NORTH STAR

INTRODUCTION

Location & Access

The North Star area is approximately 6,000' southeast of the Little Chief shaft, and is accessible by four-wheel drive vehicle from the Keewenaw haulage road.

Topography

The area is generally flat, and is relatively well forested. Outcrop northwest of the showing is scarce.

Claims

The area of interest is covered by claims Bob 5 and 6, and Emidele 12, 13 and 15. Claim GENO 33 Fraction was staked in 1975, to cover a possible northeastward extension of the zone. All claims are held solely by Whitehorse Copper Mines Ltd.

History

The area was prospected around the turn of the century, and several small pits were dug on small copper magnetite skarn zones. The claims were optioned from Geo. T. Simmons in 1965 by New Imperial Mines Ltd. A grid was cut over the area, and geological mapping and a magnetometer survey were completed.

In 1971, a broad low intensity IP chargeability anomaly was located, but was rated at too low a priority to be drilled at that time.

Reinterpretation of all available data in 1975 suggested that the showings were at the southeastern end of an embayment of sediments into the intrusive. Such a setting was analogous to most areas on the Copper Belt which contain economic or near economic deposits. Funds were obtained for further exploration, and a mapping program, magnetometer survey and drilling program were carried out during the summer of 1975.

GENERAL GEOLOGY

An embayment of Triassic Lewes River sediments composed of limestone and pyritic quartzite is surrounded on three sides by cretaceous granodiorite. The sedimentary rocks are cut by numerous porphry dykes, locally the sedimentary rocks have been metosomatized to garnet, epidote, diopside skarn or serpentine skarn.

The structure of the pendant is not yet clear. On the west side of the pendant, the rocks dip at a low angle to the west, while banding in the limestone and skarn near the North Star showing suggests a steep dip to the east. Banding in core of NS1 and NS2 suggests a shallow dip to the east.

MAGNETOMETER SURVEY

A magnetometer survey using a Scintrex MF1 Fluxgate Magnetometer was conducted over the area. Results do not clearly separate sedimentary areas from those underlain by the intrusive. Several very small positive magnetic anomalies were detected in the vicinity of the showings. One of these was to be tested by NS3, which was not drilled because funds had been depleted.

A low magnitude positive anomaly (+700) was tested by NS1, which intersected a pyritic hybrid zone of dioritized quartzite.

DRILLING RESULTS

NS2 was laid out to test an IP chargeability high in an overburden covered area, where the interpreted geology was considered favourable. The IP anomaly proved to be caused by disseminated pyrite in quartzite. However, the hole continued mainly in skarn from 139' to 1001.9'; the last 2' contained 7.44% Zn and 2.50% Cu. The hole continued in limestone to 1363.7' and remained mainly in skarn to 1569'. The skarn appeared to be grading to diorite toward the end. It contained traces of copper from 1365 - 1405'. From 1392' to 1394' (2'), it contained 1.75% copper, .41 oz./ton silver and 0.23% Zn.

CONCLUSIONS & RECOMMENDATIONS

The following factors, based on the work to present, are judged to make the North Star area an attractive exploration target:

1) Confirmation of the existence of a large sedimentary pendant of possibly 1,700' strike length, on strike with and one mile from Little Chief.

2) Skarn intersected in NS-2 did contain minor copper and zinc mineralization.

3) Approximately 1,000' of skarn was intersected in NS-2, much of which was serpentine skarn similar to the footwall of Little Chief.

4) The area is largely overburden covered; structural relationships are not clear. No drilling had been done until 1975.

The pendant should be drilled on a maximum of 400' centers, starting with the hole proposed under the North Star showing itself. The pendant appears to be relatively small in that area, and interpretation of the structure should be easier.

Funds for 8,000' of drilling have been requested in the 1976 budget.