

## DEPARTMENT OF MINES LABORATORY

3rd September, 1937.

C O P Y

LAUNCESTON,.....

ORE DRESSING INVESTIGATIONNo. R8.SAMPLE OF CRUSHED TIN ORE FROM RENISON BELL. SAMPLE NO. 1166/37.Screening Analysis.

<u>B.S.S.</u>		<u>Assay</u> <u>Tin %</u>	<u>Distribution</u> <u>Tin %</u>	<u>Screen</u> <u>Aperture</u>	<u>Calculated</u> <u>Head Assay</u> <u>Tin %</u>
<u>Mesh</u>	<u>Weight %</u>				
+ 85	1.81 )	0.26	2.81	0.178 mm.	0.66
	) 7.17				
- 85+120	5.36 )	0.38	4.45	0.124 mm.	
	)				
-120+150	7.76			0.104 mm.	
-150+200	12.60	0.68	12.93	0.076 mm.	
-200	72.47	0.73	79.81		

Vanning Assay of Sample -200 mesh. (Tailings re-vanned 3 times)

Vanning assay 0.27 % tin, equivalent to 41.0 % recovery calculated from chemical assay.

The sample did not contain any tin in acid soluble form.

Examination.

From the screening analysis it is unlikely that tin oxide is present attached to gangue minerals, or if so, at least in minor amount only. Microscopical examination did not show any attachment.

Microscopical Examination for particle size of Cassiterite.Samples as received:

No. of particles observed	48	microns
Mean diameter	30	"
Largest Particle	80	"
No. of particles 25 microns and smaller	22	"

Sample -200 mesh:

No. of particles observed	48	microns
Mean diameter	20	"
Largest particle	42	"
No. of particles 25 microns and smaller	35	"

The samples were prepared by chemical means, after which they were carefully concentrated. The tailings of each contained further amounts of cassiterite which was of extremely small size, averaging between 5 and 15 microns.

SUMMARY.

No attachment of cassiterite and gangue minerals was observed.

Screening analysis indicates that the majority of the cassiterite is in the free state.

Microscopical examination proved that the particle size of the tin oxide was very small and that of the 98 particles observed, 57 were 25 microns and under.

As a large proportion of the cassiterite exists in such small sizes as to make concentration difficult and in many cases impracticable, it is concluded that this factor is responsible for the low recoveries obtained.

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