle testing was conducted to confirm flotation results and locked cycle tails were forwarded to cyanide leaching. Gold recoveries of >80% were reported to a copper-lead concentrate, and a cyanide gold extraction of 83% from the LCT tails was reported. Comminution testwork from this program determined the Bond Ball Work Index to be 16.8 kWh/t.

Separate copper and lead concentrates were not produced in this testwork program. The report recommends that further work be conducted to produce separate concentrates, as well as to reduce zinc misplacement to the copper-lead circuit.

## 13.2 Blue Coast Research Metallurgical Testwork Program (2021-2022)

A new metallurgical test program on split core samples from four drill holes from the Johnson Tract deposit was initiated at BCR in October 2021 (BCR, 2022). Selected sample intervals were used to form a single Master composite for characterisation and metallurgical testwork. The objectives of the program were to:

- Characterise the mineralogy of the composite;
- Measure the hardness of the composite through standardized grindability testing;
- Further develop the sequential copper-lead-zinc flotation flowsheet applied in earlier test programs;
- Conduct locked-cycle flotation testing to evaluate final concentrate grades and recoveries; and,
- Evaluate potential additional gold recovery from flotation tailings streams by cyanidation.

In total, 20 batch flotation tests and one locked-cycle test were conducted, with the results used to develop a potential overall flowsheet for metal recovery.

## 13.3 Sampling and Composite Characterization

Samples for the testwork program were collected by HighGold personnel from the 2021 drilling campaign. A master composite (JT21-MET001) was designed to reflect the average grade of the Johnson Tract deposit and was comprised of ½ core sections of selected intervals from two drill holes (JT21-125 and JT21-134). The location of the drill holes, and the sub-intervals used to generate the composite, are presented in Error! Reference source not found.**3.1.**

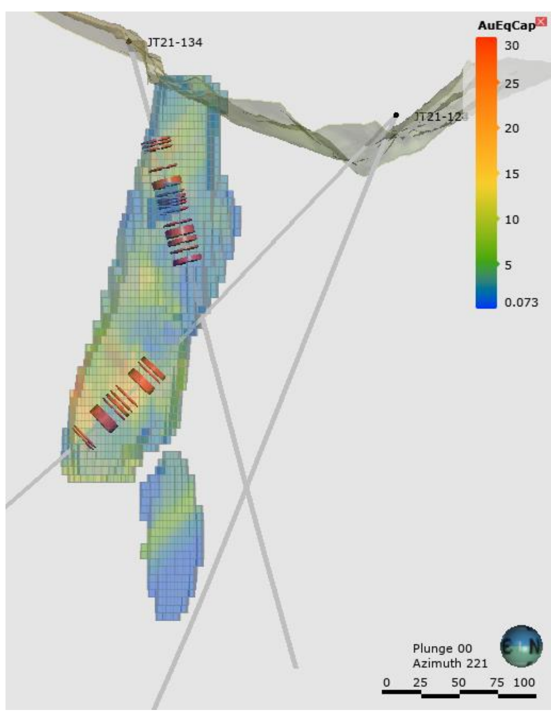



*Figure 13.1 Selected Intervals for Master Composite JTMET-001*

Chemical characterization of the master composite was performed on a head sample. Gold was measured in triplicate by fire assay with a gravimetric finish. Silver, copper, lead, and zinc were assayed with a four-acid digest followed by an ICP finish. Total sulphur was assayed directly on an ELTRA Carbon-Sulphur analyzer. A summary of the measured head grades of the master composite is shown in Error! Reference source not found..

***Table 13.1 Johnson Tract Master Composite Head Assays***

| Composite | | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | S (%) |
|---|---|---|---|---|---|---|---|
| **Method** | | **FA-GRAV** | **4AD-ICP** | | | | **ELTRA** |
| JT21MET-001 | Head A | 11.75 | 6.18 | 0.52 | 1.27 | 5.13 | 6.14 |
| | Head B | 12.54 | | | | | |
| | Head C | 11.25 | | | | | |
| | **Average** | **11.85** | **6.18** | **0.52** | **1.27** | **5.13** | **6.14** |

## 13.4 Mineralogical Analysis

A subsample of the master composite was ground to a $P_{80}$ of 100 µm, screened to three size fractions, and submitted to Activation Laboratories for mineralogical analysis by QEMSCAN including modal mineralogy, liberation and association. Mineralogical analysis of the master composite indicated that:

- The primary sulphide minerals are sphalerite, pyrite, galena and chalcopyrite.
  - Chalcopyrite and sphalerite have higher liberation, at 77% and 81% liberated, respectively. (Note: liberated is defined as >90% surface exposure.)
  - Pyrite and galena have lower liberation, at 63% and 45% liberated, respectively.
  - A significant portion (28%) of the galena is associated with sphalerite or in ternary particles.
- The primary non-sulphide minerals are quartz, chlorite, calcite, and Si-Al clays.

## 13.5 Comminution Testwork

Comminution testwork was conducted on the master composite, including Bond Ball Work Index, Abrasion Index, and SMC Testing. A summary of the comminution results is shown in **Table 13.2**.

***Table 13.2: Grindability Results Summary***

| ID | BWI | Ai | DWi | DWi | $M_{ia}$ | $M_{ih}$ | $M_{ic}$ | A x b | sg | ta | SCSE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | kWh/t | g | kWh/m$^3$ | % | kWh/t | kWh/t | kWh/t | | | | kWh/t |
| JT21MET-001 | 16.6 | 0.352 | 3.7 | 15.0 | 12 | 7.9 | 4.1 | 73.7 | 2.7 | 0.71 | 7.63 |

Findings of the grindability testwork are as follows:

- Bond Ball Work Index testing was conducted with a closing size of 150 µm. The work index of 16.6 kWh/t indicates the sample is hard relative to the JKTech database.
- Bond Abrasion index testing (subcontracted to SGS Burnaby) results indicated the sample is moderately abrasive relative to the SGS database.
- SMC testwork showed that this sample was soft with respect to impact breakage relative to the JKTech database.

## 13.6 Gravity Concentration

An Extended Gravity Recoverable Gold (E-GRG) test was conducted on the master composite to gain an understanding of the gravity response. During the E-GRG test a 20 kg sample is passed through the Knelson MD-3, with the tails of each subsequent gravity pass being ground successively finer. Target grind sizes for each pass are $P_{90}$ of 850 µm, $P_{80}$ of 250 µm and $P_{80}$ 75 µm. The cumulative gravity recoverable gold (GRG) was determined to be 26.5%, and was relatively fine and late liberating, with only 2.7% of the gold found in particles greater than 106 µm. The gravity recoverable gold by size fraction is shown in **Figure 13.2**.

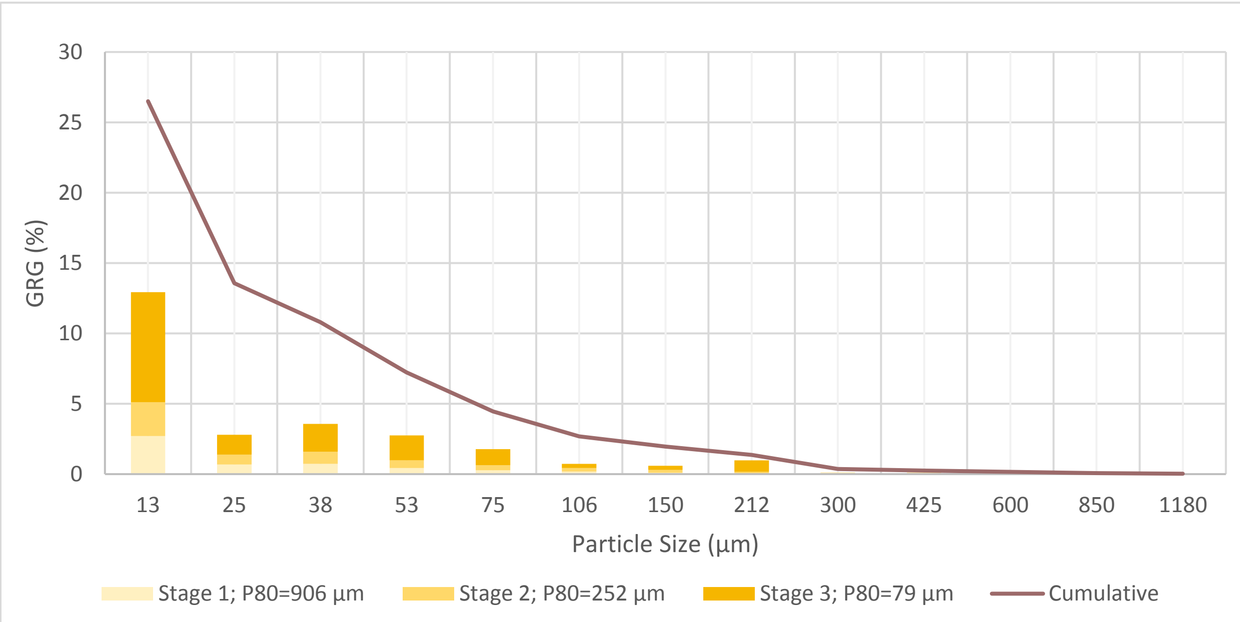



**Figure 13.2: Johnson Tract Gravity Recoverable Gold by Size Fraction**

## 13.7 Flotation Testwork

Flowsheet development testwork was conducted on the master composite in a series of 20 batch flotation tests. A sequential flowsheet to generate separate final concentrates for copper, lead, zinc, and gold (pyrite) was taken to a locked cycle test to confirm metallurgical performance.

Key findings of the flotation program are as follows:

- A primary grind $P_{80}$ of 125 µm, combined with Sodium Metabisulfite (SMBS) and $ZnSO_4$/NaCN as depressants, provided good selectivity between sulfide minerals;
- Target grades for copper, lead, and zinc were achieved after regrinding (Cu and Pb only) and 1-2 stages of cleaning;
- Good circuit stability was achieved in locked-cycle testing;
- Gold was found to report primarily to the copper and lead concentrates;
- Additional gold units can be recovered to a separate pyrite concentrate, however a secondary grind (to a $P_{80}$ of 55µm) is required to achieve good liberation of the pyrite; and,

- A separate gold-pyrite concentrate grading 64 g/t Au and 33.3% S, and representing 18.5% Au recovery, was generated.

A locked cycle flotation test of the copper, lead, and zinc circuits was conducted as a standard six-cycle test with the intermediate products from one cycle fed to the corresponding stage of the next. A schematic of the test flowsheet is presented in

**Figure 13.3**. The gold circuit was added to cycles 5 and 6 of the test and consists of a secondary grind, followed by rougher flotation, concentrate regrind, and one stage of cleaner flotation. The test reached stability by the fifth cycle. **Table 13.3** shows the projected metallurgy based on cycles 5 and 6.

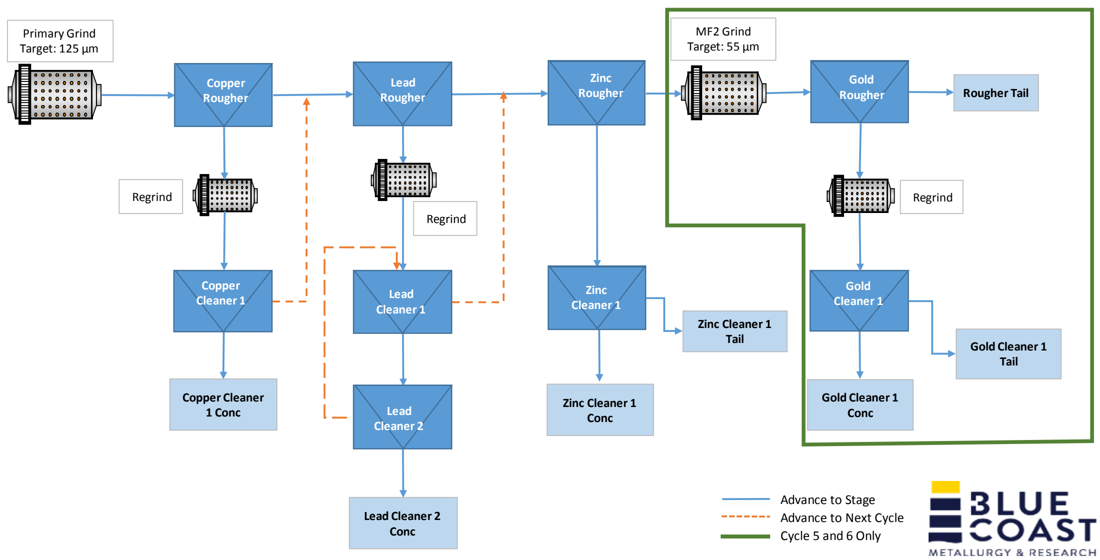



**Figure 13.3: LCT-1 Flowsheet**

It should be noted that the MF2 (mill-float-mill-float) flowsheet is not conventional for polymetallic deposits. This flowsheet was chosen for the good selectivity between copper, lead, and zinc at a primary grind size $P_{80}$ of 125 µm, with the finer grind size ($P_{80}$: 55 µm) required to liberate pyrite and gold. Further optimization of the primary grind is recommended as a method to potentially eliminate regrinding of the zinc tailings.

***Table 13.3: LCT-1 Projected Metallurgy Based on Cycles 5-6***

| Product | Weight (%) | Assays | | | | | | % Distribution | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | S (%) | Au | Ag | Cu | Pb | Zn | S |
| Cu Cln. 1 Conc | 1.47 | 276 | 71 | 30.6 | 2.11 | 3.94 | 33.4 | 32.7 | 15.3 | 84.5 | 2.4 | 1.1 | 8.7 |
| Pb Cln. 2 Conc | 1.51 | 220 | 95 | 1.42 | 62.1 | 15.1 | 18.1 | 26.9 | 21.1 | 4.0 | 72.4 | 4.3 | 4.9 |
| Zn Cln. 1 Conc | 9.30 | 10.4 | 26 | 0.31 | 2.85 | 52.6 | 31.9 | 7.8 | 35.5 | 5.5 | 20.4 | 92.3 | 52.7 |
| Zn Cln. 1 Tail | 2.63 | 7.64 | 7 | 0.21 | 0.35 | 0.77 | 9.15 | 1.6 | 2.5 | 1.1 | 0.7 | 0.4 | 4.3 |
| Au Cln. 1 Conc | 3.56 | 64.3 | 24 | 0.38 | 0.70 | 1.52 | 33.3 | 18.5 | 12.4 | 2.6 | 1.9 | 1.0 | 21.1 |
| Au Cln. 1 Tail | 7.95 | 2.17 | 2 | 0.04 | 0.08 | 0.10 | 1.49 | 1.4 | 2.2 | 0.6 | 0.5 | 0.1 | 2.1 |
| Rougher Tail | 73.6 | 1.85 | 1 | 0.01 | 0.03 | 0.05 | 0.48 | 11.0 | 11.0 | 1.8 | 1.7 | 0.7 | 6.2 |

| Calc. Head | 100.0 | 12.4 | 7 | 0.53 | 1.30 | 5.29 | 5.62 | 100 | 100 | 100 | 100 | 100 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Minor element assays were conducted on the final concentrates from the locked cycle test, with the results presented in **Table 13.4**.

***Table 13.4 LCT-1 Concentrate Minor Element Analysis***

| Element | Units | Cu Cln 1 Con | Pb Cln 2 Con | Zn Cln 2 Con | Au Cln 1 Con |
|---|---|---|---|---|---|
| Hg | ppb | 279 | 496 | 985 | 314 |
| Cl | % | <0.01 | <0.01 | <0.01 | <0.01 |
| F | % | 0 | <0.01 | <0.01 | 0 |
| Al | % | 0.129 | 0.114 | 0.323 | 1.751 |
| As | ppm | 63 | 27 | 133 | 903 |
| Ba | ppm | 14 | 10 | 43 | 115 |
| Be | ppm | <0.2 | <0.2 | <0.2 | 0 |
| Bi | ppm | <2 | <2 | <2 | <2 |
| Ca | % | 0.055 | 0.037 | 0.193 | 0.404 |
| Cd | ppm | 162 | 611 | 2218 | 47 |
| Co | ppm | 6 | 9 | 27 | 139 |
| Cr | ppm | 17 | 19 | 261 | 1913 |
| Fe | % | 31 | 2 | 7 | 36 |
| K | % | 0 | <0.01 | 0 | 0 |
| Li | ppm | <2 | <2 | <2 | <2 |
| Mg | % | 0.069 | 0.046 | 0.203 | 0.933 |
| Mn | ppm | 71 | 64 | 411 | 1029 |
| Mo | ppm | 29 | 81 | 37 | 171 |
| Na | % | <0.01 | 0.02 | <0.01 | 0.02 |
| Nb | ppm | <10 | <10 | <10 | <10 |
| Ni | ppm | 3 | <1 | 214 | 1793 |
| P | % | < 0.002 | < 0.002 | < 0.002 | < 0.002 |
| Rb | ppm | 21 | 26 | <20 | 30 |
| Sb | ppm | 13 | 51 | 39 | 73 |
| Se | ppm | 228 | 134 | 93 | 82 |
| Sn | ppm | 16 | 37 | 12 | <10 |
| Sr | ppm | 1 | 2 | 3 | 9 |
| Ta | ppm | <10 | <10 | <10 | <10 |
| Te | ppm | <10 | <10 | <10 | <10 |
| Ti | % | 0.023 | 0.015 | 0.040 | 0.219 |
| Tl | ppm | <2 | <2 | 5 | 39 |
| V | ppm | <1 | <1 | <1 | <1 |
| W | ppm | <10 | <10 | <10 | <10 |
| Zr | ppm | 11 | <4 | 7 | 32 |

Two locked cycle products were submitted for cyanide leach testing: Cycle 6 Rougher Tails, and Cycle 5 and 6 Gold Cleaner Concentrate. The gold recovery from the rougher tails by cyanidation was 81%, and from the cleaner concentrate was 93%. A summary of the overall gold recovery is shown in Error!

Reference source not found.. Note: in this table it is assumed that the gold concentrate will be sold to a 3rd party, rather than leached on site.

*Table 13.5 Estimated Overall Gold Recovery*

| Product | Assays Au (g/t) | CN Leach Extraction (%) | Overall Au Recovery (%) |
|---|---|---|---|
| Cu Final Conc | 276 | n/a | 32.7 |
| Pb Final Conc | 220 | n/a | 26.9 |
| Zn Final Conc | 10 | n/a | 7.8 |
| Au Final Conc | 64.3 | n/a | 18.5 |
| Zn Cleaner 1 Tail + Au Cleaner 1 Tail (CN) | 3.5 | 81* | 2.5 |
| Rougher Tail (CN) | 1.85 | 81 | 8.9 |
| **Combined Au Recovery with CN** | | | **97.3** |

**Estimated based on Rougher Tail CN Recovery*

The results suggest that, for the composite sample tested, ~86% of the gold could be recovered to the flotation concentrates with a further ~11% of the gold leached from the flotation tailings by cyanidation. Gold grade of the zinc concentrate is at a high enough level to be considered payable.

