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● CONSOLIDATED MAYBRUN MINES LIMITED



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GEOLOGICAL REPORT ON THE MAYBRUN MINE PROPERTY

KENORA MINING DISTRICT

1984

OM83-3-I-155

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INTRODUCTION

During the 1983 summer season, Hans L. Matthews, a geologist with Consolidated Maybrun Mines Limited, remapped the surface geology at the Maybrun Mine, located in the Kenora Mining District, 75 km SE of Kenora. During this period a baseline trending N-S was cut and detailed mapping (1 inch to 200 feet) and sampling covering an area of approximately 1.2 square kilometers was performed. Sites for future drilling were surveyed at the end of the summer season. Since operations ceased at the mine in December 1974, speculation for a rise in the price of gold has instigated a re-evaluation of the property.

The Maybrun property consists of 30 claims, 22 of which are patented. Eight additional adjoining claims were staked in 1983. Both an open pit and underground development are present on the property. The open pit measures approximately 185m by 30m and trends S140°E. A 3-compartment shaft having a depth of 298 feet (92m) and 2 levels, one at 150' and the other at 275', is located northwest of the open pit.

Under the control of Sheridan Geophysics Limited, the mine was put into production in August 1973 at a scheduled rate of 500 tpd. Due to a decline in copper prices, the mine was closed in December 1974. Since the closure of the mine no systematic exploration work has been undertaken.

In light of recent developments in the further understanding of volcanic stratigraphy by other geologists, it became important to the writer that a detailed stratigraphic study be applied to the Maybrun property. Gold at the Maybrun is confined to one or perhaps two Archean basalt lava flows.

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Summary

The property consists predominantly of mafic basalts trending at 140° - 160° (NW) and dip 85° - 60° SW south of Head Bay (Atikwa Lake) (fig. 1). West of the bay, lithic units strike at between 000° and 010° (NE), and dip at about 50° W. Based on basalt pillow orientation, all units face SW south of the bay and W west of the bay. Narrow carbonate shears trending 140° - 170° are found in the open pit. There is a lack of surface evidence suggesting major faulting in the mine area; however, Davies (1973) denotes a major fault east of the mine, trending south from Head Bay.

There are three types of basalt lava flows on the property. These are designated by the writer as Unit 1a, aphyric basalts; Unit 1b, plagioclase-phyric basalts; and Unit 1c, carbonated aphyric basalts. Vesicular monolithic mafic pyroclastics (Unit 2) and cherts (3) are found intercalated between individual lava flows as discontinuous lenses. Medium- to coarse-grained gabbroic intrusive units (Unit 4) occur sporadically throughout the property as dykes and sills. Medium- to coarse-grained felsic to dacitic intrusives (Unit 5) are ubiquitous in and around Head Bay (Atikwa Batholith) and in the open pit as northeasterly-trending dykes.

The aphyric basalts (Unit 1a) are confined to the eastern part of the mine property, east of the open pit. Well pillowed to massive textures are preserved with chlorite and sericite in pillow selvages. Pillows are generally less than 0.5m. No sulphides were observed in this unit. There are a minimum of seven lava flows separated by tuffaceous lenses or non-mineralized cherts. These flows average 50m in thickness. At the bay, these basalts are in discordant contact with the Atikwa Batholith.

Plagioclase-phyric basalts (1b) overlie the aphyric basalt flows 150m east of the open pit. This unit hosts the copper-gold mineralization and can be traced for more than 1300m from south of the mine workings. (8+00S)

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northward around Head Bay to 34+00N. This unit, in the past, has been referred to as leopard rock and, more recently, spotted andesite, and consists of albitized, epidotized plagioclase phenocrysts in a mafic aphanitic matrix. The altered euhedral to subhedral phenocrysts range in size from 1cm or less in the massive parts of individual lava flows. In the pillowed upper parts of the flows, phenocrysts may attain dimensions of 7cm or less. There are a minimum of 3 porphyritic lava flows in this unit, each possesses an increase in phenocryst proportion (approximately 5%) at the top of the flow unit concomitant with an increase in selvage sulphide. These mineralized plagioclase-phyric flow units are denoted as I, II, and an upper flow III and have an average thickness of 60 metres.

Mineralization is confined to flow II with minor subeconomic gold present in flow III. Sulphides and visible gold are present in variable amounts over a strike length of 1300 metres in flow unit II. In the open pit, south of the bay, sulphides, in particular chalcopyrite, pyrrhotite and pyrite, predominate with minor amounts of visible gold in pillow selvages. Chalcocite, cubanite, covellite, sphalerite and tr. cobalt have also been reported (Setterfield, 1980; Menzies, 1953). Massive pillow triple-junction sulphides of chalcopyrite and pyrrhotite up to 20cm x 15cm are common in the open pit. Biotite, within the pillow and selvages, is a common accessory with the sulphide-rich parts of the flow in the pit.

