

MAR 19550003: CLEAR HILLS

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ECONOMIC MINERALS

FILE REPORT No.

FE-AF-003(02)

IAN M. COOK
CONSULTING GEOLOGIST
CALGARY, ALBERTA

703 - 5th Street West,
January 22nd, 1955.

Siebens Minerals Limited,
1106 Crescent Road,
Calgary, Alberta.

Dear Sirs:

Pursuant to your request, I have made a review of various geologic reports pertaining to the occurrence of iron ore in the Clear Hills district of northwestern Alberta. The review was made with particular reference to the advisability of further exploratory work on Iron Prospecting Permit No. 3.

The reports made available by your Company included a geologic report on Iron Prospecting Permit No. 3 by W. L. McDonald and various reports pertaining to the occurrence of iron ore at a locality 8 miles to the south of the Permit. A seismic shot hole and surface elevation map of the permit area was made available.

The occurrence of iron ore in the Clear Hills district was first noted in samples of wells drilled for oil and gas in Townships 89-91, Ranges 4 and 5 W6th. This information was augmented by the drilling of 10 core holes in the spring of 1954. The ore is oolitic in origin and occurs in the Kaskapau formation of Upper Cretaceous age. The ore body is apparently lens shaped, having an elongate north-south axis. The ore body dips southwestward in conformity to the dip present in the Clear Hills district. The strike of the ore body is generally northward through Township 90, Ranges 4 and 5 W 6th. A sharp westward change in strike of the ore body is present in the southerly portion of Township 91, Range 5 W 6th. This is the most northerly known extent of the ore body. The ore body occurs between elevations of 2,540 and 2,600 feet, and has an overburden of glacial drift ranging up to 200 feet, depending upon topographic relief. The ore thins to 0 feet to the west and is eroded off to the east. The ore body has a known length of approximately 10 miles and an indicated width of 3 miles. Maximum known thickness is 20 feet.

A geologic reconnaissance of Permit No. 3 was made by W. L. McDonald. The permit area was thoroughly covered by helicopter. No bedrock outcrops were found. McDonald found some evidence of oolitic iron float on sand bars on the Notikewin River. These occurrences were all glacial, and offer no evidence as to the source of the iron. McDonald was of the opinion that further work on the permit was not justified.

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Due to the absence of outcrops, the only method of evaluating Iron Permit No. 3 would be by means of core holes. A topographic map of the permit was made, using the surface elevations of seismic shot holes. Based on the assumption that the strike of the ore body would continue to be north in Townships 91 and 92, Range 5 W 5th into the permit area, and occur between the elevations between 2,540 and 2,600 feet, the only area of interest on the permit is a relatively small area in the northern third of Township 93, Range 5 W 6th and possibly a portion of Township 94, Range 5 W 6th. This area would be further restricted after allowance is made for the presence of glacial drift. Should the strike of the ore body continue to be westerly, as it is at its most northerly known occurrence in Township 91, Range 5 W 6th, then the projection of the ore body would be to the west of the permit.

Shot hole logs in the area of interest were made available by the British American Oil Company Ltd. The depths of these holes were 80 feet on the average. All of the holes would appear to bottom in glacial drift. No indication of iron ore could be discerned from the logs.

It would appear that further exploration on Permit No. 3 is confronted with two problems: firstly, to find the ore, and secondly, the thickness of the overburden which would appear to be the limiting, or economic, factor. Present information suggests that the ore, if present, would have an overburden of at least 100 feet. It is my understanding that the Clear Hills iron ore is not economic with such an overburden. It is my opinion, under these conditions, that Iron Prospecting Permit No. 3 does not warrant the expenditure of further monies and it is recommended the Permit be dropped.

Yours very truly,



Ian M. Cook

P. Eng.