Department of Mines, Adelaide

RB 28/13

CONFIDENTIAL REPORT

on

THE CALCOOKARA COPPER MINE

by

M.L. WADE, B.Sc.

July, 1950.

Department of Mines, Adelaide

CONFIDENTIAL REPORT DM 549/50

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Situation

County of Jervois, Hundred of Hawker. At the head of Yalpudnie Creek and about 18 miles by road north-west of Cowell. On the property of Mr. Ern. Smith.

Previous References

Review of Mining Operations	No. 12, p.19	1910
" " " "	No. 15, pp.25-26	1911
" " " "	No. 18, p.33	1913
" " " "	No. 19, p.64	1913
" " " "	No. 21, p.35	1914
" " " "	No. 24, pp.24-28	1916,

the latter reference being to borehole logs.

Unpublished fortnightly report 30/10/49. A.S. Giles.

Abstract

Attention was drawn to the rather narrow copper workings of the Calcookara mine because the copper ore on dumps and ore paddock gave a Geiger Muller gamma count of about 150 above the normal background of 60.

The workings are shallow and all well up in the oxidised zone, and are strung out along a N.E.-S.W. strike over a distance of 500 feet.

Further attention was paid to the mine because of reports of a wide, possibly well-leached lode, in the deepest shaft, situated at the south-west end of the line of workings.

Topography

The workings are situated in the foothills in open country and in fair grades in ridge and gully terrain. The relief of ridges seldom exceeds 200 feet above gully beds.

Geology

The surface plan and the bore logs shown in the Review of Mining Operations No. 24, pp.24-8, suggest a strongly folded sedimentary series regionally metamorphosed and intruded by a sill-like pegmatite.

The workings significantly are confined to the close vicinity of the pegmatite.

The copper occurs in a crushed schist between hanging-wall pegmatite and footwall recrystallised limestone.

The crushed zone in the north-east end is only from three feet to four feet in width, but only six to eighteen inches of this carries the veins and nodules of copper carbonate.

The four boreholes put down in this section failed to locate copper below the water level.

The conclusion is that the ore lens was less than 50 feet in length, lensing out either end, and failing at depth because of structural changes.

In the south-west end of the workings the shaft goes down to 80 feet, but is still well above water level, and is in a wide leached jaspery gossan.

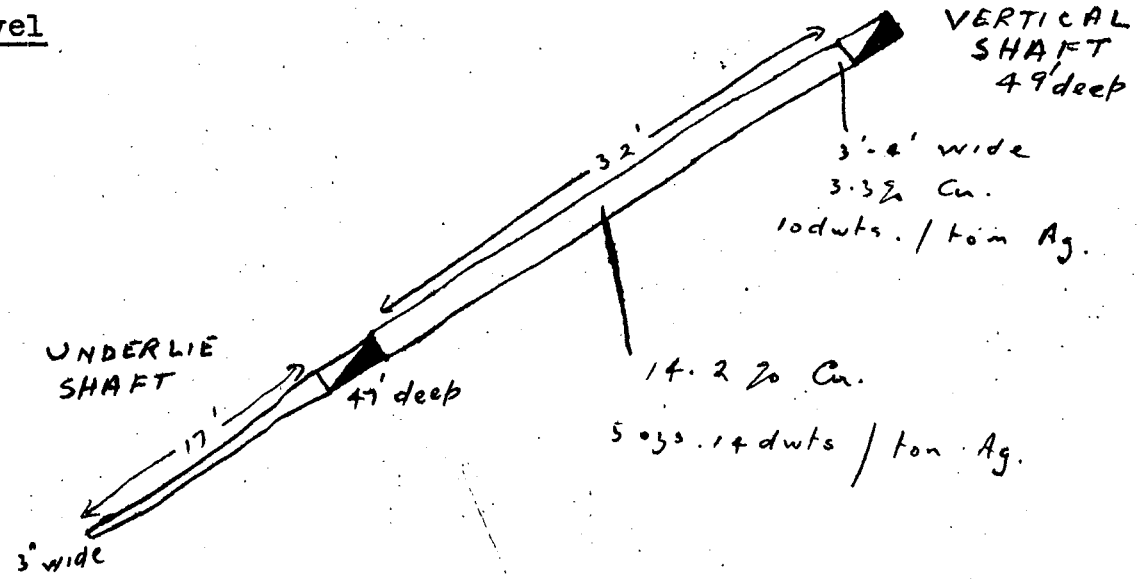
From appearances it is more likely that the south-west workings followed down a pyritic gossan, not a copper one.

Unfortunately the Geiger Muller did not give any unusual reaction for the larger formation in the south-west end.

