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ALL OFFICIAL CORRESPONDENCE
SHOULD BE ADDRESSED TO THE DIRECTOR.
DIVISION OF ORE DRESSING AND
METALLURGY

G. C. MACKENZIE, B.SC., CHIEF OF DIVISION
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B. M. DERRY, MILLMAN



MINES BRANCH
EUGENE HAANEL, Ph. D.
Director.

OTTAWA, Ont., July 11th, 1918.

Report of the Ore Dressing & Metallurgical Laboratories.

Test No. 92

MOLYBDENITE ORE from LOON LAKE, ONT.

On July 3rd, 1918, a sample of 502 pounds of Molybdenite Ore was received from J.A. Johnston, Loon Lake, Ont.

The molybdenite was of the flake variety in a quartz and felspar gangue, practically free from other sulphides but containing a small amount of mica.

Net weight of Ore received-----502 pounds.

Analysis-----MoS₂-----2.14%

MoO₃-----0.10%

Content-----MoS₂-----10.7428 pounds.

MoO₃-----0.5020 pounds.

Tests were conducted on the Laboratory Flotation Machines to determine the adaptability of the ore for concentration.

1000 grams of the ore crushed to pass 48 mesh. .0116" aperature were taken for each test.

The oil used in each case was 1 pound of #5 Pine Oil per ton of Ore, and 3 pounds of Coal Oil per ton of Ore.

Each test was agitated in a pebble mill to obtain a mixture of the oil, water and ore for 10 minutes.

On test #1- only the tailings were analysed which gave 0.29% MoS₂ .

On Test #2- only the tailings were analysed which gave 0.19% MoS₂ .

On Test #3- all products were weighed and sampled with the following results.

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"2"

Concentrates obtained-----21 grams.
Analysis-----MoS₂-----85.70%
Content-----MoS₂-----17.9970 grams.
Recovery of MoS₂ Values-----90.1 %
Middlings obtained-----23 grams.
Analysis-----MoS₂-----2.77%
Content-----MoS₂-----0.6371 grams.
%age of MoS₂ Values-----3.2%
Tailings obtained-----956 grams.
Analysis-----MoS₂-----0.14 %
Content-----MoS₂-----1.3384 grams.
Loss of MoS₂ Values-----6.7%

Figuring on a Recovery of 70% of the MoS₂ Values in the Middlings, the total recovery would be 92.3% of the Values in the Crude Ore.

Conclusions:- From the above results it has been determined that this ore can be easily concentrated. The Laboratory tests show a concentrate of grade 85.70% MoS₂ with a recovery of 92.3% of the MoS₂ Values. In practice better results should be obtained. On an ore of this class a concentrate of grade 90% with a Recovery of 95% of the MoS₂ Values could be expected.