

LAUNCESTON, 8th December, 1914.

SCANNED
12-3-19N^o 128INVESTIGATION NO. 468/44.Battery Sands From Middle Arm, BeaconsfieldCyanidation.Sample.

A sample of sands weighing 7 K.G. was received from Mr. A. C. Matthews for cyanide extraction tests after sizing to plus and minus 60 mesh B.S. screen size. Quartz is the predominant gangue mineral.

Sizing Analysis and Assay Values.

Mesh Size	Percent Weight	Gold	
		Dwts/L ton.	Percent. S. Cu.
+60	76.44	1.8	0.48 Nil
-60	23.56	2.4	1.54 0.2
Composite	100.00	1.94	

Cyanidation - Agitation.Constant Treatment Conditions.

Sample	Lime Added Lbs./Ton.	Agitation Hours	Consumptions Lbs./Ton.		Gold Grains/ton	Extraction Percent
			CaO	KCN		
Solid: Solution Ratio 1.2			Reagents and extractions are expressed in terms of per long ton of 2240 lbs.			
Barren Solution 0.1% K C N.						
+60 Mesh material	5.6	20	2.7	0.51	9.4	21.8
-60 Mesh material	3.4	8	2.5	1.38	18.8	32.6
-60 Mesh material	3.4	20	2.6	1.65	18.8	32.6

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Plus 200 mesh fraction.

The fraction represents 37.83 percent by weight of the tailing sample and contains 18.7 percent of the total tin with an assay value 0.43 percent tin. Practically all the cassiterite is present as composite grains. Cassiterite grains measured ranged from 60 to 20 microns in size. Vanning of the fraction resulted in a recovery of 4 percent of the tin in a concentrate assaying 3.3 percent tin. After grinding the fraction to minus 200 mesh size a recovery by vanning of 50 percent was obtained in a concentrate containing 25 percent of tin.

Minus 200 mesh fraction.

The fraction represents 62.17 percent by weight of the tailing sample and contains 81.3 percent of the total tin with an assay value of 1.13 percent tin. Concentration of the fraction by vanning resulted in a recovery of 48 percent of the tin in a concentrate containing 41 percent of tin. Measurement of the cassiterite in the concentrate showed grains from 60 to 10 microns. Mill recovery of the order as shown in this test could not be anticipated unless the treatment was designed to recover "slime" cassiterite.

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