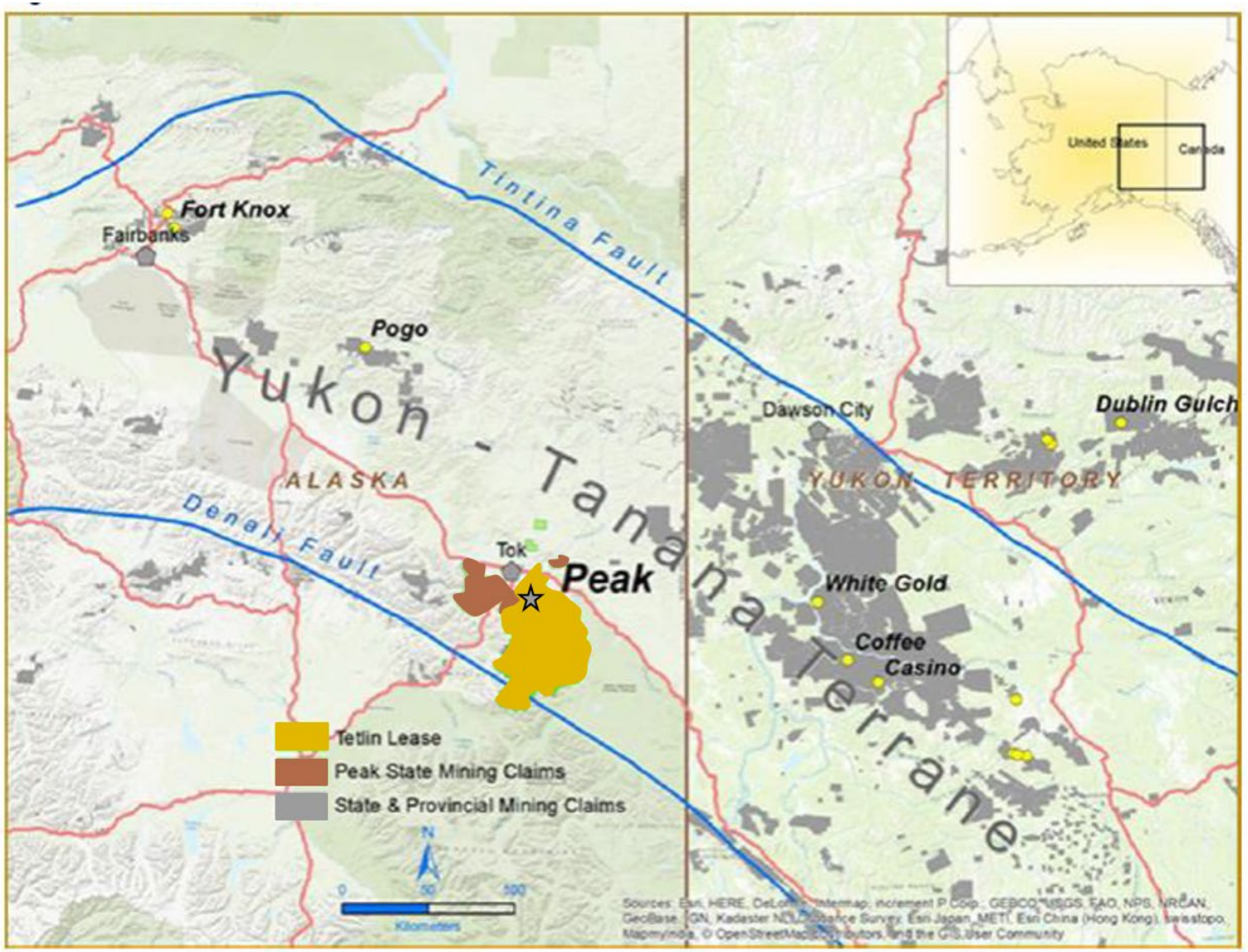
PEAK GOLD GEOLOGIC DATA

Location: Heart of the Tintina Gold Belt



Source: Royal Gold (2018)

CONTANGO ORE

7 Local Geology and Mineralization & Deposit Type

7.1.1 Chief Danny Area Geology

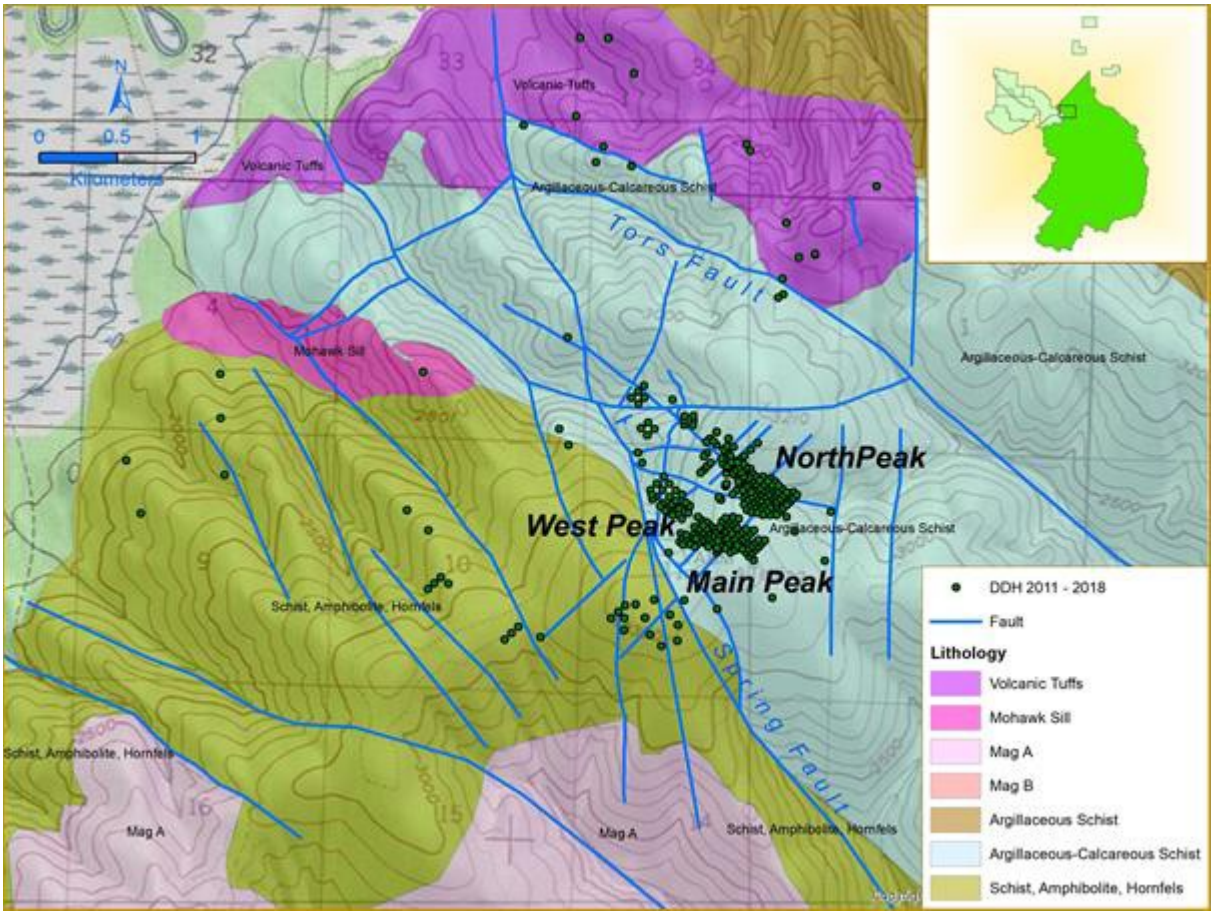
Although bedrock exposures are limited to 5% or less of the 5 mile by 6 mile Chief Danny prospect area, the following general prospect geology observations are supported by 1:250,000 geologic mapping completed by Foster (1970), rock chip mapping derived from grid-based top of bedrock soil auger sampling, trench, road cut and drill pad geologic mapping and over 81,000 m of diamond core drilling completed from 2011 through mid-June 2018 (Figure 7-3). The majority of the bedrock in the area is a quartz muscovite ± biotite schist unit (QMS) containing conformable layers of amphibolite schist / greenstone. The QMS unit is primarily comprised of quartz, muscovite, biotite and local garnet with minor actinolite and epidote. QMS is fine to medium grained and varies in color from gray to green, green-gray or blue-gray with opaque to milky white quartz. This unit is usually tan to dark brown in the weathering zone. Conformable but discontinuous metamorphic quartz “sweats” are common whereas quartz veins that cross-cut foliation are rare. The QMS unit is exposed in road cuts and on ridge top outcrops in the Tetlin Hills and is regionally extensive in eastern Interior Alaska. The muscovite and biotite contents of the QMS unit are variable, with zones several meters thick containing only the muscovite-rich end member to zones a few centimeters thick containing only the biotite end member. Dodecahedral red garnets (almandine) within the QMS unit range in size from 2 mm to nearly 1 cm in diameter. Limited petrologic data indicates some garnets have helicitic textures indicative of shearing and rolling during regional metamorphism (Deininger, 2013).

