

N<sup>o</sup> 117

SCANNED

Investigation No. 187/44"40" mill tailings.Investigation.

The sample stated to be tailing from "40" mill was received in pulp form and submitted by Mr. Wilkins for investigation of similar nature and detail to those set out in Investigation No. 186/44.

Preliminary Classification.Table 1. - Products.

<u>Product</u>	<u>Percent</u>		<u>Percent Tin Distribution</u>	<u>Percent Sulphur</u>
	<u>Weight</u>	<u>Tin</u>		
Sands (Spigot)	21.44	0.19	24.14	8.72
Classifier Overflow	70.54	0.17	71.11	4.20
Unsettled Solids	8.02	0.10	4.75	
Composite	100.	0.17	100.	

Sizing Analyses of Sands and Classifier Overflow.Table 2.

<u>Size</u>	<u>Sands (Spigot)</u>			<u>Classifier Overflow.</u>		
	<u>Weight</u>	<u>Tin</u>	<u>Percent Tin Distribution</u>	<u>Weight</u>	<u>Tin</u>	<u>Tin Dist.</u>
+ 44	46.64	0.14	35.00			
+ 60	22.08	0.17	20.10			
+ 85	21.20	0.21	23.85			
+100	2.72	0.25	3.64	2.50	0.06	0.86
+150	5.68	0.35	10.66	6.25	0.10	3.62
+200	0.96	0.76	3.91	6.57	0.14	5.29
-200	0.72	0.73	2.84			
1.S. 1				3.02	0.49	8.51
2				21.13	0.19	23.04
3				12.76	0.33	16.84
4				8.51	0.27	13.22
5				6.01	0.23	7.93
6				6.79	0.18	7.01
7				26.46	0.09	13.68
Composite	100.	0.19	100.	100.	0.17	100.

Treatment of Classifier Overflow.Flotation of Sulphides.

Preliminary tests resulted in concentrates ranging from 12.64 to 45.76 percent by weight and containing 0.06 to 0.1 percent tin or 4.2 to 26.6 percent of the total tin. Sulphur content ranged from 7.4 to 13.14 percent. Flotation conditions were similar to investigation No. 186/44. The low sulphur contents in flotation concentrates were occasioned by flotation of non-sulphide gangue. Test work included addition of several gangue depressants without marked effect. As iron sulphide minerals floated so readily it was considered that treatment by tabling followed by flotation of the pyritic table concentrate would be the preferred treatment.

Test No. 6.Table concentration of classifier overflow and flotation of sulphides in pyritic table concentrate.Flotation Conditions.Reagent/lbs. per ton.

<u>Reagent.</u>	<u>Pyritic Table Concentrate.</u>	<u>Table feed (App).</u>
Copper Sulphate	0.47	0.04
Sodium Ethyl Xanthate	0.94	0.07
Cresylic Acid	0.3	0.03 p.H 7

(Rougher Float treated in similar manner to test 186/5)

Results.Table 3.

<u>Product.</u>	<u>Percent</u>		<u>Percent Tin</u>	<u>Sulphur</u>	
	<u>Weight</u>	<u>Tin</u>	<u>Distribution</u>	<u>Percent.</u>	<u>% Dist.</u>
<u>Table Concentrate.</u>					
(Flotation Tailing	4.24	1.69	39.29	2.51	2.53
(Flotation Concentrate	3.85	0.25	5.27	43.62	39.96
Table Tailing	91.91	0.11	55.44	2.63	57.51
Composite	100.	0.18	100.	4.2	100.

Concentration of the flotation tailing from the table concentrate was performed by vanning and operation of the super-panner with similar results to those obtained in investigation No.186.

A recovery of 39.29 percent of the tin in a concentrate containing 1.69 percent tin was obtained in test 6. This is equivalent to a tin recovery of 0.07 percent. Assuming a recovery of 80 percent of the tin in this concentrate in the production of a finished concentrate the recovery would amount to 31.4 percent or 0.056 percent tin.