

TR12-24-27

4. ROYAL GEORGE TIN MINE CORNWALL COAL COMPANY

by A. J. Noldart

GENERAL

From August 1966, until February 1967, Geologist G. Urquhart carried out a detailed examination of the Royal George Tin Mine, Royal George, and its surroundings. Investigations included geological mapping, surface and underground; diamond drilling recommendations; and core logging and sampling advice for the owners, Cornwall Coal Company.

By February, all geological mapping and underground sampling had been completed; diamond drill holes C.C.C.1 to C.C.C.7 inclusive had been completed and sampled; C.C.C.9 completed and partly sampled; and C.C.C.8 and C.C.C.10 were drilling ahead.

An interim report, with plans and sections, was prepared and copies forwarded to the Cornwall Coal Company. No ore reserves were calculated at that time.

After February, supervision of the programme was taken over by the writer. Diamond drill holes C.C.C.8 and C.C.C.10 were completed and sampled; longitudinal projection 2956/55 of the ore body (Urquhart, Jan. 1967) was revised, and ore reserves calculated.

Other plans and sections are currently being revised and brought up to date.

ORE RESERVES

Ore reserves for the ore body are based on floor assays from the No. 2 mine level and diamond drill intersections by Cornwall Coal Company (1966-67), B.H.P. (1957), and Ridgeway (1954). A conversion factor of 13.5 cubic feet/ton was used throughout.

The reserves were calculated in a series of triangles in order to determine significant variations in ore body size and grade. Individual reserve blocks are shown on revised longitudinal section 2956 (fig. 7).