From an economic standpoint, the most important of the major rock types in the Chief Danny area is a calcareous unit that is interbedded with the QMS unit and which forms the primary host for silicate skarn alteration as well as gold and sulfide mineralization at Main and North Peak. The composition of this rock type various from rare pure marble (seldom mineralized) through a gradational series of calcareous schists ranging from a calcareous arenite to a silty marble. The marble unit is equigranular, fine to medium grained, and weakly to strongly foliated. Unaltered, unmineralized marble is light grey and has been intercepted east and northeast of the resource zone and occurs as beds ranging from centimeter to multiple meters thick that are interbedded with QMS.

Calcareous arenite to silty marble forms the primary host for skarn alteration and gold-sulfide mineralization. Because primary textures and mineralogy are often destroyed by metamorphism, alteration and mineralization, the importance of calcareous schists was not recognized until grid-based drilling at Main Peak deposit in 2013 produced core exhibiting the entire spectrum of calcareous schists, ranging from barren to completely replaced by alteration and mineralization. Because calcareous schists are less competent than surrounding MQS, calcareous rocks tend to deform more easily, resulting in their displaying a myriad of complex to simple deformational textures, including structural thickening and thinning, isoclinal and recumbent folding, cascade folding and disharmonic folding. This behaviour often makes correlation of calcareous schist units, both barren and mineralized, difficult or impossible in drill sections. It is believed that most of the deformation exhibited by calcareous schists in the Chief Danny area is of pre-mineral age, most likely a result of ductile deformation during one or both periods of regional metamorphism that have affected these rocks.

Layers of massive, equigranular greenstone / amphibolite schist ranging from 5 ft to 50 ft thick are located on the south side of the Chief Danny prospect, primarily south of the Spring fault (Figure 7-3). This unit is weakly to moderately foliated with minor calcite and trace to minor disseminated pyrrhotite + chalcopyrite. Greenstone is often interbedded with quartz-mica schist and/or calcareous schist. The rock is dark greenish-grey to black and can be distinguished in airborne magnetics due to its high magnetic susceptibility (Fugro, 2011). Most of the holes drilled in the Discovery zone have intercepted this greenstone unit and the north end of 2009 Trench CD0901 exposed massive unoxidized blocks of this rock type.

Figure 7-3: General Geology of the Chief Danny Prospect Area



Source: Peak Gold LLC (2018)

Southwest of the Spring fault (Figure 7-3), bedrock is comprised of similar rocks as described above but the ratio of calcareous rocks to QMS/greenstone is significantly lower. As a consequence, sulfide-bearing skarn mineralization in the Discovery, 7 O'clock, and 8 O'clock zones is not as thick nor as high grade as that northeast of the Spring fault in the Main and North Peak deposits. While many of the same pre-drilling and post-drilling characteristics are present southwest of the Spring fault, both the gold and pathfinder grades and the thickness of sulfide skarn mineralization are significantly lower than that in the Main and North Peak deposits.

The metamorphic country rocks of the Chief Danny area have been intruded by small plugs and hypabyssal intrusive bodies of felsic, intermediate, and mafic composition. The largest of these bodies, a porphyritic quartz monzodiorite crops out along the northern end of Mohawk Ridge (Figure 7-3). Based on rock types observed in TET1106, the Mohawk Ridge quartz monzonite body appears to be a sill or dike intruding the QMS. The quartz monzonite body does not contain significant gold, copper or silver mineralization, but does exhibit local zones of 1 cm to 2 cm thick A-type quartz-magnetite veins (Sillitoe, 2013). Recrystallization textures indicate a complex cooling history, including possible fluid release and subsequent re-equilibration. Its relationship to gold, copper and silver mineralization at the Chief Danny prospect, if any, remains uncertain but its younger age suggests it is a late magmatic end member of the

larger magmatic-hydrothermal system that affected the area. Nearby hole TET13128 was collared at the extreme eastern extent of a curvilinear magnetic high now thought to represent A-type magnetite-quartz veins within the quartz monzodiorite. This hole intercepted a 3 m thickness of QMS-hosted massive magnetite within a larger interval of semi-massive / banded magnetite, both with disseminated chalcopyrite. This hole is the only hole in the greater Chief Danny area where hydrothermal magnetite has been intersected.

Tertiary intermediate, mafic and felsic hypabyssal rocks and their more widespread volcanic equivalents are common along the extreme western edge of the Chief Danny area and north of the Tors fault (Figure 7-3). These rocks are thought to be preserved at the current erosional surface due to north-side down motion on the northwest-trending Tors fault and possible west-side down motion on a poorly documented northeast-trending fault that is sub-parallel to the Tok River fault. The lateral and vertical extent of these Tertiary rocks was unknown until soil sampling and reconnaissance drilling of the North Saddle and 2 O'clock zones revealed extensive areas of volcanic rocks and their hypabyssal equivalents. Drilling in 2018, particularly in holes 18421 through 18425 and 18429, intersected significant thicknesses of Ag-Pb-Sb enriched "feeder zone" style mineralization similar to that associated with the Main and North Peak deposits, hosted in both intermediate fragmental volcanics and their hypabyssal equivalents and in underlying QMS
– calc schists. While gold values are generally <0.5 g/t in these Ag-Pb-Sb enriched zones, drilling in the 2 O'clock zone in 2018 represents the first-time geochemical signatures seen in the Main and North Peak deposits has been located beneath Tertiary volcanic cover north of the Tors fault. Perhaps more important is the fact that several of most strongly altered and mineralized feeder zone intervals are hosted in clay, sericite and pyrite-bearing volcanic rocks, suggesting at least some of the Tertiary volcanic / sub-volcanic rocks are of pre-mineral age.

The northwest and northeast expression of structures in the Tetlin Hills is accompanied by arcuate patterns attributed to folded stratigraphy as interpreted from airborne geophysical data (Cook, 2016;Van Treeck and others, 2013), These analyses indicate that the Main Peak deposit was located on the north limb of a 4-5 mile wide southeast-plunging synform. Cook (2016) refined this model and suggests that the largely unprospected south limb of this fold contains rocks with similar magnetic characteristics as the calcareous schists hosting the Main Peak and North Peak deposits. Exploration of the South Limb area was conducted in 2017 and 2018 however no significant geochemical or ground geophysical anomalies were indicted by this work.

Linear stream drainages, low saddles and distinctive magnetic and resistivity features within the Tetlin Hills define the surface expression of several fault orientations in this part of the Peak Gold Project. The three dominant structural orientations documented in the Chief Danny prospect area include 1) northwest striking high angle faults with dips to the north and south with both dip-slip and right-lateral strike-slip motion; 2 northeast striking high-angle faults with both dip-slip and left-lateral strike-slip motion, and 3) post-mineral north-south trending, east dipping reverse faults (B1 and B2 faults, Figure 7-3) that truncate mineralization in the Main Peak – North Peak resource area.

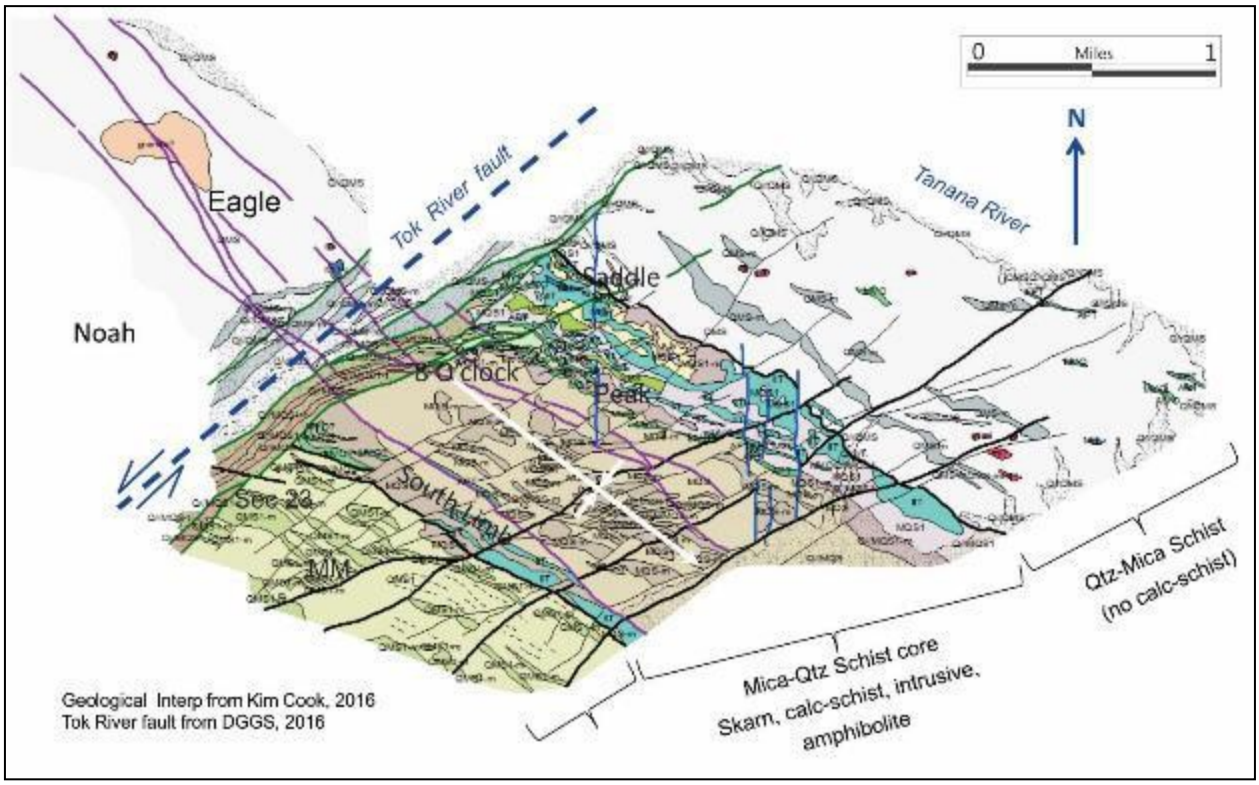
Northwest-trending structures include the Tors fault, the Tanana River valley along the north edge of the Tetlin Hills, the Last Tetlin Hill fault, the Clearwater Creek fault on the Eagle-Noah claim block and several faults inferred from drilling, magnetic and resistivity data that appear to control or influence mineralization at Main Peak and North Peak. All of these structures are conjugate to the dominant regional stress regime in this part of Eastern Interior Alaska (Flanigan and others, 2000; Foster and others, 1994; Silberling and others, 1994).

