

LAUNCESTON,
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No 131

INVESTIGATION 37-42/45.SILICA SAND AND QUARTZITE-ULVERSTONE.BENEFICIATION TESTS.

Samples of silica sand (Pearson's) and quartzites from Ulverstone were received from Mr. D. R. Dickenson, Extension Officer on the 25th January. Analyses were required and reported on the 9th of February. At the request of the Director of Mines tests were undertaken on the sand and a composite of the quartzites (Reg. No's. 38-42) by acid treatment to reduce the iron contents. It was stated that for the required purpose the maximum percentage of ferric oxide allowable was 0.02 percent.

Reg. No. 37. Silica Sand. This sample contained 0.02 percent of ferric oxide and therefore did not require beneficiation to reduce the iron content. A digestion with hot 10% Hydrochloric Acid reduced the ferric oxide content to 0.01 percent. After acid digestion it was noted that the settled solids showed a definite top band of light pinkish material. It may be possible to reject this band by elutriation but this could not be accomplished without appreciable loss of high grade silica (vide sizing analysis 9.2.45, page 3). This material is probably a mixture of the finest silica and clay etc. Pulping the sample with water alone and settling does not result in any visible separation of material other than general sizing.

Reg. No. 38-42, Composite Sample. Quartzite. After reduction to minus 5 mesh by jaw crusher the sample was submitted to digestion with hot 10 percent Hydrochloric Acid with the following result:-

Ferric oxide content of sample	0.4 percent
" " extracted	0.047 "
" " in residue	0.353 "

Acid digestion does not reduce the ferric oxide content to any appreciable degree.

Vanning tests on finely ground material resulted in practically no concentration of impurities. Several isolated grains of hematite one to two millimetres in size were observed in hand specimens. Some of the ferric oxide is present in a very finely divided state as an intimate mixture with quartzite.

Test work on the quartzite indicates that reduction of the ferric oxide content to 0.02 percent is not practicable although selected material may be more amenable to treatment. The percentage of ferric oxide in the samples and in the composite ranged from 0.24 to 0.8 percent.

CHIEF CHEMIST & METALLURGIST.

The Director of Mines,
HOBART.