## 13.8 Conclusions

Recently completed metallurgical testing on a composite sample of new drill core from the Johnson Tract deposit has resulted in the following conclusions:

- Quantitative mineralogy by QEMSCAN indicated that at a $P_{80}$ of 100 µm chalcopyrite and sphalerite were well liberated, whereas galena and pyrite were moderately liberated;
- Grindability testing indicated that the Master Composite was moderately hard in terms of Bond Ball Work Index and moderately abrasive.
- The Master Composite contains a component of gravity gold, but this gold requires finer grinding to achieve liberation.
- Flotation testwork indicated that the constituent sulfide minerals can be selectively floated at a moderate primary grind size, and good concentrate grades can be achieved through regrinding and cleaning of the rougher concentrates.
- The majority of the contained gold in the Master Composite reported to the final copper and lead concentrates, and to a lesser extent, the zinc concentrate. Additional gold recovery was realized in two ways:
    - By regrinding and flotation of the zinc circuit rougher tailings to produce a pyrite concentrate grading ~64 g/t Au.
    - Through cyanidation of the flotation tailings to achieve a further 11% gold extraction.

## 13.9 Recommendations

Based on the work conducted to date, the following additional testwork is recommended:

- Further grindability testing on domain and variability composites from the Johnson Tract deposit.

- Evaluate the response of domain and variability composites to the process flowsheet developed in the BCR program.
- Conduct further testwork to optimize the primary grind and eliminate the need for regrinding of the zinc rougher tailings.
- Conduct further testwork to increase recovery to lead concentrate and reduce zinc misplacement to the lead concentrate.
- Confirm cyanidation recovery on the combined cleaner tailings (Zn 1$^{st}$ cleaner tailings, Au 1$^{st}$ cleaner tailings)
- Additional gravity testing to evaluate potential gold recovery in the grinding circuit.
- Gold focused mineralogy including a trace mineral search (TMS) and D-SIMS to evaluate the association of gold with sulfide minerals.

# 14 MINERAL RESOURCE ESTIMATES

## 14.1 INTRODUCTION

The mineral resource estimate documented here is an update of the initial JT Deposit Resource dated June 15th, 2020. The initial estimate used data from 52 NQ and HQ sized diamond drill holes (15,930 m) in generating the geological model for the JT Deposit, 37 of which intersected the interpreted mineralized zones in 3,394 m of core with a total of 2,239 assays inside the mineralized solids.

New geologic domains were created using Seequent Leapfrog Geo® software by Nathan Steeves, PhD, HighGold - Chief Exploration Geologist, and reviewed by Ian Cunningham-Dunlop, P.Eng., HighGold - Senior Vice President, Exploration and Author James N. Gray, P.Geo.

Gold, silver, copper, lead and zinc grades were estimated using Geovia GEMS® software within interpreted mineralized zones. The largest of these, the Johnson Domain, contained a sufficient number of samples to allow meaningful spatial analysis and grades were estimated by ordinary kriging. Grades in the other, smaller domains were estimated by inverse distance weighting. Drill density of the Johnson domain is high, allowing the declaration of an Indicated Mineral Resource in that zone. All other estimated mineralized material has been classified as inferred.

## 14.2 AVAILABLE DRILL DATA AND MODEL SETUP

This Johnson Tract Deposit resource estimate is based on assay data available as of April 6th, 2022. A total of 120 NQ and HQ sized diamond drill holes (42,575m) were used to generate the new geological model for the JT Deposit, 75 of which intersected the interpreted mineralized zones in 7,633 meters of core with a total of 5,078 assays inside the mineralized solids.

**Figure 14.1** illustrates drill hole locations, the extents of the resource block model and the interpreted zones of mineralization. **Table 14.1** lists the Johnson Tract block model setup.

A total of 63 new holes (26,728 m) have been completed at the JT deposit area by HighGold since the initial 2020 resource, including 52 new holes (20,256 m) used in the geologic model and 29 holes (12,704 m) that intersect the resource domains. Additional holes by previous operators along strike to the northeast were also used in generating the new geological model and subsequent resource estimate.

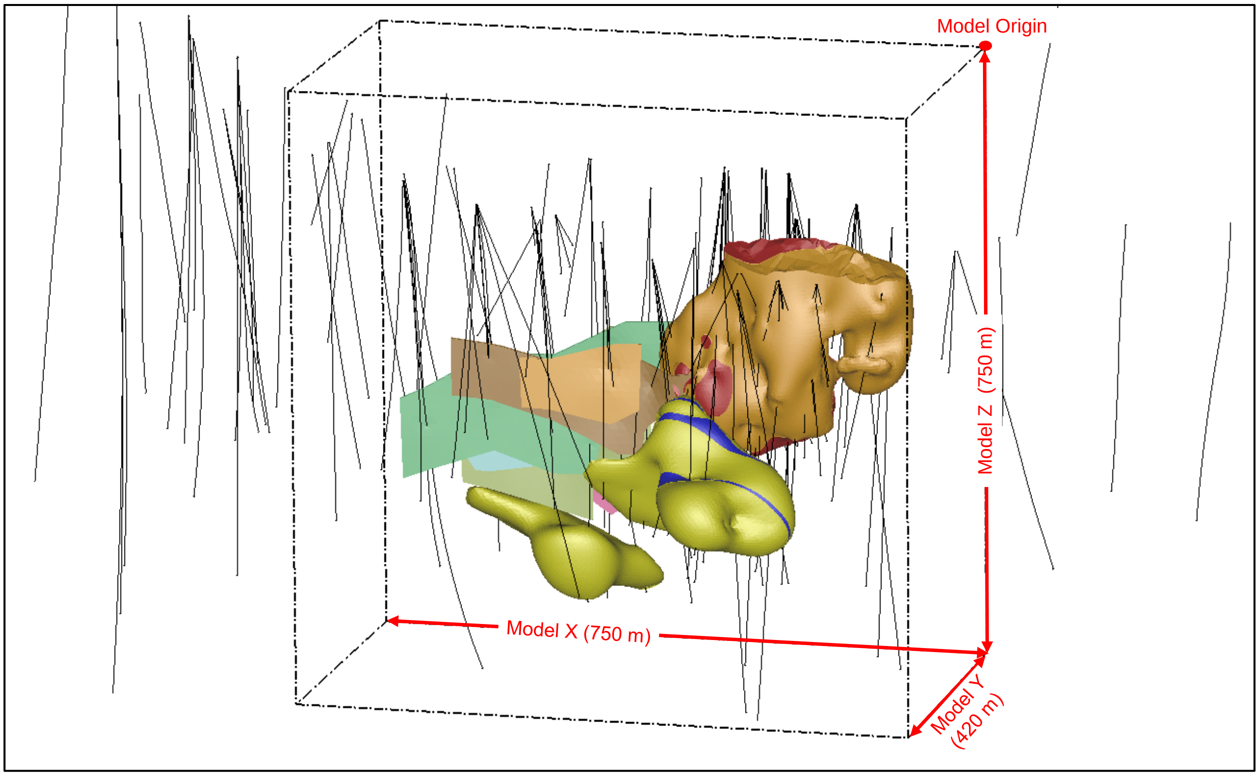



*Figure 14.1 Johnson Tract Drilling, Mineralized Zones and Block Model Extents (view to ESE)*

*Table 14.1 Block Model Setup*

| Block: | X | Y | Z |
|---|---|---|---|
| origin(1) | 502,660 | 6,664,600 | 750 |
| size (m) | 6 | 6 | 6 |
| no.blocks | 125 | 70 | 125 |
| 45° counter-clockwise rotation about origin; 1,093,750 blocks | | | |
| (1) SW model top, block edge | | | |

## 14.3 Geologic Model

Modeled domains include the JT Deposit (JT) domain, the Footwall Copper Zone (FCZ) domain, and the JT Extension domain. The JT and FCZ domains are subdivided into 'higher grade' (JT HG and FCZ HG) and 'lower grade' (JT LG and FCZ LG) subdomains. Along strike to the northeast, the JT Extension (JT Ext) domain consists of six distinct thin tabular wireframes (see **Figure 14.2**).

The domains were created using Leapfrog Geo's Intrusion and Vein modeling tools. The domains are controlled foremost by geology to include significant mineralized, silicified, and veined rock. Domain extents are limited to material that can be correlated within geologically continuous, definable zones. Wireframes are snapped to sample intervals or to logged lithologic intervals where no samples exist. Where not constrained by drilling or faulting, domains were extended approximately 25 meters from a drill hole, except where geology supports extension between holes in the trend of mineralization.

The majority of the mineral resource is contained within the JT HG domain (**Figure 14.2 (b) & (c)**). The JT HG domain consists of a single solid that is a steeply dipping, 25 to 70 meters thick, and extends 125 to 200 meters along strike and 250 meters vertically, with a moderate to steep plunge to the northeast. This domain was defined using logged heavily veined and brecciated silicified intervals and refined using a 2 g/t AuEq cut-off. The volume includes any internal waste that would likely be mined. The Leapfrog Geo Indicator Interpolant and the Economic Composite tools were also used as guides at a 3 g/t AuEq cut-off.

The JT HG domain is surrounded by the lower grade JT LG domain (**Figure 14.2 (b)**)**.** This domain represents a lower-grade alteration halo and was defined using logged alteration and a 0.5 g/t AuEq cut-off as a guide. The domain includes mostly silicified rock but includes outboard anhydrite- and sericite-altered intervals.

The JT Ext domain captures silicified and mineralized zones extending to the northeast along strike and down-plunge in a sparsely drilled portion of the JT Deposit (**Figure 14.2 (d)).** This domain is made up of six steeply southeast-dipping tabular solids with a similar orientation to the main JT HG and LG domains. These volumes are interpreted to be mineralized structures fingering to the northeast off the main JT domains. This domain is sparsely drilled, and care was taken to correlate, and wireframe similar zones of mineralization based on alteration, mineralogy, and structural interpretation. In places, these wireframes are extended up to 50 m from drill intercepts due to the wide-spaced drill pattern.

A texturally and mineralogically distinct, relatively copper-rich zone underlies the JT domains and is composed of the FCZ HG and FCZ LG domains (**Figure 14.2 (e) & (f)).** These domains are relatively Cu-Ag-rich compared to the more Au-Zn-Cu-rich JT domains. The FCZ HG domain consists of three moderately southeast dipping tabular solids of higher Cu-Ag grade. A 2 ppm AuEq and 0.3% Cu cut-off was used as a reference guide to model the FCZ HG domain. Contiguous lower grade around these zones was captured and modeled as two volumes. One of these is cut by the three FCZ HG solids, forming a total of five FCZ LG solids.

Two significant fault zones were modeled and constrain resource domains. The 5 to 10 m thick, steeply southeast-dipping Dacite fault zone truncates the JT HG and JT LG domains to the southeast. The Dacite fault zone is interpreted to have had, in part, east-side down offset of at least 100 m and an unknown lateral offset distance and direction. Locally, the Dacite fault zone contains mineralized wallrock. The upper extents of the JT Ext domain are constrained by the moderately northwest-dipping Saddle Fault zone. This fault is not modeled near the JT domains, further south. The Saddle fault is interpreted to have, in part, reverse oblique displacement. Offset distance is unknown.

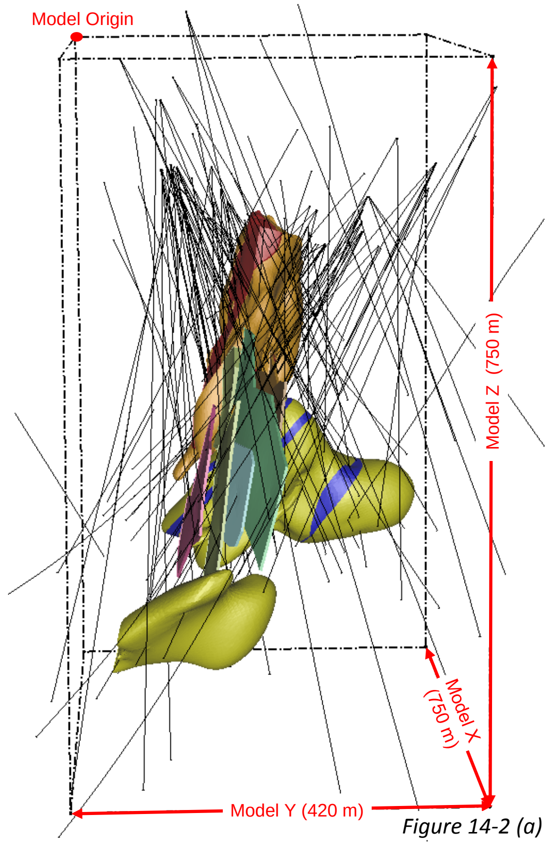


Figure 14-2 (a)

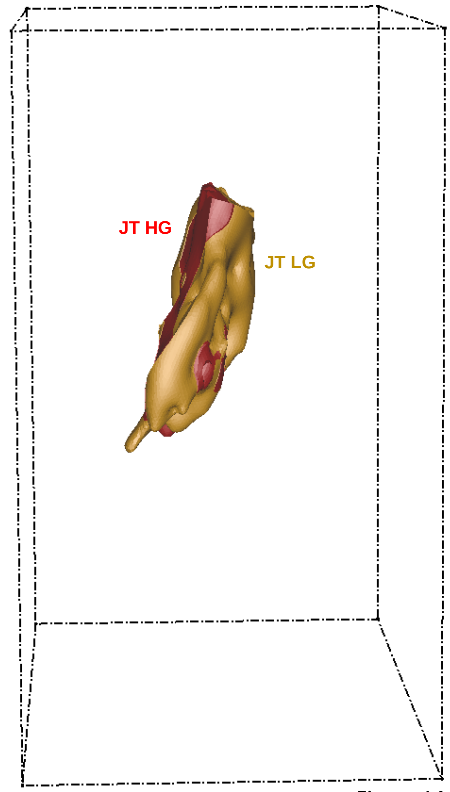


Figure 14-2 (b)

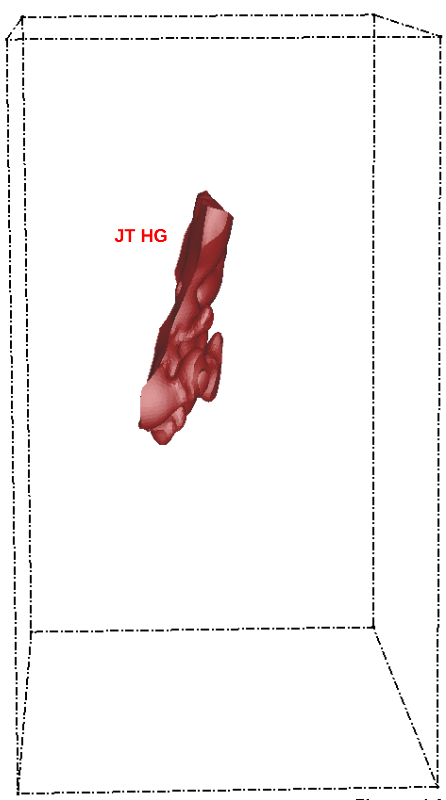


Figure 14-2 (c)

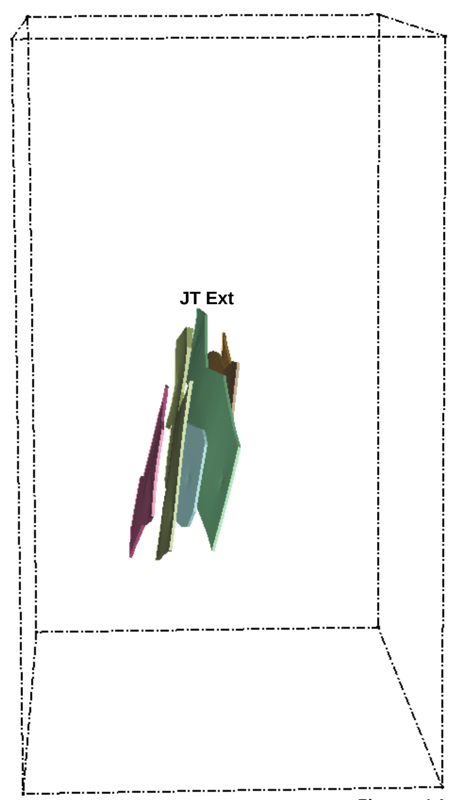


Figure 14-2 (d)

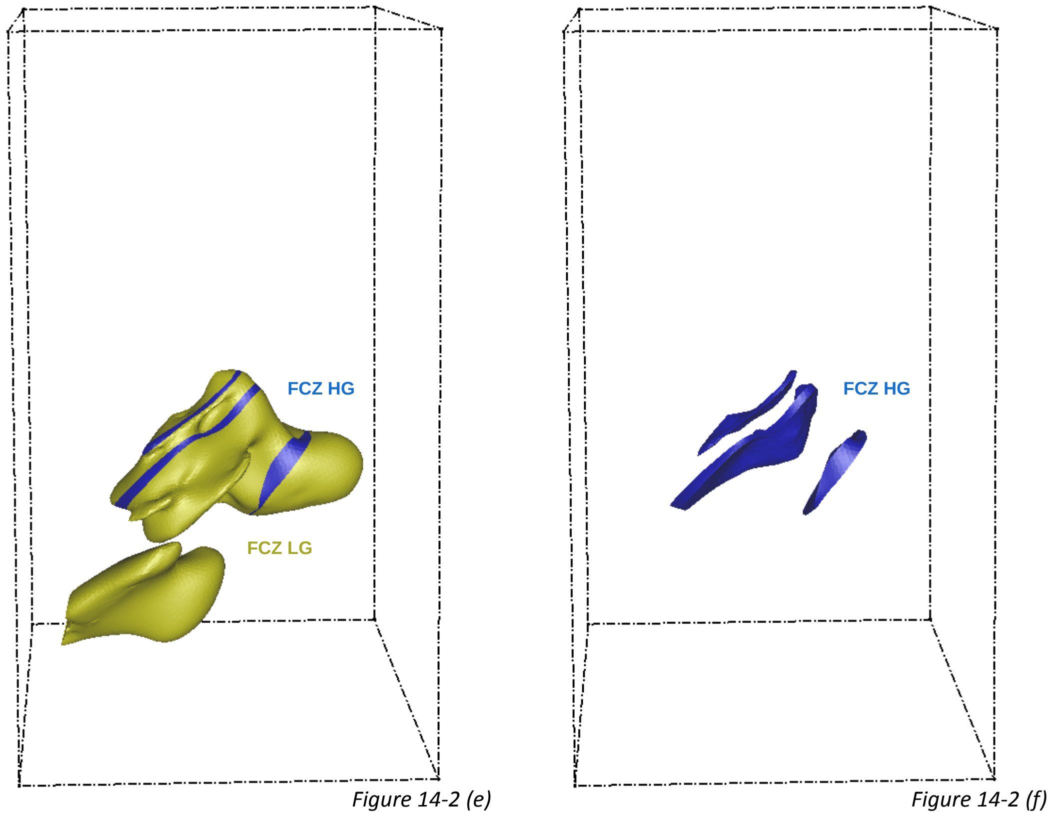



***Figure 14.2 Johnson Tract Drilling, Mineralized Zones and Block Model Extents (view to SW)***

All domain solids are constrained by a topographic surface created using high-resolution photogrammetry and validated by ground control points and collar locations. Collars and control points were collected using a Trimble R2 GNSS device and typically have <10 cm accuracy.