Also conjugate to the regional stress regime are high angle northeast-trending, left-lateral structures such as the Tok River fault, Tetlin Creek fault and several faults inferred from drilling, magnetic and resistivity data in the Main Peak and North Peak resource area. While some of these structures appear to truncate or offset geochemical anomalies defined by top of bedrock soil sampling, the relationship between northeast and northwest trending structures and gold-copper-silver mineralization is complex and likely includes multiple periods of brittle deformation for both structural regimes.

Recent structural analysis by SRK's Simon Craggs collected data from oriented and unoriented drill core, surface outcrops, airborne and ground geophysical surveys and past reports on the Peak Gold Project to formalize a comprehensive structural paragenesis for the Main Peak and North Peak resource areas (Figure 7-4). Two periods of folding and at least three periods of faulting have been identified by this work, including:

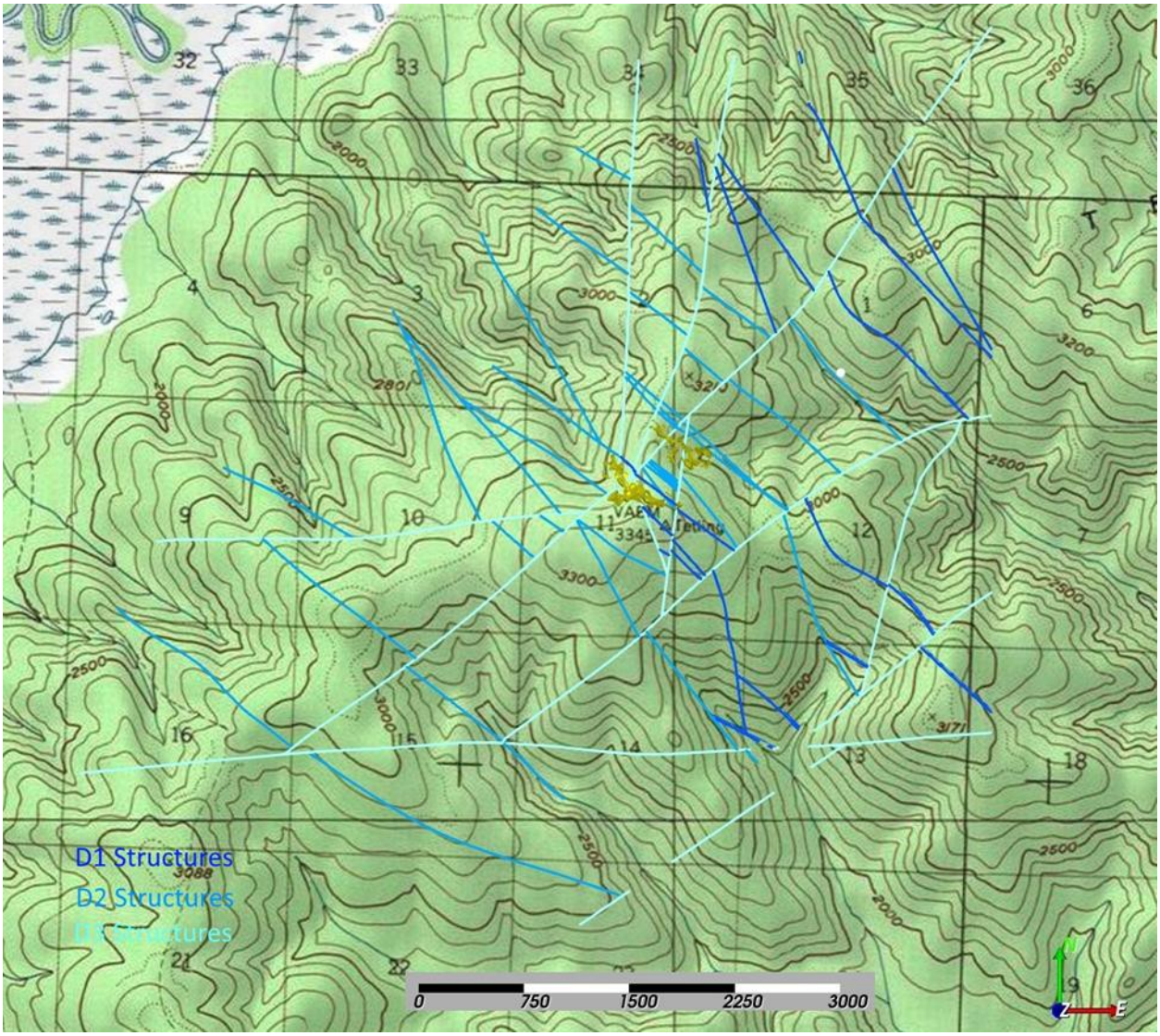
- D1 Faulting: highly disjointed and deformed by later folding and faulting, difficult to trace, probably are pre-kinematic or early syn-kinematic and are pre-mineral structures.
- D2 Faulting: northwest trending, high angle with dips to north or south, likely has both dip slip and/or right-lateral strike slip components, preferential locus in axial plans of F2 folds, may have pre- mineral and/or post-mineral motion on them but likely acted as feeder zones in syn-mineral time.
- D3 Faulting: north-northeast trending moderately southeast-dipping reverse faults of uncertain but likely post-mineral age. These post-mineral faults include the B1 and B2 faults which truncate mineralization in the West Peak area.
- F1 Folding: Northwest striking, isoclinal, often recumbent, south over north motion, most axial planes are southwest dipping. Deformation includes disharmonic folding with greatest deformation in calcareous hosts, and possible late south over north thrust ramp development. No documented evidence of later gravity motion of former thrust ramps but this motion has been documented elsewhere in Interior Alaska. These folds are syn-kinematic and of pre-mineral age.
- F2 Folding: northwest striking asymmetric open folds with southwest dipping axial planes. These structures re-fold all F1-related features, sometimes changing apparent fold vergence directions. These folds are also syn-kinematic or late-kinematic and of pre-mineral age.

Figure 7-4: Inferred Geology Derived from Airborne Magnetics over the Tetlin Hills, Northern Peak Gold Project



Source: Raw geophysics from Fugro (2011, 2013); interpretation by K. Cook (2016)

Figure 7-5: Structural Interpretation of Faulting with early low-angle D1 structures, NW oriented mineralized D2 structures offset by late D3 structures



