Occurrence Details

Occurrence Number: 115O 051
Occurrence Name: Lucky Joe
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 12/15/2025 1:06:45 PM

General Information

Secondary Commodities: copper, gold, lead, molybdenum, silver, tellurium, zinc
Aliases: Burmeister
Deposit Type(s): Unknown
Location(s): 63°34'31" N - -139°30'16" W
NTS Mapsheet(s): 115O12
Location Comments: .5 Kilometres
Hand Samples Available: Yes
Last Reviewed:

Capsule

Work History

Staked as EM cl 1-34 (Y56922) and B cl 1-70 (Y56956) in Aug/70 by the Dawson Syndicate (Silver Standard Mines Ltd and Asarco Exploration Company of Canada), which performed grid soil sampling and drilled 3 holes (128.6 m) in 1971.
Optioned in 1975 by Rio Tinto Canadian Exploration Ltd, which performed mapping, geochemical sampling, magnetic and IP geophysical surveys, drilled two holes (424.9 m) and added Sunep cl 1-34 (Y99745) and BJB cl 1-17 (Y99868) in Jun/75 and Ash cl 1-44 (Y99883) and Pax cl 1-10 (Y99927) in Jul/75. In 1976 the company drilled 5 diamond drill holes (1 195.4 m) followed by a small mapping and geochemical program in 1977.
In 1978 the company drilled an additional 5 diamond drill holes (788.8 m) and staked Tar cl 1-6 (YA29800), Mad Dog cl 1-12 (YA29806), Extract cl 1-8 (YA31216) and Bushed cl 1-2 (YA31224). In 1980 the company carried out an EM survey before dropping the option. Silver Standard changed its name to Consolidated Silver Standard Mines Ltd in 1984 and Silver Standard Resources Ltd in Mar/90.
Restaked in Jul/92 as Heat cl 1-41 (YB41093) by Noranda Exploration Company Ltd.
In 2000 a low-level airborne magnetic survey was conducted jointly by the Geological Survey of Canada and the Yukon Geology Program (now known as the Yukon Geological Survey) over the region. Results released in 2001 (Shives et al., 2001), were used by S. Ryan to stake Lucky Joe cl 1-48 (YC20828) approximately 4 km to the southeast and Lucky cl 1-12 (YC21084) 3 km to the southwest in Sep/2001. Between Jul/2001 and Jul/2002 Ryan carried out prospecting and soil sampling programs on the claims.
In Jun/2002 Ryan optioned the claims to Copper Ridge Explorations Inc which proceeded to stake LJ cl 1-441 (YC21282) and carry out a large regional soil sampling program. The company also staked LJS cl 1-38 (YC21952) 7.5 km to the south on topographic map sheet 115O 06 to cover a newly discovered kill zone. In addition Copper Ridge optioned the 4 remaining B claims (B1-B2, B5-B6, (Y56956)), Ash cl 2 and 4 (Y99884) and Tar cl 1 (YA29800) from Silver Standard Resources Ltd and carried out a small sampling program to confirm previous results.
Copper Ridge optioned the newly named Lucky Joe project to Kennecott Canada Exploration Inc in Jan/2003. During the summer of 2003 the company carried out a large prospecting, soil sampling and trenching program on the entire claim package. In Aug/2003 Kennecott staked LJS cl 39-78 (YC27363) and LJ cl 442-483 (YC28403).
In 2005, Copper Ridge performed diamond drilling for Kennecott on the property. Five diamond drill holes were completed for a total of 1035.1 m.