Error! Reference source not found. lists the volumes of the interpreted zones and supporting drilling; since holes may intersect more than one of the zones tabled below, there is no total on the number of holes column, as that number would be misleading. Partial block modeling was used to accurately account for domain volume and corresponding estimated grades. Whole block values were calculated as the weighted percentage volume/grade of individual domains.

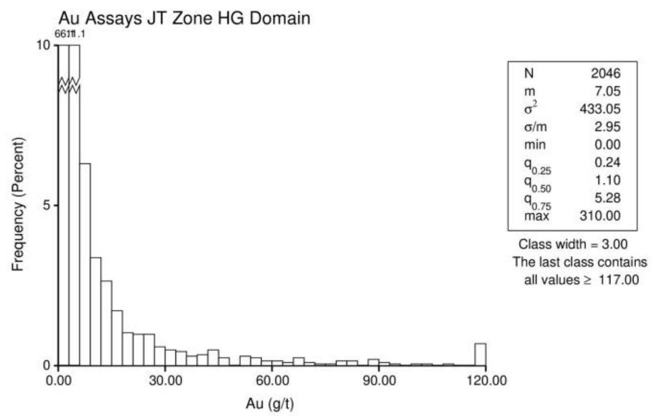
*Table 14.2 Geologic Model Volume and Support*

| Mineralized Solid | | | Volume ($m^3$) (1,000s) | No. Holes | Intersection Length (m) |
|---|---|---|---|---|---|
| JT LG | 11 | JT LG Zone | 2,003 | 47 | 2,559 |
| JT HG | 12 | JT HG Zone | 1,446 | 43 | 2,516 |
| JT Ext | 111 | JT NE Vein1 | 32 | 3 | 10 |
| | 112 | JT NE Vein2 | 73 | 7 | 53 |
| | 113 | JT NE Vein3 | 123 | 7 | 98 |
| | 114 | JT NE Vein4 | 25 | 1 | 4 |
| | 115 | JT NE Vein5 | 153 | 8 | 80 |
| | 116 | JT NE Vein6 | 86 | 5 | 46 |
| FCZ LG | 211 | Cu LG Zone 1 | 42 | 8 | 59 |
| | 212 | Cu LG Zone 2 | 392 | 19 | 324 |
| | 213 | Cu LG Zone 3 | 1,551 | 20 | 843 |
| | 214 | Cu LG Zone 4 | 597 | 5 | 255 |
| | 215 | Cu LG Zone 5 | 1,277 | 5 | 289 |
| FCZ HG | 221 | Cu HG Zone 1 | 64 | 10 | 105 |
| | 222 | Cu HG Zone 2 | 402 | 17 | 328 |
| | 223 | Cu HG Zone 3 | 95 | 6 | 64 |
| | | Total: | 8,362 | | 7,633 |

## 14.4 Grade Capping

Grade capping is used to control the impact of extreme, outlier high-grade samples on the overall resource estimate. Assay histograms and probability plots were examined to determine levels at which values are deemed outliers to the general population, an example plot for gold in the Johnson Domain is shown in **Figure 14.3**. Cap values were applied by metal, by mineralized zone prior to compositing. Capping levels are listed in **Table 14.3**.

The impact of grade capping can be measured by comparing uncapped and capped estimated grades above a zero cut-off. Metal removed through capping amounts to: 8.4% Au, 10.1% Ag, 2.8% Cu, 6.2% Pb and 1.3% Zn.



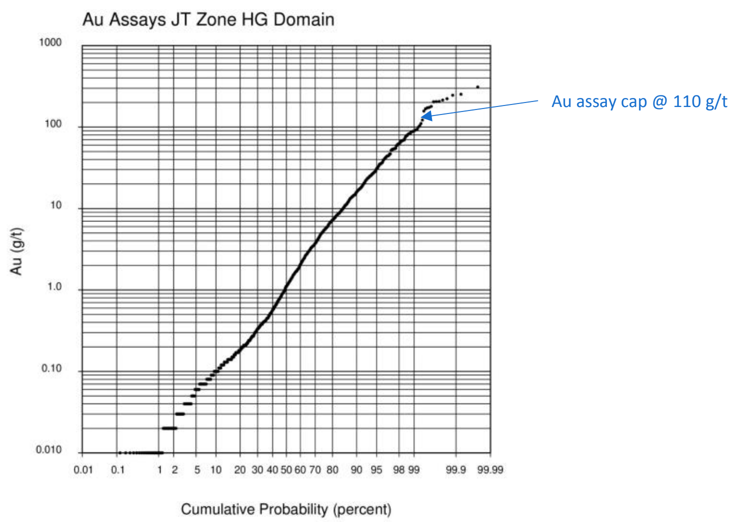




*Figure 14.3 Example Histogram & Probability Plot: JT HG Domain – Au Assays*

*Table 14.3 Grade Capping Levels*

| Mineralized Solid | | | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) |
|---|---|---|---|---|---|---|---|
| JT LG | 11 | JT LG Zone | 3.5 | 30 | 2 | 1.2 | 22 |
| JT HG | 12 | JT HG Zone | 110 | 70 | 5.3 | 21 | 35 |
| JT Ext | 111 | JT NE Vein1 | *uncap* | *uncap* | 1.2 | *uncap* | *uncap* |
| | 112 | JT NE Vein2 | 8 | 30 | 1.2 | *uncap* | *uncap* |
| | 113 | JT NE Vein3 | 8 | 30 | *uncap* | 1.2 | *uncap* |
| | 114 | JT NE Vein4 | *uncap* | *uncap* | *uncap* | *uncap* | *uncap* |
| | 115 | JT NE Vein5 | *uncap* | *uncap* | 1.2 | 1.2 | 22 |
| | 116 | JT NE Vein6 | *uncap* | *uncap* | *uncap* | 1.2 | *uncap* |
| FCZ LG | 211 | Cu LG Zone 1 | 1.4 | 55 | *uncap* | 0.4 | 5 |
| | 212 | Cu LG Zone 2 | 1.4 | *uncap* | *uncap* | 0.4 | 5 |
| | 213 | Cu LG Zone 3 | 1.4 | *uncap* | *uncap* | 0.4 | 5 |
| | 214 | Cu LG Zone 4 | *uncap* | *uncap* | *uncap* | *uncap* | *uncap* |
| | 215 | Cu LG Zone 5 | 0.15 | 55 | 3 | 0.4 | 5 |
| FCZ HG | 221 | Cu HG Zone 1 | 1.5 | *uncap* | *uncap* | 0.4 | 8.5 |
| | 222 | Cu HG Zone 2 | 1.5 | *uncap* | 6.2 | 0.4 | 8.5 |
| | 223 | Cu HG Zone 3 | *uncap* | *uncap* | *uncap* | 0.4 | *uncap* |

## 14.5 Assay Compositing

Assays were composited to a target length of 1.5 meters within the bounds of the mineralized wireframes. A 1.5 m composite length was chosen based on the fact that that was the dominant sample length for assays in total as well as within most mineralized solids.

Compositing to a constant length within mineralized solids, would result in the generation of shorter-length intervals at the down-hole edge of the solids; less than half-length (0.75 m in this case) samples would commonly be discarded prior to grade estimation. For this estimate, composite lengths across solid intersections were calculated such that they were equal, and as close to 1.5 m as possible. This technique resulted in composite lengths ranging between 0.8 and 2.1 m and, most importantly, makes use of all sampled material in the interpreted mineralized zones. Capped and uncapped composite statistics are presented in **Table 14.4.** (CV=coefficient of variation, standard deviation ÷ mean).

***Table 14.4 Composite Grade Statistics***

| Mineralized Solid | | | Au (g/t) | | | | AuCap (g/t) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count | mean | max. | CV | #Cap | mean | max. | CV |
| JT LG | 11 | JT LG Zone | 1,707 | 0.17 | 10.83 | 2.5 | 6 | 0.16 | 3.47 | 1.9 |
| JT HG | 12 | JT HG Zone | 1,679 | 6.50 | 255.64 | 2.7 | 24 | 5.96 | 110.00 | 2.2 |
| JT Ext | 111 | JT NE Vein1 | 7 | 0.37 | 0.78 | 0.8 | 0 | 0.37 | 0.78 | 0.8 |
| | 112 | JT NE Vein2 | 36 | 0.46 | 10.05 | 3.9 | 1 | 0.40 | 8.00 | 3.6 |
| | 113 | JT NE Vein3 | 65 | 0.65 | 25.07 | 5.2 | 2 | 0.32 | 8.00 | 4.3 |
| | 114 | JT NE Vein4 | 3 | 0.05 | 0.09 | 0.7 | 0 | 0.05 | 0.09 | 0.7 |
| | 115 | JT NE Vein5 | 53 | 0.25 | 2.03 | 1.5 | 0 | 0.25 | 2.03 | 1.5 |
| | 116 | JT NE Vein6 | 30 | 1.25 | 7.57 | 1.6 | 0 | 1.25 | 7.57 | 1.6 |
| FCZ LG | 211 | Cu LG Zone 1 | 40 | 0.22 | 4.76 | 3.5 | 3 | 0.11 | 1.40 | 2.2 |
| | 212 | Cu LG Zone 2 | 217 | 0.07 | 1.09 | 1.5 | 2 | 0.07 | 1.09 | 1.5 |
| | 213 | Cu LG Zone 3 | 562 | 0.10 | 6.27 | 3.5 | 6 | 0.08 | 1.15 | 1.7 |
| | 214 | Cu LG Zone 4 | 171 | 0.04 | 0.17 | 0.7 | 0 | 0.04 | 0.17 | 0.7 |
| | 215 | Cu LG Zone 5 | 192 | 0.07 | 2.56 | 4.0 | 5 | 0.03 | 0.15 | 1.0 |
| FCZ HG | 221 | Cu HG Zone 1 | 71 | 0.30 | 12.75 | 5.1 | 3 | 0.12 | 1.50 | 2.2 |
| | 222 | Cu HG Zone 2 | 219 | 0.15 | 3.04 | 2.0 | 9 | 0.14 | 1.50 | 1.6 |
| | 223 | Cu HG Zone 3 | 43 | 0.05 | 0.15 | 0.5 | 0 | 0.05 | 0.15 | 0.5 |

| Mineralized Solid | | | Ag (g/t) | | | | AgCap (g/t) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count | mean | max. | CV | #Cap | mean | max. | CV |
| JT LG | 11 | JT LG Zone | 1,707 | 2.5 | 99.9 | 1.7 | 8 | 2.5 | 28.0 | 1.3 |
| JT HG | 12 | JT HG Zone | 1,679 | 6.8 | 401.4 | 2.6 | 7 | 6.1 | 70.0 | 1.2 |
| JT Ext | 111 | JT NE Vein1 | 7 | 15.7 | 28.7 | 0.6 | 0 | 15.7 | 28.7 | 0.6 |
| | 112 | JT NE Vein2 | 36 | 11.6 | 72.9 | 1.3 | 3 | 9.8 | 30.0 | 1.0 |
| | 113 | JT NE Vein3 | 65 | 9.8 | 285.8 | 4.5 | 3 | 2.0 | 30.0 | 3.1 |
| | 114 | JT NE Vein4 | 3 | 1.4 | 2.8 | 0.9 | 0 | 1.4 | 2.8 | 0.9 |
| | 115 | JT NE Vein5 | 53 | 1.4 | 5.0 | 0.9 | 0 | 1.4 | 5.0 | 0.9 |
| | 116 | JT NE Vein6 | 30 | 1.9 | 13.5 | 1.6 | 0 | 1.9 | 13.5 | 1.6 |
| FCZ LG | 211 | Cu LG Zone 1 | 40 | 6.8 | 62.6 | 1.8 | 2 | 6.1 | 46.2 | 1.6 |
| | 212 | Cu LG Zone 2 | 217 | 3.1 | 36.7 | 1.3 | 0 | 3.1 | 36.7 | 1.3 |
| | 213 | Cu LG Zone 3 | 562 | 3.3 | 32.5 | 1.4 | 0 | 3.3 | 32.5 | 1.4 |
| | 214 | Cu LG Zone 4 | 171 | 2.6 | 23.3 | 1.2 | 0 | 2.6 | 23.3 | 1.2 |
| | 215 | Cu LG Zone 5 | 192 | 4.6 | 119.3 | 2.2 | 2 | 4.2 | 52.8 | 1.6 |
| FCZ HG | 221 | Cu HG Zone 1 | 71 | 14.7 | 97.4 | 1.2 | 0 | 14.7 | 97.4 | 1.2 |
| | 222 | Cu HG Zone 2 | 219 | 14.5 | 131.0 | 1.4 | 0 | 14.5 | 131.0 | 1.4 |
| | 223 | Cu HG Zone 3 | 43 | 14.6 | 82.0 | 1.1 | 0 | 14.6 | 82.0 | 1.1 |

| Mineralized Solid | | | Cu (%) | | | | CuCap (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count | mean | max. | CV | #Cap | mean | max. | CV |
| JT LG | 11 | JT LG Zone | 1,707 | 0.08 | 2.48 | 2.6 | 13 | 0.08 | 2.00 | 2.5 |
| JT HG | 12 | JT HG Zone | 1,679 | 0.56 | 7.96 | 1.3 | 15 | 0.55 | 5.30 | 1.2 |
| JT Ext | 111 | JT NE Vein1 | 7 | 0.60 | 3.41 | 2.1 | 1 | 0.28 | 1.20 | 1.6 |
| | 112 | JT NE Vein2 | 36 | 0.31 | 1.23 | 1.2 | 2 | 0.31 | 1.17 | 1.2 |
| | 113 | JT NE Vein3 | 65 | 0.07 | 0.58 | 1.5 | 0 | 0.07 | 0.58 | 1.5 |
| | 114 | JT NE Vein4 | 3 | 0.24 | 0.65 | 1.5 | 0 | 0.24 | 0.65 | 1.5 |
| | 115 | JT NE Vein5 | 53 | 0.19 | 1.48 | 1.3 | 2 | 0.18 | 1.17 | 1.2 |
| | 116 | JT NE Vein6 | 30 | 0.04 | 0.19 | 1.3 | 0 | 0.04 | 0.19 | 1.3 |
| FCZ LG | 211 | Cu LG Zone 1 | 40 | 0.20 | 1.58 | 1.6 | 0 | 0.20 | 1.58 | 1.6 |
| | 212 | Cu LG Zone 2 | 217 | 0.13 | 2.12 | 2.0 | 0 | 0.13 | 2.12 | 2.0 |
| | 213 | Cu LG Zone 3 | 562 | 0.14 | 1.20 | 1.4 | 0 | 0.14 | 1.20 | 1.4 |
| | 214 | Cu LG Zone 4 | 171 | 0.07 | 1.01 | 1.9 | 0 | 0.07 | 1.01 | 1.9 |
| | 215 | Cu LG Zone 5 | 192 | 0.25 | 4.04 | 2.0 | 6 | 0.24 | 2.93 | 1.7 |
| FCZ HG | 221 | Cu HG Zone 1 | 71 | 0.74 | 3.39 | 1.1 | 0 | 0.74 | 3.39 | 1.1 |
| | 222 | Cu HG Zone 2 | 219 | 0.86 | 9.11 | 1.6 | 5 | 0.83 | 5.86 | 1.4 |
| | 223 | Cu HG Zone 3 | 43 | 0.62 | 4.13 | 1.3 | 0 | 0.62 | 4.13 | 1.3 |

| Mineralized Solid | | | Pb (%) | | | | PbCap (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count | mean | max. | CV | #Cap | mean | max. | CV |
| JT LG | 11 | JT LG Zone | 1,707 | 0.05 | 7.35 | 4.6 | 18 | 0.04 | 1.20 | 2.9 |
| JT HG | 12 | JT HG Zone | 1,679 | 0.79 | 18.66 | 2.3 | 3 | 0.78 | 17.09 | 2.2 |
| JT Ext | 111 | JT NE Vein1 | 7 | 0.09 | 0.48 | 1.9 | 0 | 0.09 | 0.48 | 1.9 |
| | 112 | JT NE Vein2 | 36 | 0.18 | 1.17 | 1.6 | 0 | 0.18 | 1.17 | 1.6 |
| | 113 | JT NE Vein3 | 65 | 0.17 | 3.48 | 3.1 | 2 | 0.12 | 1.20 | 2.1 |
| | 114 | JT NE Vein4 | 3 | 0.07 | 0.18 | 1.5 | 0 | 0.07 | 0.18 | 1.5 |
| | 115 | JT NE Vein5 | 53 | 0.33 | 1.65 | 1.3 | 4 | 0.31 | 1.20 | 1.2 |
| | 116 | JT NE Vein6 | 30 | 0.17 | 3.07 | 3.3 | 1 | 0.08 | 0.61 | 1.9 |
| FCZ LG | 211 | Cu LG Zone 1 | 40 | 0.07 | 1.45 | 3.7 | 2 | 0.03 | 0.34 | 2.4 |
| | 212 | Cu LG Zone 2 | 217 | 0.03 | 0.61 | 2.5 | 4 | 0.02 | 0.35 | 2.1 |
| | 213 | Cu LG Zone 3 | 562 | 0.03 | 0.70 | 2.8 | 15 | 0.02 | 0.40 | 2.5 |
| | 214 | Cu LG Zone 4 | 171 | 0.01 | 0.08 | 1.6 | 0 | 0.01 | 0.08 | 1.6 |
| | 215 | Cu LG Zone 5 | 192 | 0.03 | 0.59 | 2.3 | 2 | 0.02 | 0.32 | 2.0 |
| FCZ HG | 221 | Cu HG Zone 1 | 71 | 0.11 | 5.65 | 6.4 | 2 | 0.02 | 0.40 | 2.6 |
| | 222 | Cu HG Zone 2 | 219 | 0.06 | 2.14 | 3.3 | 12 | 0.04 | 0.39 | 2.0 |
| | 223 | Cu HG Zone 3 | 43 | 0.03 | 0.55 | 2.9 | 2 | 0.02 | 0.31 | 2.1 |

