

TR 10-115-117

## R. 509

## JIG CONCENTRATION TESTS ON ABERFOYLE H.M.S. FLOAT MATERIAL

*Sample*

Aberfoyle Tin, N.L., requested jig concentration tests with sizings of the jig feed on a sample of Aberfoyle H.M.S. float material. This sample was marked E53.

*Method*

After drying, the sample was reduced to pass an 8 mesh screen using a laboratory jaw crusher.

The minus 8 mesh material was fed to the Denver laboratory jig, the slime which was all minus 60 mesh was collected separately and not further treated.

The coarse tailing from the above jig was reduced in rolls to all pass 16 mesh, and the crushed material jigged again. Again the slime was removed.

The coarse tailing was reduced in the rolls to all pass a 25 mesh screen. In jigging this no separation was made of the slime in the tailing.

In the small scale laboratory test aiming at recovery, the tin concentrate is of necessary low grade. To see how recoverable this tin was the concentrates made were subjected to heavy liquid separation using acetylene tetrabromide.

*Summary*

In the heavy liquid sink products 71.9 per cent of the tin was recovered. The sink products averaged 3.4 per cent tin. This indicates that quite a high recovery of tin is possible from the mill H.M.S. float product.

Most of this recoverable tin is in the 8 mesh sink product, namely 52.2 per cent of the tin recovered in a concentrate assaying 4.5 per cent tin.

Products were assayed for tungsten, but not one contained a measureable amount.

Vanning assays on the jig discard products indicate that no recoverable tin was lost in these.

*Sizing-8 Mesh Jig Feed*

Fraction	Per Cent Weight
+12	17.47
+16	16.68
+25	16.92
+52	15.65
+100	11.06
+200	6.67
-200	15.55
Composite	100.00

*Sizing-16 Mesh Jig Feed*

+25	21.11
+52	33.35
+100	21.18
+200	10.97
-200	13.39
Composite	<u>100.00</u>

*Sizing-25 Mesh Jig Feed*

+52	36.48
+100	32.55
+200	16.64
-200	14.32
Composite	<u>100.00</u>

*Jigging Conditions*

	Minus 8 Mesh	Minus 16 Mesh	Minus 25 Mesh
Hutch Water lit/min. ....	1.6	1.5	0.76
Feed Water lit/min. ....	1.0	1.0	2.66
Stroke, inches ....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
Hutch Screen ....	$\frac{1}{2}$ inch	6 mesh	6 mesh
Ragging ....	Coarse pyrrhotite	Iron shot and pyrrhotite mixture	

Product	Per Cent			Per Cent
	Weight	Tin	WO <sub>3</sub>	Tin Distribution
-25 Mesh Tail	71.38	0.008		10.4
	0.40	0.26		1.9
	<u>71.78</u>	<u>0.009</u>		<u>12.3</u>
-16 Mesh Tail	71.78	0.009		12.3
	4.95	0.04		3.6
	3.14	0.34		19.5
Total	<u>79.87</u>	<u>0.024</u>		<u>35.4</u>
-8 Mesh Tail	79.87	0.024		35.4
	8.60	0.05		7.8
	11.53	0.27		56.8
Head	<u>100.00</u>	<u>0.055</u>		<u>100.0</u>

All products tested contained only slight traces of WO<sub>3</sub>.