Capsule Geology

The area is located at the northwest end of the Yukon portion of the Yukon-Tanana terrane. The region is currently being remapped by Ryan and Gordey (2002, 2003) as part of the Ancient Pacific Margin NATMAP Project initiated by the Geological Survey of Canada, Yukon Geological Survey and British Columbia Geological Survey Branch. Although a final report has not yet been released, preliminary results are available.
Geological mapping in the area is hampered by the fact that most of the Stewart River region escaped glaciation. Thus much of the area is covered by a thick soil veneer (~ 1 m), thick gravel and loess deposits in valley bottoms and by thick cover of forest, moss and lichen. The best bedrock exposure is along the main rivers and large creeks and on ridges of high elevation. In addition the rocks have been twice-transposed and have undergone intense metamorphism. Thus it is likely that the geology will change as more information becomes available.
The area is underlain by undivided metasedimentary rocks (unit DMps) including mica-quartz schist and paragneiss of psammitic, semipelitic and rare pelitic origin. Although transposed, they generally preserve primary compositional layering. The unit commonly contains members of micaceous quartzite and rare conglomerate. The metasedimentary rocks are overlain by amphibolite schist and gneiss (unit DMa) that are probably derived from mafic to intermediate volcanic or volcaniclastic rocks. The amphibolite is probably interstratified with the metasedimentary rocks. The sequence is intruded by grey gneiss (unit DMt), a unit described as intermediate to mafic orthogneiss derived from intermediate granitoid (tonalite to diorite) sheets and veinlets. The unit is interpreted as subvolcanic intrusions to the volcanic pile(s) represented by the amphibolite unit (unit DMa) with which it is intimately associated, essentially forming a volcanic-plutonic complex. Felsic to intermediate orthogneiss (unit DPg), composed of pink- to orange-weathering granite to granodiorite sheets and veinlets crosscut the diorite and tonalite sheets with which they were transposed. Several Jurassic or Cretaceous granitic stocks are believed to intrude the area.
The original discovery consists of copper mineralization contained within a quartz-muscovite and biotite-muscovite schist sequence that is overlain by a magnetite-bearing amphibolite and orthogneiss units. The mineralization occurs in blanket-like zones of disseminated chalcopyrite and pyrite with minor molybdenite that transgress lithological contacts. Within the sulphide zones, pyrite is more abundant near the top and chalcopyrite is concentrated near the base. The mineralized zone was defined over an 800 m strike length by 200 m wide and 30 m thick. Copper grades ranged from 0.35 to 0.6% over 20 to 30 m intervals with the best interval recorded being 0.95% copper over 5.2 m. Gold was shown to have close to a 1:1 correlation with copper. When copper assays are in the 0.95% range, gold values are in the 0.8 to 0.9 g/t range. The sulphide minerals appear to have been subject to the same metamorphism and deformation as the host rocks. Early researchers suggested a sedimentary diagenetic origin for the copper mineralization.
Results from the jointly funded 2000 a low-level airborne magnetic survey (Shives et al., 2001), were used by S. Ryan to stake the original Lucky Joe and Lucky claim blocks. The magnetics component of the survey identified a belt of northwest trending aeromagnetic highs trending from the Lucky Joe claims through the mineralized showings located on the surviving B claims. Ryan's soil sampling program showed that the aeromagnetic highs were anomalous in copper and the mineralization likely extended across the region. Ryan was able to use his preliminary results to option his claims to Copper Ridge Explorations Inc.
Copper Ridge's reconnaissance scale soil sample survey outlined two strong copper anomalies; the Bear Cub and Ryan¿s Creek. The Bear Cub is located 4.5 km north of the original Lucky Joe occurrence, and measures approximately 1 750 m long and 1 500 m wide and is open at both ends. The core of the anomaly measures 1 500 m by 1 000 m and averages 250+ ppm copper and 10+ ppm molybdenum. The Ryan's Creek anomaly approximately parallels the Bear Cub anomaly 3 km to the southwest. It is locally as strong as the Bear Cub anomaly, although in some areas it has a weaker expression. Using a threshold value of 60 ppm copper, it has a strike length of 3.5 km and a average width of 500 m. It is open to the north and partially open to the south. Its linear shape follows the transition from a magnetic high along the ridge to the west and a magnetic low in the valley. In both cases the anomalies appear to wrap around local magnetic high areas, as predicted by the geological model of copper mineralization underlying the magnetite-bearing amphibolite. A rock sample collected from an old trench located on the B1 claim near the occurrence, returned 4 301 ppm copper, 492 ppb gold and 35 ppm molybdenum.
Kennecott geologists mapped 5 principal rock units on the claim block. From east to west the rocks were divided into: 1) eastern class intrusions, 2) metaclastic unit, 3) amphibolite, 4)