| Mineralized Solid | | | Zn (%) | | | | ZnCap (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count | mean | max. | CV | #Cap | mean | max. | CV |
| JT LG | 11 | JT LG Zone | 1,707 | 1.17 | 24.17 | 1.5 | 6 | 1.15 | 18.60 | 1.4 |
| JT HG | 12 | JT HG Zone | 1,679 | 5.42 | 48.20 | 1.1 | 18 | 5.34 | 35.00 | 1.1 |
| JT Ext | 111 | JT NE Vein1 | 7 | 0.42 | 1.72 | 1.6 | 0 | 0.42 | 1.72 | 1.6 |
| | 112 | JT NE Vein2 | 36 | 0.76 | 2.89 | 1.1 | 0 | 0.76 | 2.89 | 1.1 |
| | 113 | JT NE Vein3 | 65 | 1.77 | 17.36 | 1.7 | 0 | 1.77 | 17.36 | 1.7 |
| | 114 | JT NE Vein4 | 3 | 1.36 | 1.88 | 0.5 | 0 | 1.36 | 1.88 | 0.5 |
| | 115 | JT NE Vein5 | 53 | 4.07 | 21.34 | 1.0 | 2 | 4.04 | 20.16 | 1.0 |
| | 116 | JT NE Vein6 | 30 | 0.71 | 3.69 | 1.2 | 0 | 0.71 | 3.69 | 1.2 |
| FCZ LG | 211 | Cu LG Zone 1 | 40 | 0.51 | 8.54 | 2.9 | 2 | 0.38 | 4.42 | 2.2 |
| | 212 | Cu LG Zone 2 | 217 | 0.28 | 3.31 | 1.6 | 2 | 0.28 | 3.18 | 1.6 |
| | 213 | Cu LG Zone 3 | 562 | 0.16 | 4.92 | 2.3 | 0 | 0.16 | 4.92 | 2.3 |
| | 214 | Cu LG Zone 4 | 171 | 0.07 | 1.41 | 2.2 | 0 | 0.07 | 1.41 | 2.2 |
| | 215 | Cu LG Zone 5 | 192 | 0.21 | 3.24 | 2.1 | 1 | 0.21 | 3.24 | 2.1 |
| FCZ HG | 221 | Cu HG Zone 1 | 71 | 0.71 | 12.47 | 2.7 | 1 | 0.62 | 8.40 | 2.4 |
| | 222 | Cu HG Zone 2 | 219 | 0.80 | 12.44 | 2.2 | 4 | 0.73 | 7.54 | 1.9 |
| | 223 | Cu HG Zone 3 | 43 | 0.17 | 1.26 | 1.6 | 0 | 0.17 | 1.26 | 1.6 |

## 14.6 VARIOGRAPHY

The Johnson low-grade and high-grade domains were the only mineralized zones with sufficient numbers of composites to calculate meaningful variograms. In these two domains, spatial continuity of capped composite data was analysed using Supervisor® software. For each metal, directions of continuity were determined from variogram maps. The nugget effect and sill contributions were derived from down-hole experimental variograms followed by final model fitting on directional variogram plots. Variogram models for the Johnson LG and HG Domains are listed in **Table 14.5**.

*Table 14.5 Johnson Domain Variogram Models*

| Johnson Domain | Axis | Direction (dip/azimuth) | Nugget Effect | Spherical Component 1 | | Spherical Component 2 | |
|---|---|---|---|---|---|---|---|
| | | | | Sill | Range(m) | Sill | Range(m) |
| Au 11 (LG) | X | 80 / 305 | | | 10 | | 130 |
| | Y | 00 / 035 | 0.14 | 0.45 | 15 | 0.41 | 70 |
| | Z | -10 / 305 | | | 20 | | 45 |
| Au 12 (HG) | X | 58 / 006 | | | 30 | | 85 |
| | Y | -18 / 064 | 0.12 | 0.58 | 25 | 0.30 | 75 |
| | Z | -25 / 325 | | | 10 | | 25 |
| Ag 11 (LG) | X | 61 / 283 | | | 10 | | 45 |
| | Y | 14 / 039 | 0.18 | 0.55 | 10 | 0.27 | 60 |
| | Z | -25 / 315 | | | 10 | | 30 |
| Ag 12 (HG) | X | 60 / 039 | | | 25 | | 135 |
| | Y | -30 / 027 | 0.19 | 0.51 | 20 | 0.30 | 45 |
| | Z | 05 / 300 | | | 5 | | 25 |
| Cu 11 (LG) | X | 38 / 343 | | | 50 | | 125 |
| | Y | -38 / 037 | 0.14 | 0.63 | 60 | 0.23 | 85 |
| | Z | -30 / 280 | | | 5 | | 40 |
| Cu 12 (HG) | X | 19 / 035 | | | 45 | | 95 |
| | Y | -65 / 075 | 0.15 | 0.53 | 10 | 0.32 | 85 |
| | Z | -15 / 310 | | | 15 | | 25 |
| Pb 11 (LG) | X | 00 / 020 | | | 35 | | 105 |
| | Y | -25 / 110 | 0.15 | 0.69 | 25 | 0.16 | 45 |
| | Z | -65 / 290 | | | 15 | | 40 |
| Pb 12 (HG) | X | 74 / 286 | | | 40 | | 120 |
| | Y | 05 / 034 | 0.16 | 0.48 | 15 | 0.36 | 60 |
| | Z | -15 / 305 | | | 20 | | 45 |
| Zn 11 (LG) | X | -01 / 025 | | | 15 | | 50 |
| | Y | 10 / 115 | 0.12 | 0.42 | 5 | 0.46 | 45 |
| | Z | -80 / 120 | | | 15 | | 70 |
| Zn 12 (HG) | X | 05 / 058 | | | 30 | | 130 |
| | Y | -69 / 136 | 0.14 | 0.48 | 35 | 0.38 | 70 |
| | Z | -20 / 330 | | | 15 | | 30 |

## 14.7 GRADE INTERPOLATION

Grades were estimated by ordinary kriging in the Johnson Domain and by inverse distance weighting in the other less densely drilled domains. **Table 14.6** lists the orientations and dimensions of search volumes as well as the method and numbers of samples used for estimation, in each of the mineralized zones. Search orientations were derived to best fit the geometry of each domain. Each mineralized zone was initially estimated separately, with hard boundaries among the domains. Some JT volumes were estimated sharing samples across interpreted domain boundaries over a short distance.

Three of the JT Extension domains abut LT HG and/or JT LG mineralization (codes: 112, 113 and 115). In a second estimation pass, samples were shared across the interpreted domain boundaries, over a nominal strike length of 100 m (~50 m into each zone). Search dimensions for this estimation pass was one-half that listed in **Table 14.6**. The impact of this search strategy is very low; AuEq grade of blocks included in the resource was lowered by 0.1%.

***Table 14.6 Grade Estimation Parameters***

| Mineralized Solid | | | Search Direction (dip / azimuth) | | | Search Radius (metres) | | | Weighting | Number of Samples for Estimate | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | X | Y | Z | X | Y | Z | | min | max | max/hole |
| JT LG | 11 | JT LG Zone | 00 / 047 | 74 / 317 | -16 / 317 | 100 | 100 | 50 | OK | 2 | 20 | 12 |
| JT HG | 12 | JT HG Zone | 00 / 043 | 76 / 313 | -14 / 313 | 100 | 100 | 50 | OK | 2 | 20 | 12 |
| JT Ext | 111 | JT NE Vein1 | 00 / 042 | 87 / 312 | -03 / 312 | 100 | 100 | 50 | $ID^2$ (Au, Ag) $ID^3$ (Cu, Pb, Zn) | 2 | 16 | 8 |
| | 112 | JT NE Vein2 | 00 / 040 | 83 / 310 | -07 / 310 | 100 | 100 | 50 | | 2 | 16 | 8 |
| | 113 | JT NE Vein3 | 00 / 034 | 75 / 304 | -15 / 304 | 100 | 100 | 50 | | 2 | 16 | 8 |
| | 114 | JT NE Vein4 | 00 / 030 | 79 / 300 | -11 / 300 | 100 | 100 | 50 | | 2 | 16 | 8 |
| | 115 | JT NE Vein5 | 00 / 045 | 81 / 315 | -09 / 315 | 100 | 100 | 50 | | 2 | 16 | 8 |
| | 116 | JT NE Vein6 | 00 / 044 | 80 / 314 | -10 / 314 | 100 | 100 | 50 | | 2 | 16 | 8 |
| FCZ LG | 211 | Cu LG Zone 1 | 00 / 064 | 41 / 334 | -49 / 334 | 100 | 100 | 50 | $ID^2$ (Au, Ag) $ID^3$ (Cu, Pb, Zn) | 2 | 20 | 12 |
| | 212 | Cu LG Zone 2 | 00 / 071 | 40 / 341 | -50 / 341 | 100 | 100 | 50 | | 2 | 20 | 12 |
| | 213 | Cu LG Zone 3 | 00 / 068 | 42 / 338 | -48 / 338 | 100 | 100 | 50 | | 2 | 20 | 12 |
| | 214 | Cu LG Zone 4 | 00 / 055 | 34 / 325 | -56 / 325 | 100 | 100 | 50 | | 2 | 20 | 12 |
| | 215 | Cu LG Zone 5 | 00 / 106 | 30 / 016 | -60 / 016 | 100 | 100 | 50 | | 2 | 20 | 12 |
| FCZ HG | 221 | Cu HG Zone 1 | 00 / 056 | 36 / 326 | -54 / 326 | 100 | 100 | 50 | $ID^2$ (Au, Ag) $ID^3$ (Cu, Pb, Zn) | 2 | 20 | 12 |
| | 222 | Cu HG Zone 2 | 00 / 071 | 41 / 341 | -49 / 341 | 100 | 100 | 50 | | 2 | 20 | 12 |
| | 223 | Cu HG Zone 3 | 00 / 052 | 56 / 322 | -34 / 322 | 100 | 100 | 50 | | 2 | 20 | 12 |

## 14.8 DENSITY ASSIGNMENT

As detailed earlier in this report, 615 density measurements were made on historic and 2019 Johnson Tract core samples during the 2019 field season. The mean value of these measurements is 2.79 t/m$^3$. While the relationship between density and grade is not overly compelling, removing 178 samples with gold equivalence less than 2.5 g/t shifted the average to 2.84 t/m$^3$. This observation coupled with a review of pycnometer density measurements, and the higher historic value of 2.88 used by Westmin, led to the decision to use an average of 2.84 t/m$^3$ for mineralized material included in this estimate.

## 14.9 Model Validation

Estimated grades for all elements were validated visually by comparing composite to block values in plan view and on cross-sections. There is good visual correlation between composite and estimated block grades for all modelled elements. An example vertical section, comparing drill hole composites with estimated block grades is shown in **Figure 14.4**; to provide context, the Figure includes resource classification and identifies domains.

Nearest neighbour (NN) validation models were also estimated for all metals using search parameters consistent with those used for resource estimation. In the Johnson Domain, where the resource estimate was by OK, inverse distance models were also estimated as a validation tool. For the NN estimate, the block size was adjusted to 3x3x1.5 m to appropriately match the composite interval. NN results were then re-blocked (12:1) for comparison to resource blocks.

Grade models were compared spatially using swath plots; example plots for gold resource blocks, in the Johnson Domain, are included in **Figure 14.5**. The OK estimates are appropriately smooth in comparison to the nearest neighbor model. Globally, model average grades above zero cut-off (shown on plots) compare very closely indicating no bias. **Table 14.7** lists metal grades by domain for the resource and the validation block models. Highlighted entries are the 2022 resource estimated values. The large differences to NN estimates are indicative of areas of lesser sample support (inferred mineral resource).

***Table 14.7 Resource and Validation Grade Models by Domain***

| Mineralized Solid | | | Block | Au (g/t) | | | Ag (g/t) | | | Cu (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Count | $ID^2$ | OK | NN | $ID^2$ | OK | NN | $ID^3$ | OK | NN |
| JT LG | 11 | JT LG Zone | 227 | 2.59 | 2.66 | 2.69 | 4.4 | 4.3 | 4.8 | 0.36 | 0.36 | 0.41 |
| JT HG | 12 | JT HG Zone | 6,905 | 5.19 | 5.06 | 4.98 | 5.9 | 5.9 | 5.6 | 0.53 | 0.53 | 0.53 |
| JT Ext | 112 | JT NE Vein2 | 28 | 2.04 | | 2.63 | 6.4 | | 13.1 | 0.60 | | 0.45 |
| | 113 | JT NE Vein3 | 234 | 3.50 | | 4.63 | 18.0 | | 28.0 | 0.25 | | 0.22 |
| | 115 | JT NE Vein5 | 501 | 0.29 | | 0.28 | 1.9 | | 1.9 | 0.32 | | 0.26 |
| FCZ HG | 222 | Cu HG Zone 2 | 221 | 0.13 | | 0.15 | 26.6 | | 35.2 | 1.75 | | 2.21 |

| Mineralized Solid | | | Block | Pb (%) | | | Zn (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Count | $ID^3$ | OK | NN | $ID^3$ | OK | NN |
| JT LG | 11 | JT LG Zone | 227 | 0.24 | 0.23 | 0.16 | 2.77 | 2.72 | 2.71 |
| JT HG | 12 | JT HG Zone | 6,905 | 0.65 | 0.65 | 0.60 | 5.28 | 5.21 | 5.13 |
| JT Ext | 112 | JT NE Vein2 | 28 | 0.29 | | 0.39 | 5.09 | | 1.29 |
| | 113 | JT NE Vein3 | 234 | 0.66 | | 0.75 | 3.94 | | 3.56 |
| | 115 | JT NE Vein5 | 501 | 0.31 | | 0.32 | 6.03 | | 3.71 |
| FCZ HG | 222 | Cu HG Zone 2 | 221 | 0.08 | | 0.10 | 2.19 | | 2.52 |

