TR11-164-166 R. 523 PART 1

OCEAN MINING A.G.: SEABED SAMPLES

Introduction

In its preliminary investigation of three off-shore areas, namely Oyster Bay, the NE coast of Tasmania, and the seabed E of King Island, Ocean Mining A.G. were to supply five samples from each area for sizing and tin assay so that some information could be gained on the nature of the deposits and the tin occurrence.

From this information equipment for primary concentration on the main sampling vessel could be designed.

This report covers the samples from the first two areas mentioned.

Description and Location of the Samples

Reg. No.	*OMAG No.*	*OMAG Description*
662069	1	Hole 1, Oyster Bay
662070	2	Hole 1, Bryan's Corner, Oyster Bay
662071	3	Hole 2, Oyster Bay
662072	4	Hole 3, Nine Mile Beach, Oyster Bay
662073	5	Cobbler's Rocks, NE coast
662354	6	Hole 1, Mussel Roe Bay
662355	7	Hole 1, Ringarooma Bay
662356	8	Hole 5, Ringarooma Bay
662357	9	Hole 2, Ringarooma Bay
662358	10	Hole 2, Anderson Bay.

Tabling Tests

As samples 662069 and 662071 showed a higher tin assay than the others in the minus 200 mesh fractions these samples were tabled.

On sample 662069 the plus 52 mesh material was screened out leaving the minus 52 mesh material for table feed which represented only 3.3 per cent by weight of the original sample.

During tabling no cassiterite was seen, but rutile was. The table concentrate, which contained 14.5 per cent of the table feed, assayed 1.3 per cent zirconium and 1.0 per cent titanium.

The minus 72 mesh fraction of sample 662071 was tabled. This was about half the sample. During tabling no cassiterite was seen, but a heavy white mineral band and a brown band were seen. This white mineral band was sampled and assayed 30 per cent zirconium and 9 per cent titanium showing that it contained zircon and rutile. The table concentrate assayed 4 per cent zirconium and 3 per cent titanium.

These two tablings should be interpreted more as qualitative tests indicating the presence of zircon and rutile than quantitative tests.

Comments

The tin content of all samples was extremely low. Even after sizing, the minus 200 mesh fractions, where a concentration of fine cassiterite would be expected, were in most cases still low in tin, although in all cases the tin assay was appreciably higher than the head assay.

No sample was sufficiently high in tin to warrant hydraulic cyclone tests to study that means of recovering tin on the sampling ship.

The tabling tests provided a visual check on the absence of cassiterite, and also revealed the presence of zirconium and titanium. Without a more detailed study of the coarser sizes for these metals, recoveries from the finer material indicate head values for each of less than 0.1 per cent. This suggests jigging the coarser material as a laboratory investigation.

All samples are almost devoid of very fine material where one would expect tin.

It was noted that the samples exhibited deliquescence, doubtless due to the presence of salt. Henceforth, it is considered advisable to wash the samples in fresh water before doing any test work.

Results: Sizing Analyses and Tin Assays

Sizing Aperture		Per Cent		Assay	Per Cent		Assay	Per Cent		Assay	Per Cent		Assay	Per Cent		Assay
Mesh B.S.S.	Microns	Weight	Cum. Weight	Per Cent Tin	Weight	Cum. Weight	Per Cent Tin	Weight	Cum. Weight	Per Cent Tin	Weight	Cum. Weight	Per Cent Tin	Weight	Cum. Weight	Per Cent Tin
		Reg. No. 662069			Reg. No. 662070			Reg. No. 662071			Reg. No. 662072			Reg. No. 662073		
+ 7	2410	16.4	16.4		11.8	11.8		4.5	4.5		9.5	9.5		38.8	38.8	
14	1200	26.6	43.0		18.7	30.5		3.4	7.9		8.5	18.0		11.4	50.2	
25	600	31.1	74.1		11.5	42.0		3.0	10.9		9.2	27.2		11.1	61.3	
52	300	22.6	96.7		7.9	49.9		22.9	33.8		18.1	45.3		25.6	86.9	
100	150	2.8	99.5		39.2	89.1		64.8	98.6		47.9	93.2		7.4	94.3	
200	75	0.4	99.9		10.6	99.7		1.3	99.9		6.6	99.8		5.1	99.4	
—200	....	0.1	100.0	0.13	0.3	100.0	0.04	0.1	100.0	0.17	0.2	100.0	0.04	0.6	100.0	0.03
Head	....	100.0		0.005	100.0		< 0.005	100.0		< 0.005	100.0		< 0.005	100.0		< 0.005
		Reg. No. 662354			Reg. No. 662355			Reg. No. 662356			Reg. No. 662357			Reg. No. 662358		
+ 7	2410	7.7	7.7		14.4	14.4		2.3	2.3		2.8	2.8		9.6	9.6	
14	1200	9.8	17.5		13.7	28.1		7.1	9.4		2.1	4.9		5.1	14.7	
25	600	28.4	45.9		32.0	60.1		20.6	30.0		2.4	7.3		8.8	23.5	
52	300	40.0	85.9		15.8	75.9		28.5	58.5		7.2	14.5		24.4	47.9	
100	150	9.8	95.7		16.5	92.4		35.1	93.6		83.1	97.6		42.9	90.8	
200	75	3.7	99.4		7.2	99.6		6.1	99.7		2.3	99.9		8.7	99.5	
—200	....	0.6	100.0	0.20	0.4	100.0	0.04	0.3	100.0	0.05	0.1	100.0	0.08	0.5	100.0	0.03
Head	....	100.0		< 0.005	100.0		< 0.005	100.0		< 0.005	100.0		< 0.005	100.0		< 0.005