TR7-183-184

R. 417

PRELIMINARY TESTING OF DUMP MATERIAL, MIDDLE ARM, BEACONSFIELD

Sample

Approximately 30 pounds of sample was received on 19th June, 1962, per Mr. R. P. J. Weedon of Clutha Development Pty. Ltd. The sample was stated to be from two places from the dump at Middle Arm, Beaconsfield, to a depth of about one foot.

The sample assayed 4.0 dwt. of gold per long ton.

Sizing of the sample was—

Size Fraction	Weight Percent
Plus 10 mesh	Nil
22 mesh	4.2
30 mesh	15.7
44 mesh	25.5
60 mesh	20.0
100 mesh	24.8
200 mesh	5.2
Minus 200 mesh	4.6
Composite	100.0

One half of the sample was forwarded to Mr. Weedon at his request.

The sample is not regarded as representative of the dump, and was utilized merely for preliminary extraction tests, principally by cyanidation.

No responsibility is accepted for the results shown in this report, except in so far as they apply to the sample tested.

Investigation

The company requested a preliminary investigation to assess the possibility of gold extraction from the sample.

Summary

1. Cyanidation tests were conducted on the tailings as received, and after ball mill grinding to minus 200 mesh. To ensure favourable conditions for extraction of the gold, the samples were treated to remove water soluble salts, and pre-aerated prior to cyanidation.

2. Cyanidation of the sample without grinding resulted in an extraction of gold amounting to 2.36 dwts. per ton of tailings.

3. Cyanidation of the sample after grinding to minus 200 mesh resulted in an extraction of gold amounting to 2.87 dwts per ton of tailings.

4. Flotation of the tailings after grinding to minus 200 mesh size resulted in a concentrate amounting to 12.4 percent by weight, with an assay value of 16.8 dwts. of gold. This concentrate represents a value of 2.08 dwts. of gold per ton of tailings.

Test Conditions

Test 1: Agitation—48 hours

Solid: solution ratio 1 : 7.64

Consumptions Lbs./ton		Gold Extraction	
CaO	NaCn	Dwts./ton	Percent
1.9	7.5	2.46	61.5

Test 2: Agitation—48 hours

Solid: solution ratio 1 : 7.38

Consumptions Lbs./ton		Gold Extraction	
CaO	NaCn	Dwts./ton	Percent
1.3	6.3	2.87	71.7

Test 3: Rougher flotation using butyl xanthate and M.I.B.C.
Flotation concentrate—12.4 percent by weight.
Gold assay value—16.8 dwts./ton.
Equivalent to extraction of 2.08 dwts, or 52 percent.

No attempt was made to determine the conditions for lowest cyanide consumption.