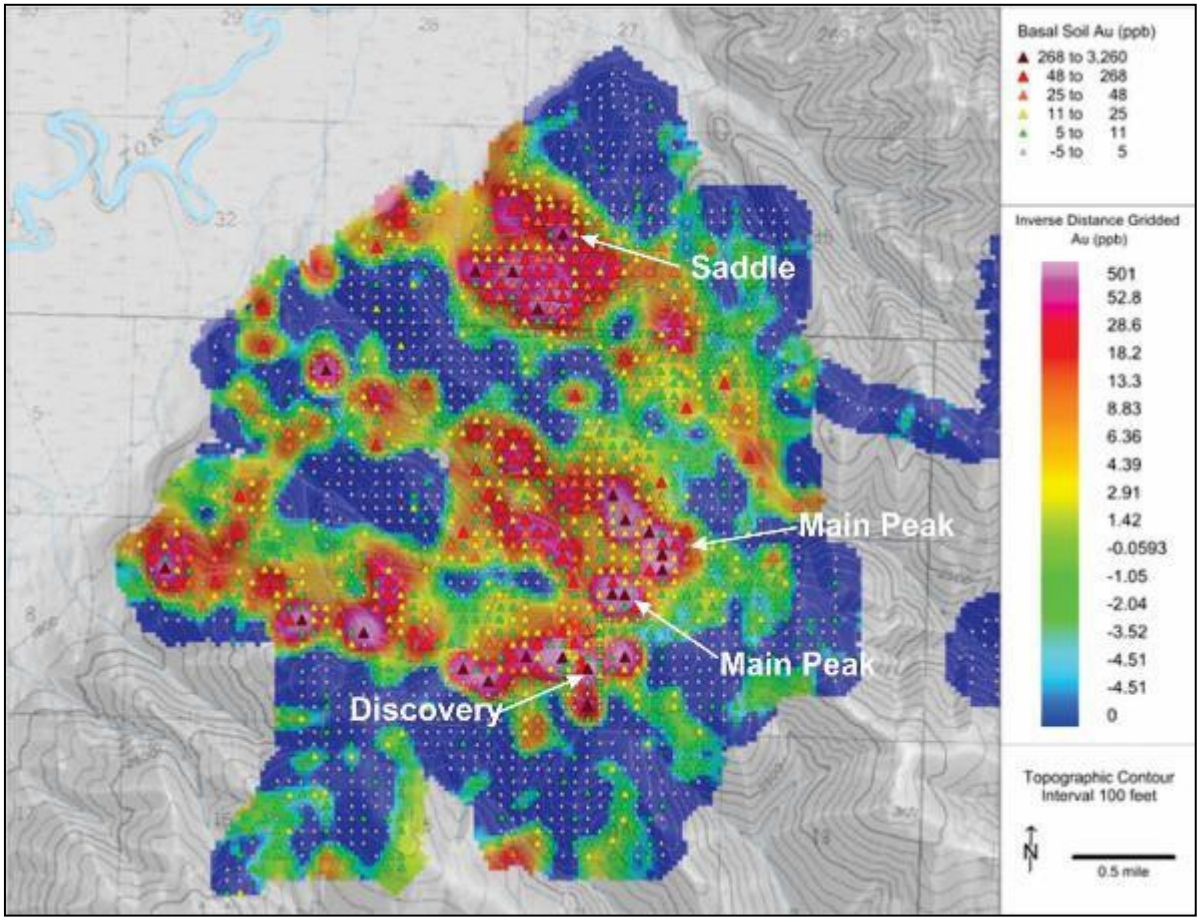
Source: SRK – Simon Craggs (2018)

7.1.2 Chief Danny Area Mineralization

Following discovery of gold-bearing float rock samples at the Discovery zone in 2009, Juneau / Contango began top of bedrock soil auger sampling in 2010, and Contango continued that work in subsequent years, expanding the soil grid in the Chief Danny prospect area to is current 6.5 km N-S by 6.5 km E-W footprint. The result of this work, extending from the 8 O'clock area on the south to the Saddle zone on the north and including the Main Peak and North Peak resource areas, is a remarkably consistent multi-element anomaly, zoned from a copper-rich core, grading outward through a gold-copper zone where the Main Peak and North Peak resources are located, then copper-gold-arsenic and rimmed by lead-zinc-antimony- manganese (Figure 7-6 and Figure 7-7). This zoned anomalous footprint covers 6.5 km N-S and 5.5 km E-

W along the north limb of the Chief Danny synform. The anomaly remains open to the southwest and the west, the latter direction likely structurally truncated along the northeast-trending Tok River fault (Figure 7-6).

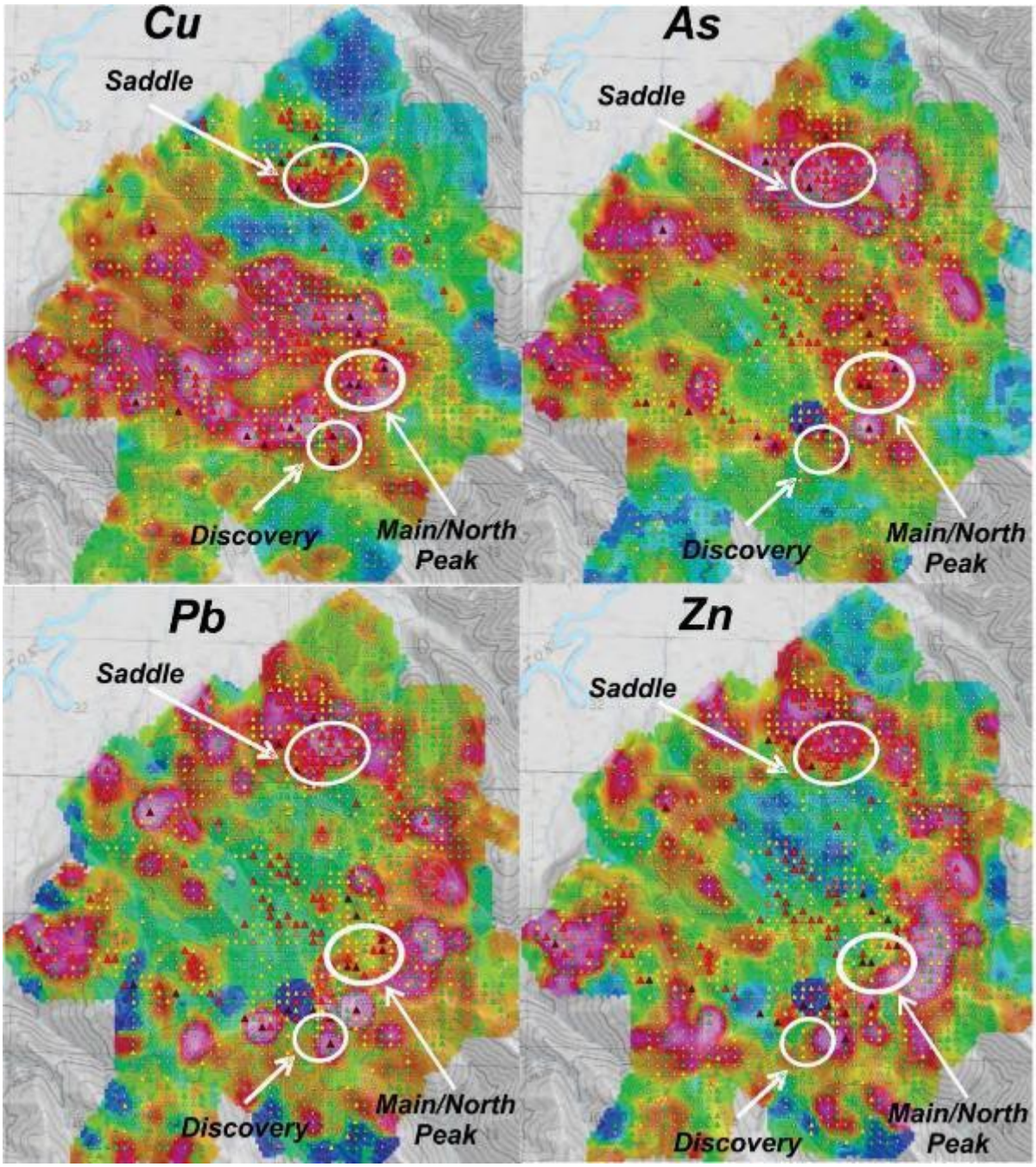
Figure 7-6: Thematic and Contoured Gold in Soils, Chief Danny Area



Source: Avalon (2017)

Other metallic elements of interest, such as silver, bismuth, cobalt, tungsten, manganese and iron show more irregular patterns that are not as easily explained when compared with gold, copper, arsenic, lead and zinc. In general, higher gold values tend to have higher bismuth and arsenic values associated with them while copper tends to be associated with anomalous silver and iron. Cobalt values tend to be higher in samples with higher copper however, following the identification of danaite ((Co.16-Fe.84)AsS) as at least one of the cobalt-bearing mineral species (Illig, 2015), spatial analysis of cobalt, arsenic and copper indicates that elevated cobalt values are not spatially associated with the highest copper values. Cobalt tends to be most elevated in the Discovery zone (where copper values are generally low) while cobalt:arsenic ratios indicate strong cobalt concentrations at the northern, southeastern, Discovery zone and southwestern extremes of the Chief Danny soil grid. The extremely high arsenic concentrations in the Saddle zone are not accompanied by elevated cobalt values, suggesting the possible presence of a paragenetically different arsenic mineral within the Saddle zone.

Figure 7-7: Thematic Gold Over Contoured Copper, Arsenic, Lead and Zinc in Soils, Chief Danny Area



Source: Avalon (2017)

Manganese in both silicate phases (rare johannsenite-enriched pyroxene) and in oxide phases (MnOx-silver minerals) are common components in distal settings at many porphyry copper deposits (Wilt, 1995; Sillitoe, 2010). Spatial analysis of the manganese values in soil samples in the Chief Danny zone reveals

elevated manganese levels in the most distal parts of the zoned anomaly. This is particularly well displayed by the manganese:copper ratio which shows an annular Mn/Cu enrichment surrounding the Discovery and Peak zones as well as an unexplained Mn/Cu enrichment north of the Saddle zone along the northernmost limit of the Chief Danny soil grid.

