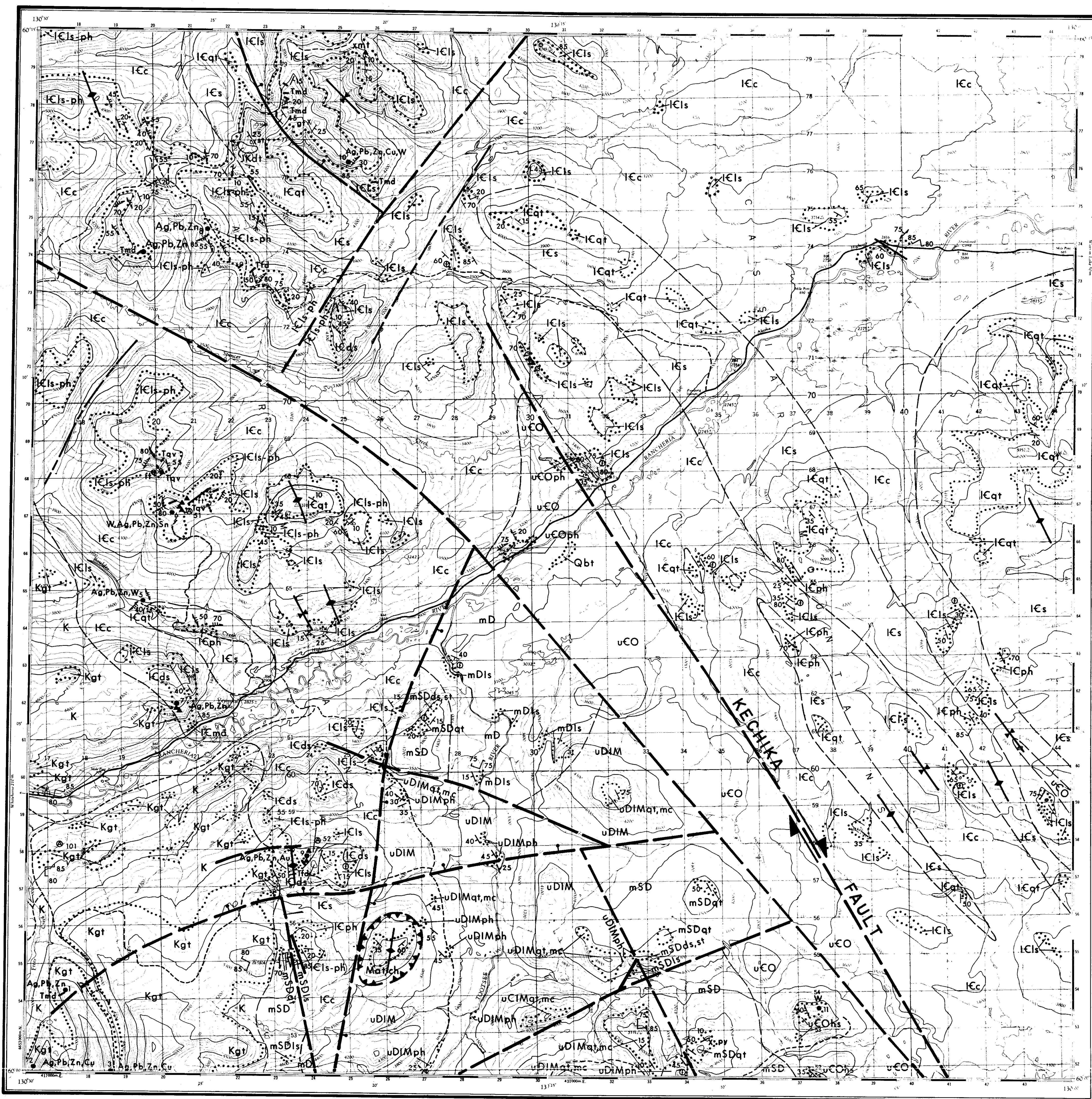




SYMBOLS

area of bedrock outcrop	
float	
geological boundary, observed	
geological boundary, interpreted	
fault, observed	
fault, assumed (dot indicates down thrown side, arrows indicate horizontal movement)	
thrust fault, assumed	
lineament, from air photographs	
F ₁ structures bedding (S ₁), inclined	
slaty cleavage (S ₂), inclined	
F ₂ structures crenulation cleavage (S ₂) inclined, vertical	
multiple folds, arrows indicate fold axis (F ₃)	
F ₃ structures jointing (S ₃), inclined	
small-scale folds, arrow indicates plunge of fold axis (F ₃)	
anticline	
syncline	
jointing (in plutonic rocks), inclined	
fossil locality	
locality where age has been determined in million of years	
syncline	
breccia	
dyke or vein	
mineral deposit or prospect	
mineral locality	
magnetite	
pyrite	
specularite	
fluorite	
goethite	
silver	
lead	
zinc	
tin	
copper	
tungsten	
molybdenum	
gold	
primary road	
secondary road	

Geology by G.W. Lowey and J.F. Lowey, 1985.

