

Whitehorse Map-area, Yukon Territory***Properties in the Central Part of the Belt******Arctic Chief (33)***

Reference: McConnell, 1909, pp. 33-37.

The Arctic Chief is at an elevation of 3,012 feet above sea-level at the head of McIntyre Creek. It is accessible by a rough road 3 miles long from mile 9134 on the Alaska Highway.

The orebody lies on the west side of a northerly trending limestone body intruded by altered quartz diorite of variable composition. The granitic rocks near the Arctic Chief are strongly mineralized over a width of 400 feet for a length of 1,000 feet along the limestone-quartz diorite contact. The mineralization gradually diminishes away from the orebody. Where most intense, the original limestone and granitic rocks are almost entirely replaced by alternating bands and masses of garnet (brown andradite) and diopside. In addition to these, secondary minerals include epidote, actinolite, scapolite, and magnetite associated with bornite and chalcopyrite. The magnetite occurs as lenses and as disseminated grains.

Several large diorite-porphry and gabbro-porphry dykes cut both the limestone and the altered quartz diorite. These dykes have no effect on the mineralization of the region.

The orebody, as defined by the workings on the main level 65 feet below the surface, consists of a northwest-trending mass of magnetite about 230 feet long and from 25 to 40 feet wide. At its northwestern end the orebody curves away from the contact of the granitic rocks and is enclosed almost wholly in limestone. Ore continues for 25 feet in a 50-foot shaft sunk centrally in the orebody from the main level. Another lens of magnetite was encountered in workings connected to the bottom of this shaft. It was not determined whether this was a separate lens or part of the main orebody. A crosscut on the lower level intersected a vein of silver-bearing tetrahedrite.

Copper in the Arctic Chief lode exceeded an average of 4 per cent. Gold ranged from traces to over 2 ounces a ton, but did not bear a direct relationship to the copper content. Silver averaged about 2 ounces a ton although assays of 147 ounces a ton have been recorded from the tetrahedrite vein. A selected shipment of 140 tons, made in 1904, returned 0.39 ounce a ton gold, 2.5 ounces a ton silver, and 7.22 per cent copper. A shipment of 83 tons in 1907 yielded 0.18 ounce a ton gold, 2.00 ounces a ton silver, and 5.37 per cent copper.

The Grafter (34)

Reference: McConnell, 1909, pp. 38-40.

The Grafter lies about a mile north of the Arctic Chief and is accessible by the same rough road. The orebody is near the east end of a band of marble—one of several bands alternating with diorite. The bands are terminated on the east by andradite-diopside skarn and altered quartz diorite.