Silver, lead and antimony are now recognized as diagnostic of the D2-age hydrothermal feeder zones that allowed metal-bearing hydrothermal fluids to come into contact with favorable calcareous schists. Structural analysis by Craggs (written comm., 2018) suggests that pre-mineral, northwest striking, sub-vertical D2 faults were preferentially formed along axial planes of earlier F2 folds. Significant gold-bearing skarn mineralization occurs in places where D2 faults cut favorable calcareous schist units and where these D2 faults were open to fluid flow during hydrothermal alteration and mineralization.

Recent analysis of drilling intercepts containing silver show that, while silver occurs throughout the Main Peak and North Peak deposits, silver that occurs in thin (<2 m) wide intervals often returns grades in the
+30 g/t to +200 g/t silver range, compared to the average resource grade of 15 g/t to 20 g/t silver. Spatial analysis of these thin, high-grade silver zones show they are often accompanied by highly anomalous Pb (>100 ppm) and Sb (>50 ppm), neither of which are significantly enriched in the gold-bearing zones and they cluster in only a few areas of the Chief Danny zone. These feeder zones also carry elevated arsenic, bismuth, copper, cobalt, molybdenum, and tin and anomalously low gold contents, usually less than 1 g/t. However, Ag, Pb and Sb are spatially restricted to areas on the eastern Main Peak and North Peak resources areas where they tend to occur below and spatially separate from high gold-bearing zones. Only three other areas of the Chief Danny area where drilling has been done show similar Ag-Pb-Sb feeder signatures: Discovery zone, Fin zone and northern 2 O'clock zone near holes 18421-525 and 818429. Potential exists in these three areas for higher-grade gold-bearing skarn mineralization similar to that at Main and North Peak.

Rock-forming elements associated with hydrothermal alteration in porphyry copper systems also show a consistent zoning in the soil samples in the Chief Danny prospect area (Sillitoe, 2010, Haley and others, 2015, Brown and others, 2010). Anomalous calcium (>1.25%) magnesium (>1.5%) and sodium (>1.25%) are tightly clustered around the copper-gold anomalous core in the west central part of the Chief Danny soil grid while potassium is notably depleted in the same central core area. Anomalous potassium (>2.75%) forms a more distal outer ring around the anomalous copper-gold and highly anomalous potassium closely mimics the distribution of gold and arsenic in the Saddle zone where sericitic alteration is pervasive within the altered volcanics. The calcium, magnesium and sodium-enriched "core zone" on the west side of the Chief Danny grid may be related to the Mohawk Ridge quartz monzodiorite body (Figure 7-3) however the calcium-magnesium-sodium anomaly is more extensive than the relatively limited extent of the post-mineral Mohawk Ridge quartz monzodiorite, suggesting the possibility of a much large intrusive mass at depth on the west side of the Chief Danny prospect area.

Although soil sampling identified the initial drill targets in the Chief Danny area, subsequent airborne and ground geophysics and over 80,000 m of diamond core drilling have generated a series of exploration characteristics that allow both pre-drill targeting and post-drill refinement of near-resource targets. These two phases of drill targeting are summarized as follows:

Pre-Drilling Skarn Indicators:

1. Most Au-bearing skarn mineralization is magnetic and conductive because pyrrhotite is the dominant sulfide and it causes a positive magnetic response and a negative resistivity (aka positive conductivity) response;

2. The Calculated Vertical Gradient (CVG) product of the airborne magnetic survey emphasizes the magnetic response from the upper 500 m of bedrock, and therefore is the most useful for drill targeting of pyrrhotite-dominant Au skarn, Chimney-like magnetic highs occur immediately below the Main and North Peak resource areas;
3. Airborne Resistivity has a penetration depth of less than 100 m, and is attenuated by the first conductor it encounters, therefore this tool will only identify very shallow conductors;
4. Plumbing structures are linear, high angle features, and may be clay and/or pyrrhotite rich resulting in low resistivity response in IP surveys. A moderate to weak chargeability high caused by disseminated peripheral po/py may form adjacent to an IP resistivity low;
5. Coincident IP chargeability highs with IP resistivity lows are most likely unmineralized clay-altered shear or gouge zones.
6. Elevated soil Au or pathfinders (particularly As) occur only where skarn or plumbing–related mineralization is exposed at the surface. Even 1 m of barren QMS overlying mineralization will prevent a Au-pathfinder response in soils. Soils cannot be used as a condemnation tool;
7. Elevated soil Au or pathfinders may occur with little or no magnetic or resistivity response due to
   +50 m thick bedrock oxidation zone that has destroyed magnetic minerals and degraded or destroyed magnetic and resistivity responses.

In summary, the best pre-drilling targets are chimney-like CVG highs, coincident with small IP resistivity lows, which are coincident with linear soil sample anomalies containing elevated gold plus pathfinder elements.

Post-Drilling Indicators:

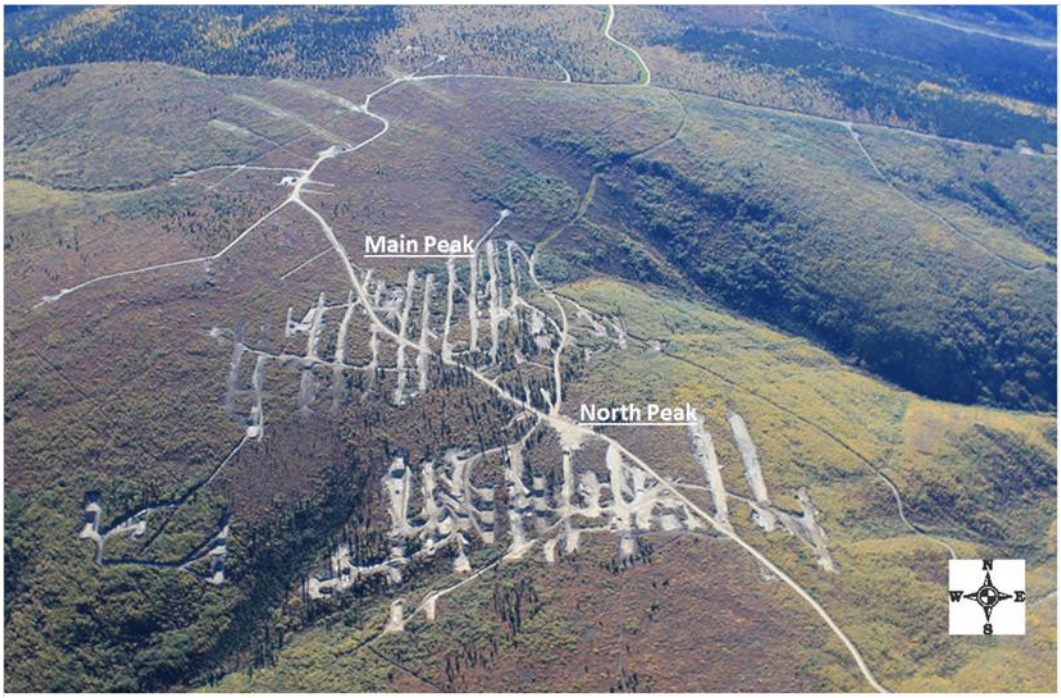
1. Highest Au grades occur in dark green amphibole-rich skarn with coarse grained arsenopyrite and coarse-grained pyrrhotite. Visible gold is rare;
2. The higher the arsenopyrite content, the more likely the interval will contain high-grade Au however extremely high As grades can occur in Au-poor zones;
3. The higher the ratio of chalcopyrite to arsenopyrite, the lower the average Au grade;
4. The highest Au grades occur in rock with total sulfide percentages ranging from 5% to 15%. Lower gold values occur at <5% total sulfide percentages but lower gold also occurs at extremely high sulfide percentages (>20%);
5. Higher Au grades often occur in skarn horizons containing coarse-grained euhedral amphibole and/or calcite, often in discordant, late structures;
6. Geochemical signature of a skarn horizon includes highly anomalous Au, Ag, As, Bi, Co, Cu and sometimes anomalous Mo, Pb, Sn or Te;
7. Geochemical signature of a plumbing feature includes extremely high Ag, Sb, Pb, and Zn with highly variable amounts of Au, As, Bi, Co, Cu, Mo, Sn and Te; and
8. Higher grade-thickness intervals are more likely to occur up-dip of a plumbing feature than down- dip below a plumbing feature, and
9. Plumbing structures tend to strike to the northwest and dip steeply to the northeast or southwest.

In summary, the best post-drilling targets occur up-dip of discordant plumbing features in dark green amphibole-rich skarn with coarse grained arsenopyrite and pyrrhotite, high pyrrhotite:chalcopyrite ratios, total sulfide volumes ranging from 5% to 15%, coarse-grained euhedral amphibole and/or calcite, low levels of Pb, Sb and Zn, and Ag values generally below 34 g/t.

