

O T T A W A

September 8th, 1942.

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of the

ORE DRESSING AND METALLURGICAL LABORATORIES.

Investigation No. 1293.

Flotation Concentration of Molybdenite Ore
from La Pause Township, Quebec.

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Flotation Concentration of
Molybdenite Ore from
La Pause Township, Québec.

Shipments:

A shipment of ore was received on July 1st, 1942, weighing 250 pounds. A second shipment was received on August 17th, 1942, weighing 290 pounds. This second shipment contained 2 samples of ore designated "No. 1 Vein, 12 feet wide," and "No. 2 Vein, 33 feet wide."

The shipments were submitted by J. A. Turgeon, Villemontel, Québec.

Location of the Property:

The property, known as the La Pause property, is located in La Pause township, at Villemontel, Quebec.

Purpose of the Investigation:

This investigation was made to determine the recovery and grade of concentrate that might be expected from ore similar to that of the shipment.

Character of the Ore:

Hand specimens showed small grains and thin stringers of almost amorphous molybdenite very sparingly disseminated in the gangue. The second shipment was apparently slightly higher in molybdenite content.

Sampling and Analysis:

The shipments were crushed and sampled by standard methods and were found to contain:

Shipment No. 1:

Molybdenite sulphide (MoS_2) - 0.23 per cent.

Shipment No 2:

Sample No. 1 Vein.

MoS_2 - - - - - 1.31 per cent.

Sample No. 2 Vein.

MoS_2 - - - - - 0.65 "

Investigative Procedure:

Representative portions of the shipments were concentrated by flotation.

Results of Tests on Shipment No. 2, (Combined):

92 per cent of the molybdenite was recovered in a concentrate assaying 90.38 per cent MoS_2 . The ratio of concentration was 92.6:1.

Details of Tests:

Test No. 1 (SHIPMENT NO. 1).

A representative portion of the ore of Shipment No. 1 was ground in a ball mill, dilution 4:3, to give a product 94 per cent minus 200 mesh.

Reagents:

<u>To ball mill -</u>		<u>Lb./ton</u>
Kerosene oil	-	0.75
<u>To flotation -</u>		
Pine oil	-	0.10

The concentrate was recleaned with 0.025 pound of pine oil per ton.

Results:

<u>Products</u>	<u>Weight, : per cent</u>	<u>Assays, : per cent MoS₂</u>	<u>Distribution, : per cent MoS₂</u>	<u>Ratio of : concen- : tration</u>
Feed	: 100.00	: 0.21	: 100.0	: ' :'
Flot. cleaner conc.	: 0.19	: 68.12	: 61.0	: 526:1.
" " tailing	: 0.97	: 3.43	: 15.7	: 103:1.
" tailing	: 98.84	: 0.05	: 23.3	: : :'

61 per cent of the molybdenite was recovered in a concentrate assaying 68 per cent MoS₂. The ratio of concentration was 526:1.

Owing to the low mineral content of the ore, difficulty was experienced in obtaining a concentrate of marketable grade.

Test No. 2 (SHIPMENT NO. 2).

The ore from this shipment was mixed for the test work.

The feed to the tests was made up of one part of No. 1 Vein ore and two parts of No. 2 Vein ore.

The calculated value of the feed was 1.06 per cent MoS₂.

(Details of Tests, con't) -

A representative portion of the mixed feed was concentrated by flotation.

Reagents:

<u>To ball mill -</u>	<u>Lb./ton</u>
Sodium silicate (water glass) -	0.75
Kerosene oil -	0.30

Grind, 97.0 per cent minus 200 mesh.

To flotation -

Pine oil	- 0.10
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The concentrate was recleaned without reagents.

Results:

Products	:Weight, : per : cent	: Assays, : per cent : MoS ₂	: Distribution, : per cent : MoS ₂	: Ratio of : concen- : tration
Feed	: 100.00	: 1.06	: 100.0	:
Cleaner conc.	: 1.08	: 90.38	: 92.1	: 92.6:1.
Cleaner tailing	: 0.32	: 4.54	: 1.4	: 312.5:1.
Flot. tailing	: 98.60	: 0.07	: 6.5	:

The rougher concentrate assayed 70.76 per cent MoS₂ with a ratio of concentration of 71.4:1. The recovery in the rougher concentrate was 93.5 per cent.

This test indicated that a suitable grade of molybdenite concentrate could be obtained from ore similar to that submitted in Shipment No. 2.

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