VTI Resources Pty Ltd

Møre 1-10

Final Report

1. License Holder and License Information

VTI Resources Pty Ltd (VTI).

Tenement/ Prospect	Licence Type	Status	Area (Km^2)
Møre 1	Exploration	Granted Sept 2018	10
Møre 2	Exploration	Granted Sept 2018	10
Møre 3	Exploration	Granted Sept 2018	10
Møre 4	Exploration	Granted Sept 2018	10
Møre 5	Exploration	Granted Sept 2018	10
Møre 6	Exploration	Granted Sept 2018	10
Møre 7	Exploration	Granted Sept 2018	10
Møre 8	Exploration	Granted Sept 2018	10
Møre 9	Exploration	Granted Sept 2018	10
Møre 10	Exploration	Granted Sept 2018	10

2. History

The Møre province is situated in south-central coastal Norway, and hosts a series of deposits of vanadiferous, titaniferous magnetite with subordinate ilmenite. The Rødsand (also known as Raudsand) mine in this region was discovered in 1850 and was worked from 1891 to 1981 for vanadiferous magnetite with ilmenite as a by-product.

3. Regional Geology

According to historical texts, “proven reserves” (non-JORC or 43101) at Rødsand total 11Mt with “additional resources” of 120Mt[1], although these figures vary depending on the source. Ore grades quoted in historical texts also vary, and occasionally vanadium grades are missing altogether, since the vanadium was treated as a by-product, but include 35% Fe, 6% TiO_2 and 0.5% V_2O_5 from a USGS report[2]. Situated on the Tingvoll Fjord, concentrates produced at the mine were historically loaded directly into coasting vessels for shipment to a nearby smelter, from which pig iron and ferrovanadium were produced[3]. The following is a quote from the Fennoscandian mineral database on Rødsand:

“The Rødsand Fe-Ti-V deposit was a major source of Fe-Ti-V ore in Norway for 80 years, until mining ceased in 1981. It is associated with Fe-Ti oxide-rich amphibolites surrounded by Paleoproterozoic orthogneisses. The ore comprises disseminated to semi-massive Fe-Ti oxides and consists of several ore bodies within three main amphibolite units. The ore bodies are ribbon-shaped, commonly en echelon, and appear to be restricted to the marginal parts of the amphibolites. Individual ore bodies contain massive and banded ores, and their lateral extension is from 50 m to 700 m with thicknesses ranging from 5 m to 80 m. The main oxide minerals are titanomagnetite and hemo-ilmenite. The crude ore produced contained 25–30 % magnetite, 3.5–4 % ilmenite and 0.15–0.20 % V (0.36% V_2O_5). The following concentrates were produced: (1) Magnetite with 64% Fe, 2 % TiO2 and 0.5% V (0.89%V_2O_5) for the production of pig iron and ferrovanadium at Elkem's metallurgical plant at Svelgen. (2) An impure ilmenite concentrate sold as heavy medium for coal separation. (3) Amphibolite aggregate. Proven and probably resources are 11 Mt, whereas possible ore resources in the Rødsand area are 120 Mt.” Along strike from Rødsand, there are multiple other recorded vanadium occurrences. Among these is Sjøholt, with grades of 36% Fe and 0.6% V_2O_5 quoted in historical texts. Historical reports noted the possibility of these prospects being aggregated together into a large, single project. The following is a translated quote from the Fennoscandian mineral database on Sjøholt:

“The occurrence is associated with amphibolitic lenses in gneiss, with the disseminated and massive appearance of vanadium-containing titanium magnesia and ilmenite. The value components are primarily iron and vanadium, both bound in titanium-containing magnetite (titanium magnetite). Geis (1967) states: At magnetometer measurements in 1962, the output of the Lid field has a length of 850 m. The mineralization appears to consist of a number of single lenses. Three diamond drill holes have been drilled quite close to the outcrop of the ore. An average width of 15.63 m was recorded with a grade of 35.52% Fe. Thus, if the ore is continuous, one obtains a vertical ore cross section of 13300 m2 corresponding to 46500 tonnes per. m inwards. Geis refers to a note by Lieutenant Colonel Smith dated 14. March 1947, which refers to an experiment performed at Bring in 1937, where the ore contains 41.51% Fe, 11.88% TiO_2 and 0.34% V (0.61% V_2O_5)…..” “In practice, any mining operation must be connected to a smelter similar to that of Elkem at the time that the Rødsand mines were in operation. However, the total resource base for this type of deposits in the region of Sjøholt-Rødsand is significantly distributed among a number of occurrences (see Sanetra 1985). A theoretical possibility is that in the future a favourably located processing plant / smelter will be built for this kind of ore, for example in combination with natural gas, and based on raw materials from deposits in the region as well as elsewhere. This scenario should have been further developed.”

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[1] *Korneliussen et al. 1985, in http://www.ngu.no/upload/Publikasjoner/Bulletin/Bulletin436_27-38.pdf, also http://gtkdata.gtk.fi/fmd/fullreport.html?layerid=20&name=R%C3%B8dsand

[2] Fischer, 1975. Vanadium Resources in Titaniferous Magnetite Deposits. Geological Survey Professional Paper 926-B.

[3] https://pubs.usgs.gov/pp/0926b/report.pdf

4. Overview of Measurement Data and Sample Material

No measurement data or samples taken, due to collapse in vanadium prices.

5. Results of Work Studies

No field work carried out, due to collapse in vanadium prices.

6. Results of Work Studies

No field work carried out, due to collapse in vanadium prices.

7. Reason for Relinquishment

Global collapse in vanadium prices.

8. Maps and Figures

No field work carried out, due to collapse in vanadium prices.