

TR9-172-173

R. 479

25. DORSET DREDGE: JIG TAILINGS**Sample**

A sample of material stated to be the minus 20 mesh fraction of 6.1 cubic feet of primary jig tailing was received from the above company. Investigation of the nature of the tin losses in this fraction was desired by the company, and it was decided to concentrate on a Humphrey's Spiral as a means of assessing jig efficiency.

Investigation

Primary concentration of the sample was undertaken with a Humphrey's Spiral. The feed rate to the spiral was 1 ton per hour at a pulp density of 20 per cent solids. Some 15 per cent of the material was taken as a low grade spiral concentrate. The spiral concentrate was upgraded to 4.73 per cent tin by tabling.

A sample of spiral tailing was examined by tabling. No tin was observed on the table, indicating virtually total recovery of all tin down to as fine as a hypothetical screen size of 500 mesh.

A sample of table tailings was assayed and contained a trace only of tin showing that no loss of tin was incurred in the upgrading of the spiral concentrate by tabling.

A sizing analysis of the concentrate was carried out and results calculated to show the actual weight recovery of tin in each size.

Summary

1. The minus 20 mesh was concentrated to recover sample 0.389 ounces of tin, which is equivalent to 1.72 ounces per cubic yard of original tailing. This was recovered in a concentrate assaying 4.73 per cent tin, and no attempt was made to produce a higher grade concentrate.

2. Tin recovery by spiral concentration was high, and the spiral concentrate can be upgraded by tabling to at least 5 per cent tin with no significant losses.

3. Sizing analysis of the concentrate shows that 83 per cent of the tin is minus 100 mesh B.S.S. size, and 9 per cent is minus 200 mesh size.

Test Results

Spiral Concentration

Feed rate: 1 ton per hour—20 per cent solids.

Concentrate: Approximately 15 per cent by weight.

Tailing: Examined by tabling for recoverable tin with negative results.

Tabling of Spiral Concentrate

Table Concentrate: 8.22 ounces 4.73 per cent tin. Equivalent to 0.389 ozs metallic tin.

Table Tailings: Assay Trace tin.

Sizing analysis of Concentrate

Fraction	Weight	Per Cent	
		Tin	Tin Distribution
+ 100 mesh	9.3	8.76	17.2
+ 150 mesh	36.3	7.65	58.8
+ 200 mesh	26.5	2.63	14.7
— 200 mesh	27.9	1.57	9.3
Composite	100.0	4.73	100.0

Actual Weight of tin recovered in individual fractions

+ 100 mesh	0.067 ounces
+ 150 mesh	0.229 ounces
+ 200 mesh	0.057 ounces
— 200 mesh	0.036 ounces
Total	0.389 ounces