REPORT ON MACKS COPPER PROPERTY - NORDENSKIOLD RIVER AREA, YUKON

By: James C. Snell
Arctic Explorations

(105-M-8)

013.55

REPORT FOR

ARCTIC EXPLORATION AND MINING CO. LTD

ON

MACKS COPPER PROPERTY

NORDENSKIOLD RIVER AREA, YUKON

OCTOBER 1964

INTRODUCTION

The following report to the company concerns operations at the Macks Copper Property on the Nordenskiold River , Yukon for the first two weeks of October 1964. To coincide with discussions and decisions made by the board of directors to carry out an initial phase of investigation and exploration on the property located 80 miles north of Whitehorse.

PROGRAM

Arrangments where concluded for a geophysical survey , geochemical survey and preliminary geological mapping as was prescribed by the company consultant Dr. AC Skerl. The program as outlined was contracted to White and Hosford of Dawson Creek, BC mining engineers and professional engineers for a cost of $ 4,000.00 over a time period of 2 weeks from time of departure. The quoted price was to include engineers services, helicopter transportation, camp services total wages and misc.

At 6.30 AM of Wednesday, October 7, 1964 two trucks of White and Hosford, and H Gloslee left Whitehorse for Twin Lakes mile 70 on the Mayo Road. Twin Lakes is located about 12 miles northeast of the Macks Copper property.

One Bell 47 Helicopter was utilized for transportation purposes The aircraft left Whitehorse at 7.30 AM and carried R. Newsom and J Snell to the property for purposes of supervision and inspection of the mineral body.

The helicopter proceeds to convoy men and equipment from the Twin Lake sight to the property camp sight near a small lake called Simmons Swamp a few thousand foot north of the mineral zone.

A total of 6 men where included in the exploration party brought to the property , plus food for two weeks, campgear and equipment. The party was directed by P White ,min.eng. and helper; two native assistance, and H. Closloe and associate claim stakers. Upon completion of the transfer operation R Newsom and J Snell returned to Twin Lakes and brought both vehicles to Whitehorse.

Total flying time was 5 hours and I5 minutes for a total cost of $ 550.00. This price has been included in the contract cost ostimates.

The field party will return to Whitehorse on the morning of October I9 , men and equipment being transfered to vehicles waiting at the Twin Lakes government camp sight.

GENERAL GEOLOGY

During the transfer operation approx. two hours in lenght R newsom and J Snell proceeded to inspect the property which included two particular mineral zones, the main zone which was a small hill of magnetite and a second zone several hundred foot to the west which was essntially a calcite, magnetite , copper showing area exposed at the top of an adjoining hill.

The property was origionally described by DD Cairns , Memoir No 5 Lewes and Nordenskiold River Coal District, 1910 and was lately described in a report to the company by Dr AC Skorl.

Both reports seem to be generally accurate in description and mapping by AC Skorl defines mineralized outcrop areas lying within the potential mineral zone.

The ore body appears to be a replacment of a limestone bed intermittent in an andesite sequence now tilted to an angle of about 35 degrees and lying at an elevation of about 4000 feet above sea level. Mineralizing solutions appear to have been localized within the andesite boundries and have effected an almost total replacement of the limestone by magnetite , calcite and sulphides including copper.

Field observations show an outcrop area on strike of about 500 feet and a possible thickness of 100 feet. The mineral zone appears to dip at about 35 degrees to the south east and under the overburden at about 300 feet on dip down the side of the hill.

Presumably then this would give an observable volumn of 500ft by 300ft by 100 ft or 15,000,000 cu. ft. of matterial. Since the mineral zone consists primarily of magnetite with 6.08 cu. ft. per ton and minor impurities of calcite and associated sulphides an estimated tonnage factor of 7 cu feet per ton could be used to determine the possible tonnage as exposed.

15,000,000 equals 2,142,837 tons

The surface area of mineralization at the top of the hill has been somewhat depleted by errosion and the above figure would be reduced by 2,500,000 feet or 357,142 tons.

