TR11_169-170

R. 523 PART 3

OCEAN MINING A.G.: SEABED SAMPLES

Introduction

This report covers investigational work on tin recovery from Ringarooma Bay samples taken by jet lift.

These samples were originally assayed at AMDEL by semi-quantitative X-ray Spectrograph, with the following results:—

Reg. No.	*OMAG No.*	*Sn (p.p.m.)*
664501	4-19-3	10,000
664502	3-20-5	7,000

With subsequent core drilling of this area values were less than those indicated by these and other jet lift results.

Method

The samples received were too small for cradling, being just sufficient for tabling after screening on 60 mesh. The table concentrate was magnetically separated.

The table tailings were sized to see where the tin losses occurred.

The occurrence of appreciable tin in the plus 60 mesh of sample 664501 led to sizing of these products also, including wet screening, which produced a further quantity of minus 60 mesh which was not further treated.

Discussion

Assays below 0.05 per cent Sn should be treated as indicative only, but these values have been used for calculation purposes.

In sample 664501 there is an indication of lower tin in the plus 60 mesh fraction after washing. (Compare Items 1 and 17.) This suggests that fine tin could be adhering to large particles. In the plus 60 fraction all the tin in both samples appears to be in the minus 44/plus 60 range. This would appear to be as composite grains. In sample 664501 this quantity is significant. In sample 664502 tin assay agreement between Items 1 and 17 is poor, no doubt due to determinations beyond our accuracy range.

Item 5 shows high grade concentrates which indicate free cassiterite grains. The tailings from the table are low in tin. The tin in these tailings is coarse, sample 664501 being almost all plus 100 mesh, and in sample 664502 plus 200 mesh. This tin, which overall does not amount to much, should be recoverable if lower grade concentrates were made.

Conclusion

With material similar to that represented by these samples recovery by tabling can be expected to exceed 95 per cent.

Item No.	Description	Reg. No. 664501 (OMAG No. 4-19-3) Per Cent Weight	Per Cent Sn	Per Cent Distribution O'all	Per Cent Distribution Indiv.	Reg. No. 664502 (OMAG No. 3-20-5) Per Cent Weight	Per Cent Sn	Per Cent Distribution O'all	Per Cent Distribution Indiv.
	Screening on 60 mesh (250μ) Dry—								
1.	Fraction +60	77.1	0.21	15.4		83.2	0.01	1.7	
2.	−60 (Table Feed)	22.9	3.9	84.6		16.8	2.92	98.3	
3.	Head	100.0	1.06	100.0		100.0	0.50	100.0	
4.	Check by chemical assay		0.9				0.49		
	Tabling −60 Fraction and Mag. Sep.—								
5.	N.M. Conc.	2.33	35.9	79.2	93.6	1.09	41.0	89.7	91.2
6.	M. Conc.	1.34	1.46	1.9	2.2	0.59	4.95	5.8	5.9
7.	Table Tail.	19.23	0.19	3.5	4.2	15.12	0.09	2.8	2.9
8.	Table Feed (—60 Fraction)	22.9	3.9	84.6	100.0	16.8	0.50	98.3	100.0
	Sizing of Table Tailing—								
9.	Fraction +100 mesh (150μ)	17.90	0.19	3.4	95.8	10.44	0.08	1.5	52.2
10.	Fraction +200 mesh (75μ)	1.32	0.10	0.1	3.7	4.63	0.15	1.2	42.8
11.	Fraction −200 mesh	0.01	0.02	Tr.	0.5	0.05	1.68	0.1	5.0
12.	Composite Head	19.23	0.18	3.5	100.0	15.12	0.10	2.8	100.0
	Sizing of +60 mesh Fraction (after washing)—								
13.	Fraction +10 mesh (1.67 mm)	10.9	0.005		0.36	11.2	0.005		1.27
14.	Fraction +22 mesh (700μ)	24.2	0.003		0.49	28.9	0.005		3.27
15.	Fraction +44 mesh (350μ)	45.8	0.04		12.25	48.9	0.003		3.32
16.	Fraction −44/+60 mesh	19.1	0.68		86.90	11.0	0.37		92.14
17.		100.0	0.15		100.0	100.0	0.04		100.0