Open File 1986-1

Drawn by the N.A.P. Drafting section

Approximate magnetic declination in 1985 was 30°27' east and decreasing 4.5' west annually.

Elevations in feet above mean sea level, contour interval 100 feet.

This map accompanies the following report Lowey, G.W. and Lowey, J.F., 1986. Geology of Spencer Creek (105B/1) and Daughney Lake (105B/2) map areas. Rancheria district southeast Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada. Open File Report 1986-1 with two 150,000 scale maps with marginal notes.

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LEGEND

QUATERNARY	
Pleistocene and Recent	
Q unconsolidated glacial, glaciofluvial, glaciolacustrine, alluvial and soil deposits	
Qbr basalt: porphyro-aphanitic with light green, 0.5 to 1 mm olivine phenocrysts in a light to dark brown groundmass; subaerial flows 2 to 5 m thick. Flow tops marked by vesicular rhy basalt; columnar jointing locally present.	
TERTIARY	
Eocene (?)	
Tmd mafic dykes, porphyro-aphanitic with biotite and rarely augite phenocrysts in a dark green groundmass; up to 1 m thick.	
Tfd felsic dykes, porphyro-aphanitic with quartz and albite phenocrysts in a light grey groundmass; up to 1 m thick.	
Tqv quartz veins, light grey, generally coarsely crystalline; associated minerals may include feldspar, pyrite, galena, sphalerite, siderite and epidote; generally less than 0.5 m thick.	
CRETACEOUS	
unsubdivided granite, granodiorite, orthogneiss and sheared and tectonized granite	
Kgt granite, speckled light grey or light red and dark black; aphanitic medium to coarsely crystalline and equigranular to porphyritic with up to 5 cm long orthoclase crystals; consists of 40% alkali feldspars, 30% quartz, 20% plagioclase and 10% biotite and/or muscovite. Minor amounts of granodiorite locally present.	
Kog orthogneiss: medium to dark grey and speckled light grey or light red and dark black; consists of augen of albite in a cataclastic matrix of quartz, feldspar and mica. Minor amounts of sheared and tectonized granite are present.	
JURASSIC (?) and CRETACEOUS	
JKdt dacite, light grey-green to dark black; aphanitic, medium crystalline and equigranular; consists of 60% plagioclase, 20% biotite and 20% hornblende (?).	
MISSISSIPPIAN AND DEVONIAN	
unsubdivided mylonite, breccia, quartzite and dolostone	
MPDs dolostone, light grey, very finely crystalline dolomite; massive.	
MPny mylonite, interlayered light and dark laminae of very finely crystalline quartz.	
MPqt quartzite, light grey-green; modal grain size is fine grained sand; mineralogically a quartzarenite with minor chlorite and muscovite.	
MISSISSIPPIAN	
Mat, ch intercalated andesite agglomerate and chert; andesite agglomerate is porphyro-aphanitic with 1 to 2 mm long hornblende phenocrysts in a light to medium green groundmass; andesite blocks range from 1 to 30 cm in length. Chert is medium green; horizontally laminated and bedded. Minor amounts of medium red argillite are locally present.	
DEVONIAN and MISSISSIPPIAN	
unsubdivided quartzite, metaconglomerate, phyllite, argillite and schist	
uDIMat, mc interbedded quartzite and metaconglomerate; quartzite is dark grey; modal grain size is medium grained sand; mineralogically a quartzarenite with zircon and tourmaline common, horizontally laminated and bedded. Metaconglomerate is dark grey; modal grain size is fine to coarse pebble gravel; mineralogically a chert pebble lithrudite. Minor amounts of black argillite and plant fragments are locally present.	
uDIMph phyllite, medium black, thin interbedded quartzite beds are present. Minor amounts of schist and argillite are locally present.	
DEVONIAN	
unsubdivided limestone and minor amounts of dolostone.	
mDls limestone, light to dark grey, finely crystalline massive or horizontally bedded; poorly preserved fossils (sparganites) are present. Minor amounts of interbedded black fetid dolostone and limestone are locally present.	
SILURIAN and DEVONIAN	
unsubdivided dolostone, siltstone, quartzite and limestone	
mSDls limestone, medium grey; finely crystalline, horizontally laminated and bedded.	
mSDqt quartzite, medium to dark grey, modal grain size is medium sand; mineralogically a quartzarenite with zircon and tourmaline common, horizontally laminated and bedded. Minor amounts of phyllite are locally present.	
mSDds, st dolostone and siltstone; light to medium grey, weathers medium grey to light brown; finely crystalline massive or thin bedded; trace fossils are present.	
CAMBRIAN and ORDOVICIAN	
unsubdivided phyllite, hornfels and minor limestone	
uCOph phyllite, light to medium grey, weathers light silver-grey; highly folded; minor amounts of black argillite and rare amounts of limestone are locally present.	
uCOhs hornfels, light grey brown, weathers light red-brown; finely laminated; magnetite and pyrite present along fractures. Minor amounts of marble and skarn are locally present.	
CAMBRIAN	
unsubdivided carbonates, includes interbedded limestone and phyllite, limestone, dolostone, marble and minor schist.	
ICma marble, light grey; coarsely to very coarsely crystalline; laminated and bedded. Minor amounts of schist are present.	
ICds dolostone, light grey, weathers light red; ranges from fine to coarsely crystalline; generally massive; pisolites are locally present.	
ICls limestone, medium grey; finely crystalline to bioclastic; archaeocyathids are locally abundant and trilobite fragments, oolites and pisolites may be present.	
ICls-ph interbedded limestone and phyllite; limestone is light grey and weathers light grey-brown; finely crystalline, massive or horizontally laminated. Phyllite is medium grey. Both limestone and phyllite beds are generally less than 10 cm thick and highly folded. Minor amounts of marble and schist are locally present.	
unsubdivided siliciclastics, including quartzite and phyllite and minor amounts of limestone.	
ICph phyllite, medium brown; thin interbedded quartzite beds and rare limestone beds are locally present.	
ICqt quartzite, light grey to medium brown, modal grain size is medium sand; mineralogically a quartzarenite with zircon rare, massive. Minor amounts of dark brown argillite are locally present.	