History

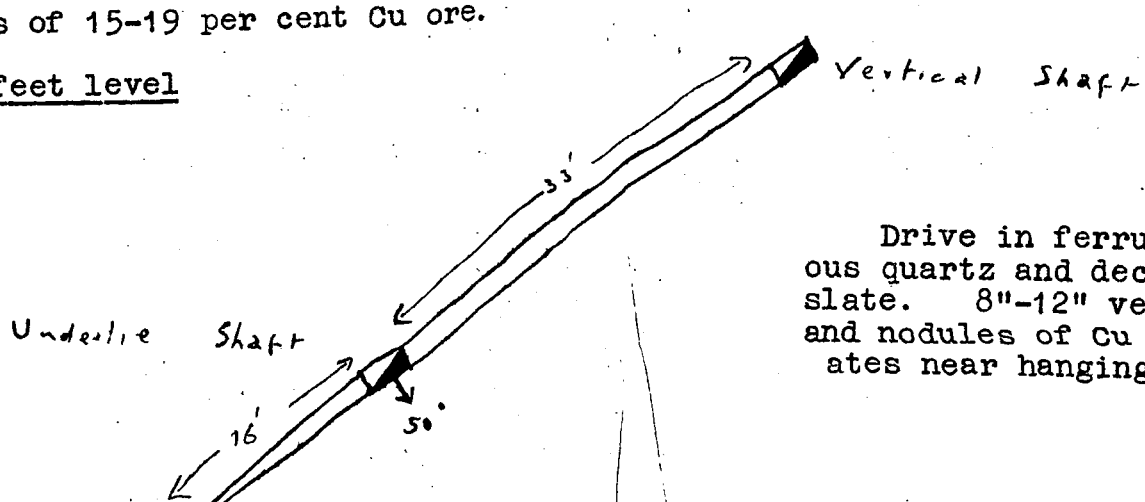
The Reviews give the following salient facts -

21 feet level



Stoped above and below level on 3'-4' wide lode. Thirty tons of 15-19 per cent Cu ore.

47 feet level



Drive in ferruginous quartz and decomposed slate. 8"-12" veins and nodules of Cu carbonates near hanging-wall.

The walls are well defined even where 6 inches or less apart.

Seven chains south-west on the brow of the hill a vertical shaft was sunk to a depth of 85 feet. (The sink of this shaft would be a little above the collars of the two in the north-east end).

One hundred and eighty-five feet of levels from this shaft showed no values, although at 82 feet from the shaft in the south-west drive a large ferruginous formation was cut.

Stainings and small pockets of copper only were found on the surface between the above-mentioned shafts.

The workings shown east of the fence, and 70 feet south-east of the underlie shaft are reported in the Reviews as 35 feet deep, and with a drive 10 feet east in the sink, where the formation is 2 feet wide, carrying 22.4 per cent Cu and 16 ounces 4 dwts. Ag. / ton.

The various assays given vary from 3.5 per cent Cu. to 22.4 per cent Cu. and from a few dwts. Ag. to 19 ounces 16 dwts. Ag./ton They evidently come from a supergene zone.

Summary

The lode in the north-east end is narrow, short, patchy and does not carry much below the water level. It is weakly radio-active.

The lode in the south-west end is wide, most probably an iron gossan and is not radio-active or cupriferous.

Two samples from either set of workings have been submitted for assay and petrological examination for future guidance.

Other small lenses may occur.

M. L. Wade.

M.L. Wade,
GEOLOGIST.

APPENDIX

Felspar at Calcookara (Vide surface plan)

The felspar here forms a very prominent high ridge over 100 feet above the copper workings.

In the more central portions of the lens the edges are fairly conspicuous.

The lens is about 100 feet at its greatest width and is reasonably thick over a length of about 200 feet, but beyond this it tapers off fairly quickly. The open cutting width would lie between 250 and 300 feet.

The felspar is coarsely and crudely crystallised and at the outcrop contains very little siliceous or micaceous material.

The felspar is separated from the copper workings by 150 feet of gneiss with some calcite near the copper.

It is possible this will be a lime felspar.

Samples have been submitted for the determination of the felspar and for a lithium test.

M. L. Wade

M.L. Wade,
GEOLOGIST

DEPARTMENT OF MINES.

ADELAIDE.

D.M. 549/50.

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Amendment to Report on Calcookara Copper Mine.

In the light of the assay results of samples G1504, G1505 and G1506 and the conclusions and suggestions submitted by A. W. Whittle and in view of field evidence of size and leaching, it is now thought desirable to recommend a drill hole to intersect the lode formation below water level at the S.W. shaft.

Observed surface dips show a tendency to steepening from N.E. to S.W. There are no dips at surface at the shaft, but a steep dip may reasonably be assumed, as the shaft occurs midway between dips of 85° and 70°.

