

TR12-164. 165

R. 546**KENNETH McMAHON & PARTNERS—SEABED SAMPLES****Introduction**

Kenneth McMahon & Partners organised a sampling campaign for Planet Exploration in areas held by that company off the north coast of Tasmania.

Sampling of the seabed was done using an 'Amdril' sample drill, which delivers a sample pulp by the air lift principle. As outlined by McMahon's this pulp was delivered to a settling tank fitted with two underflow baffles after which the water overflowed back to the sea. Once the five-foot depth of sample had been delivered to the tank, the remaining water was siphoned off. The solids were then scraped out and bagged.

From the samples thus obtained five representing the types of sediments encountered were randomly selected for preliminary assessment.

McMahon's will have the heavy mineral concentrates microscopically examined.

Sample

The following samples were investigated:—

<i>Reg. No.</i>	<i>McMahon No.</i>
671271	E2-5
671272	E3-1
671273	E7-5
671274	G1-2
671275	J1-3

McMahon's asked that the examination be made primarily for gold, but the presence of cassiterite, zircon and rutile should be noted.

Methods

Sample 671273 was selected for direct jigging. However, without screening the jig feed this method was found ineffective.

As the samples were similar in grain size to those examined for Ocean Mining A.G. (R.523) a similar method was adopted.

The cradle screen removed the coarse material. The cradle screen undersize was run over a table where a heavy mineral concentrate was made. An examination of the bands on the table would indicate the presence of cassiterite, zircon and rutile.

As gold could be missed on the table the table concentrate was panned. In this way a speck of gold should be seen. Gold in amounts less than the minimum amount assayable (0.2 dwt/ton) can be detected by panning.

Results

By using the cradle as a screen, tabling the undersize and panning, the following results were obtained.

Reg. No.	Weight (%)	HEAVY MINERAL CONCENTRATE			
		Occurrence of Minerals			
		Gold	Cassiterite	Zircon	Rutile
671271	0.28	D	D	P	P
671272	0.47	N	D	P	P
671273	0.15	N	D	D	P
671274	1.05	N	D	P	P
671275	0.70	N	D	P	P

N = Not detected.

P = Present.

D = Possibly present.

These terms should be regarded as qualitative descriptions rather than expressing any quantitative relationship. Also identification of the minerals may be difficult, for instance cassiterite and rutile would be difficult to identify if zircon were absent.

In all cases the minerals mentioned as 'present' were there in very small amounts.

The main heavy mineral in the concentrates was ilmenite.

Conclusion

As the heavy minerals seem to be present in the samples only in small amounts, the above method will be used for testing and reporting them.