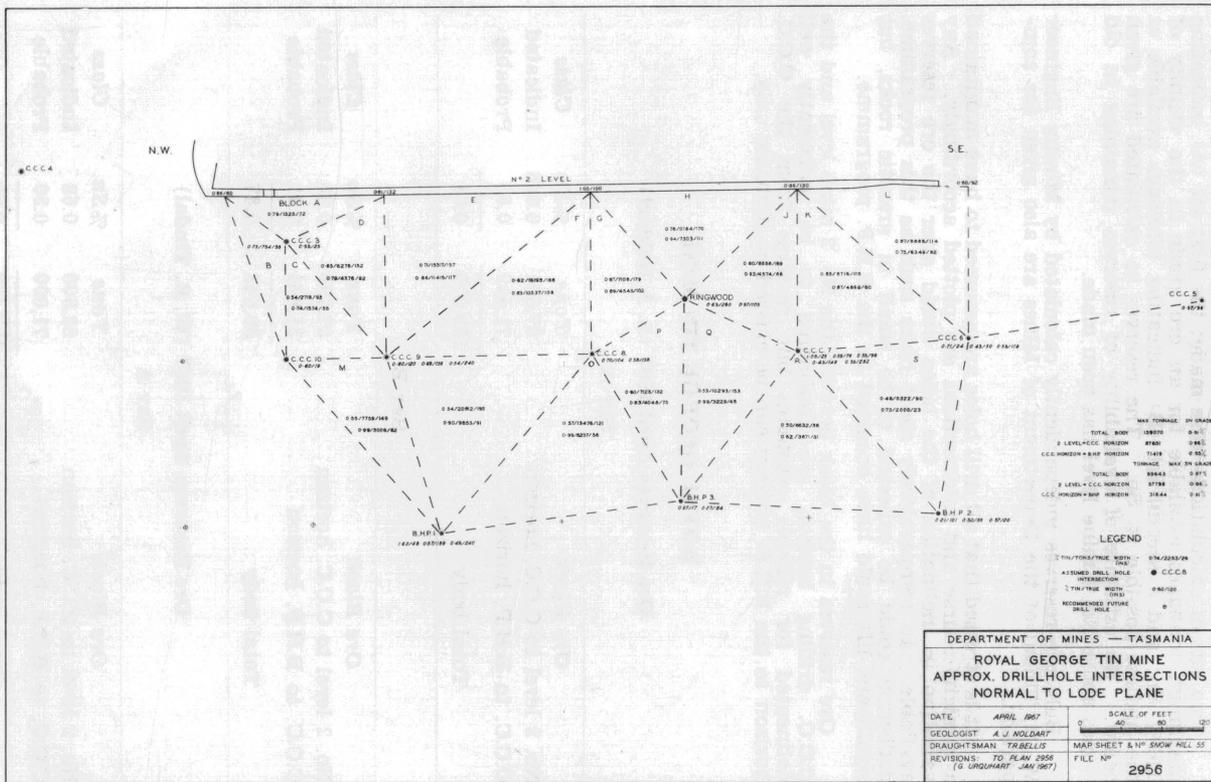


FIGURE 7

5 cm

Two sets of calculations were made; the first set (A) indicating maximum tonnages available for an ore grade in the vicinity of 0.60% Sn; and a second set (B) indicating tonnages available at the highest possible % Sn. The reserves so calculated are given below. No estimate of availability of reserves remaining in old stopes above No. 2 mine level has been made.

Bulk ore reserves independently calculated by Mining Engineer W. R. Tindal of the Department of Mines are also given for comparison.

It is stressed that all drill holes are assumed to have maintained a straight course and intersections are plotted accordingly. Any variation in inclination of the holes would alter the ore reserves available. In comparatively short holes such as this programme, deflection could be expected to be small in granitic rocks, but significant lift could have occurred in the B.H.P. programme.

Ore reserves in the block between the No. 2 mine level and the C.C.C. drilling horizon are considered to be sufficiently well delineated for reliable estimates but reserves from the C.C.C. horizon to the B.H.P. horizon can be classed as probable only.

ROYAL GEORGE TIN MINE

Ore Reserves April 1967 (A. J. Noldart)

SET A

<i>Ore Block</i>	<i>Tons</i>	<i>%Sn</i>	<i>Class</i>
No. 2 level to C.C.C. horizon	87,651	0.666	Indicated
C.C.C. to B.H.P. horizon	71,419	0.55	Probable
Total body	159,070	0.61	

SET B

<i>Ore Block</i>	<i>Tons</i>	<i>%Sn</i>	<i>Class</i>
No. 2 level to C.C.C. horizon	57,799	0.86	Indicated
C.C.C. to B.H.P. horizon	31,844	0.91	Probable
Total body	89,643	0.87	

Ore Reserves April 1967 (W. R. Tindal)

SET A

<i>Ore Block</i>	<i>Tons</i>	<i>%Sn</i>	<i>Class</i>
No. 2 level to C.C.C. horizon	82,500	0.68	Indicated
C.C.C. to B.H.P. horizon	71,000	0.50	Probable
Total body	153,500	0.60	

SET B			
<i>Ore Block</i>	<i>Tons</i>	<i>%Sn</i>	<i>Class</i>
No. 2 level to C.C.C. horizon	56,000	0.81	Indicated
C.C.C. to B.H.P. horizon	29,800	0.86	Probable
Total body	85,800	0.84	

CONCLUSIONS AND RECOMMENDATIONS

The Cornwall Coal Company exploration programme covering drill holes 60 to 10 inclusive allows a reliable assessment of the ore body to a depth of 150 feet below the No. 2 mine level, but it should be extended to the NW.

An intersection on the ore body should be made on this horizon 100 feet along strike to the NW from C.C.C.10. Dependent on favourable results from this hole an intersection 200 feet along strike from C.C.C.10 should then be made.

The three B.H.P. intersections are insufficient for reliable calculation of ore reserves and should be supplemented by additional drilling at this level.

Intersections should be made at points midway between B.H.P.2 and B.H.P.3, and between B.H.P.3 and B.H.P.1. At least one more hole should be drilled to intersect this horizon approximately 125 feet NW of B.H.P.1, and again subject to favourable results, a further hole 250 feet along strike from B.H.P.1.

It is also recommended that the SE face on No. 2 mine level be extended 100 to 150 feet to the SE to investigate ore body characteristics and grade variations. The face should be sampled and measured after each advance and the ore recovered stockpiled for pilot plant investigations.