Vide attached plan for proposed drill site and lay-out.

Length of hole 153' to be stopped at 110'. Depression 80° N.W. V.D. 150'.

In my recent visit to the West coast the Calcookara Mine offered the one chance of any size or value for radio-active minerals.

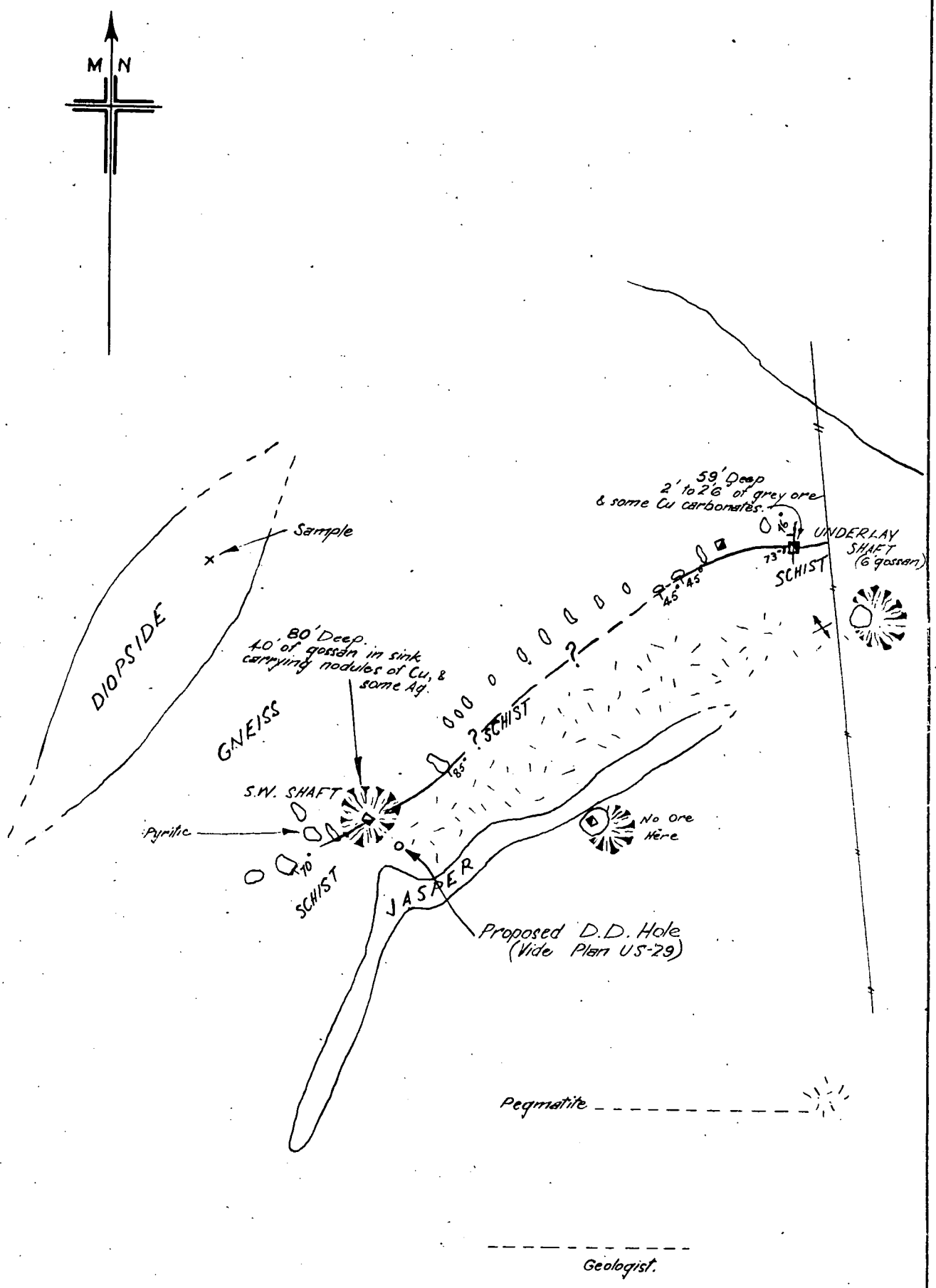
The surface workings are fallen in and are under water. Accessibility to underground workings for fresher samples is quite impossible.

The mineral described in the appendix to my report is now identified as pyroxene and is, therefore, of no further interest.

M. L Wade

4-8-50.

GEOLOGIST.