* unconsolidated deposits on the map are represented by the subdivided part of the lithostratigraphic units and lie outside of the outcrop symbol
** not exposed within this map area (see map area 105B/2)

MINERAL OCCURRENCES

Eleven previously known mineral occurrences are described. The following information was compiled from annual Mineral Industry Reports and Yukon Exploration and Geology Reports of D.I.A.N.D., the National Mineral Inventory (Energy Mines and Resources Canada), Assessment Report 06068 by F.R. Harris and field observations made during 1985.

(1) DALE Ag, Pb, Zn
A 20 cm wide galena-bearing quartz vein is exposed in a trench for a strike length of 20 m in granite (Kgt) of the Cassiar Batholith. The vein strikes 245° and dips 60° N. A 15 m wide mafic dyke (Tmd) parallels the vein and cuts it in one place. An envelope of poorly developed argillite alteration occurs around the vein. Drill intersections of 199.9 g/t Ag, 4.31% Pb and 2.68% Zn have been reported (D.I.A.N.D., 1984, p. 140).

(2) LUCK (FREER) Ag, Pb, Zn, Cu
Chalcocite, galena, sphalerite and minor argentiferous galena occur in quartz veins and lenses in fracture zones in granite (Kgt) which strike 085°-090° and dip 75°-85° S. Four veins occur in the Yukon and a fifth occurs on the B.C. side. The granite is also cut by northerly trending mafic dykes (Tmd) up to 5 m wide. Chlorite, sericite and argillite alteration envelopes occur in granite for several metres around the showings. A grab sample of galena in quartz assayed 56.2 g/t Ag, 8.4% Pb and trace Au (National Mineral Inventory).

(3) LUCKY (ANT) Ag, Pb, Zn, Cu
At least six trains of argentic boulders (Kgt) containing fine-grained argentiferous galena and lesser amounts of sphalerite, chalcocite, bornite and pyrite occur in talus of the Cassiar Batholith. Forty-three assays from different mineralized boulders average 9.25 g/t Ag, 57.9% Pb and 0.74% Zn (D.I.A.N.D., 1984, p. 146).

(4) HARDTACK Ag, Pb, Zn
Gossans of black iron oxides (goethite) and possibly manganese oxides occur along a contact between mafic dykes (Tmd) and Lower Cambrian interbedded limestone and phyllite (ICls-ph). Mafic dykes strike 075° and dip 60° S, paralleling an east-west joint and cutting across bedding. Two or more parallel quartz-calcite veins up to 15 cm wide with a strike length of 210 m have been reported. Veins strike 060°, cut across bedding and are manganese stained near surface. Mineralization consists of galena and sphalerite and a chip sample across 15 cm assayed 1305.1 g/t Ag, 65.5% Pb and 0.9% Zn (National Mineral Inventory).