Northward, along Unit 1b, sulphides occur in selvages west and southwest of the bay in flow units II and III.

Grab samples from the open pit assayed as high as 1.49oz/ton Au with 8.2% Cu (sample #1025). Other grab samples from the pit have assayed as low as 0.03oz/ton Au with a high Cu (8.5% Cu, sample #1028). Northwest along strike, grab samples with less amounts of chalcopyrite assayed as high as 2.24oz/ton Au with 0.145% Cu (sample #1040). Previous drill results by Noranda (1952-1953) and Maybrun Mines Limited (1956) reveal assay values as high as 0.51oz/ton Au, 1.268% Cu over a core length of 41.4 feet (DDH71, 10+00N, 11+45W, bearing 45°E, depth 260') located 300 metres northwest of the open pit. A deep hole drilled by Maybrun in 1956 intersected

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64.4 feet of 0.34oz/ton Au at a depth of 1300 feet beneath the open pit (DDH-M-84, bearing east). Gold at the Maybrun commonly occurs both free in selvages in chlorite with disseminated sulphides and/or, more rarely, as free gold in narrow (<1cm) granular grey quartz stringers discordant to pillow selvages. No exhalite stratiform sulphide occurrences were observed during mapping. Contacts between mineralized flow tops and overlying massive flow bases are abrupt.

Hanging wall units, overlying the plagioclase-phyric basalts, are aphyric pillowed to massive basalts (Unit 1c). Sulphides were not observed in these lava flows while mapping. In colour and texture, these basalts resemble those in the footwall (aphyric basalt, Unit 1a) but are unique in that in the pillowed parts of the flow units, massive coarse- to medium-grained white to buff calcite is ubiquitous. Some triple junction carbonates measure up to 20cm x 15cm in size and quite often contain hyaloclastic basaltic fragments at their margins. At the core of the carbonate selvage there is commonly a quartz crystal cluster. A minimum of six lava flows have been identified in this aphyric unit. Each flow contains a carbonate rich top within the small pillowed portion of the flow. The massive basalts at the base of the flow units do not contain noticeable carbonate. These flows are traceable for more than 1300 metres, trending northwest to northeast, south and north of the bay, respectively. Individual flows within 1c average 45m in thickness.

Capping the pile are medium- to coarse-grained massive basalts, herein referred to as gabbros. Mapping reveals that the gabbro is somewhat concordant and thus may be a sill. Gabbro dykes occur sporadically throughout much of the property and are not common.

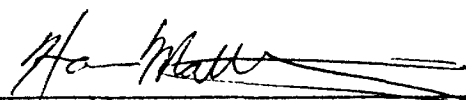
Granitic intrusives, referred to as "Granodiorite", "Hornblende Granite" and "Biotite Granite", are common in the open pit and generally attain an attitude of subvertical striking in a northeasterly direction. Sulphides are not observed in the granitic intrusives in the pit. Where mineralized basalts are intruded, contacts are sharp with the sulphides.

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In conclusion, the Maybrun property is part of a volcanic pile composed predominantly of massive to pillowed basalts. There are three basalt types. The base or footwall aphyric basalts in the mine sequence are non-mineralized. The ore zones are confined to a second type of basalt characterized by altered plagioclase phenocrysts. The ore (Cu-Au) is common in small pillow parts of the plagioclase-phyric flow units. Two flows, II and III, are considered exploration or development targets. Flow II may have more potential, based on surface sampling and past drilling. The mineralization and porphyritic nature of these basalts define the flow units in Unit 1b and thus these are good marker horizons for future exploration. Likewise, the overlying carbonate-bearing aphyric basalt flows in the hanging wall are ideal marker horizons. Consistent tops direction to the west, southwest, and the presence of extensive marker horizons suggest that there are no major faults or folds in the western part of the property. Granite xenoliths were not observed in any of the basalt units.

Based on the above geological interpretation, preliminary probable ore tonnage calculations by the writer for the area southwest of Head Bay (4+00S - 16+00N) are 1.9 million tons at 0.136oz/ton Au. to a depth of 300 feet. Ore in the area between 16+00N and 34+00N west of the bay is not included in the total tonnage. These results will be available at a later date.

Respectfully submitted,



Hans L. Matthews, B.Sc.