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REPORT ON C. R. COX'S APPLICATION FOR ASSISTANCE - NEW ELDORADO MINE, MATHINNA

INTRODUCTION:

The New Eldorado mine is situated on the western side of Black Horse Creek and about three-quarters of a mile to the south of the township of Mathinna.

Mr. Cox's application deals with only a small portion of the mine workings but it is considered necessary and advisable to briefly review the history of the whole of the workings of the mine.

PREVIOUS REPORTS:

The following list includes the more important of the published reports dealing with the mine:-

Thureau, G.	Report on Mount Victoria, Dan Rivulet, Black Boy, and Mangana Goldfields, 1884.
Montgomery, A.	Report on the Mathinna Goldfield, 1892.
Twelvetrees, W.H.	Report on the Mathinna Goldfield, Part 11., 1906.
Finucane, K.J.	Mathinna and Tower Hill Goldfields Geological Survey Bulletin No.43, 1935.

A short typewritten memorandum was prepared by Mr. Q.J. Henderson, Field Geologist, in May, 1941.

HISTORY:

Thureau described the Eldorado reef and claim in his 1884 report. Records show that the claim was taken up in 1871, but there is no information concerning the early workings of the claim. A lease (No. 183/83) was taken up in 1886 and it would appear that the greater part of the underground workings were conducted between 1886 and 1895. The mine became known as the Eldorado, although the New Eldorado Gold Mining Company, N.L., was not formed until 1891 and the lease was not transferred to that Company until 1896. Most of the underground workings had been completed at the time of Montgomery's visit in 1892, but work from the main shaft was conducted until 1896 at least. The mine was probably abandoned later but was taken up by the Ophir Mining Company Limited in 1905. The latter Company did not, however, carry out much work in the old workings. Twelvetrees visited and described the workings in 1906. It is stated by Finucane that, in 1909, the Eldorado adit was cleaned out and one of the eastern drives repaired. Very little, if any, work has been carried out since that date.

REEFS AND WORKINGS:

The surface workings consists of two lines of stopes and a number of trenches and shallow shafts. An adit with the length of approximately 300 feet was driven in a general southerly direction, and drives were driven to both the east and west on the two lines of reef. The adit intersected the reef at a depth of 120 feet below the surface. Later, a main shaft was sunk to the south-east of the reefs and a crosscut extended to the north-west.

The surface stopes and drives from the adit level suggest that there are two lines of reef in this mine. Messrs. Montgomery and Twelvetrees considered the two reefs to be faulted portions of one and the same reef but although on the surface the conditions are consistent with their view, the workings on the adit level suggest that there are two lines of reef. Finucane also considered that there were two reefs. The lines of reef have an approximate east-west strike and dip to the south at angles of 50° to 70°. More detailed descriptions are given in Finucane's report (Bulletin No. 43) and will not be repeated here. The reefs will be referred to as the North Reef (Finucane's No. 2) and the South reef (Fincuane's No. 1).

EAST DRIVE ON NORTH REEF:

Cox's application deals with a portion of the East drive on the North reef and it is necessary to consider in detail, the history of that drive.

According to the underground mine plans, this drive was completed before the end of 1890. With perhaps one exception, all winzes and branch drives from it were completed by the time of Montgomery's visit in 1892. The exception referred to is an incline winze reported by Twelvetrees in 1906 to have been "recently sunk" from a place near the mouth of the East drive. A plan of the adit workings is attached to this report.

The East drive can now only be entered for a distance of approximately 40 feet where a fall of rock occurs and completely blocks the drive. From the adit, a smooth wall striking at 110° and dipping at 65° to the south was followed for a distance of 30 feet. The drive then turned sharply to the north-east and the block occurs a few feet from the band. The previous reports indicate that a reef was followed for about 20 feet but contained little or no gold in that length. According to Montgomery, a structural plane (Called by him a slide) was encountered and, on the eastern side of the plane, the reef became gold-bearing and was stoped above the drive for a distance of 50 feet to the east. It is also reported by Montgomery that two winzes were sunk below the drive and that the reef was stoped until the shoot was terminated at depth by the plane.