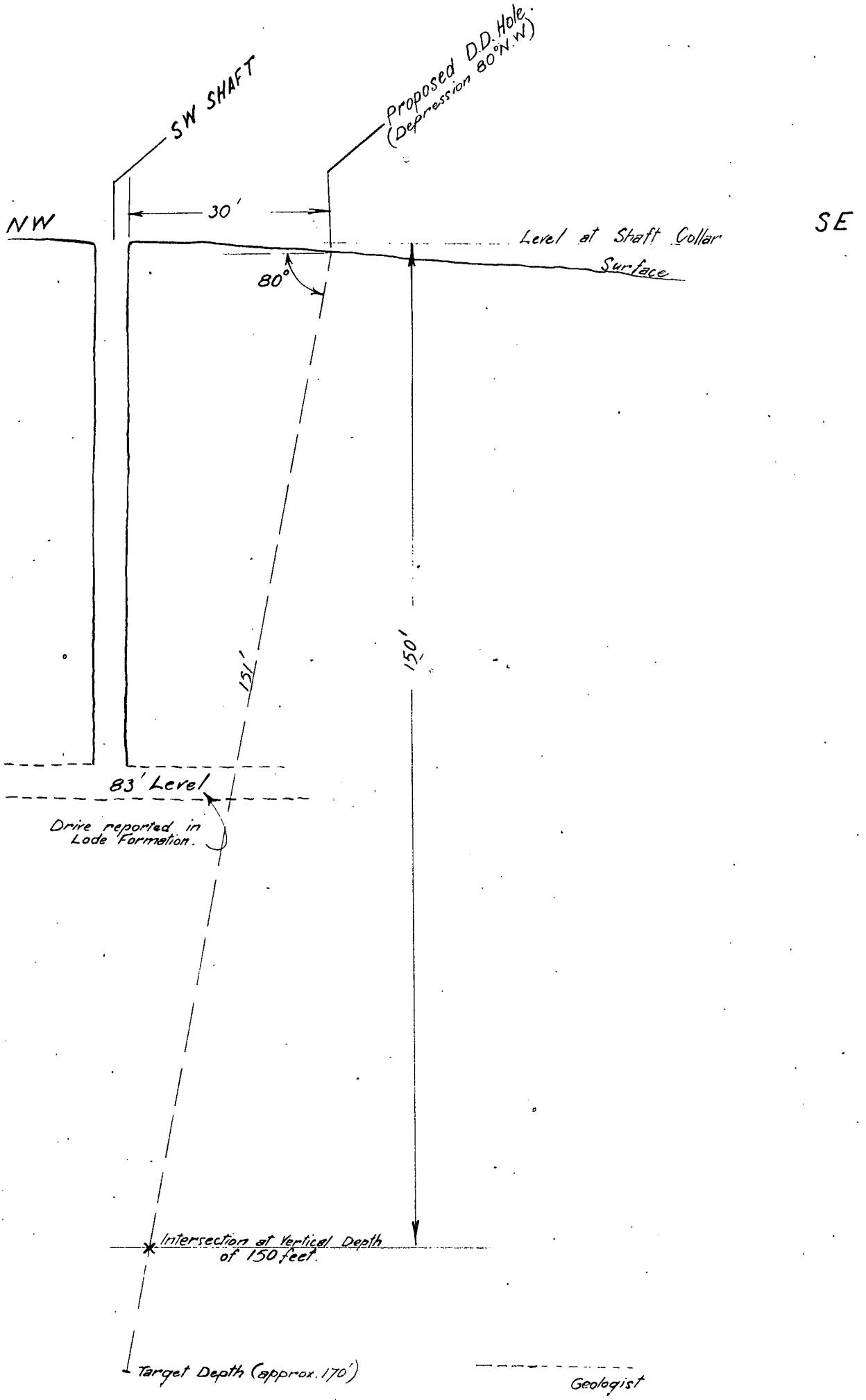


NOTE (1) Vide plan US 19 for locality of mine.
(2) In N.E. or Underlay Shaft section, the Geiger Counter gave readings of about 150 above a background of 60.

COPY 1

S. A. G. DEPT. OF MINES

Approved	Passed	Drn. A.D.G.	CALCOOKARA COPPER MINE H^D. HAWKER : C^o JERVOIS	D.M.	Scale 100 feet to 1 inch.
T. A. Burnes		Tcd.	SURFACE PLAN	Req. 5902	US-28
for Director	C.D.	Ckd. Exd.			Date 2-8-50



Note – Vide Plan US 28 for locality of D.D. Hole.

COPY 2

S. A. G. DEPT. OF MINES

Approved	Passed	Drn. A.D.G.	CALCOOKARA COPPER MINE	D.M.	Scale 20 feet to 1 inch.
		Tcd.	H.P. HAWKER : C.P. JERVOIS	Req. 5902	US-29
T. A. Bruce		Ckd.	SECTION THROUGH S.W. SHAFT showing PROPOSED D.D. HOLE.		
for Director	C.D.	Exd.			Date 3-8-50