

TR9-160-161

R. 475

23. FRASER RIVER BEACH SANDS: TABLE CONCENTRATE

A sample of table concentrates was obtained from concentration of Fraser River Beach Sands by Messrs. Curtain and Gatenby on the 7th August. The sample consists mainly of cassiterite, zircon and monazite, with minor quantities of other minerals including rutile.

The sample was submitted to a brief examination to obtain data on the nature and sizing of the concentrate.

Concentration was performed in such a manner that the lighter minerals such as quartz, garnets, ilmenite and rutile would be substantially lost in the tailings.

Previous investigations have shown that gravity concentration alone will not result in separation of ilmenite and rutile, and for this purpose both electro-magnetic and electrostatic separations would be necessary.

The sample was treated by magnetic separation and sized with the results shown in the following table.

Acid insoluble in the non-magnetic fractions indicates the approximate zircon content.

A feebly magnetic fraction was produced which amounted to 12.3 per cent by weight and contained 87.3 per cent monazite.

Dry Magnetic Separation and Sizing of Products

Product	Per Cent			Acid Insol.	Monazite	Per Cent Tin Distribution
	Weight	Tin	Rutile			
Highly Magnetic—						
+ 150 Mesh	7.5	0.21				0.1
+ 200 Mesh	8.7	2.29				1.8
— 200 Mesh	0.8	15.7				1.1
Comp. Highly Magnetic	17.0	2.00				3.0
Feebly Magnetic (Monazite)—						
+ 150 Mesh	1.2	2.49			53.9	0.3
+ 200 Mesh	9.7	2.50			92.0	2.1
— 200 Mesh	1.4	8.00			83.3	1.0
Comp. Monazite Fraction	12.3	3.12			87.3	3.4
Non-Magnetic—						
+ 150 Mesh	26.2	5.82	10.3	78.6		13.4
+ 200 Mesh	39.8	17.7	0.30	66.2		61.9
— 200 Mesh	4.7	44.4	0.88	31.6		18.3
Comp. Non-Magnetic	70.7	15.1	4.04			93.6
Composite Head	100.0	11.4	2.86			100.0