the lean siliceous magnetite of the iron formation. The ore as found at this mine is of two types: the first is a more or less massive magnetite, free from banding, and possibly represents a portion of the original iron formation that was subsequently enriched by iron-bearing solutions; the second is a fine-grained banded siliceous magnetite, somewhat higher in iron than the typical Keewatin iron formation, since it carries about 37 per cent iron and 45 per cent silica. From the ore of the first type it was found possible to produce a marketable concentrate, carrying about 55 per cent in iron, by magnetic cobbing, and a considerable quantity was produced in this way. Since, however, the quantity of crude ore of this type available was very limited, it became evident that, if the mine was to continue in operation, means must be found for utilizing the lower grade banded material of the second type. Experimental tests showed that by very fine grinding, followed by magnetic concentration on Gröndal separators, a good separation of magnetite from gangue could be effected, and that by subsequently briquetting and sintering the resultant concentrate, a product of Bessemer grade, carrying 65·6 per cent of iron, and excellently adapted for blast furnace use could be obtained—2·1 tons of crude ore being required to produce a ton of concentrates.

A mill to treat the low grade ore along these lines was accordingly built in 1912. From the start, however, practical difficulties were met with in its operation, and in 1915, after three years experimenting and the production of some 10,159 gross tons of finished briquettes, it was finally closed, the process having proved unsuccessful commercially.

In southeastern Ontario magnetite has been mined in the past from a number of deposits scattered through the counties of Haliburton, Peterborough, Hastings, Renfrew, Frontenac, Lanark, and Leeds. The total production from these, as nearly as can be estimated from the information now available, has been between 700,000 and 750,000 tons. The chief producers were, in the order of their production, Blairton, Wilbur, Bessemer, Coe Hill, Glendower, Black Bay, Radnor, and the Matthews and Chaffey (titaniferous) mines. All of them are now idle. None of the individual deposits are very large. The deepest any of them has been worked is about 350 feet; in most the workings are much shallower. The known dimensions of the deposits do not indicate that there is in the aggregate more than a very few millions of tons of commercial grade available.

The ores vary from lean magnetic gneiss with bands and ribs of magnetite to deposits of nearly pure magnetite. The better grades will average 50 to 55 per cent in iron, but considerable cobbing would have to be done to keep any large quantity up to this standard. The sulphur content, while variable, is usually too high to allow the ore to be used in the blast furnace without some preliminary treatment for its removal.