quartzite and 5) western class intrusions. These units generally compare well with Ryan and Gordey's work and inconsistencies such as the division of intrusions into eastern and western classes can be traced to the extensive geochemical studies conducted by Kennecott.
The mineralization process present on the claim block is not yet fully understood. Sulfide mineralization consists of chalcopyrite-pyrite-pyrrhotite and trace molybdenum. Gold and silver are associated with chalcopyrite, occurring as inclusions of electrum. Surface exposures of sulphide are invariably oxidized and information concerning economic mineralogy has so far been determined from diamond drill core and to a lesser extent from trenches. Copper mineralization occurs in rock that contains at least some biotite, commonly near to or just within the muscovite-quartz alteration assemblage. Magnetite forms a halo above and or lateral to sulphide mineralization. Sulfides commonly follow pre-existing foliation, but post-fabric quartz-sulfide veinlets with sharp boundaries are at least locally observed.
At present there are two principal trends and several smaller zones of magnetite alteration. In general this alteration occurs locally to regionally in the hanging wall of muscovite-quartz alteration and roughly tracks the amphibolite unit. However many of the strongest magnetite occurrences occur in laminated felsic units. This may be a consequence of host rock mineralogy, as magnetite dominantly occurs with feldspar. The important observation is that magnetite occurs at least as a minor constituent in every unit, indicating that it is not a metamorphic product after hematite in a particular sedimentary horizon. At present Kennecott believes that a hydrothermal system may be the source of mineralization suggesting a porphyry copper-gold deposit or a variety of iron oxide copper gold deposit.
Reconnaissance soil sampling followed up by detailed sampling outlined two main copper-gold trends on the claims. Both are north-northwest trending zones that are anomalous in copper, gold, molybdenum, silver, zinc and lead +/- tellurium and +/- uranium. The easternmost zone referred to as the Lucky Joe Trend, trends at least 11.3 km and is defined by high soil values of 3 060 ppm copper and 235 ppb gold with associated silver and molybdenum. It includes the original Lucky Joe occurrence and the Bear Cub anomaly. The copper-gold zone extends outward into a lead and zinc halo that together outline a hydrothermal system over 21 km long and up to 3 km wide.
The westernmost zone is referred to as the Ryan Creek Trend, parallels the Lucky Joe Trend approximately 4 km to the southwest. It has a strike length of 7.2 km and is more strongly enriched in gold relative to the Lucky Joe Trend, with high soil values of 4 400 ppm copper and 611 ppb gold.
Test trenching across portions of the anomalies demonstrated that solifluction is present on many slopes and must be taken into account when following up anomalies and sighting drill holes.
In 2005, drilling targeted the 3.5 km long Papa Bear copper-gold soil anomaly and related IP chargeability anomaly. Drill Hole LJ05-03 intersected 74.1 m of 0.135% Cu and 0.032 g/t Au.

References

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YUKON EXPLORATION AND GEOLOGY 1983, p. 29; 2002, p. 17-18, 24; 2003, p. 16, 25.

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Work History

Date	Work Type	Comment
12/31/2003	Geology	
12/31/2003	Geochemistry	
12/31/2003	Trenching	

12/31/2003	Other	
12/31/2002	Geochemistry	
12/31/2002	Other	
12/31/2001	Geochemistry	Initial exploration.
12/31/2001	Other	Initial exploration.
12/31/2000	Airborne Geophysics	Geological Survey of Canada and Yukon Geological Survey flew low-level airborne magnetic survey over region. Results led Ryan to stake claims.
12/31/1980	Ground Geophysics	
12/31/1978	Drilling	Five holes, 788.82 m.
12/31/1978	Geochemistry	
12/31/1978	Geochemistry	
12/31/1977	Geology	
12/31/1977	Geochemistry	
12/31/1976	Drilling	Five holes, 1,195.43 m.
12/31/1975	Drilling	Two holes, 424.89 m.
12/31/1975	Geology	
12/31/1975	Geochemistry	
12/31/1975	Geochemistry	
12/31/1975	Ground Geophysics	Also IP survey.
12/31/1971	Drilling	Three holes, 128.63 m.
12/31/1971	Geochemistry	
12/13/2005	Drilling	Five holes, 1,035.1 m.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
094388	2003	Report on the 2003 Geological and Geochemical Work on the Lucky Joe Property	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Petrographic - Lab Work/Physical Studies		
090683	1980	Rio Canex Exploration Ltd. Geophysical Report on a Vector Pulse Electromagnetometer Survey Lucky Joe Option	EM - Ground Geophysics, Process/Interpret - Pre-existing Data		
090046	1975	Geochemical Survey B and SUNEP Claims	Soil - Geochemistry		
061293	1975	Geophysical Report B Claims	Magnetics - Ground Geophysics		

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
DDH-06-07	Lucky Joe	2006	NQ	2	1