7.2 Property Geology and Mineralization

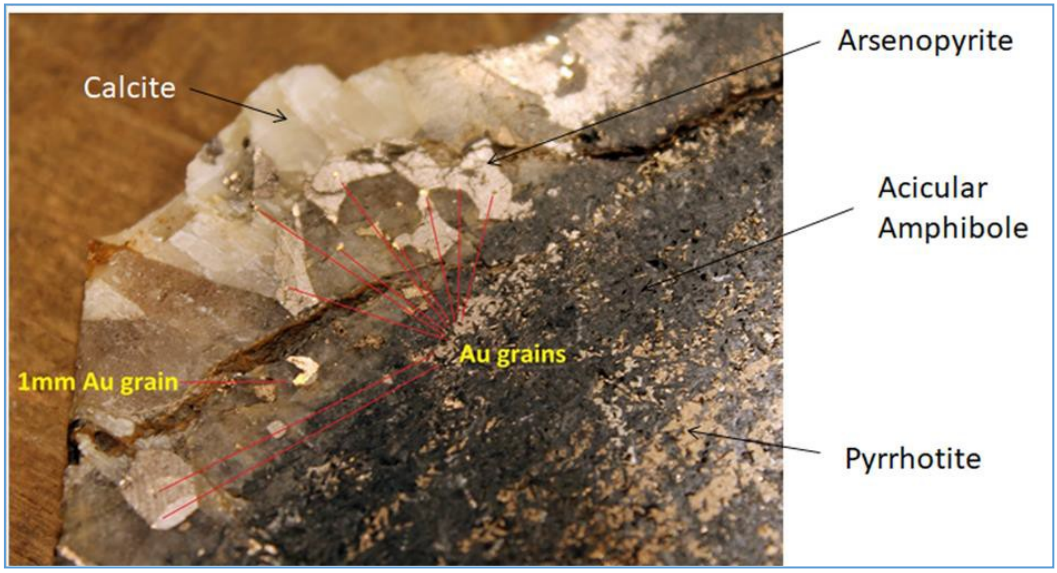
The Peak Gold Project contains two deposits, which are the focus of the PEA, Main Peak and North Peak (see Figure 7-8). Both deposits have appreciable quantities of gold, silver, and copper associated with pyrrhotite-chalcopyrite-arsenopyrite dominant strata bound replacement bodies interlayered with Ca-Fe amphibole which replace the calcareous portions of the interlayered calcareous to argillaceous schist unit (Figure 7-9). High angle discordant pyrrhotite-chalcopyrite-arsenopyrite-spalerite-galena-boulangerite- pyrite-amphibole-calcite-quartz veins show open space textures and are proposed to represent the D2 hydrothermal fluid conduits connecting from the source pluton to the chemically responsive host rock trap. The highest gold and silver grades are associated with the junctions of the discordant veining and the calcareous schist with precious metal grade rapidly decreasing down dip, and gently tapering up dip. Two major discordant vein orientations one generally striking E-W dipping steeply N, and one striking NW-SE dipping steeply N control the shape of the mineralized body with their interaction with the composite fold body of calcareous schist, i.e. elongate in the E-W direction with a NW oriented tail. The intersection of these major discordant veins and secondary N-E to N trending faults creates east dipping shoots which have localized and accentuated hydrothermal fluid flow.

Figure 7-8: Aerial Photo Showing Main Peak and North Peak Locations



Source: Avalon (2017)

Figure 7-9: Peak Style Mineralization from Drill Hole TET13117

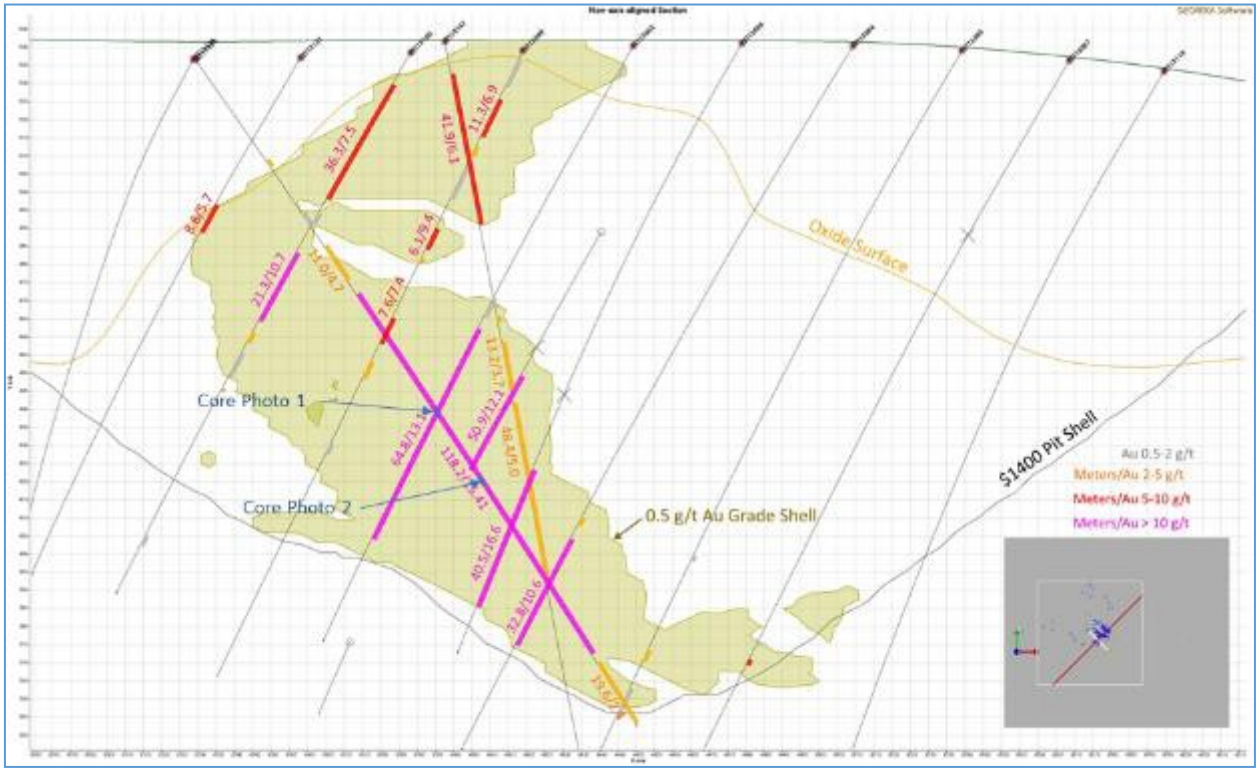


Source: Avalon (2017)

7.2.1 Main Peak Deposit

Main Peak is a largely unoxidized distal skarn hosted in recumbent folded calcareous schist and marble interbedded with amphibolite grade argillaceous schist and quartzite. A cross section through Main Peak is presented in Figure 7-10 and core photos are presented in Figure 7-11. A penetrative foliation / axial planer cleavage characterizes the Chief Danny prospect, this cleavage is striking 150° and dipping 20-30° southwest.. The numerous recumbent isoclinal folds measure 0.1 cm to 2 cm across the axis and form a composite overturned isoclinal fold shape with its axis sub parallel to the strike of foliation and opening to the northeast. This larger composite fold body of calcareous schist, also opening to the northeast, crops out at the surface, measures 200 m vertically and 300 m horizontally in cross section. In long section, the fold measures just over 500 m. The calcareous schist body is dissected by three to four high angle NE-SW trending normal faults which display offsets of 2 m to 10 m, appear to be post-mineralization in age, and have a periodicity of 100 m along the strike of the folded calcareous schist body. The eastern edge of the composite fold is proposed to be truncated by the B1 fault, a north-northeast striking, moderately east dipping (45-50) reverse fault, also of D2 age. At least one northwest striking, sub-vertical fault, thought to be a D2 feeder zone, can be traced along the long axis of the mineralization. This fault is characterized by
+100 g/t Ag values associated with highly anomalous Pb, Sb and Zn with the highest-grade concentration of these metals in the extreme southeastern portion of the Main Peak deposit.

Figure 7-10: Main Peak Cross Section 9735 045 Looking Northwest



Source: Royal Gold (2018)

Gold, silver, and copper mineralization is associated with pyrrhotite-chalcopyrite-arsenopyrite dominant strata bound replacement bodies interlayered with Ca-Fe amphibole dominant gangue which has replaced the calcareous portions of the interlayered calc-schist units. High angle discordant pyrrhotite-chalcopyrite- arsenopyrite-spalerite-galena-boulangerite-pyrite-amphibole-calcite-quartz veins show open space textures and are thought to represent the hydrothermal fluid conduits connecting the source plutonic system to the chemically responsive host rock. The highest gold and silver grades are associated with the junctions of the discordant veining and the calcareous schist with precious metal grade rapidly decreasing down dip, and gently tapering up dip. Two major discordant vein orientations have been identified at Main Peak, one generally striking E-W dipping steeply N (the 275 fault), the other striking NW-SE and dipping steeply north (the 305 fault). Combined, these two feeder systems control the shape of the mineralized body which is elongate in the E-W direction with a NW oriented tail. The intersection of these major discordant veins and secondary N-E to N trending faults creates east dipping shoots which have localized and accentuated hydrothermal fluid flow. As is true at the North Peak resource, the eastern portion of these feeders returned significantly higher silver grades (>100 g/t) associated with higher Pb, Sb and Zn, possibly indicating a higher temperature and fluid flow regime on the extreme southeastern end of the Main Peak resource.

