



THE PENHALONGA BAUXITE/ KAOLIN DEPOSITS

Manica Province, Mozambique

PROJECT MOZ/ 84/ 007
CONCLUSIONS AND RECOMMENDATIONS

September 1989

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REPORT CONCLUSIONS

Exploration work undertaken by the Project has shown that the Penhalonga bauxite and kaolin deposits in Mozambique's Manica province are of limited extent including the Alumen Mine and Marondo areas. They are residual in nature and mainly overlie gabbroic rocks, epidiorites, and granitic gneisses. Anorthosites appear to be the parent rocks of the high-grade bauxites.

The following total reserve resources, proved and indicated, have been determined:

- Bauxite from 45 to > 55% Al_2O_3 and < 10% Fe_2O_3 = 1 374 600 tons
- Bauxite, mixable, > 42% Al_2O_3 , and from 10 to 16% Fe_2O_3 = 756 850 tons
- Ferruginous bauxite, > 41% Al_2O_3 , and from 10 – 16% Fe_2O_3 = 520 000 tons
- White, bauxitic clay with gibbsite concretions = 662 150 tons
- White, kaolinitic clay with scattered gibbsite concretions = 2 792 800 tons

The amount of gibbsite concretions of +1/4" in diameter contained in the white clays is estimated at around 250 000 tons.

Ore dressing tests and technological assays indicate that three separate end-products can be obtained by appropriate ore processing procedures for future commercialization:

- Bauxite between 45 and 50% Al_2O_3 for continued aluminium sulphate production;
- Gibbsite concretions for refractory specialities in ceramics manufacturing;
- White, kaolinitic clay for the ceramic and building industries.

The restricted amounts of bauxite reserves available preclude their utilization as a main raw material supply source for the aluminium industry. Moreover, test results from three different specialized laboratories do not advocate an application of the bauxites in refractory and/or abrasive materials in view of their partly unfavourable chemical and mineralogical composition. Therefore the construction of a calcination plant does not seem to be realistic at this time.

REPORT RECOMMENDATIONS

For a smooth and economic continuation of current bauxite exploitation at Alumen Mine for aluminium sulphate production the following immediate measures are recommended:

- Restrict bauxite mining to a few quarries to avoid further depredation of the deposits causing accelerated depletion of high-grade bauxites. Quarries 2 and 1-3-7 are suggested for continued extraction work;
- Establish clearly defined waste disposal areas, and zones for crude ore stocks of different types and grades for future use, such as high and medium-grade bauxites, kaolinitic clays, gibbsite nodules, and mixable bauxite.

About Mina Alumina Lda.

Mina Alumina Lda. is a bauxite mine situated on the Zimbabwe/ Mocambique border. The mine is unique as it is the only bauxite mine in operation in Southern Africa, the nearest alternative being in Tanzania. Mina Alumina has been worked almost continuously since 1935 mainly for the refractory, cement and water treatment industries. Mina Alumina Lda. was the very first foreign-owned mine in Mocambique, and was incorporated in 1992.

The family owned company has an outstanding financial performance and solid order book with Larfarge, Zambia as one of the major customers. For succession reasons, Mina Alumina Lda. is for sale as a whole or as a majority share and interested parties are encouraged to make contact to discuss the opportunity in more detail.

Interested Investors To Contact:

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