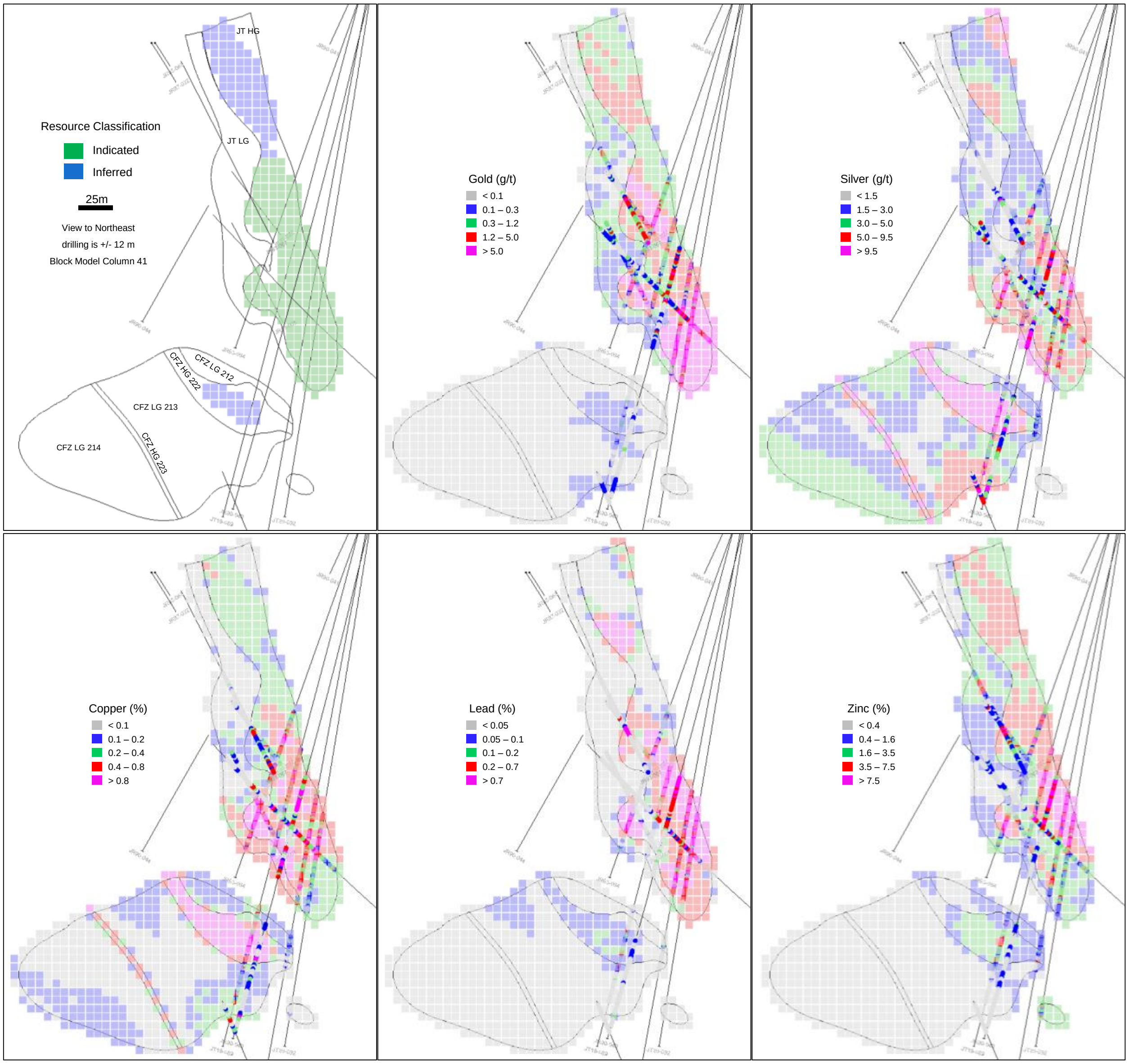



***Figure 14.4** Example Section - Model Column 41: Resource Class, Block Estimate and Composite Grades*

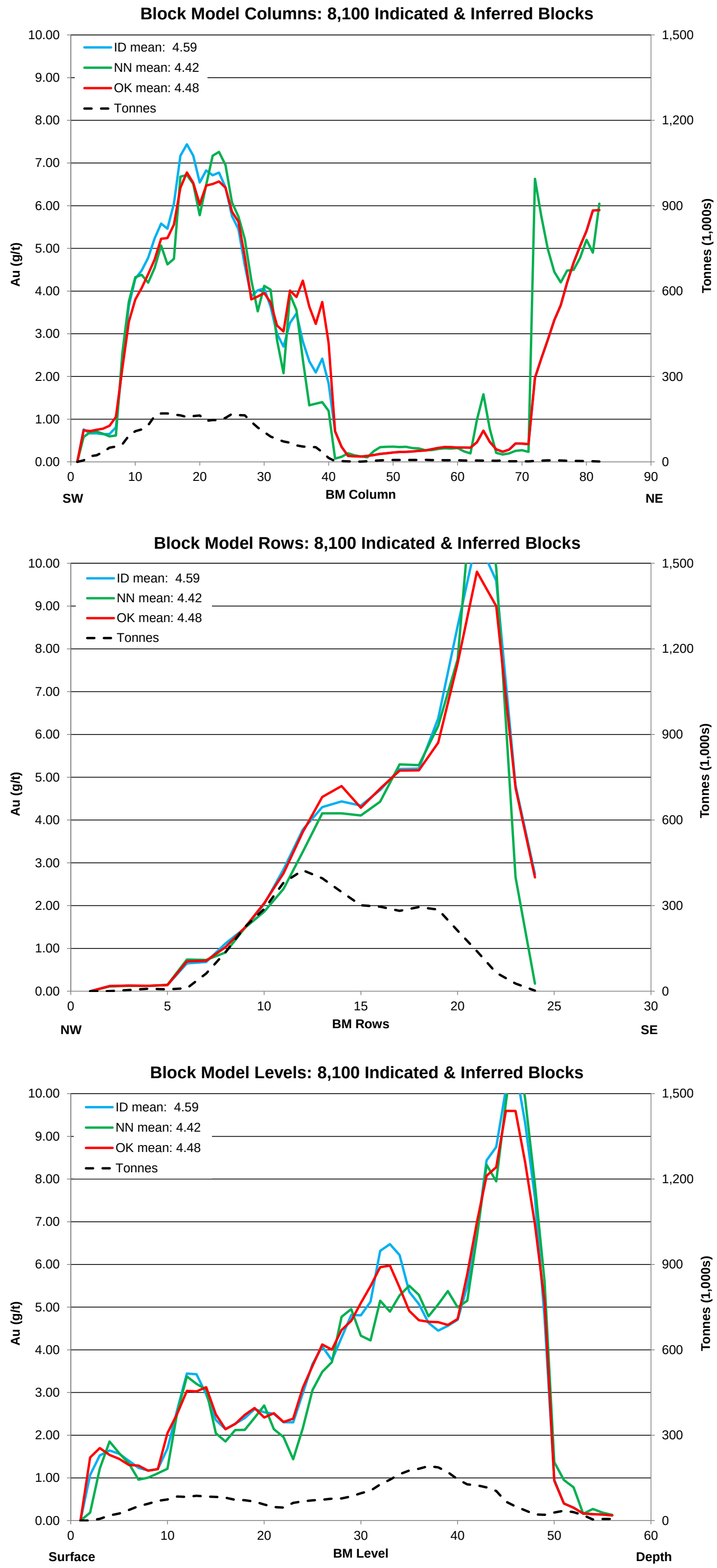



***Figure 14.5 Swath Plots Comparing OK, ID and NN Models in Johnson Domain***

## 14.10 Resource Classification and Tabulation

The resource estimate for the JT Deposit is reported in both indicated and inferred categories. There is no portion of the mineralized zones that is considered to comprise measured resources at this time.

According to the May 10th, 2015 CIM Definition standards:

- *An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.*

  *Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.*

- *An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.*

  *An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

Estimated blocks were initially classified based on spatial parameters related to drill spacing and configuration – namely calculated drill density and the distance to the closest composite. Blocks were initially assigned as inferred if drilled at a maximum spacing of 100 m or within 30 m of the closest sample. Within that volume, blocks having a maximum drill spacing of 40 m were initially classified as Indicated Mineral Resource. Measures were then taken to assess the contiguous nature of classified blocks at a range of cut-off grades, such that the resource has reasonable prospects of eventual economic extraction by underground mining methods.

In order to establish a meaningful resource tabulation for potential underground extraction methods, a minimum volume needs to be considered; the 6x6x6 m block size is not a realistic selective mining unit. For resource reporting, blocks were grouped, by AuEq cut-off grade, into face connected volumes. Reporting here is based on a minimum of 10 contiguous blocks – a minimum volume of 2,160 $m^3$, a reasonable minimum stope size.

The contiguous, classified volume was further checked to manually include or exclude blocks that could not be practically handled in an underground mining scenario (pillars above and below cut-off). The resulting classified volumes are shown in **Figure 14.6** and totalled in **Table 14.8**.

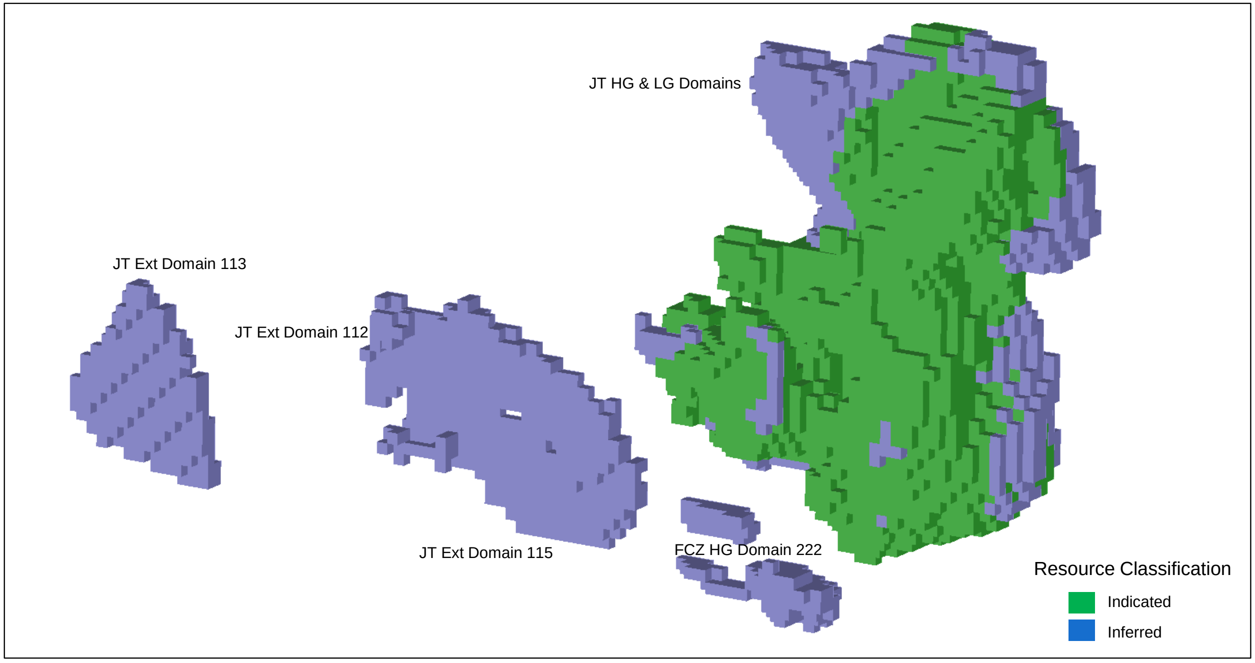



***Figure 14.6* Johnson Tract 2022 Resource Classification (view to ESE)**

***Table 14.8* JT Deposit Mineral Resource Estimate (3.0 g/t AuEq Cut-Off)**

| Category | Tonnes (000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) |
|---|---|---|---|---|---|---|---|
| Indicated | 3,489 | 5.33 | 6.0 | 0.56 | 0.67 | 5.21 | 9.39 |
| Inferred | 706 | 1.36 | 9.1 | 0.59 | 0.30 | 4.18 | 4.76 |
| Contained Metal | | | | | | | |
| **Category** | | **Au (K oz)** | **Ag (K oz)** | **Cu (M lb)** | **Pb (M lb)** | **Zn (M lb)** | **AuEq (K oz)** |
| Indicated | | 598 | 673 | 43.1 | 51.5 | 400.8 | 1,053 |
| Inferred | | 31 | 207 | 9.2 | 4.7 | 65.1 | 108 |

*Notes*

1. *Includes all drill holes completed at JT Deposit, with drilling completed between 1982 and most recently as October 2021*
2. *Assumed metal prices are US$1650/oz for gold (Au), US$20/oz for silver (Ag), US$3.50/lb copper (Cu), US$1/lb lead (Pb), and US$1.50/lb for zinc (Zn)*
3. *Gold Equivalent ("AuEq") is based on assumed metal prices and payable metal recoveries of 97% for Au, 85% for Ag, 85% Cu, 72% Pb and 92% Zn from metallurgical testwork completed in 2022.*
4. *AuEq equals = Au g/t + Ag g/t × 0.01 + Cu% × 1.27 + Pb% × 0.31 + Zn% × 0.59*
5. *An average bulk density value of 2.84 used as determined by conventional analytical methods for assay samples*
6. *Capping applied to assays to restrict the impact of high-grade outliers*
7. *Preliminary underground constrains were applied, including the elimination of isolated or scattered blocks above cut-off grade to define the "reasonable prospects of eventual economic extraction" for the Mineral Resource Estimate*
8. *Mineral resources as reported are undiluted*
9. *Mineral resource tonnages have been rounded to reflect the precision of the estimate*
10. *Readers are cautioned that mineral resources that are not mineral reserves do not have demonstrated economic viability*

The Indicated Mineral Resource is entirely within the JT Domain. Small volumes of the JT Extension and Footwall Copper Domains are included in the Inferred category. **Table 14.9** provides domain breakdown of the 2022 resource by domain.

***Table 14.9 JT Deposit Mineral Resource Estimate by Domain (3.0 g/t AuEq Cut-Off)***

| Domain | Indicated | | | | | | | Inferred | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tonnes (1,000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) | Tonnes (1,000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) |
| JT Main | 3,489 | 5.33 | 6.0 | 0.56 | 0.67 | 5.21 | 9.39 | 405 | 1.86 | 4.5 | 0.32 | 0.35 | 4.29 | 4.94 |
| JT Ext'n | | | | | | | | 167 | 1.15 | 6.1 | 0.31 | 0.38 | 5.50 | 4.96 |
| Copper | | | | | | | | 134 | 0.14 | 26.5 | 1.74 | 0.08 | 2.20 | 3.95 |
| **Total** | **3,489** | **5.33** | **6.0** | **0.56** | **0.67** | **5.21** | **9.39** | **706** | **1.36** | **9.1** | **0.59** | **0.30** | **4.18** | **4.76** |
| **Contained Metal** | | | | | | | | | | | | | | |
| Domain | | Indicated | | | | | | | Inferred | | | | | |
| | | Au (K oz) | Ag (K oz) | Cu (M lb) | Pb (M lb) | Zn (M lb) | AuEq (K oz) | | Au (K oz) | Ag (K oz) | Cu (M lb) | Pb (M lb) | Zn (M lb) | AuEq (K oz) |
| JT Main | | 598 | 673 | 43.1 | 51.5 | 400.8 | 1,053 | | 24 | 59 | 2.9 | 3.1 | 38.3 | 64 |
| JT Ext'n | | | | | | | | | 6 | 33 | 1.1 | 1.4 | 20.2 | 27 |
| Copper | | | | | | | | | 1 | 115 | 5.2 | 0.2 | 6.5 | 17 |
| **Total** | | **598** | **673** | **43.1** | **51.5** | **400.8** | **1,053** | | **31** | **207** | **9.2** | **4.7** | **65.1** | **108** |

The economic underground mining cut-off is calculated to be 2.5 g/t AuEq derived from assumed operating cost of $65/t for mining, $35/t processing and $20/t G&A and accounting for transport and smelter charges. HighGold elected to report this mineral resource at a higher cut-off grade of 3.0 g/t Au, given the high-grade nature of the deposit. To illustrate sensitivity to AuEq cut-off, a range of cut-off grades are included in **Table 14.10**.

***Table 14.10 JT Deposit Mineral Estimate at Range of AuEq Cut-Off Grades***

| COG AuEq (g/t) | Indicated | | | | | | | Inferred | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tonnes (1,000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) | Tonnes (1,000s) | Au (g/t) | Ag (g/t) | Cu (%) | Pb (%) | Zn (%) | AuEq (g/t) |
| 2.5 | 3,608 | 5.19 | 5.9 | 0.55 | 0.66 | 5.14 | 9.18 | 934 | 1.13 | 9.3 | 0.59 | 0.26 | 3.74 | 4.27 |
| 2.75 | 3,557 | 5.25 | 5.9 | 0.56 | 0.66 | 5.16 | 9.27 | 800 | 1.24 | 9.3 | 0.60 | 0.28 | 3.99 | 4.53 |
| 3.0 | 3,489 | 5.33 | 6.0 | 0.56 | 0.67 | 5.21 | 9.39 | 706 | 1.36 | 9.1 | 0.59 | 0.30 | 4.18 | 4.76 |
| **Contained Metal** | | | | | | | | | | | | | | |
| COG AuEq (g/t) | | Indicated | | | | | | | Inferred | | | | | |
| | | Au (K oz) | Ag (K oz) | Cu (M lb) | Pb (M lb) | Zn (M lb) | AuEq (K oz) | | Au (K oz) | Ag (K oz) | Cu (M lb) | Pb (M lb) | Zn (M lb) | AuEq (K oz) |
| 2.5 | | 602 | 684 | 43.7 | 52.5 | 408.8 | 1,065 | | 34 | 279 | 12.2 | 5.4 | 77.0 | 128 |
| 2.75 | | 600 | 675 | 43.9 | 51.8 | 404.6 | 1,060 | | 32 | 239 | 10.6 | 4.9 | 70.4 | 117 |
| 3.0 | | 598 | 673 | 43.1 | 51.5 | 400.8 | 1,053 | | 31 | 207 | 9.2 | 4.7 | 65.1 | 108 |

# 15 MINERAL RESERVE ESTIMATES

No National Instrument 43-101 compliant reserve estimate currently exists for the JT Deposit.

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# 16 MINING METHODS

Historic reports have made recommendation towards mining methods; however, for the purpose of this report, these recommendations are listed in Section 6.

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# 17 RECOVERY METHODS

No recovery methods were designed for the Project.

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# 18 PROJECT INFRASTRUCTURE

No infrastructure was designed for the Project.

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# 19 MARKET STUDIES AND CONTRACTS

No market studies or contracts were conducted for the Project.

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# 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL COMMUNITY IMPACT

Disclosure under Section 20 applies to advanced stage projects. The Johnson Tract Project is not an advanced stage exploration project.

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# 21 CAPITAL AND OPERATING COSTS

No capital and operating costs were estimated for the Project.

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# 22 ECONOMIC ANALYSIS

No economic analysis was conducted for the Project.

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# 23 ADJACENT PROPERTIES

There are no adjacent properties whose boundaries are reasonably proximate to the Project and have geological characteristics similar to those of the Project.

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# 24 OTHER RELEVANT DATA AND INFORMATION

There is no additional information or explanation necessary to make this Report understandable and not misleading.

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# 25 INTERPRETATION AND CONCLUSIONS

The Authors have reviewed the exploration data and geological model provided by the Company for the Johnson Tract Project, and this review suggests that the exploration data accumulated is generally reliable for the purposes of mineral resource estimation. Mineral resources for the JT Deposit have been estimated in conformity with generally accepted CIM "*Estimation of Mineral Resource and Mineral Reserves Best Practices*" Guidelines.

In the opinion of the Authors, the block model resource estimate and mineral resource classification reported herein are a reasonable representation of the gold-copper-zinc-silver-lead mineral resources found at the Project. After validation and classification, the Authors consider that the mineral resources are appropriately reported at a cut-off of **3.0 g/t AuEq** considering the likely underground mining scenario envisioned for the Project. Mineral resources, however, are not mineral reserves and hence do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource documented in this report will be converted into a mineral reserve.

The total mineral resources defined on the Project are classified as Indicated and Inferred. Additional infill drilling will continue to increase the confidence and classification of the mineral resources. All mineral resources are open, and there is very good potential for expansion of the deposit. The potential for discovery of additional deposits in other regions of the Project is considered to be excellent.

The Author's interpretations and conclusions by area are as follows:

## 25.1 Land and Permitting

- The Company's leased lands are all in good standing and the Company has sufficient land and valid government permits and licenses to carry out their contemplated work programs.

## 25.2 History

- The Johnson Tract Project is an exploration stage project with a history of significant exploration work, most notably by Anaconda (1981 - 1985) and Westmin Resources (1993 -1995) followed by over 20 years of little to no work until HighGold acquired the Project in 2019.
- Geological mapping and 62,289 meters of drilling completed from 1982 to 2021 have generated a well-developed geologic understanding of the project area, including definition of a high-grade gold-silver-zinc-copper-lead mineralized zone referred to as the JT Deposit. Numerous other mineral prospects occur along trend from the JT Deposit over a 12 to 13 km strike length.
- Past work culminated in economic and engineering studies by Westmin that evaluated developing an underground mine at Johnson Tract and barging ore to their Premier Mine near Stewart, British Columbia for processing. These studies and the historical estimates upon which they are based were prepared prior to establishment of NI 43-101 guidelines and reporting standards.

## 25.3 Geology & Mineralization

- Mineralization at the JT Deposit forms a tabular silicified body that contains a stockwork of quartz-sulphide veinlets and brecciation, cutting through and surrounded by a widespread zone of anhydrite alteration.
- Mineralogy is relatively simple, consisting of sphalerite, galena, chalcopyrite, and pyrite at moderate to coarse grain sizes.

## 25.4 Deposit Type

- A range of potential deposit models have been proposed for Johnson, from a feeder-zone beneath a sea-floor Volcanogenic Massive Sulphide ("VMS") deposit, to Epithermal, to the possibility of mineralization being significantly younger than the host volcanic rocks and instead related to regional intrusive activity and/or structures.
- Available data currently supports mineralization being roughly coeval with the volcanic stratigraphy whereby the JT Deposit formed in the sub seafloor in a shallow submarine environment, whereas some other prospects, such as the Difficult Creek, likely forming in a subaerial environment and exhibit more classic epithermal vein characteristics.