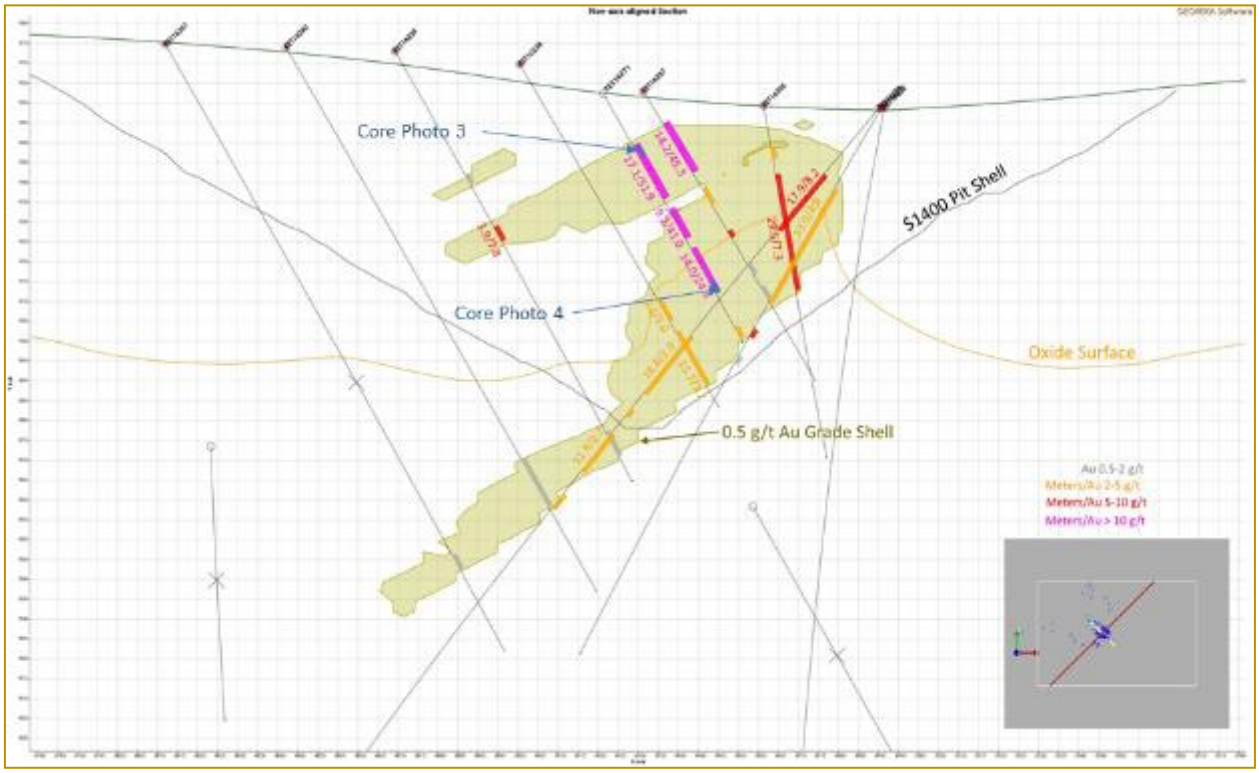
Figure 7-11: Main Peak Core Photos

Source: Royal Gold (2018)

7.2.2 North Peak Deposit

North Peak is a largely oxidized distal skarn hosted in recumbent folded calcareous schist and marble interbedded with amphibolite grade argillaceous schist and quartzite. A significant portion of the North Peak resource area is oxidized to depths in excess of 50 m below surface, resulting in widespread iron, copper and arsenic oxides. This strong, pervasive oxidation destroyed the magnetic and conductive pyrrhotite- arsenopyrite-chalcopyrite skarn mineralization, resulting in geophysical signatures unlike those over the unoxidized Main Peak zone. A cross section through North Peak is presented in Figure 7-12 and core photos are presented in Figure 7-13.

Figure 7-12: North Peak Cross Section 9880 045 Looking Northwest



Source: Royal Gold (2018)

A penetrative foliation/axial planer cleavage characterizes the Chief Danny prospect, this cleavage is striking 150° and dipping 20° to 30° to the southwest. The numerous recumbent isoclinal folds measure 0.1 m to 2 m across the axis and form a larger composite overturned isoclinal fold shape with its axis sub parallel to the strike of foliation and opening to the southwest. This composite fold body of calcareous schist measures 150 m vertically and 100 m horizontally in cross section. In long section, the fold measures just over 270 m over the NW portion of the resource and is proposed to have had the upper limb and hinge eroded in the SE portion of the resource. The calcareous schist body is dissected by four to five high angle NE-SW trending normal D3 faults which display offsets of 2 m to 10 m, appear to be post-mineralization in age, and have a periodicity of 100 m along the strike of the folded calcareous schist body. The eastern edge of the resource area is proposed to be truncated by the B1 fault, a north-northeast striking, moderately east dipping (45-50) reverse D3 fault.

Gold, silver, and copper mineralization is associated with pyrrhotite-chalcopyrite-arsenopyrite dominant strata bound replacement bodies interlayered with Ca-Fe amphibole dominant gangue which has replaced the calcareous portions of the interlayered calc-schist units in the NW half of the resource. The weathering product of this mineralization, dominated by hematite, limonite, goethite, and scorodite-rich clays, make up a significant portion of the SE resource area. High angle discordant pyrrhotite-chalcopyrite-arsenopyrite- spalerite-galena-boulangerite-pyrite-amphibole-calcite-quartz veins show open space textures and are thought to represent the D2 hydrothermal fluid conduits connecting the source plutonic system to the chemically responsive host rock. The highest gold and silver grades are associated with the junctions of the discordant veining and the calcareous schist with precious metal grade rapidly decreasing down dip, and gently tapering up dip. At least two steeply dipping, northwest striking D2 feeder faults have been identified within the North Peak zone, the 125 and 110 faults, named for their strike directions. As in the Main Peak zone, the eastern portion of these feeders returned significantly higher silver grades (>100 g/t) associated with higher Pb, Sb and Zn, possibly indicating a higher temperature and fluid flow regime on the extreme southeastern end of the North Peak resource.

Figure 7-13: Main Peak Core Photos

Source: Royal Gold (2018)

8 Deposit Types

Exploration results from 2009 through 2018 revealed the presence of a distinctive suite of elements, sulfide minerals and alteration minerals at the Main Peak, North Peak and Discovery zones that do not match the typical characteristics of an intrusive-related gold system but do share several diagnostic characteristics of distal reduced gold-copper-silver skarns and the larger porphyry copper systems with which such skarns are sometimes associated. Petrologic data from Deininger (2012) and University of Alaska Masters student Peter Illig (Illig, 2015) confirmed the rare presence of remnant prograde skarn minerals (hedenbergite and wollastonite). However, the most pervasive and often abundant alteration assemblage associated with gold- sulfide mineralization is amphibole and chlorite, a mineral assemblage normally associated with retrograde skarn alteration. This evidence suggests the highest temperatures reached during silicate alteration were stable for amphibole and chlorite but temperatures rarely reached levels where true prograde skarn minerals were stable. From a strictly technical standpoint, amphibole at Main Peak and North Peak is a prograde mineral. However, to avoid confusion of the reader, the terms “prograde” and “retrograde” will not be used in this report except in places where their use is defined and in compliance with the commonly understood technical meaning of these two terms.

New Pb-isotope data from the Peak zone plots in a zone with other replacement / vein style mineral deposits with 206Pb / 204Pb ratios in the 19.1 to 19.2 range and 207Pb/204Pb ratios in the 15.64 to 15.68 range (Illig, 2015). The Peak zone’s Pb-isotope data are considerably more radiogenic than Devonian- Mississippian volcanogenic massive sulfide deposits that are common to the west in the Delta Mining District. Lead isotope data from Cretaceous and Tertiary plutonic rocks in the Yukon Tanana Terrane plot in a similar range to the Peak zone samples and other skarn samples from Eastern Interior Alaska, leading Newberry and others (1997) to conclude that the source of lead for Yukon Tanana Terrane skarns was plutonic.

In September 2013, noted economic geologist Dick Sillitoe conducted a two-day site visit to the Peak Gold Project and agreed with the previously drawn conclusion that the gold-rich mineralization at the Peak zone was part of a reduced gold skarn system within a larger porphyry copper setting (Sillitoe, 2013). Additional evidence supporting the presence of a larger porphyry copper-gold system includes:

1. 35 km^2 of anomalous copper, gold and pathfinder element soil sample geochemistry zoned from a copper-gold enriched core to arsenic-lead-zinc-manganese enriched rim;
2. A-type quartz magnetite veins observed in a crowded quartz monzonite porphyry intrusive in drill hole TET11006 on Mohawk Ridge; and
3. A metal and mineral suite similar to well-known distal gold skarn deposits in other parts of the world.

The link to a porphyry copper system was further strengthened by trace element work conducted by Illig (2015). On a plot of Y/Sr compared to SiO_2 content, the Main Peak skarn at Peak plots clearly in the porphyry copper field with other well-known examples such as Bingham Canyon, Yanacocha, Batu Hijau, Pebble and similar age porphyries in the adjacent Yukon Territory.

