



Occurrence Details

Occurrence Number: 105D 204
Occurrence Name: Little Chief
Occurrence Type: Hard-rock
Status: Deposit
Date printed: 4/28/2025 8:10:05 PM

General Information

Primary Commodities: copper, gold, silver
Secondary Commodities: gallium, palladium, platinum
Aliases: Whitehorse Copper
Deposit Type(s): Skarn Cu
Location(s): 60°38'10" N - -135°3'29" W
NTS Mapsheet(s): 105D11
Hand Samples Available: Yes
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 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 CO2 environment and skarn minerals forming in a low CO2 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. Copper mineralization has been intersected at depth to 1430 ft (435.9 m). The Little Chief mine operated between 1967-1982. Total reported production, including ore from the Middle Chief deposit, was 8,536,400 tonnes. The reported grade between 1972-1982 was 1.53 Cu%, 0.75 g/t Au and 9.16 g/t Ag. There are no reported grades for the period from 1967-1971.

Work History		
Date	Work Type	Comment
12/13/1973	Geology	
12/13/1973	Pre-existing Data	
12/13/1973	Lab Work/Physical Studies	
12/13/1969	Studies	
12/13/1967	Drilling	21 Drill holes completed
12/13/1966	Drilling	2 Drill holes completed
12/13/1966	Studies	
12/13/1966	Geochemistry	
12/13/1965	Studies	
12/13/1965	Geology	
12/13/1964	Drilling	
12/13/1963	Drilling	13 Holes completed

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
060575	1973	[Proposed Surface Drill Programs on the Little Chief-Big Chief-Valerie	Research/Summarize - Pre-existing Data		

060262	1973	Properties]	Research/Mineralize - Processing 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)	
ARMC004893	Magnetic survey map - sheet 460N/610E - Big, Middle & Little Chief and Valerie claims		Property File Collection	Geophysical Map	
ARMC004831	Map sections - 9850 N looking north and 9250 looking north of Arctic Chief and Little Chief		Property File Collection	Geoscience Map (General)	
ARMC004798	Map of geology - Little Chief		Property File Collection	Geoscience Map (Geological - Bedrock)	
ARMC004801	General geology map - North Star and Little Chief		Property File Collection	Geoscience Map (Geological - Bedrock)	
ARMC004828	Map sections - 9850 and 9250 - Arctic Chief and Little Chief		Property File Collection	Geoscience Map (General)	
ARMC004797	Map showing Valerie, Big Chief, Little Chief		Property File Collection	Geoscience Map (General)	
ARMC004793	Exploration composite map - Little Chief		Property File Collection	Geoscience Map (General)	
ARMC004808	Geology geology map - North Star and Little Chief		Property File Collection	Geoscience Map (Geological - Bedrock)	
ARMC004794	Map of Middle Chief and Little Chief ore zones		Property File Collection	Geoscience Map (General)	
ARMC004796	Map of Little Chief to Big Chief - DDH BC 1 to 6 drilled		Property File Collection	Geoscience Map (Geological - Bedrock)	
ARMC004806	General geology map - North Star and Little Chief		Property File Collection	Geoscience Map (Geological - Bedrock)	

Drill core at YGS core library					
Number	Property	Year Drilled	Core Size	Photos	Data
LC-94	Little Chief	1973	AQ	21	0