

OTTAWA
15th. April 1919

REPORT OF THE ORE DRESSING & METALLURGICAL LABORATORIES

TEST No. 112

A shipment of 11 bags of scheelite concentrates was received on January 9th. 1919, at the testing plant of the Ore Dressing and Metallurgical Division, from Frank Cantin, Esq., Mayo Landing Yukon Territory.

The concentrates were shipped from Mayo Landing and had been produced by placer mining; They contained, besides the scheelite, a certain amount of gold, this being in the form of metallic flakes of fair size.

A mill test was desired, to ascertain if the gold could be recovered from the scheelite concentrates by an economical process.

Gross weight of concentrates		1,405 lbs
Net weight of concentrates		1,393 "
Head Sample		3 "
Net Weight after sampling		1,390 "
Moisture, at 0.32 %		5 "
Net weight of dry concentrates		
	after sampling	1,385 "
Analysis	WO ₃	65.70 %
	Au	2.40 ozs per ton
Content	WO ₃	909.94 lbs
	Au	1.66 ozs.

The concentrates were crushed and screened on 35 mesh until only metallics were left as oversize. These metallics were treated to recover the bullion in them, and the undersize was weighed and sampled for analysis.

Weight after screening		1,380 lbs
Analysis	WO ₃	65.90 %
	Au	1.10 ozs per ton
Content	WO ₃	909.42 lbs
	Au	0.759 ozs
Bullion recovered by screening		1.220 ozs

The material, which had been crushed to pass 35 mesh, was put through an amalgamator and then over amalgamation plates, the flow from the plates being led to a long series of settling boxes so that the scheelite would settle out from the water used in the amalgamation. After the run, all the amalgam was collected from the plates and amalgamator and treated to recover the bullion in it. The scheelite in the settling boxes was also collected, dried, weighed and sampled.

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Weight after amalgamation		1,318 lbs
Analysis	WO ₃	67.10%
	Au	0.05 ozs per ton
Content	WO ₃	884.38 lbs
	Au	0.033 ozs
Bullion recovered by amalgamation		0.729 ozs

Figuring on the contents of the different products, we have the following percentages.

Crushing & Screening

Loss of Scheelite Values	0.06%
Recovery of gold values in metallics	54.3%

Amalgamation

Loss of Scheelite values	2.75%
Recovery of gold values in amalgam	43.7%

SUMMARY

Total Loss of Scheelite values	2.81%
Total recovery of gold values	98.0%

Bullion recovered in metallics by screening	1.220 ozs
Bullion recovered in amalgam	0.729 "
Total Bullion recovered	1.949 "

CONCLUSIONS

1. The value of the gold recovered from a ton of concentrates would be \$48.62, and the value of the scheelite, (figured at \$15.00 a unit of tungsten trioxide) lost in treating a ton of the concentrates would be \$24.73, so that there is a balance of \$23.89.
2. The scheelite loss would be cut down by the use of better methods to de-water and collect the scheelite after amalgamation.
3. The 98% recovery of the gold values is very good. This shows that the gold is very adaptable to amalgamation.