## 25.5 Exploration

- The 2021 surface exploration program work consisting of geological mapping, geochemical sampling, and airborne and ground geophysical surveying successfully outlined multiple priority target areas for future drilling related to the prospective six-km long regional Milkbone Fault system while also advancing the geological knowledge base for the Project. Encouraging surface results have now been returned in both rock and soil sampling across the length and breadth of the Property.
- The Milkbone prospect and the 1.2 km long corridor between it and the bonanza-grade drill hole DC21-010 intercept at the Middle DC prospect to the northeast emerged as a priority target area for the Company with strong supporting surface geochemistry, including soils up to 8.3 g/t Au and rock samples up to 184 g/t Au.
- The Easy Creek prospect, located 6 km north of DC, along the trace of the Milkbone Fault displays a large (1.5 x 2 km) IP chargeability geophysical anomaly that is coincident with anomalous soil geochemistry, rock samples up to 29 g/t Au, large-scale hydrothermal alteration, and a circular magnetic anomaly (associated with an intrusive plug).
- The Kona Creek prospect, bearing a similar geophysical signature to Easy Creek, is located somewhat lower stratigraphically than DC and the JT Deposit and may represent a portion of the deeper roots of the large-scale Johnson Tract mineralized system.

## 25.6 Drilling

- The 2021 drill program was successful in demonstrating the impressive width and high-grade continuity of the JT Deposit. Infill and expansion drilling on the JT Deposit was successful in extending mineralization down-dip/down-plunge to the north-northeast. Holes JT21-124, 125 and 134 provided an opportunity to infill key portions of the JT Deposit and also collect necessary material for a metallurgical testwork program. Step-out drilling also expanded the portions of the JT Deposit, which remains open along strike and at depth. Hole JT21-123 on Section 525N intersected zinc-rich VMS-style mineralization and provided insight into new styles of mineralization.

- The Au-Cu-Zn-Ag-Pb mineralization associated with the JT Deposit has now been defined over a total strike length of 600 meters and remains open along strike to the northeast and southwest, and at depth. The true thickness of the JT Deposit typically ranges from 20 to 55 meters. The potential for the discovery of additional mineralization in the immediate area of the JT Deposit is considered very good and follow-up exploration drilling is warranted.
- The discovery of very high-grade Au/Ag mineralization at the Middle DC Prospect has been an important development for the Project, establishing a second center of high-grade mineralization at Johnson Tract and highlighting the potential for additional deposits on the greater property. Hole DC21-010, the first hole completed by the Company at the Middle DC Prospect, targeted a mineralized silicified breccia known as the "Rizzo Vein" and returned exceptional grades of **577.9 g/t Au**, **2,023 g/t Ag, 2.15% Zn, and 0.30% Cu over 6.40 meters.**
- Ongoing drill testing of Middle DC Prospect and other property-wide prospects such as the Milkbone, Kona Creek and Easy Creek prospects is recommended.

## 25.7 QA-QC

- The QA/QC programs developed by the Company for this Project for its exploration programs are mature and are overseen by appropriately qualified geologists, acquired using adequate quality control procedures that generally meet industry best practices for a drilling-stage exploration property. The QA/QC programs did not identify any grade biases, therefore assay results within the database are appropriate for use in a Mineral Resource estimate.
- The number of density measurements compiled to date are reflective of all rock types likely to be encountered by mining and are an accurate representation of the entire mineral resource area.

## 25.8 Metallurgy

- The polymetallic (Au-Zn-Cu-Pb-Ag) JT Deposit exhibits an excellent response using conventional metallurgical techniques. Locked cycle flotation tests yielded very high-quality copper, zinc, lead and gold concentrates produced at a coarse primary grind with very good metal recoveries, low impurities and negligible penalty elements.
- Highlights include:
  - Gold recovery of 97.2% combined total of payable gold to concentrates and leaching of the tails
  - Zinc recovery of 92.3% to a concentrate grading 52.6% zinc
  - Copper recovery of 84.5% to a concentrate grading 30.6% copper
  - Lead recovery of 72.4% to a concentrate grading 62.1% lead

- Gold pyrite concentrate grading 64.3 g/t gold
- Coarse primary grind size of 125 microns

## 25.9 Mineral Resource Estimates (MRE)

- The Updated MRE is constrained by 3D geologic wireframes created by Company staff that are controlled primarily by geology to include significant mineralized, silicified, and veined rock.
- The majority of the MRE is contained within the JT Deposit High Grade (HG) domain which is a steeply dipping, 25 to 70 meters thick, heavily veined and brecciated silicified zone extending 125 to 200 meters along strike and 250 meters vertically, with a moderate to steep plunge to the northeast, surrounded by the lower grade silicified or anhydrite-altered JT Deposit LG domain. A texturally and mineralogically distinct copper-rich zone underlies these two domains and is composed of the FWCZ HG and FWCZ LG domains. A fifth domain, JT EXT, captures silicified and mineralized zones extending to the northeast along strike and down-plunge in a sparsely drilled portion of the JT Deposit.
- The southeastern margin of the JT Deposit is constrained by the steeply southeast-dipping Dacite Fault zone. Where not constrained by drilling or faulting, domains were extended approximately 25 meters from a drill hole, except where geology supports extension between holes in the trend of mineralization.
- Indicated Resources include the core of the JT Deposit, where drill density and confidence in the geological model are the highest (**Figure 25.1**). Blocks were initially classified as Inferred Mineral Resource where drill spacing was to a maximum of 100 meters or where within 30 meters of the closest sample. Indicated Resource blocks meet the criteria of being drilled at a maximum hole spacing of 40 meters. All indicated blocks have three holes within a maximum distance of 50 meters; 88% on inferred blocks have three holes within a maximum distance of 75 meters.
- JT Deposit Mineral Resource Highlights:
  - Updated Indicated Resource – 3.49 million tonnes ("Mt") grading 9.39 g/t gold equivalent ("AuEq") for 1,053,000 oz AuEq (**Table 14.8**)
  - Updated Inferred Resource – 0.71 Mt grading 4.76 g/t AuEq for 108,000 oz AuEq
  - Growth – 40% increase in Indicated AuEq ounces and 54% increase in total tonnes (+60% Ind and -19% Inf) over the 2020 MRE
  - High Confidence – 91% of the total AuEq ounces in the Indicated Resource Category
  - Peer-Leading Thickness – Indicated resource averages 40-meter horizontal width, roughly 10 times the mineable thickness of most development stage high-grade (+5 g/t) underground gold deposits in North America
  - Ideal Geometry for Low-Cost Methods of Underground Mining – thick, subvertical deposit with potential for lateral development from the valley floor to access the deepest and highest-grade portions of the deposit first and for gravity-assisted, bottom-up mining
  - Expansion Potential – open to expansion along strike/down-dip/down-plunge with numerous high-priority property-wide targets including the DC and Milkbone prospects
- The potential to expand the JT Deposit through additional drilling along strike and at depth is considered very good.

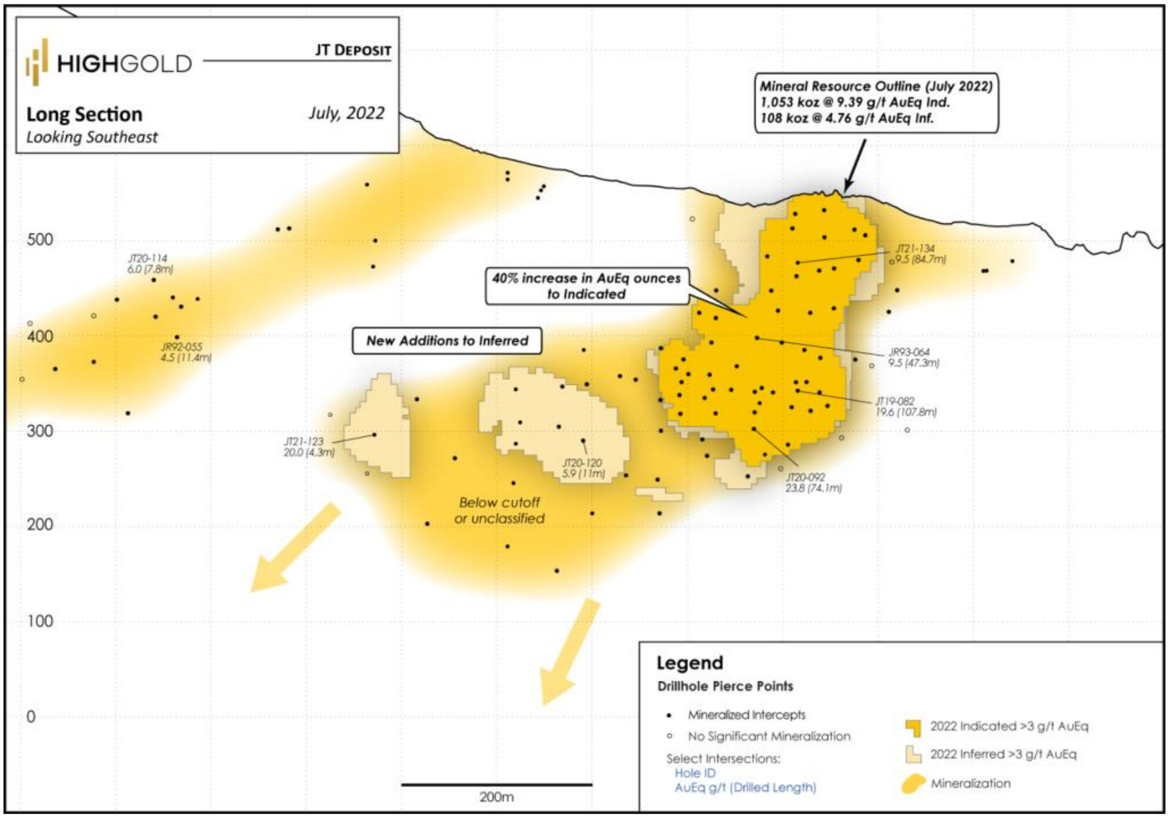


*Figure 25.1 JT Project – JT Deposit Longitudinal Section Showing Indicated & Inferred Blocks*

## 25.10 Risks and Opportunities

- A summary of key project risks and opportunities can be found in Error! Reference source not found..

*Table 25.1 JT Project – Risks and Opportunities*

| Project Element | Economic Risk Level | Comment | Opportunity |
|---|---|---|---|
| Database<br>- Exploration data | Low | Sufficient amount of drilling data at low to moderate density to support mineral resource estimation. Estimated boundaries for mineralized solids were trimmed to exclude areas of little to no drilling, or where confidence in drilling was low. | Recommendations to expand drilling in all areas to increase drilling density to support mineral resource re-classification and upgrade. |
| Assaying | Low | Company's drilling programs have had modern QA/QC and support historical drill results. | Recommendations for 3rd party check assays to confirm results. |
| Surveying | Low | All drill hole collars have been surveyed by differential GPS with submeter accuracy. All holes have been down-hole surveyed. | Sufficient ground control exists to eliminate the potential for any significant errors. |
| Geology | Low-moderate | Recent core re-logging and structural mapping have confirmed that rock units are sufficiently understood for future exploration. | Recommendations for additional geological mapping to gain a better understanding of the distribution of key lithologies and structures. |
| Geological modeling<br>- Structural Domaining | Low-moderate | Location of structures is supported by field observations and oriented drill core data. | Identification of additional structures may alter/improve the mineralization model. |
| Geological modeling<br>- Stratigraphic Domaining | Moderate | Correlation of stratigraphic units within drill core to surface exposures has progressed since 2019 with more detailed core logging and mapping but interpretation is still difficult given abundant fault offsets, the lack of outcrop exposure, alluvial cover and challenging topography in some areas. | Recommendation to continue detailed and regional mapping at every opportunity. |
| Resource estimation | Low-moderate | The relatively low number of drill holes in the Inferred category within the deeper parts of the JT Deposit coupled with sub-optimal drilling orientations presents some challenges for geological interpretation. | Recommendations to expand drilling in all areas to increase geological confidence. Ultimately drill the deposit from underground headings for better angles. |
| Density (Specific Gravity) | Low-moderate | Good quality, quantity and uniformity of SG data collected in 2019 but no SG data collected in 2020/2021. | Risk that the SG data is not adequate and does not cover the resource volume. Additional SG work is recommended, especially in any new resource areas. |
| Land | Low | Company has sufficient mineral surface rights to carrying out near-term exploration work. | Identification of similar geological settings within regional Talkeetna Formation. |
| Permitting | Low | All Federal and State permits are in hand to achieve short term exploration goals. | Additional permits required to carry out future underground exploration. |

# 26 RECOMMENDATIONS

Based on the encouraging 2021 exploration and resource results, the Authors believe that additional drilling is warranted to further infill and expand the main JT Deposit along strike and down-dip/down-plunge. There is also significant potential to discover additional mineralized zones within the greater Johnson Tract Project, especially along the Milkbone-DC corridor and at the Kona, EC, SV, and DG prospects.

The recommended work plan should be phased, with an initial Phase 1 budget totalling **$9.75M USD** as described in **Table 26.1.** The recommended work plan includes the following:

- Completion of a minimum 13,000-meter diamond drill program testing both JT Deposit area targets and regional prospects
- JT Deposit area targets recommended for drilling include:
    - NE and SW infill and expansion drilling on the JT Deposit
    - Exploration drilling within the JT Footwall Copper Zone
    - Exploration drilling down-dip/down-plunge and along trend of the JT Deposit
- Regional Prospects recommended for drilling include:
    - Difficult Creek
    - Milkbone
    - Kona
    - Easy Creek
- Conduct ongoing geological mapping, geochemical sampling and prospecting programs to advance the other prospects to the drill stage
- Additional metallurgical test work is recommended to assess JT Deposit variability including the evaluation of other mineralization styles such as the JT Footwall Copper Zone. Several opportunities for further optimization and flowsheet refinement may exist and should be evaluated in future studies
- Initiate preliminary baseline engineering and environmental studies for the greater project area
- Continue stakeholder engagement and community relations

The scope and budget of a potential Phase 2 work plan would be conditional on the results of the Phase 1 work plan. For the purpose of conceptual level planning, it is assumed the Phase 2 work plan would consist of a nominal **$15M USD** budget that includes an expanded exploration drill program and engineering and economic studies.

*Table 26.1 Recommended Phase 1 Budget (USD) for the Johnson Tract Project*

| Code | Main Category | Total Budget |
|---|---|---|
| 15000 | Acquisition Costs (CIRI Annual Lease Payment) | **75,000** |
| 19000 | Community Relations & Advocacy (FN) | **25,000** |
| 20000 | Office & Administration (including IT/software) | **90,000** |
| 21000 | Permitting | **10,000** |
| | **Subtotal G & A** | **200,000** |
| | ***Drilling Meters*** | *13,000* |
| 22000 | Drilling (Two rigs x Avg. 50/m/rig/day @ $250/m) | **3,250,000** |
| 22400 | Drilling - Assays (75% of meters sampled @ $40/sample) | **400,000** |
| 23000 | Geophysics - Airborne Drone Magnetics | **65,000** |
| 24000 | Geology & Project Management | **1,200,000** |
| 25000 | Technical Consulting & Engineering (Met/Res/Road) | **350,000** |
| 26000 | Environmental Wetlands/Wildlife/Water/Cultural) | **200,000** |
| 27000 | Camp Costs & Field Support | **1,000,000** |
| 28000 | Field Transportation (Heli, Fixed Wing, Barge, Fuel) | **2,200,000** |
| 29000 | Travel Expenses (To and from JT) | **135,000** |
| | **Subtotal Exploration & Engineering** | **8,800,000** |
| 35000 | Other (Misc., Stock Based Comp) | **200,000** |
| | Capital Purchases | **100,000** |
| | **Subtotal** | **9,300,000** |
| | *Contingency 5%* | **465,000** |
| | **Grand Total** | **9,765,000** |

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# 28 QUALIFIED PERSON CERTIFICATES

## CERTIFICATE OF QUALIFIED PERSON

I, **Ray C. Brown**, CPG, certify that:

1. I am a consulting geologist with an office at 3893 S. McCarran Blvd. 185, Reno, NV 89502
2. This certificate applies to the ***"Updated Mineral Resource Estimate and NI 43-101 Technical Report for the Johnson Tract Project, Alaska"***; with an Effective Date of July 12th, 2022 and dated August 25th, 2022 (the "**Technical Report**").
3. I am a member of American Institute of Professional Geologists (CPG-11886) and Geological Society of Nevada. I am also a member of the Society of Economic Geologists.
4. I graduated from the University of Alaska Fairbanks with a BS, Geological Engineering. I have practiced my profession continuously since 1997, which includes nearly 20 years of experience working on gold and base metal projects in Alaska. This work ranges from early-stage greenfield exploration projects to resource definition drilling as well as work at several active Alaskan mining projects.
5. As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101").
6. I have visited the property from July 9th to 12th, 2020, August 11th to 14th, 2020, June 28th to July 2nd, 2021, June 29th to July 1st, 2022, and July 29th to August 1st, 2022.
7. I have supervised the preparation of and edited this report and I am responsible for all sections of this report, except Section 13 and Section 14.
8. I am independent of HighGold Mining Inc. as described in section 1.5 of NI 43-101.
9. I hold no direct interest in the Johnson Tract Project as a result of any prior involvement with the Johnson Tract Project.
10. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101.
11. As of the effective date of this certificate, to the best of my knowledge, information and belief, the portion of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portion of the Technical Report for which I am responsible not misleading.

**Respectfully submitted this 25th day of August 2022 in Fairbanks, USA**

*"signed and sealed"*

________________________________

Chris Brown, CPG. (CPG-11886)

## CERTIFICATE OF QUALIFIED PERSON

I, **James N. Gray**, P.Geo., do hereby certify that:

1. I am a Consulting Geologist with the Advantage Geoservices Limited. with an office 1051 Bullmoose Trail, Osoyoos, BC, V0H 1V6;
2. This certificate applies to the ***"Updated Mineral Resource Estimate and NI 43-101 Technical Report for the Johnson Tract Project, Alaska";*** with an Effective Date of July 12th, 2022 and dated August 25th, 2022 (the "**Technical Report**").
3. I am a graduate of the University of Waterloo in 1985 where I obtained a B.Sc. in Geology. I have practiced my profession continuously since 1985. My experience includes resource estimation work at operating mines as well as base and precious metal projects in North and South America, Europe, Asia and Africa;
4. I am a Professional Geologist registered with the Engineers and Geoscientists British Columbia (#27022);
5. I visited the property from September 11th - 13th, 2019;
6. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101;
7. As a qualified person, I am independent of the issuer as defined in Section 1.5 of NI 43-101;
8. I am the co-author of the Technical Report, responsible for **Section 1.12 and Section 14**, as well as the relevant parts of Section 12 – Data Validation and Section 25 - Interpretation and Conclusions, and accept professional responsibility for those sections of this technical report;
9. I was previously involved in the Project during preparation of the NI 43-101 Technical Reports dated June 15th, 2020 and August 9th, 2021;
10. I have read NI 43-101 and Form 43-101F1 and confirm that this Technical Report has been prepared in compliance therewith; and
11. As of the effective date of this certificate, to the best of my knowledge, information and belief, the portion of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portion of the Technical Report for which I am responsible not misleading.