(5) LUCK (A-B) Ag, Pb, Zn, W
Disseminated sphalerite, pyrite and pods of galena occur in interbedded limestone and phyllite (ICls-ph) in an east-trending lens shaped zone, 1 to 12 m wide and approximately 100 m long. Sulphides occur as replacement lenses and narrow, irregular veinlets. The mineralized outcrop is highly fractured and replacement occurs along a 270° striking 40° S dipping joint and fracture plane. The northern contact of the mineralized zone is marked by an east-trending calcite-scheelite vein which was emplaced along a fault. Detailed sampling indicated an average of 261.2 g/t Ag, 8.51% Pb and 9.9% Zn over 10 m (Craig and Laporte, 1972, p. 136).

(6) FIDDLER W, Ag, Pb, Zn, Sn
A series of northeast striking quartz veins (up to 0.8 m wide) occur in Lower Cambrian interbedded limestone and phyllite. Quartz veins contain variable concentrations of wolframite, galena, scheelite, fluorite and minor amounts of cassiterite, stannite, sphalerite, chalcocite and pyrite. Samples of the main

vein assayed 516.3 g/t Ag, 0.2% Cu, 3.34% Pb and 0.67% W over 1 m (Harris, 1971). A quartz breccia striking 060° and dipping steeply south is exposed 500 m east of the wolframite-bearing quartz veins for a strike length of 600 m and width of 40 m. The breccia contains unevenly disseminated scheelite and minor fluorite and assayed up to 0.54% W over 15 m (Harris, 1971). Limited exposures of massive galena occur in shear zones at the Pete and North showings.

(7) STERLING (ZULU LADY) Ag, Pb, Zn
The Sterling property is underlain by Lower Cambrian dolostone (ICds) near the western contact with the Cretaceous Cassiar Batholith (Kgt). The main showing consists of irregular pods of coarse-grained galena, sphalerite and pyrite associated with a north-trending dolostone-limestone breccia. The breccia is exposed in a trench over a 2 by 4 m area and is in sharp contact with marble to the west and dolostone to the east (Ron Stack, pers. comm. 1985). A 1 m wide carbonate vein trending 065° is exposed for approximately 60 m at the upper showing. The vein contains sparsely disseminated galena and is enveloped by a fine-grained dolomite breccia.

(8) KODIAK Ag, Pb, Zn, Cu
Narrow galena-bearing carbonate veins parallel northeast to east-trending fault and fracture zones, and replacement lenses parallel limestone-phyllite contacts near fault and fracture zones. The host rock is Lower Cambrian interbedded limestone and phyllite (ICls-ph). Surface exposures are oxidized to a black or rust colored wad. Mafic dykes (Tmd) occur locally and trend northeast to east. A chip sample taken across a 7.5 to 10 cm wide vein assayed 1376 g/t Ag, 37.3% Pb, 6.1% Zn, 0.6% Cu and 0.06 g/t Au (National Mineral Inventory).

(9) YP (BUTLER MTN.) Ag, Pb, Zn, Au, Cu
Massive sulphide lenses and quartz veins containing variable percentages of pyrrhotite, pyrite, marmarite (black sphalerite), chalcocite, galena and arsenopyrite are associated with a north-trending zone of steeply dipping felsic dykes (Tfd) and breccias. Sulphide mineralization occurs adjacent to felsic dykes and within breccias and sedimentary rocks (ICs). Drill intersections of 1526 g/t Au over 3.4 m and 337.37 g/t Ag over 2.2 m have been reported (D.I.A.N.D., 1984, p. 139).

(10) KERNS Ag, Pb, Zn, Cu, W
A gossan approximately 2 m wide is exposed in trenches in Lower Cambrian limestone (ICls). The gossan contains iron and possibly manganiferous oxides, x-ray diffraction identified goethite as the principal oxide. The gossan strikes 230°, paralleling an east-west joint direction and cutting across bedding. Quartz veins containing galena and minor sphalerite, chalcocite and scheelite have been reported. Grab samples taken over 0.7 m average 117.8 g/t Ag, 4.2% Pb and 0.7% Zn. Copper assayed as high as 0.9% and tungsten as high as 0.1% (National Mineral Inventory).

(11) HOT W
The claims are underlain by Upper Cambrian and Ordovician hornfels, argillite, minor skarn and marble (uCOhs) of the Kechika Group and are intruded by small dykes. Scheelite occurs finely disseminated in metamorphic rocks and may be accompanied by pyrrhotite and minor pyrite.

GEOLOGY OF THE SPENCER CREEK MAP AREA (105B/1), RANCHERIA DISTRICT, SOUTHEAST YUKON