Occurrence Details

Occurrence Number: 105D 205
Occurrence Name: Middle Chief
Occurrence Type: Hard-rock
Status: Deposit
Date printed: 12/16/2025 7:48:41 AM

General Information

Primary Commodities: copper, gold
Secondary Commodities: gallium, palladium, platinum
Aliases: Whitehorse Copper
Deposit Type(s): Skarn
Location(s): 60°38'15.48" N - -135°3'44.95" W
NTS Mapsheet(s): 105D11
Hand Samples Available: No
Last Reviewed:

Capsule

The Whitehorse Copper Belt is located west of Whitehorse and contains 30+ mines, deposits and showings. Many of the occurrences in the Copper Belt are skarns. The skarns form on or near the contact between the Whitehorse batholith and the Lewes River group. The Whitehorse batholith is commonly a grey coarse-grained hornblende granite and ranges from quartz monzonite to granodiorite to diorite. The Lewes River group contains numerous different rock types, most importantly of which is the limestone group, which is essential in the formation of skarns in the area. A small number of occurrences within the Copper Belt are vein and/or replacement and occur within the Whitehorse batholith granite.

The Middle Chief and Big Chief deposits are within 2000 ft (610 m) of the Little Chief deposits. Therefore, although there is little detailed work done on the Middle and Big Chief deposits, it is assumed that they display much of the same characteristics. The Middle and Big Chief deposits are considered a faulted northward extension of the Little Chief deposit. The description below is from the Little Chief Deposit:

"The Little Chief deposit is within the Hancock member of the Aksala formation in the Lewes River Group. The skarn occurs along the northwest trending contact between the granodiorite and the limestone and the ore is about 600 ft. (182.88 m) along strike and an average of 80 ft. (24.384 m) in width.

The Little Chief mine display features of both endoskarns and exoskarns however, the endoskarn is subordinate to the exoskarn. The skarns of the contact zone developed in three stages; the pyroxene Stage, The Magnetite-Andradite Stage, and the Serpentine-Chlorite-Epidote Stage. The skarn is believed to have formed between 525-300 °C with early contact metamorphic minerals forming in a high CO_2 environment and skarn minerals forming in a low CO_2 environment. The deposit shows characteristics of both infiltrational and diffusional metasomatic features. The deposit has been described as a bimetasomatic skarn in calcareous rocks onto which an infiltrational skarn has been imposed.

Ore minerals present within the deposit include bornite, chalcopyrite, valeriite and magnetite. During drilling, encouraging copper values have been intersected down to an elevation of 1430 ft (435.9 m). Total production at the Little Chief mine between operating years 1967-1982 was 8 536 400 tonnes (Includes production from the Middle Chief deposit) and the reported grade between 1972-1982 was 1.53 Cu%, 0.75 g/t Au and 9.16 g/t Ag."

Work History

Date	Work Type	Comment
12/13/1974	Drilling	
12/13/1974	Ground Geophysics	
12/13/1974	Geochemistry	
12/13/1973	Drilling	2 holes completed
12/13/1973	Geology	
12/13/1973	Pre-existing Data	
12/13/1973	Lab Work/Physical Studies	
12/13/1969	Studies	
12/13/1968	Drilling	
12/13/1967	Drilling	
12/13/1966	Studies	
12/13/1964	Drilling	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled

061173	1974	Report on Exploratory Work on Whitehorse Copper Belt	Diamond - Drilling, Drill Core - Geochemistry, IP - Ground Geophysics	10	2222.29
060525	1973	[Proposed Surface Drill Programs on the Little Chief-Big Chief-Valerie Properties]	Research/Summarize - Pre-existing Data		
062018	1973	Preliminary Report on Geological Control to Ore Distribution in the Whitehorse Copper Belt	Reverse Circulation - Drilling, Bedrock Mapping - Geology, Petrographic - Lab Work/Physical Studies	665	5555
062228	1969	Feasibility Study for the Underground Development of the Little Chief Orebody	Feasibility - Studies		
092558	1967	[Drilling of the Little Chief Orebody]	Diamond - Drilling	21	
062227	1966	An Evaluation of the New imperial Mines Ltd.	Feasibility - Studies		
091123	1964	Summary of assessment work for 316 claims	Diamond - Drilling	46	3652.57

Related References

Number	Title	Page(s)	Reference Type	Document Type
1984-1	The Whitehorse Copper Belt - A Compilation		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Open File (Geological - Bedrock)
ARMC004794	Map of Middle Chief and Little Chief ore zones		Property File Collection	Geoscience Map (General)
ARMC004790	Preliminary proposal for the Middle Chief pit surface - diamond drilling		Property File Collection	Report