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COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF SUPPLY AND SHIPPING.
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

REPORT No. 1949/39

(Geol.Ser.22)

NOTE ON NEW OCCIDENTAL GOLD MINE,
NEW SOUTH WALES.

by

C.J. Sullivan.

CANBERRA.

29th July, 1949.

DEPARTMENT OF SUPPLY AND DEVELOPMENT

Bureau of Mineral Resources,
Geology and Geophysics.

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COBAR, NEW SOUTH WALES.

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The Cobar field was visited during the period 18th to 24th July, mainly in connection with the exploration programme which is taking place in that area. During this visit, however, some information was obtained concerning the operations of the mines controlled by New Occidental Gold Mines, N.L., which company is being assisted financially by the Commonwealth.

TABLE I.

GRADE OBTAINED FROM NEW OCCIDENTAL
AND CHESNEY MINES DURING RECENT OPERATING PERIODS.

Period Ending	<u>Occidental Mine</u>	<u>Chesney Mine</u>	
	dwt. Long tons	dwt. Long tons	% Cu
4. 7.48	6.99	1.28	1.84
1. 8.48	8.42	1.27	1.72
29. 8.48	9.42	1.66	1.84
26. 9.48	9.40	1.29	1.72
24.10.48	7.4	1.48	1.58
21.11.48	7.3	1.38	1.63
19.12.48	8.29	0.72	1.56
16. 1.49	8.54	0.77	1.44
13. 2.49	8.11	0.61	1.77
13. 3.49	6.26	1.32	1.56
10. 4.49	6.68	1.24	1.57
8. 5.49	8.67	0.71	1.79
5. 6.49	7.47	0.48	1.83
Average	7.92	1.09	1.68

From this table it will be seen that the New Occidental Mine is more than maintaining the grade of 6.7 dwt per ton anticipated in the report of April 1949 (File 97N/3), but that the Chesney is tending to fall a little below the grade of 1.2 dwt. Au and 1.75 per cent Cu. In the company's original submission to the Treasury, the Chesney ore reserves were stated at 1.23 dwt. Au and 1.88 per cent Cu. but the information upon which these grades were calculated was probably inadequate. In any case very close calculations of grade in orebody of this type are difficult. Table I shows that the average heading value for the year ended 5/6/49 was 1.09 dwt. Au and 1.68 per cent Cu.

Development and Exploration.

The development programme for the New Occidental and Chesney mines was discussed with the Underground Manager and it was found, as anticipated in the report of April 1949, that the programme of 1750 ft. of development per year was the normal one required to prepare the orebodies for stoping and did not constitute any real exploration. This development is expected to yield approximately 80 tons of ore per foot which is an extremely

high figure compared with the average West Australian gold mine, in which 20 to 30 tons per foot of development is the normal yield.

No costly exploration is being undertaken and diamond drilling is largely the routine testing of known lodes preparatory to development and exploitation.

FUTURE OF THE FIELD.

New Occidental Mine.

Since the previous inspection of this mine (two years ago) development and diamond drilling at No.14 (bottom) level has indicated that the orebody here is larger than previously anticipated and may be of the order of 1300 tons per vertical foot containing perhaps 6.5 dwt. per ton. This is a very substantial orebody and indicates that the mine is showing no sign whatever of becoming depleted.

Chesney Mine.

Driving at the northern end of No.8 (bottom) level has proved further ore at this mine. The lode has now been shown to extend over a length of approximately 800 feet. at this level and diamond drilling indicates that the average width may be around 40 ft. These dimensions will yield approximately 3200 tons per foot of ore which is thought to contain approximately 1.2 dwt. Au and 1.3 per cent Cu.

New Cobar Mine.

In accordance with the Government's agreement the New Cobar mine is being kept unwatered; the men employed range from 3 to 7, and the cost varies from \$400 to \$600 per period. The company is carrying out a limited amount of diamond drilling on this mine and during recent months some relatively high-grade ore has been intersected. The Underground Manager considers that it would be rather dangerous to allow this mine to be filled with water as the large number of flat breaks through the country and through the lode would tend to lead to heavy falls with consequent danger to the mine openings. It would not, of course, be advisable to keep the mine unwatered for an indefinite number of years unless there was some prospect of mining the orebody. This point will be dealt with under the next sub-heading.

New Scheme for Large-Scale Mining Operations.

The company, in conjunction with its Consultants, has recently considered a scheme to mine ore from Cobar at the rate of 750,000 tons per annum. The basis of this scheme is that in view of the new ore exposed in the Chesney Mine, and taking into account the Dapville deposit discovered by the Zinc Corporation and the Bureau of Mineral Resources, the field could be expected to yield from all deposits approximately 7,000 tons per vertical foot. Giving this vertical extension of 1,000 feet, the ore available would be 7,000,000 tons.

Taking the grade of this ore at 1.3 per cent Cu and 1.2 dwt. Au, the value at present prices would be 59/9 per ton. The company has estimated costs at 35/- per ton which will leave a substantial profit. The division of their estimated costs is -

Mining	Milling	Smelting and	Contingencies	Total
		Realisation		
21/-	6/-	5/6	2/6	35/-

It would be impracticable to comment on these costs at the present time, but it may be remarked that many of the stopes at Cobar would be from 60 to 80 ft. in width and that in orebodies of this type, transverse stoping, using blast hole drilling would be practicable. At Big Bell, West Australia, where similar stoping methods are employed, mining costs in 1949 were approximately 20/- per ton and total costs were approximately 30/-

It is estimated that the scheme would cost about £3.5 million. Mr. Eggs, the General Manager, is at present in England and is believed to be investigating the possibility of raising English capital to implement this scheme. If it came into operation New Occidental Gold Mines N.L. would go out of existence and a new company would, presumably, dominate operations.

At the present time the scheme is only an idea in the minds of the directors and was originally formulated by the General Manager and by Mr. H.J.C. Conolly, the Geological Consultant to the Company.

It appears to the writer that the field probably could produce 6,000 to 7,000 tons of ore per vertical foot, which could well be of the grade indicated by the company, viz. 1.2 dwt. Au and 1.3 per cent Cu. The ground containing these orebodies is all held by the Company. The questions as to whether this ore can be worked at a sufficient profit to amortize the substantial expenditure required and as to whether sound English mining groups are likely to become interested in the proposition are only matters of speculation at the present time. However, if the scheme can be brought into operation it is a most desirable one from Australia's point of view and the efforts being made to implement it deserve sympathetic treatment.

The ore estimated by the Geological Consultant to be present to a depth of 1,000 feet below present workings would contain approximately £21,000,000 worth of metals at the present price and it is more than likely that the deposits will continue in depth beyond this range.

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