Dated this 25th day of August 2022 in Osoyoos, British Columbia, Canada

*"signed and sealed"*

________________________________

James N. Gray, P.Geo. (EGBC 27022)

## CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled ***"Updated Mineral Resource Estimate and NI 43-101 Technical Report for the Johnson Tract Project, Alaska";*** dated August 25th, 2022, with an effective date of July 12th, 2022 (the "**Technical Report**").

I, **Lyn Jones**, P.Eng., do hereby certify that:

- I am the Manager, Process Engineering with Blue Coast Research with a business address at 2-1020 Herring Gull Way, Parksville, British Columbia. .
- I graduated from the University of British Columbia with a Bachelor's of Applied Science in Bio-Resource Engineering in 1996, and a Master's of Applied Science in Metals and Materials Engineering in 1998.
- I am registered as a Professional Engineer in the province of Ontario (PEO licence #100067095).
- I have practiced my profession continuously since graduation. My relevant experience includes 24 years working on base and precious metals projects in the mining sector with experience including metallurgical testwork, flowsheet development, process engineering, and plant commissioning. I have read the definition of "qualified person" set out in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101") and certify that by virtue of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- I am independent of the issuer, HighGold Mining Inc., as defined in Section 1.5 of NI 43-101.
- I am responsible for **Section 1.11 and Section 13** of the Technical Report, as well as the relevant parts of Section 12 – Data Validation and Section 25 - Interpretation and Conclusions and accept professional responsibility for those sections of this Technical Report.
- I have had no previous involvement with the project.
- I have not visited the Johnson Tract Project site.
- As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.
- I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Dated this 25th day of August 2022, in Peterborough, Ontario.

"signed electronically"

Lyn Jones, P.Eng.

# 29 APPENDIX A – Drill Hole Collar Locations

## 29.1 Johnson Tract

*Summary of all drillholes completed at Johnson Tract by Anaconda (1982-1984)*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Length (m) |
|---|---|---|---|---|---|---|---|
| 1 | JM-82-001 | 6664726 | 502764 | 535 | 285 | -50 | 199.0 |
| 2 | JM-82-002 | 6664696 | 502648 | 489 | 105 | -50 | 156.0 |
| 3 | JM-82-003 | 6664796 | 502711 | 501 | 145 | -55 | 273.0 |
| 4 | JM-82-004 | 6664705 | 502797 | 553 | 325 | -85 | 370.0 |
| 5 | JM-83-005 | 6664798 | 502712 | 500 | 105 | -55 | 367.0 |
| 6 | JM-83-006 | 6664835 | 502775 | 516 | 110 | -45 | 169.0 |
| 7 | JM-83-007 | 6664835 | 502775 | 516 | 130 | -65 | 304.0 |
| 8 | JM-83-008 | 6664869 | 502693 | 502 | 140 | -60 | 459.0 |
| 9 | JM-83-009 | 6664724 | 502714 | 512 | 140 | -50 | 94.0 |
| 10 | JM-83-010 | 6664616 | 502752 | 540 | 310 | -85 | 518.0 |
| 11 | JM-83-011 | 6664691 | 502867 | 594 | 50 | -89 | 678.0 |
| 12 | JM-83-012 | 6664832 | 502848 | 543 | 130 | -85 | 376.0 |
| 13 | JM-83-013A | 6664921 | 502913 | 554 | 78 | -90 | 341.0 |
| 14 | JM-83-014 | 6664855 | 502803 | 530 | 48 | -89 | 205.0 |
| 15 | JM-84-015 | 6664890 | 502992 | 613 | 330 | -89.5 | 544.0 |
| 16 | JM-84-016 | 6664856 | 502804 | 529 | 310 | -80 | 394.0 |
| 17 | JM-84-017 | 6665056 | 502832 | 588 | 135 | -80 | 370.0 |
| 18 | JM-84-018 | 6664844 | 502930 | 583 | 5 | -88 | 418.0 |
| 19 | JM-84-019 | 6664891 | 502995 | 613 | 135 | -80 | 477.0 |
| 20 | JM-84-020 | 6665064 | 503033 | 613 | 160 | -70 | 433.0 |
| 21 | JM-84-021 | 6664844 | 502930 | 583 | 325 | -81 | 407.0 |
| 22 | JM-84-022 | 6664892 | 502994 | 613 | 320 | -65 | 193.0 |
| 23 | JM-84-023 | 6665211 | 503064 | 658 | 243 | -89.5 | 462.0 |
| 24 | JM-84-024 | 6664615 | 502753 | 540 | 90 | -82 | 459.0 |
| 25 | JM-84-026 | 6664973 | 503191 | 667 | 350 | -80 | 415.0 |
| 26 | JM-84-027 | 6664696 | 502646 | 489 | 78 | -73 | 250.0 |
| **26** | | | | | | **Total** | **9,331.0** |

*Summary of all drillholes completed at Johnson Tract by HWP (1987-1992)*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Length (m) |
|---|---|---|---|---|---|---|---|
| 1 | JM-87-028A | 6664799 | 502713 | 501 | 104 | -43.5 | 255 |
| 2 | JM-87-029 | 6664756 | 502697 | 498 | 113 | -46 | 171 |
| 3 | JM-87-030 | 6664756 | 502696 | 498 | 145 | -57 | 152 |
| 4 | JM-87-031 | 6664721 | 502795 | 552 | 285 | -69 | 229 |
| 5 | JM-87-032 | 6664830 | 502756 | 509 | 90 | -49.5 | 319 |
| 6 | JM-87-033 | 6664763 | 502807 | 537 | 310 | -78.5 | 179 |
| 7 | JM-88-034 | 6664691 | 502866 | 594 | 296 | -78 | 399 |
| 8 | JM-88-035A | 6664784 | 502913 | 592 | 313 | -82.5 | 405 |
| 9 | JM-88-036 | 6664749 | 502908 | 597 | 283 | -88 | 408 |
| 10 | JM-88-037 | 6664690 | 502866 | 594 | 296 | -85.5 | 500 |
| 11 | JM-88-038 | 6664690 | 502866 | 594 | 291 | -82.5 | 384 |
| 12 | JM-90-039 | 6663900 | 502090 | 160 | 122 | -60 | 154 |
| 13 | JM-90-040 | 6664713 | 502881 | 598 | 295 | -76 | 439 |
| 14 | JM-90-041 | 6664713 | 502880 | 598 | 300 | -64 | 265 |
| 15 | JM-90-042 | 6664689 | 502867 | 594 | 279 | -77 | 341 |
| 16 | JM-90-043 | 6664937 | 503012 | 609 | 316 | -64.5 | 262 |
| 17 | JM-90-044 | 6664750 | 502906 | 597 | 293 | -59 | 337 |
| 18 | JM-90-045 | 6664689 | 502867 | 594 | 275 | -59.5 | 262 |
| 19 | JM-90-046 | 6663770 | 502250 | 160 | 310 | -60 | 256 |
| 20 | JM-90-047 | 6663450 | 502142 | 160 | 310 | -60 | 219 |
| 21 | JM-90-048 | 6663300 | 502133 | 162 | 310 | -60 | 289 |
| 22 | JM-91-049 | 6665127 | 503121 | 662 | 134 | -60 | 501 |
| 23 | JM-91-050 | 6663991 | 503298 | 811 | 89 | -70 | 511 |
| 24 | JM-91-051 | 6665210 | 503064 | 658 | 135 | -60 | 409 |
| 25 | JM-91-052 | 6665344 | 503078 | 707 | 135 | -60 | 167 |
| 26 | JM-91-052A | 6665344 | 503077 | 708 | 135 | -65 | 480 |
| 27 | JM-91-053 | 6665265 | 503009 | 660 | 135 | -60 | 502 |
| 28 | JM-91-054 | 6665090 | 503228 | 666 | 350 | -68 | 156 |
| 29 | JM-91-055 | 6665215 | 503381 | 729 | 280 | -60 | 485 |
| 30 | JM-91-056 | 6665490 | 503022 | 756 | 120 | -56 | 526 |
| 31 | JM-91-058 | 6665215 | 503381 | 729 | 299 | -58 | 492 |
| 32 | JM-91-059 | 6665114 | 503175 | 662 | 315 | -70 | 277 |
| 33 | JM-91-061 | 6665302 | 503357 | 763 | 280 | -65 | 373 |
| 34 | JM-92-063 | 6665244 | 503200 | 677 | 360 | -90 | 312 |
| **34** | | | | | | **Total** | **11,416** |

*Summary of all drillholes completed at Johnson Tract by Westmin (1993-1995)*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Length (m) |
|---|---|---|---|---|---|---|---|
| 1 | JM-93-064 | 6664713 | 502881 | 598 | 307 | -70 | 328 |
| 2 | JM-93-065 | 6664798 | 502712 | 500 | 131 | -52.8 | 270 |
| 3 | JM-93-066 | 6664750 | 502906 | 597 | 308 | -76.5 | 321 |
| 4 | JM-93-067 | 6664835 | 502775 | 516 | 158 | -61.3 | 298 |
| 5 | JM-93-068 | 6664825 | 502755 | 509 | 158 | -55 | 283 |
| 6 | JM-93-069 | 6664756 | 502697 | 498 | 120 | -54.3 | 270 |
| 7 | JM-93-070 | 6664705 | 502795 | 553 | 307 | -76 | 255 |
| 8 | JM-95-071 | 6664383 | 502598 | 545 | 310 | -70 | 321 |
| 9 | JM-95-072 | 6664268 | 502546 | 542 | 310 | -75 | 359 |
| 10 | JM-95-073 | 6664513 | 502675 | 530 | 300 | -75 | 225 |
| 11 | JM-95-074 | 6664140 | 502405 | 450 | 310 | -65 | 181 |
| 12 | JM-95-075 | 6665065 | 503034 | 608 | 270 | -75 | 327 |
| 13 | JM-95-076 | 6664650 | 502795 | 560 | 310 | -78 | 289 |
| 14 | JM-95-077 | 6664855 | 502804 | 529 | 96 | -60 | 300 |
| 15 | JM-95-078 | 6663100 | 502375 | 158 | 270 | -45 | 158 |
| 16 | JM-95-079 | 6665376 | 503398 | 818 | 305 | -75 | 606 |
| 17 | JM-95-080 | 6665056 | 502832 | 588 | 90 | -50 | 223 |
| 18 | JM-95-081 | 6663474 | 502301 | 215 | 283 | -60 | 217 |
| **18** | | | | | | **Total** | **5,231** |

*Summary of 2019 drillholes completed at Johnson Tract by HighGold*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Length (m) |
|---|---|---|---|---|---|---|---|
| **1** | **JT19-082** | **6664933** | **502589** | **512** | **130** | **-53** | **299.0** |
| 2 | JT19-083 | 6664933 | 502589 | 512 | 130 | -30 | 160.5 |
| 3 | JT19-084 | 6664933 | 502589 | 512 | 130 | -75 | 53.0 |
| **4** | **JT19-085** | **6664857** | **502672** | **563** | **284.5** | **-69.5** | **307.0** |
| 5 | JT19-086 | 6664857 | 502672 | 563 | 280 | -55 | 150.0 |
| 6 | JT19-087 | 6664857 | 502672 | 563 | 330 | -55 | 157.0 |
| 7 | JT19-088 | 6664857 | 502672 | 563 | 330 | -85 | 302.0 |
| 8 | JT19-089 | 6664848 | 502758 | 610 | 310 | -80 | 448.0 |
| 9 | JT19-090 | 6664848 | 502758 | 610 | 292 | -72 | 370.0 |
| **9** | | | | | | **Total** | **2,246.5** |

*Note: Bold denotes a twin hole*

*Summary of 2020 drillholes completed at Johnson Tract by HighGold*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Length (m) | Drilled Length (m) |
|---|---|---|---|---|---|---|---|---|
| 1 | JT19-090 EXT | 502758 | 6664854 | 613 | 306 | -79 | 598.3 | 228.3 |
| 2 | JT20-091 | 503316 | 6665424 | 801 | 299 | -68 | 704.1 | 704.1 |
| 3 | JT20-092 | 502759 | 6664854 | 613 | 309 | -81 | 439.0 | 439.0 |
| 4 | JT20-093 | 502785 | 6664890 | 613 | 307 | -71 | 501.0 | 501.0 |
| 5 | JT20-094 | 503316 | 6665424 | 801 | 295 | -72 | 851.4 | 851.4 |
| 6 | JT20-095 | 502785 | 6664890 | 613 | 314 | -81 | 450.5 | 450.5 |
| 7 | JT20-096 | 502785 | 6664890 | 613 | 307 | -66 | 483.0 | 483.0 |
| 8 | JT20-097 | 503316 | 6665424 | 801 | 295 | -78 | 756.0 | 756.0 |
| 9 | JT20-098 | 502785 | 6664890 | 614 | 307 | -62 | 489.0 | 489.0 |
| 10 | JT20-099 | 502826 | 6665209 | 598 | 270 | -49 | 376.0 | 376.0 |
| 11 | JT20-100 | 502785 | 6664890 | 613 | 318 | -65 | 453.0 | 453.0 |
| 12 | JT20-101 | 503305 | 6665330 | 758 | 295 | -59 | 609.0 | 609.0 |
| 13 | JT20-102 | 502827 | 6665209 | 598 | 268 | -62 | 489.9 | 489.9 |
| 14 | JT20-103 | 502785 | 6664890 | 613 | 325 | -70 | 453.0 | 453.0 |
| 15 | JT20-104 | 502827 | 6665210 | 598 | 310 | -55 | 349.8 | 349.8 |
| 16 | JT20-105 | 503306 | 6665330 | 758 | 295 | -65 | 363.0 | 363.0 |
| 17 | JT20-105B | 503306 | 6665330 | 758 | 295 | -67 | 524.7 | 524.7 |
| 18 | JT20-106 | 502785 | 6664890 | 613 | 344 | -81 | 363.0 | 363.0 |
| 19 | JT20-107 | 502827 | 6665210 | 598 | 310 | -70 | 273.4 | 273.4 |
| 20 | JT20-108 | 502669 | 6665062 | 543 | 130 | -53 | 429.0 | 429.0 |
| 21 | JT20-109 | 502829 | 6665209 | 599 | 130 | -61 | 438.3 | 438.3 |
| 22 | JT20-110 | 502669 | 6665062 | 543 | 130 | -53 | 495.0 | 495.0 |
| 23 | JT20-111 | 502828 | 6665209 | 599 | 130 | -65 | 344.1 | 344.1 |
| 24 | JT20-111B | 502828 | 6665209 | 599 | 130 | -67 | 526.7 | 526.7 |
| 25 | JT20-112 | 503229 | 6665306 | 717 | 295 | -63 | 432.0 | 432.0 |
| 26 | JT20-113 | 502668 | 6665062 | 543 | 130 | -63 | 138.0 | 138.0 |
| 27 | JT20-113B | 502668 | 6665062 | 543 | 130 | -64 | 519.0 | 519.0 |
| 28 | JT20-114 | 503230 | 6665306 | 717 | 297 | -69 | 468.0 | 468.0 |
| 29 | JT20-115 | 502669 | 6665062 | 543 | 130 | -46 | 366.0 | 366.0 |
| 30 | JT20-116 | 503230 | 6665306 | 717 | 295 | -85 | 457.5 | 457.5 |
| 31 | JT20-117 | 502829 | 6665209 | 599 | 130 | -49 | 428.7 | 428.7 |
| 32 | JT20-118 | 502667 | 6664778 | 576 | 336 | -80 | 216.0 | 216.0 |
| 33 | JT20-118B | 502667 | 6664778 | 576 | 335 | -80 | 357.0 | 357.0 |
| 34 | JT20-119 | 503233 | 6665304 | 717 | 115 | -87 | 651.0 | 651.0 |
| 35 | JT20-120 | 502717 | 6665103 | 560 | 130 | -61 | 592.8 | 592.8 |
| 36 | JT20-121 | 502665 | 6664779 | 576 | 335 | -45 | 207.0 | 207.0 |
| 37 | JT20-122 | 502664 | 6664778 | 576 | 295 | -48 | 198.4 | 198.4 |
| **37** | | | | | | | **16,791.6** | **16,421.6** |

*Summary of 2021 drillholes completed at Johnson Tract by HighGold*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Drilled Length (m) |
|---|---|---|---|---|---|---|---|
| **JT Deposit** | | | | | | | |
| 1 | JT21-123 | 502833 | 6665305 | 638 | 130 | -62 | 800.3 |
| 2 | JT21-124 | 502572 | 6665002 | 516 | 130 | -67 | 430.7 |
| 3 | JT21-125 | 502573 | 6665002 | 517 | 130 | -46 | 398.2 |
| 4 | JT21-126 | 502834 | 6665305 | 638 | 130 | -48 | 659.0 |
| 5 | JT21-127 | 502833 | 6665305 | 638 | 130 | -55 | 710.0 |
| 6 | JT21-128 | 502717 | 6665103 | 559 | 130 | -50 | 413.0 |
| 7 | JT21-128A | 502717 | 6665103 | 559 | 130 | -50 | 37.2 |
| 8 | JT21-129 | 502717 | 6665103 | 559 | 130 | -63.5 | 563.1 |
| 9 | JT21-130 | 502778 | 6665158 | 579 | 130 | -61 | 455.7 |
| 10 | JT21-131 | 502787 | 6664888 | 614 | 130 | -78 | 402.0 |
| 11 | JT21-131B | 502787 | 6664888 | 614 | 130 | -78 | 487.8 |
| 12 | JT21-132 | 502777 | 6665158 | 579 | 130 | -55 | 304.9 |
| 13 | JT21-133 | 502778 | 6665158 | 579 | 130 | -64.5 | 541.3 |
| 14 | JT21-134 | 502672 | 6664860 | 568 | 320 | -74 | 424.0 |
| 15 | JT21-135 | 502668 | 6664776 | 575 | 130 | -75 | 630.0 |
| 16 | JT21-136 | 502551 | 6664712 | 533 | 305 | -45 | 148.0 |
| 17 | JT21-137 | 502834 | 6665306 | 638 | 130 | -66 | 471.8 |
| 18 | JT21-138 | 502551 | 6664712 | 533 | 305 | -45 | 149.0 |
| 19 | JT21-139 | 502549 | 6664710 | 533 | 305 | -45 | 444.0 |
| 20 | JT21-140 | 502803 | 6665115 | 579 | 145 | -45 | 63.8 |
| 21 | JT21-141 | 502803 | 6665115 | 578 | 145 | -60 | 81.5 |
| 22 | JT21-142 | 502834 | 6665307 | 638 | 117 | -62 | 462.4 |
| 23 | JT21-143 | 502802 | 6665115 | 578 | 145 | -75 | 77.4 |
| 24 | JT21-144 | 503157 | 6665282 | 691 | 310 | -80 | 386.0 |
| 25 | JT21-145 | 502900 | 6665267 | 629 | 130 | -47 | 265.8 |
| 26 | JT21-146 | 502832 | 6665131 | 585 | 130 | -47 | 60.0 |
| 27 | JT21-147 | 502832 | 6665131 | 585 | 130 | -10 | 53.5 |
| **27** | | | | | | | **9,920.4** |

