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DIVISION OF ORE DRESSING AND
METALLURGY

G. C. MACKENZIE, B.SC., CHIEF OF DIVISION
W. B. TIMM, B.SC., 1ST ENGINEER
C. S. PARSONS, B.SC., 2ND ENGINEER
H. C. MABEE, B.SC., CHEMIST
R. J. TRAILL, ASST. CHEMIST
B. M. DERRY, MILLMAN



MINES BRANCH

EUGENE HAANEL, PH. D.
Director.

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REPORT OF ORE DRESSING AND METALLURGICAL LABORATORIES.

Test No. 119.

Six small samples of scheelite were received on March 22nd, 1919 at the testing plant of the Ore Dressing and Metallurgical Division from G. B. Mackenzie, Gold Commissioner of the Yukon Territories, Dawson City. These samples had been taken from the Sun Bay and Cairnes claims, Dublin Gulch.

Four of the samples, Nos. 1, 2, 4 and 5 were of scheelite ore as mined, and the remaining two, which had lost their numbers in transit, were of scheelite panned from the original ore.

Analyses on all the six samples for tungsten trioxide (WO_3) were desired, besides a small concentration test on the four original samples. It was decided also at the testing plant to assay some of the samples for gold.

Analyses:-

<u>Samples,</u>	<u>WO_3</u>	<u>Au. oz./ton.</u>
#1.	10.00	
#2.	20.00	
#4.	9.20	
#5.	4.80	nil
Large panned	63.40	nil
Small panned	61.30	

For the concentration test, the remainders of samples Nos. 1, 2, 4 and 5, after crushing to pass 20 mesh,

and

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and the removal of a small portion for analysis, were combined and run over a small laboratory Wilfley table, making a concentrate, a middling and a tailing. The three products were dried, weighed and sampled for analysis. The following table shows the weights, analyses and results of this test.-

Product.	Wt. gms.	Percent WO_3	Content gms. WO_3	% WO_3
Concentrate	785	67.50	528.62	84.4
Middlings	291	1.40	4.07	.6
Tailings	2603	1.70	44.25	7.1
Slime Loes	930	5.35	49.71	7.9
Heads	4607	13.60	626.55	100.0

CONCLUSIONS.-

1. The amount of material used for this test being very small (10 lbs.) and the table upon which the test was made being only a laboratory model of the standard Wilfley table, the results obtained cannot be considered as being at all accurate.

2. Results by treating the ore on a large table would certainly be much better both in regard to percent recovery and grade of concentrate.

3. The test indicates that the ore should be ground finer than 20 mesh to free all the scheelite.

4. If the grinding of the ore was done in ball mills much less slime would be produced and better results would be obtained.

5. During the test it was observed that the scheelite had a decided tendency to form a white scum and float away out of the tailing box. This partially

explains.

explains the heavy slime loss of 20.3% by weight of ore concentrated running 5.35% WO_3 , and suggests the use of flotation to treat the tailings from the concentration on tables.

6. Owing to the remoteness of the region in which this scheelite ore is mined, and in which it is desired to concentrate it, it might be deemed unadvisable to bring in any heavy machinery to treat the ore, and that treating the ore in sluice boxes would give the best monetary return. Whether this is so or not depends almost entirely on the size of the ore bodies, and their scheelite content, but we think that an ore body would have to be very small in order to make it not worth while to put in at least a small installation, of a crusher, ball mill and tables.