1127, 1126 - TRANS
VR1949/51-54

MERRYWOOD COLLIERY.

Proposed Open Cut Operations.

SITUATION. ETC.:

The Merrywood Colliery is situated some twelve miles east-north- east of the railway township of Avoca, and five miles east of St. Pauls Dome. The distance by road from Avoca to the mine is eighteen miles. The road generally follows the valley of the St. Paul's River and at eleven miles passes through the village of Royal George. For the first fourteen miles, the road, although corrugated, is in fair condition but after crossing St. Paul's River for the second time, that is, four miles from the mine, the surface becomes very rough. The two crossings of the St. Paul's are by low-level bridges which, during flood periods, become submerged.

GENERAL:

The purpose of his visit was, by means of a contour survey of the area, to ascertain the amount of coal available for open cut operations.

About eight men are at present employed on underground workings.

GEOLOGY:

The seam worked at Merrywood has been correlated as the Beta Seam of the Coal Measures, in the Coal Resources of Tasmania. It occurs in the Felspathic Sandstones of the Triassic at a height of about 1500 feet above sea level. In this locality the sand stones have been intruded by dolerite, probably in the form of a sill above the actual seam; but in the vicinity of the mine workings this dolerite cover has been removed by erosion, Dolerite talus from the neighbouring hill slopes, however, covers most of the surface of this area to a depth of about two feet.

At several places in the workings the strike and dip of the seam was measured. This showed an average strike of 30° east of north with a dip to the south east of 5°.

No major faults have been noted in this area. Two minor faults striking about east and west and with displacements of three feet and ten inches respectively may be observed in the mine workings.

THE COAL SEAM:

The effective width of the coal seam is eight feet six inches, containing two bands (of varying width but each averaging two inches) also two penny bands which sometimes disappear. Above the seam proper is a two foot section of banded coal and shale. The following table represents the average seam:-

	Ft.	Ins
Coal and Shale	2	0
Coal	5	4
Band (Shale)	0	2
Coal	1	10
Band (Shale)	0	2
Coal	1	1
Floor		

A section of the seam is shown as an inset to the contour map.

QUALITY OF THE COAL:

Various samples of the Merrywood coal have been previously assayed. In 1945, analyses were made of the three portions of the seam, between and on either side of the two bands. For purposes of completeness, these analyses are quoted hereunder:

	TOP 4' Coal	MIDDLE 1'9" Coal	BOTTOM 11" Coal	Calculate average
Moisture at 105°	2.4%	1.92%	1.82%	2.19%
V.C.M.	26.66	28.20	31.60	27.74
F.C.	50.94	50.34	54.30	51.24
Ash	20.00	19.54	12.28	18.82
Sulphur	0.35	0.36	0.34	0.35
B.Th.U.	11,200	11,270	12,590	11,410

It should be noted that these assays cover only 6'10" of the coal. If a further foot or so from the top coal and the two bands were included the ash content would be higher and the B. Th. U. less than the calculated average.

QUANTITY OF COAL:

The quantity of coal available for economic production in open cut mining is naturally dependent on the depth of overburden. Accompanying this report is a structure contour plan of the top of the seam, that is, a plan showing the depth of overburden. This plan was prepared from strike and dip data observed in the underground workings, outside the proposed open cut area, and does not rely on information obtained from bores, shafts or underground workings within the area. Hence the structure contours are purely theoretical and are only correct if the strike and dip of the seam remains constant and no faulting occurs which is extremely unlikely. Minor variations from the ideal must be expected. Hence, although serving as a guide for future operations, the following table of tonnages, based on these contours must be regarded as very approximate:-

Maximum Depth of Overburden	Coal Available
30 feet	100,000 tons
40 feet	175,000 tons
50 feet	300,000 tons

Data: Width of Seam 8 feet.

NATURE OF OVERBURDEN:

The overburden consists mainly of weathered sandstones and shaly sandstones of the Felspathic Sandstone Series. Never a hard rock series, surface weathering has affected these beds, so that to a depth of thirty feet and possibly more they are soft and easily moved. From the surface the first couple of feet consist of soil and dolerite talus,

followed by two or three feet of clay and then the weathered sandstones series. As the depth of overburden increases, so the rock will become less weathered and harder.

CONCLUSIONS:

As mentioned previously, the structure contour plan and the tonnages based on the information plotted thereon, are theoretical only. As such, a large area appears to be on the borderline of economic coal recovery. It would, therefore, be dangerous to recommend or reject the project of open cut mining on this evidence alone. The only way to be sure is by a boring or shaft sinking programme. On the plan, a line of proposed bores is shown. Boring should be commenced along this line and possibly expanded as the evidence warrants.

(Signed) Terence D. Hughes.
GEOLOGIST.
9th November, 1949

Department of Mines,
HOBART ... Tasmania.