

Duplicate

Nº85

Renison Bell. / Dalcoath workings.

Quantitative sizing analysis of Cassiterite.

Sample.

A sample of ore stated to be obtained from the Dalcoath workings was received from the General Manager, Renison Associated Tin Mines, Renison Bell. Quantitative sizing of the contained Cassiterite was desired.

Test Procedure.

The sample was reduced by jaw crusher to minus 1/2 inch size and stage crushed with rolls to minus 10 mesh screen size. The minus 10 mesh product was chemically treated for decomposition of the sulphide and non-sulphide gangue minerals as described in Investigation No. 1215/40. The treatment does not attack the Cassiterite and the procedure has the advantage that a substantial quantity of Cassiterite is available for sizing. Cassiterite from the above treatment was screened (B.S. Screens) to 200 mesh size and the minus 200 mesh portion was sized by elutriation as described in Investigation NO. 1215/40. The sample contained 4.09 percent of Tin.

Sizing of Cassiterite.

<u>Fraction</u>	<u>Size Range of Cassiterite/Tons</u>	<u>Tin Distribution</u>	
		<u>Percent</u>	<u>Percent Cum.</u>
-10 + 22 mesh	1670 - 700	28.56	28.56
-22 + 30 "	700 - 500	13.53	42.09
-30 + 44 "	500 - 353	10.22	52.31
-44 + 85 "	353 - 177	20.26	72.57
-85 + 200 "	177 - 76	13.53	86.10
El. fraction 1.	76 - 40	6.36	92.46
" "	2. 40 - 28	2.24	94.70
" "	3. 28 - 20	1.57	96.27
" "	4. 20 - 13	1.39	97.66
" "	5. 13 - 10	1.14	98.80
" "	6. minus 10	1.20	100.00

Summary.

Sizing analysis after reduction to minus 10 mesh shows that the Cassiterite is present as comparatively coarse grains. The percentages of Cassiterite present at plus 30, 85 and 200 mesh sizes respectively are 42.09, 72.57 and 86.1.

Previous investigations with samples of tin ores from Renison Bell showed that the majority of the Cassiterite occurred at sizes finer than 200 mesh screen size.

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