2,142,837 - 357,142 equals 1,785,695 tons

This tonnage figure should again be reduced by a further 25 % to allow for low grade unmineable matterials which may exist within the calculated volume.

$\frac{25}{100}$ by 1,785,695 equals 446,400 tons

possible tonnage in sight 1,785,695 minus 446,400

equals 1,339,295 tons *

This tonnage figure roughly coincides with figures quoted by Dr Skerl of expected tonnage following initial drilling of 1/2 million tons proven , 1/2 million tons probable and potentially somewhat more.

POSSIBILITIES

The possibilities of extending these ore reserves appears good. This expantion would incorporate I) a horizontal extention of the main mineral zone on strike to a) the southwest toward the second mineral zone described by Cairns and Skerl b) to the northeast on strike and into low ground. 2) a possible down dip extention of the body to a lower granite contact.

CONCLUSIONS

The present exploration program which has incorporated a magnetometer survey will indicate definetely whether an increase in the ore reserves can be expected or not.

The drill program by Dr Skerl will prove or disprove a sufficient minable grade on existing potential tonnages. This program will require 2,400 feet of drilling at a cost of about £ 12,000.

ROAD CONSTRUCTION

October I2 I was accompanied by Gordon King ,pres of Whitehorse Construction comnany on a trip to Twin Lakes for the purpose of inspecting existing conditions for road construction to the property.

We left the road at Twin Lakes and travelled by Jeep cross country on a flat glacial vallyy for a distance of about I I/2 miles to a point for crossing Klusha Creek. The old Dalton Trail exists here as a horse trail which we followed for most of the distance.

The crossing of Klusha Creek was made on a fallen tree from where we travelled on foot. Klusha Creek is a small creek about I5 feet wide and about 2 feet deep with a high level rise of about three feet. A 20 to 25 ft beam span would be required here and could be installed with little difficulty.

Travel on foot was then continued for a distance of 4 miles to a point on the Nordenskiold River at the approximate crossing of the Dalton Trail. The entire valley floor from Twin Lakes to the Nordenskiold is relatively flat and absent from muskeg and permafrost. Observations made at several locations show considerable glacial gravel over which lies several inches to a foot of volcanic ash. The entire valley floor has been completely burned off and existing vegitation consists mainly of open grass land with considerable poplar (aspen) saplings and considerable areas of burn.

The Nordenskiold River is approximately 30 feet wide and 5 to 8 foot deep through the main 6 feet of channel. The expected rise in the wet season is 3 feet. For hauling heavy equipment a Bailey Bridge spanning about 50 feet might be advisable. For preliminary crossings for purposes of hauling diamond drills ,camp etc. 50 foot beams of laminated 3 by I2 s with cross planking was suggested by King as being adequate for immediate access.

Observation to the west of the Nordenskiold in the vicinity of the crossing shows a 4 mile inclined grade on relatively well timbered slopes.

CONCLUSIONS

1 Total length of access road requirements would be between I2 and I5 miles.

2 Two bridges will be required.

3 No muskeg, swamp or permafrost should be encountered.

4 Preliminary road construction for the first 6 miles will be only a matter of walking the cat.

5 Considerable glacial matterial should be available for matterials.

6 Preliminary single span bridges of laminated planks may prove most economical for preliminary river crossing to be utilized for moving in camp. drill equipment exploration crews etc.

7 Construction of a center pier by glory hole method for the Nordenskiold bridge would be advisable as the money is available.

8 It is advised that the cheapest method of access be utilized for the time being and as money is made available improvments can be made to road and bridges over a period of time.

9 King has advised that he would have preliminary road construction completed about 2 weeks after the beginning of the project.

10 Complete time estimates and cost estimates will be made available by Whitehorse Construction.

JAMES C SNELL BS.
Technical Director
Arctic Exploration and Mining