

A-3

Each size fraction was then separated in a Davis Tube using a field strength of 1000 gauss; the products were dried and weighed. The non-magnetic products were then separated at specific gravities of 3.1 and 3.3 using methylene iodide (in the former case diluted with acetone). Because of the small particle size of the products, centrifugal separation techniques were used throughout. The products were washed, dried and weighed. Riffled portions of the products were used in the preparation of polished briquettes (PS Nos 25107-22) and further riffled portions were analysed for acid-soluble fluorine, tungsten and tin.

In this separation scheme, virtually all grains containing magnetite report into the magnetic product; fluorite, scheelite and cassiterite locked with light gangue minerals report in the <3.1 sp.gr. product; liberated fluorite reports into the 3.1 to 3.3 sp.gr. product (together with some scheelite and cassiterite locked with light gangue and/or fluorite); the >3.3 sp.gr. product contains all the liberated scheelite and cassiterite together with these minerals and fluorite that are locked with dense gangue minerals. By assay and mineralogical assessment of the separation products, it is possible to quantify the liberation of the valuable minerals.

Two products were analysed by X-ray diffraction and all were examined both in transmitted and reflected light. Two >3.3 sp.gr. products were examined using an electron-probe microanalyser in order to determine whether or not wolframite or stannospinel are present in the ore and to assess the amount of tin in garnet. High intensity magnetic separation products were prepared of the minus 75 plus 33  $\mu\text{m}$  >3.3 sp.gr. non-magnetic product and the more magnetic products were examined for the presence of wolframite.

All results were collated and computer-processed.

### 3. HEAD ANALYSES

The accurate chemical analyses of the head sample are as follows:

F	%	8.05
Acid-soluble Fe	%	16.7
SiO <sub>2</sub>	%	30.6
S	%	0.33
P <sub>2</sub> O <sub>5</sub>	%	0.06
Sn	%	0.13
W	%	0.085
Bi	ppm	450.0
Mo	ppm	45.0
U	ppm	4.0
Au	ppm	0.12