Sillitoe (2013) suggested that the Peak zone alteration and mineralization most closely resembles the gold- sulfide skarn deposits mined at the Fortitude deposit in the Battle Mountain Mining District of central Nevada. A comparison of salient features at the Peak zone and at Fortitude is presented in Table 8-1.

Unless otherwise noted, the following information on the Fortitude deposit was extracted from Wotruba and others (1988), Meyers and Meinert (1991) and Sillitoe (2013). The Fortitude deposit was mined by Duval Corporation / Battle Mountain Gold during the late 1980s and early 1990s. Resources were approximately 10 million tonnes averaging 7 g of gold per tonne, 25 g of silver per tonne and 0.12% copper, however, only the gold was recovered by cyanidation.

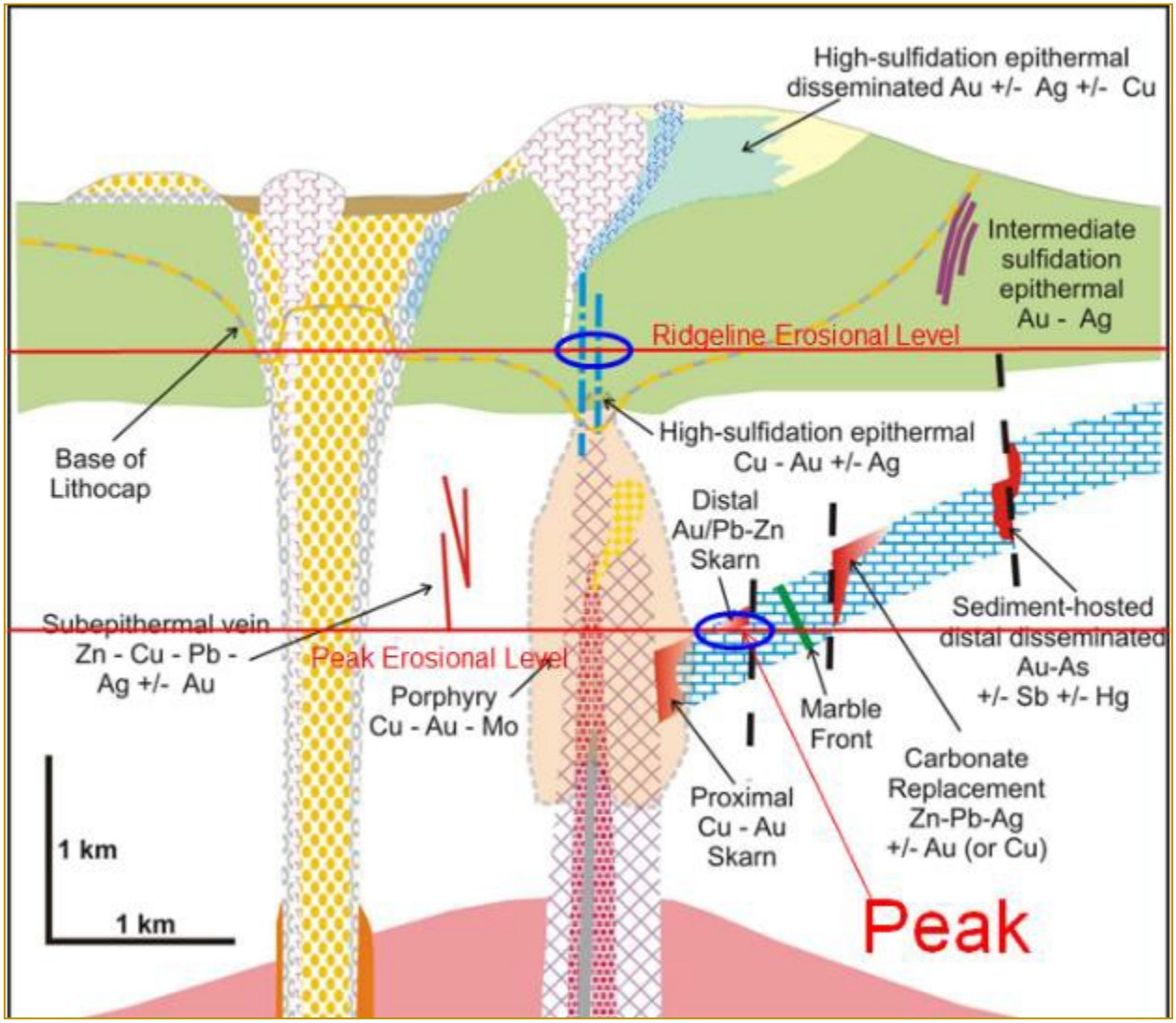
The Fortitude deposit was a calcic, reduced, distal skarn containing prograde pyroxene that had been retrograded to actinolite and chlorite, although Meyers and Meinert (1991) indicate that electron microprobe analysis of the Fortitude skarn revealed that much of the acicular minerals identified as actinolite were in fact hedenbergitic pyroxene. The skarn contained an average of ~10% sulfides by volume, chiefly as pyrrhotite, and, like the Main Peak deposit, possessed a Au-Cu-Ag-As-Bi-Te signature. The Cu/Au ratio at Fortitude decreased toward the more distal parts of the strata-bound orebody and, a Zn-Pb-Ag-Mn halo was identified immediately beyond the gold mineralization (Figure 8-1). Magnetite with galena, sphalerite and Mn-enriched pyroxene are most common near the skarn - marble front.

Table 8-1: Comparison of Main Peak Deposit and Fortitude Gold-Copper-Silver Skarns

Geologic Feature	Main Peak Deposit	Fortitude Deposit
Host rock	Deformed marble lens	Limestone horizon
Inferred related intrusive	Quartz monzonite	Granodiorite Porphyry
Prograde Assemblage	Amphibole-chlorite	Garnet-pyroxene
Retrograde Assemblage	None identified	Actinolite and chlorite
Main sulfide mineral	Pyrrhotite	Pyrrhotite
Subsidiary sulfide minerals	Pyrite, chalcopyrite and arsenopyrite	Pyrite, chalcopyrite and arsenopyrite
Total sulfide content	10–45 vol. %	10 vol. %
Primary Metal signature	Au-Cu-Ag-As-Bi-Te-Co	Au-Cu-Ag-As-Bi-Te
Secondary Metal signature	Pb-Zn-Mo-Ni-Sb-Sn-Te-Mn	Pb-Zn-Mn
Metal Zoning	Cu+Au core, As+Pb+Zn rim	Cu+Au core, As+Pb+Zn rim
Hedleyite (Bi_7Te_3)	Present	Present
Fluid Inclusion temperatures	Unknown	350-500 C
Salinity	Unknown	Low
$^{206}Pb/^{204}Pb$ ratios	19.1 - 19.2	Unknown
Tonnage	~6 Mt	~10 Mt
Gold grade	3.46 g/t	7 g/t (half orebody >10 g/t)
Copper grade	0.25%	0.12%
Silver grade	11.8 g/t	25 g/t
Gold recovery	Unknown	Cyanidation (Cu+Ag not recovered)

Source: Non-Peak data from Sillitoe (2013); Wotruba and others (1988) and Meyers and Meinert (1991).

Figure 8-1: Peak Deposit Model



Source: After Sillitoe (2010)

Fortitude was located about 500 m north of the genetically related Copper Canyon stock, a granodiorite porphyry containing roughly 0.1% to 0.2% copper and traces of gold and molybdenum. The stock, 700 m in diameter, appears to be laccolithic in form. The proximal East and West orebodies, located along the contact of the stock, were garnet-dominated magnetite skarns that were exploited for their copper and subsidiary gold contents. Copper, cobalt, molybdenum, chromium and nickel levels decrease away from the East and West skarn mineralized bodies. The 12 Moz, low-grade (1.3 g/t) Phoenix gold deposit, currently being mined by Newmont Gold, surrounds and lies between the previously mined proximal East and West copper deposits and the distal Fortitude skarn.

While the Peak zone shares many similarities with the Fortitude mineralized body, the Peak zone differs from Fortitude in having a lower-temperature amphibole-dominated alteration assemblage compared to the

higher temperature garnet-pyroxene assemblage seen at Fortitude. In addition, metal zoning at Peak has not yet been established with several apparently conflicting lines of evidence regarding the geometry of mineralization:

- Copper in soil zoning in the 6.5 km by 5.5 km Chief Danny prospect area suggests the proximal source could lie northwest of the Main Peak zone;
- The highest copper:gold ratios in soils and drilling are on the east side of Main Peak zone suggesting the proximal source lies to the east;
- Time-domain airborne electromagnetics data suggests the proximal source may lie directly beneath the Main Peak zone; and
- Limited electron microprobe analyses of pyroxene from hole TET12035 in the center of the Main Peak zone (71% hedenbergite, 29% diopside) and hole TET12056, 1150 m to the northwest (90% hedenbergite, 10% johannsenite), suggest that the Main Peak zone represented the more “proximal” of the two areas (Illig, 2015).

While various lines of evidence support one or more of the above zoning models, none offer conclusive proof of which model most accurately reflects the generative system that created the mineralization in the Chief Danny prospect area.