At a distance of 110 feet from the adit, the drive turned to the north-east and the reef passed into the hanging-wall and was not driven on further. The stoping above the drive connects with the surface stopes on the north reef. The winze described by Twelvetrees near the mouth of the drive is reported by him to have sunk on quartz containing gold but not of a profitable grade.

Mr. Cox states that the fallen rock has filled the drive for a length of 10 feet, and that 10 feet beyond the fall there is a face in the drive in which is exposed a quartz vein six to nine inches wide. He stated that the vein has a strike similar to that of the north-easterly portion of the drive. According to his statement and description, this vein should occur at the point marked X on the accompanying plan. Mr. Cox states that, according to local reports, the vein contains 16 dwt. of gold per ton. He also states that, some time ago, he obtained some of the quartz from this vein and that early in the present year he forwarded a parcel of one ton of it for treatment at the Departmental battery at Mangana. The return from the crushing of that one-ton parcel was 14.67 dwt. of bullion (or 13.75) dwt. of smelted gold.)

It is to be noted that the early reports make no reference to any vein at the place under consideration, and trending in the direction described by Mr. Cox. Montgomery gave a very detailed description of the reefs and veins in the adit workings, and, if the vein was exposed at the time of his visit, it is certain that he would have described the vein. Twelvetrees made no reference to any such vein. It would appear from these two reports that either the vein does not exist or that it was exposed subsequently to the visits of Montgomery and Twelvetrees. There is, however, no information as to any later workings on a vein at the point X. The only evidence for its existence is, therefore, the statement by Mr. Cox. It should be noted that Mr. Finucane in his report (based on field work in 1932) has stated that the East drive was blocked at a point at about 50 feet from the adit. It would appear, therefore, that if Mr. Cox obtained the quartz from this vein then he must have done so prior to 1932, and that he stored it for at least nine years before it was treated in 1941.

Quartz occurs in the portion of the drive trending north-easterly towards the point X, but it contains very little gold. Four samples taken by Q.J. Henderson at 5-feet intervals, gave assay results of trace, nil, nil and 12 grs. per ton. Montgomery reported that a north-easterly striking group of quartz veins occurred in the East drive on the South reef and that this group was probably an extension of the reef in the north-easterly trending portion of the East drive on the North reef. It is thus possible that the north-easterly trending reef or group of veins extends over some distance. As regards its north-eastern end, (i.e. in the East drive on the North reef), Montgomery stated "About 49 feet from the side of the adit the No. 1 slide was struck.....The broken quartz of the north-easterly lode is at once cut short off, and gold-bearing stone takes its place." The gold-bearing stone was that stoped above the drive. There is no evidence of the north-easterly trending vein on the surface.

CONCLUSIONS AND RECOMMENDATIONS:

The above descriptions show that there is no official information available in connection with the gold-bearing vein which, according to Mr. Cox, occurs at the point X. Moreover, it appears probable that if Mr. Cox obtained quartz from the vein, he must have done so at least nine years ago.

It should be noted that the position at present is no different from that which existed in May, when the mine was visited by Mr. Q.J. Henderson, Field,Geologist, and that the fall of rock still prevents anyone (as it did at the time of his visit) from examining the drive to the east to determine whether there is, or is not, a quartz vein which is stated to contain about 16 dwt. of gold per ton (and from which, it is stated, that one ton of quartz yielded 14.67 dwt. of gold bullion).

There is no information or evidence available which would justify a recommendation that financial assistance should be provided to enable the drive to be cleaned out. If access to the point X were possible, investigating officers would then be in a position to determine if the vein is present, and its dimensions and grade, and whether financial assistance for its development would be justified.

P.B. Nye,
GOVERNMENT GEOLOGIST.

Department of Mines,
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4th September, 1941.