## 29.2 Difficult Creek

*Summary of all drillholes completed at Difficult Creek by Anaconda (1983-1984)*

| #DDH | Hole ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Length (m) |
|---|---|---|---|---|---|---|---|
| 1 | DC-83-001 | 6667832 | 506200 | 608 | 207 | -50 | 63 |
| 2 | DC-83-002 | 6667832 | 506200 | 608 | 207 | -90 | 76 |
| 3 | DC-84-003 | 6667882 | 506229 | 606 | 207 | -65 | 245 |
| 4 | DC-84-004 | 6667857 | 506261 | 612 | 207 | -50 | 223 |
| 5 | DC-84-005 | 6667716 | 506181 | 615 | 164 | -65 | 198 |
| 6 | DC-84-006 | 6668161 | 506598 | 464 | 333 | -65 | 78 |
| 7 | DC-84-007 | 6667856 | 506224 | 609 | 290 | -70 | 108 |
| 8 | DC-84-008 | 6668027 | 507109 | 534 | 270 | -80 | 150 |
| 9 | DC-84-009 | 6667903 | 507417 | 557 | 339 | -69.5 | 203 |
| **9** | | | | | | **Total** | **1,344** |

*Summary of 2021 drillholes completed at Difficult Creek by HighGold*

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Drilled Length (m) |
|---|---|---|---|---|---|---|---|
| **DC Prospect** | | | | | | | |
| 1 | DC21-010 | 506112 | 6667998 | 626 | 220 | -45 | 260.7 |
| 2 | DC21-011 | 506112 | 6667999 | 626 | 220 | -57 | 166.1 |
| 3 | DC21-012 | 506113 | 6668000 | 626 | 220 | -75 | 160.6 |
| 4 | DC21-013 | 506111 | 6667999 | 626 | 260 | -50 | 192.9 |
| 5 | DC21-014 | 506169 | 6668077 | 620 | 220 | -74 | 270.3 |
| 6 | DC21-015 | 506168 | 6668078 | 620 | 280 | -45 | 342.6 |
| 7 | DC21-016 | 506282 | 6666831 | 992 | 340 | -45 | 587.4 |
| 8 | DC21-017 | 506169 | 6668078 | 620 | 280 | -65 | 322.2 |
| 9 | DC21-018 | 506208 | 6667611 | 683 | 310 | -55 | 196.3 |
| 10 | DC21-019 | 506282 | 6666830 | 992 | 340 | -60 | 427.0 |
| 11 | DC21-020 | 506208 | 6667606 | 684 | 40 | -60 | 151.2 |
| 12 | DC21-021 | 506280 | 6666830 | 992 | 310 | -45 | 373.3 |
| 13 | DC21-022 | 506015 | 6667604 | 731 | 130 | -50 | 371.2 |
| 14 | DC21-023 | 506283 | 6666831 | 992 | 15 | -45 | 314.6 |
| 15 | DC21-024 | 506279 | 6666828 | 992 | 270 | -45 | 454.3 |
| 16 | DC21-025 | 506168 | 6667248 | 772 | 160 | -45 | 409.8 |
| 17 | DC21-026 | 505973 | 6667139 | 825 | 130 | -45 | 292.5 |
| **17** | | | | | | | **5,293.0** |

## 29.3 KONA PROSPECT

***Summary of 2021 drillholes completed at Kona Prospect by HighGold***

| #DDH | Hole_ID | Northing (m) | Easting (m) | Elevation (m) | Collar Azimuth | Collar Dip | Drilled Length (m) |
|---|---|---|---|---|---|---|---|
| 1 | KN21-001 | 503378 | 6667674 | 480 | 310 | -50 | 494.4 |
| 2 | KN21-002 | 503378 | 6667673 | 480 | 310 | -83 | 500.6 |
| 2 | | | | | | | **995.0** |

# 29 APPENDIX B – Significant Drill Hole Intersections

*[Page Left Intentionally Blank]*

## 29.4 Historic DDH Intersections

| Drill Hole | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| **JR82-001** | 4.6 | 30.2 | 25.6 | 1.72 | 3.81 | 0.28 | 0.17 | 5.2 |
| **JR82-003** | 194 | 244 | 50 | 2.14 | 7.01 | 0.56 | 1.18 | 10.23 |
| **JR82-004** | 155.4 | 264 | 108.6 | 10.39 | 8.07 | 0.71 | 2.01 | 7.64 |
| Incl | 196 | 244 | 48 | 21.1 | 12.33 | 0.88 | 2.86 | 9.93 |
| Incl | 200 | 212 | 12 | 67.43 | 18.6 | 0.87 | 2.64 | 9.3 |
| **JR83-007** | 182 | 218 | 36 | 13.41 | 3.57 | 0.41 | 0.2 | 2.01 |
| **JR83-009** | 2.9 | 24.8 | 21.9 | 0.29 | 12.18 | 0.19 | 0.25 | 9.47 |
| **JR83-012** | 178.5 | 205.7 | 27.2 | 15.16 | 7.05 | 1.23 | 0.2 | 11.51 |
| Incl | 178.5 | 188.4 | 9.9 | 40.65 | 11.52 | 1.8 | 0.01 | 24.76 |
| **JR84-015** | 307.5 | 327.5 | 20 | 0.39 | 0.79 | 0.16 | 0.42 | 6.39 |
| **JR84-028** | 141.3 | 248.7 | 107.4 | 1.92 | 4.48 | 0.37 | 0.27 | 7.15 |
| Incl | 210.8 | 246.6 | 35.8 | 3.38 | 7.63 | 0.47 | 0.34 | 13.46 |
| Incl | 233.7 | 239.7 | 6 | 17.69 | 7.87 | 0.43 | 0.12 | 19.95 |
| **JR87-029** | 65.7 | 164.5 | 98.8 | 2.02 | 4.09 | 0.39 | 0.71 | 7.12 |
| Incl | 100.4 | 159 | 58.6 | 3.25 | 5.06 | 0.56 | 0.92 | 8.13 |
| **JR87-031** | 67.4 | 128.7 | 61.3 | 4.94 | 6.54 | 0.48 | 0.45 | 7.48 |
| Incl | 75.2 | 83.8 | 8.6 | 22.34 | 12.97 | 1.34 | 0.01 | 7.68 |
| **JR87-032** | 173.9 | 207.8 | 33.9 | 2.36 | 9.22 | 1.79 | 0.73 | 14.69 |
| Incl | 177.4 | 185.1 | 7.7 | 7.79 | 7.62 | 3.05 | 0.03 | 27.22 |
| **JR87-033** | 43.1 | 87.7 | 44.6 | 1.34 | 3.24 | 0.27 | 0 | 4.77 |
| **JR88-034** | 246.7 | 318.1 | 71.4 | 20.94 | 9.81 | 1.23 | 1.51 | 5.21 |
| Incl | 257.6 | 266.5 | 8.9 | 88.48 | 22.12 | 5.61 | 0.12 | 9.21 |
| Incl | 277.5 | 281 | 3.5 | 34.47 | 14.42 | 2.89 | 2.46 | 15.09 |
| Incl | 307.8 | 312.3 | 4.5 | 49.51 | 7.99 | 0.85 | 2.77 | 6.58 |
| **JR90-040** | 243.7 | 284.4 | 40.7 | 1.81 | 5.39 | 0.68 | 0.65 | 7.78 |
| **JR90-042** | 259 | 318.4 | 59.4 | 4.55 | 2.89 | 0.26 | 0.39 | 2.39 |
| Incl | 301.2 | 304.5 | 3.3 | 29.07 | 8.05 | 0.26 | 0.56 | 3.06 |
| **JR93-064** | 197.7 | 245 | 47.3 | 6.11 | 3.3 | 0.53 | 0.62 | 3.8 |
| Incl | 222 | 235 | 13 | 19.42 | 7.38 | 0.96 | 2.15 | 7.05 |
| Incl | 224 | 226 | 2 | 52.12 | 20.57 | 1.5 | 7.81 | 12.19 |
| And | 266 | 296.3 | 30.3 | 9.14 | 9.52 | 1.37 | 2.05 | 4.89 |
| Incl | 279 | 289 | 10 | 26.57 | 17.93 | 2.05 | 5.94 | 11.03 |
| Incl | 279 | 281 | 2 | 129.82 | 26.58 | 4.1 | 0.08 | 3.38 |
| **JR93-065** | 150 | 249.7 | 99.7 | 10.07 | 6.68 | 0.9 | 1.27 | 6.34 |
| Incl | 154.2 | 168 | 13.8 | 26.99 | 10.84 | 1.53 | 1.31 | 3.55 |
| Incl | 155 | 160 | 5 | 52.8 | 10.29 | 0.87 | 0.73 | 3.67 |
| Incl | 180 | 183 | 3 | 32.82 | 10.17 | 0.75 | 2.62 | 10.3 |
| Incl | 189 | 193.4 | 4.4 | 32.46 | 14.73 | 1.44 | 4.01 | 9.91 |
| Incl | 239 | 246.7 | 7.7 | 28.59 | 9.93 | 0.97 | 0.28 | 5.13 |
| **JR93-066** | 268 | 278 | 10 | 11.17 | 3.53 | 0.36 | 0.47 | 2.09 |
| **JR93-067** | 139 | 276.7 | 137.7 | 11.28 | 3.95 | 0.47 | 0.54 | 2.38 |
| Incl | 219 | 276.7 | 57.7 | 21.65 | 5.05 | 0.46 | 0.66 | 2.44 |
| Incl | 250 | 257 | 7 | 45.58 | 9.99 | 0.39 | 1.93 | 1.44 |
| Incl | 270 | 272 | 2 | 172.51 | 28.86 | 2.31 | 0.16 | 1.54 |
| **JR93-068** | 140.8 | 253 | 112.2 | 10.34 | 6.35 | 0.66 | 1.48 | 5.01 |
| **Incl** | 187 | 208 | 21 | 19.59 | 11.05 | 1.26 | 2.59 | 8.48 |
| Incl | 187 | 195 | 8 | 39.22 | 12.73 | 1.1 | 2.45 | 9.61 |
| Incl | 187 | 189 | 2 | 165.75 | 58.81 | 5 | 10.94 | 43.37 |
| Incl | 242 | 251 | 9 | 26.65 | 16.65 | 1.38 | 5.74 | 8.88 |
| **JR93-069** | 173 | 232 | 59 | 14.2 | 9.13 | 0.98 | 2.24 | 4.37 |
| Incl | 179 | 206 | 27 | 22.49 | 15.11 | 1.36 | 4.35 | 6.75 |
| Incl | 179 | 188 | 9 | 51.6 | 22.21 | 3.04 | 0.88 | 6.94 |
| Incl | 185 | 188 | 3 | 109.85 | 36 | 3.75 | 1.74 | 8.09 |
| Incl | 222 | 224 | 2 | 48.6 | 8.4 | 0.6 | 0.01 | 3.19 |
| **JR93-070** | 103 | 133 | 30 | 4.8 | 4.86 | 0.46 | 0.55 | 6.14 |

## 29.5 HIGHGOLD DDH INTERSECTIONS

| Drill Hole | From (m) | To (m) | Length (m) | Au (g/t) | Ag (g/t) | Cu (%) | Zn (%) | Pb (%) |
|---|---|---|---|---|---|---|---|---|
| **JT19-082** | 137 | 261 | 124 | 10.87 | 8.23 | 0.79 | 1.43 | 6.35 |
| Incl. | 153.2 | 261 | 107.8 | 12.42 | 8.92 | 0.88 | 1.64 | 7.11 |
| Incl. | 156.2 | 184.6 | 28.4 | 35.15 | 17 | 1.4 | 3.13 | 7.45 |
| Incl. | 182.6 | 184.6 | 2 | 233.5 | 30.4 | 1.56 | 3.34 | 4.15 |
| Incl. | 198 | 217.2 | 19.2 | 6.25 | 11.13 | 1.59 | 2.12 | 13.07 |
| **JT19-083** | 1.5 | 10.5 | 9 | 5 | 9.38 | 0.28 | 3.22 | 11.28 |
| And | 75.9 | 106.6 | 30.7 | 2.75 | 8.85 | 0.29 | 3 | 5.47 |
| **JT19-085** | 67.8 | 127 | 59.2 | 8.16 | 5.94 | 0.39 | 0.72 | 8.8 |
| Incl. | 68.6 | 79.5 | 10.9 | 33.06 | 9.74 | 0.57 | 0.02 | 6.37 |
| **JT19-086** | 48.1 | 95.7 | 47.6 | 2.36 | 4.84 | 0.4 | 0.13 | 9.68 |
| Incl. | 63.1 | 84.1 | 21 | 3.79 | 5.3 | 0.42 | 0.21 | 14.18 |
| **JT19-087** | 34 | 78.8 | 44.8 | 0.59 | 17.85 | 0.11 | 0.18 | 2.08 |
| **JT19-088** | 114.7 | 266 | 151.3 | 4.1 | 4.2 | 0.38 | 0.43 | 3.06 |
| Incl. | 128 | 225.5 | 97.5 | 5.93 | 4.24 | 0.46 | 0.62 | 3.86 |
| Incl. | 135.5 | 158 | 22.5 | 12.59 | 4.91 | 0.36 | 1.07 | 3.65 |
| **JT19-089** | 226.6 | 301 | 74.4 | 1.08 | 5.03 | 0.59 | 0.64 | 4.51 |
| Incl. | 226.6 | 257.6 | 31 | 1.23 | 6.55 | 0.58 | 1.29 | 6.84 |
| And | 346 | 389.1 | 43.1 | 0.12 | 17.21 | 1.3 | 0.11 | 2.92 |
| Incl. | 355.2 | 389.1 | 33.9 | 0.14 | 21.6 | 1.59 | 0.14 | 3.44 |
| Incl. | 364 | 377.2 | 13.2 | 0.11 | 44.79 | 3.45 | 0.08 | 5.83 |
| Incl. | 366 | 373 | 7 | 0.08 | 66.27 | 4.67 | 0.08 | 9.69 |
| **JT19-090** | 253.9 | 329 | 75.1 | 10.01 | 6.03 | 0.57 | 1.11 | 9.36 |
| Incl. | 257.1 | 289.1 | 32 | 4.05 | 7.75 | 0.66 | 1.62 | 17.86 |
| And | 300 | 328 | 28 | 21.68 | 6.03 | 0.58 | 0.96 | 3.18 |
| Incl. | 308 | 328 | 20 | 29.02 | 7.3 | 0.67 | 1.22 | 3.53 |
| **JT20-092** | 269.4 | 343.5 | 74.1 | 17.89 | 7.11 | 0.48 | 1.31 | 7.28 |
| Incl. | 317.5 | 331.5 | 14 | 53.22 | 8.15 | 0.19 | 0.59 | 2.34 |
| **JT20-093** | 256.9 | 300.4 | 43.5 | 1.35 | 12.1 | 1.98 | 0.8 | 8.45 |
| Incl. | 256.9 | 275 | 18.1 | 1.22 | 11.67 | 2.47 | 1.14 | 14.91 |
| **JT20-095** | 245 | 286 | 41 | 1.82 | 5.92 | 1.04 | 0.32 | 3.82 |
| **JT20-096** | 204.9 | 225 | 20.1 | 11.51 | 3.64 | 0.49 | 0.01 | 3.1 |
| Incl. | 210 | 225 | 15 | 15.37 | 4.3 | 0.58 | 0.02 | 2.12 |
| Incl. | 221 | 225 | 4 | 43.7 | 6.9 | 0.76 | 0.57 | <0.01 |
| And | 311.1 | 350.2 | 39.1 | 0.19 | 26.3 | 1.64 | 0.15 | 0.69 |
| **JT20-106** | 246.4 | 304.3 | 57.9 | 1.31 | 5.58 | 0.61 | 0.58 | 3.25 |
| Incl. | 249.4 | 272.2 | 22.8 | 3.17 | 3.98 | 0.44 | 1.37 | 5.97 |
| Incl. | 249.4 | 266.8 | 17.4 | 3.93 | 4.88 | 0.57 | 1.78 | 7.58 |
| Incl. | 259.4 | 266.8 | 7.4 | 8.63 | 7.46 | 0.66 | 3.34 | 10.15 |
| **JT20-110** | 334.9 | 393.5 | 58.6 | 0.22 | 20.55 | 1.04 | 0.09 | 0.39 |
| **JT20-115** | 181 | 237.1 | 56.1 | 0.42 | 1.49 | 0.06 | 0.32 | 1.97 |
| **JT21-125** | 226.5 | 293.3 | 66.8 | 16.39 | 3.77 | 0.45 | 0.31 | 2.11 |
| Incl. | 236.7 | 293.3 | 56.6 | 19.3 | 3.94 | 0.47 | 0.36 | 2.43 |
| Incl. | 236.7 | 245.6 | 8.9 | 0.75 | 3.2 | 0.32 | 0.2 | 5.79 |
| And Incl. | 251.4 | 293.3 | 41.9 | 25.9 | 4.64 | 0.56 | 0.45 | 2.04 |
| Incl. | 252.4 | 293.3 | 40.9 | 26.53 | 4.72 | 0.57 | 0.46 | 2.05 |
| Incl. | 260.4 | 293.3 | 32.9 | 32.75 | 5.12 | 0.58 | 0.47 | 1.82 |
| Incl. | 260.4 | 280.4 | 20 | 24 | 5.53 | 0.81 | 0.76 | 1.95 |
| Incl. | 270.4 | 279.4 | 9 | 44.85 | 6.63 | 0.88 | 0.59 | 2.23 |
| Incl. | 273.4 | 278.4 | 5 | 69.52 | 7.44 | 0.53 | 0.88 | 1.49 |
| And Incl. | 288.4 | 293.3 | 4.9 | 116.6 | 10.51 | 0.33 | 0.01 | 3.51 |
| **JT21-134** | 62.7 | 161 | 98.3 | 4.6 | 6.13 | 0.3 | 1.38 | 4.12 |
| Incl. | 66.3 | 151 | 84.7 | 5.29 | 6.67 | 0.34 | 1.6 | 4.56 |
| Incl. | 73 | 148 | 75 | 5.92 | 7.14 | 0.37 | 1.79 | 4.81 |
| and Incl. | 96 | 130 | 34 | 7.45 | 11.29 | 0.38 | 3.57 | 6.96 |