WHITE HORSE

5

Road

8b

4q/4q

LAKE

BL 26

600 N

ARCTIC CHIEF WEST OPEN PIT

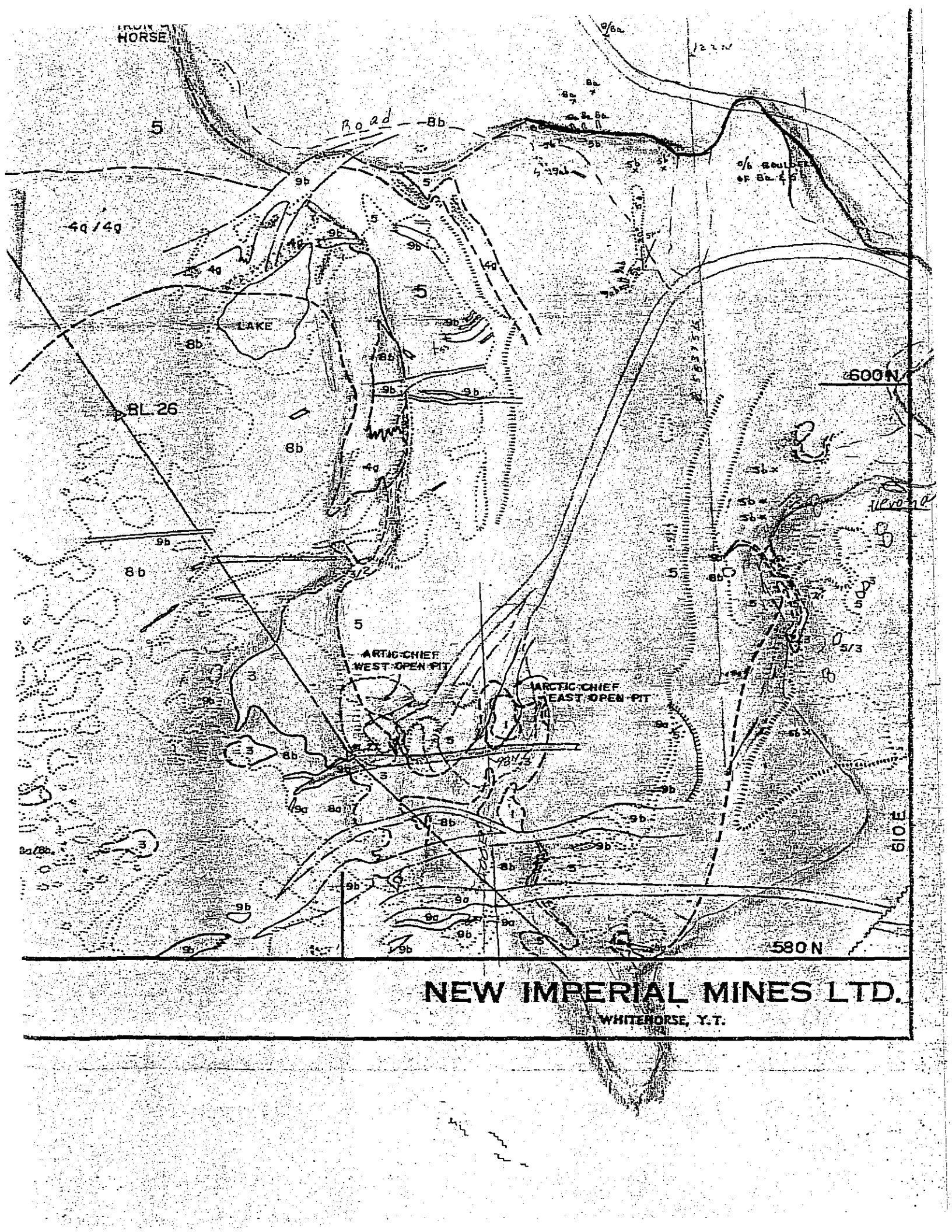
ARCTIC CHIEF EAST OPEN PIT

610 E

580 N

NEW IMPERIAL MINES LTD.

WHITEHORSE, Y.T.



January 20, 1975

V.V. Jutronich

Andy Hureau

Arctic Chief Exploration

The attached sketches are provided to support a proposal for an exploration program in the Arctic Chief area. Figures 1, 2 and 3 show that the mineralization intersected ^{by} DDH 40 may be an extension of the Arctic Chief East zone. Mineralization adjacent to the dyke on the west wall of the pit is of very high grade. (15% Cu)

A hole drilled to test the area near the AC 40 intersection would be in the order of 700'. However, if the hole were allowed to continue to test the sediments intrusive contacts east or west of the pit the hole may be in the order of 2200' in the former or 1400' in the latter case.

The second part of the proposal is more speculative but considered worthwhile. More mapping with particular emphasis of recording strikes and dips of the sediments should be done. Figures 4 and 5 show that the Arctic Chief pendant is in the order of 3500' long (Little Chief 2500') and up to 2,000' wide at surface (Little Chief 1000'). If the dip of the diorite contact shown on the west side of A.C. west on 9850 section is continuous and if the east contact is comparable then the Arctic Chief pendant 1200' below surface is comparable to that of Little Chief at surface. Generally the best mineralization has been found near the bottom of pendants on the belt. Drilling one hole per section every 800' on the pendant, approximately 20,000' of drilling would be required at a probable cost of \$300,000.


Several factors make the area particularly attractive:

1. It is less than 2.5 miles from the mill.
2. The mineralization-bornite -chalcopyrite in a magnetite skarn is similar to that of Little Chief.
3. The gold/silver values in the ore were high for the copperbelt. No production figures are available since most of the ore was milled along with Little Chief ore. Most holes were not assayed for gold and silver, however, A.C. No. 2, a vertical hole through the centre of A.C. east ran 0.1 gold over 86'. Several high gold, silver assays are shown in the adit north of A.C. west (Fig. 3). Skarn intersected in A.C. 39 from 450' to 514' ran 0.04 gold. Copper content was less than 0.1%.
4. The apparent dimensions of the pendant are large enough to allow for the presence of an orebody comparable to Little Chief.

January 20, 1975

To my knowledge none of the Hudson Bay geologists who reviewed the available information on the copperbelt recommended any work for the Artic Chief area. I suggest that we ask them to re-review the information on Artic Chief. If they still do not recommend drilling the area, a proposal should be made to renegotiate the option on that portion of the property. Whitehorse Copper should then do the work for a more favourable return, should an orebody be found, than is dictated by the present agreement.

I consider this area to be the best exploration target on the copperbelt.



A Hureau
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ARH/slp

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MEMORANDUM

Date: January 3rd, 1977.

TO: V.V. Jutronich
FROM: A. Hureau
RE: Arctic Chief Exploration

The attached sketches are provided to support a proposal for further drilling in the Arctic Chief area. Figs. 4 and 5 show that the Arctic Chief pendant is in the order of 3,500' long (Little Chief 2,500'), and up to 2,000' wide at surface (Little Chief 1,000'). If the dip of the diorite contact on the west side of the pendant is continuous, and if the dip on the east side is comparable, then the size of the Arctic Chief pendant 1,200' below surface would be comparable to that of Little Chief at surface.

The pendant which contains both pits as well as a 300' low grade mineralized zone south of the east pit, has been tested at depth by only AC 40 and AC 41. The latter hole drilled in November, 1976, to test for a possible extension of the ore in the east pit, was continued to test for a possible extension of the mineralization in AC 40.

AC 41 was in skarn for 563' before entering limestone. The skarn contained only patchy copper mineralization, the best section of which was 2' at 1.12% copper, and 0.099 oz./ton gold. Copper mineralization in the hole was normally associated with a later chlorite, serpentine, phase of skarnification, the intensity and pervasiveness of which might be expected to increase with depth.

The size of the pendant, its location - two miles from the mill, mineralization similar to Little Chief and the extensive skarn development, make the area an attractive target.

Four holes aggregating 6,000' are proposed as a preliminary test of the area.