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CONTENTS

GOLD - BEARING VEIN NEAR EUREKA CREEK

1½ MILES SOUTH-EAST OF MOLINE

INTRODUCTION

The prospect is situated about one and a half miles south-east of Moline within a small zone on the east side of Eureka Creek mapped by B.M.R. as part of the Golden Dyke Formation. (1" to 1 mile Geological Sheet D53-5-71).

The nearest point readily accessible to a vehicle is on the new road to Mount Diamond Mine at the Eureka Creek crossing, where a tributary joins Eureka Creek. Access from the road is at present possible only on foot, entailing crossing of the tributary creek and about 500 yards of wooded country in order to reach the north-west end of the vein.

This locality is within the Moline Authority to Prospect No. 1835 held by United Uranium N.L. There is no record of any previous work directed at evaluation of this occurence, and the only evidence of any previous interest is a feature which could be the remains of an attempt to dig a shallow trench across the vein at peg 200S.

PRELIMINARY INVESTIGATION

Initially in the course of mapping at air photo scale an occurence of slightly gossanous green rock was found at the point used as a base in subsequent detailed mapping. Examination of this material at Moline indicated the presence of sulphides and free-milling gold, the gold being detected by panning a pulverized portion of the rock. Subsequent assay revealed a gold content of 16 dwts/ton, and a further inspection of the occurence was made in the hope of finding more gold-bearing material. The presence of a vein marked by various occurences of quartz and gossanous material extending north-west and south-east from the original sample point was established, and four further rock samples were taken over a total length of about 700 feet in an attempt to determine whether the occurence of gold extended along this vein. These samples were of quartzose rock and gossanous material considered most likely to contain gold, and all were found after crushing and panning to contain visible fine gold in small quantities. However, only one other exposure similar to that originally sampled was noted at this stage.

MAPPING

In order to obtain quantitative information about the likely value of the vein as a gold prospect systematic mapping and sampling was next undertaken. A base point was established at the original sampling point and marked by a peg. This is indicated on the 4" to 1 mile Location Map, and is located near the crest of a low ridge. The ridge extends south-east from the downstream end of a bend in Eureka Creek occuring at the south end of a comparatively straight portion of the creek course. This trends very slightly east of north, and is ¾ mile south east from the south end of the damn impounding Moline reservoir.

A line of pegs at 100' intervals was laid out extending 200' north-west and 800' south-east from the base on a bearing of 127° Magnetic. These pegs were surveyed in using a theodolite and marked with red paint.

Mapping was confined to plotting the extent of the vein as far as possible from surface evidence and noting its relations to the country rock immediately adjacent to it. The vein is generally manifest only as a slightly to strongly outstanding narrow zone of gossanous siltstone, frequently veined with quartz and becoming highly quartzose towards the north-western end. Exposure of obvious vein material is not complete over the entire mapped length of the vein, and various exposures of ferruginous material further south-east could be indicative of an extension of the vein.. However, no gold was noted in two rock samples taken from this extension which were crushed and panned.

SAMPLING

Systematic sampling of the vein was carried out by taking chip samples at 50' intervals. These were taken across the full width of outcrop whenever possible, i.e. where the boundaries of the vein are clear. Where the extent of the vein is obscured by weathering, the debris over the line of the vein was removed before collection of the sample. All samples were taken with hammer and cold chisel across the widths indicated in the appendix and on the plan. Where the width of the vein is poorly defined or no vein material is evident the sample may have been diluted with country rock which is almost certainly non-suriferous.

GEOLOGY

The vein occurs within siltstones mapped by the Bureau of Mineral Resources as belonging to the Golden Dyke Formation. This is apparently interbedded with the Burrell Creek Formation and both units tightly folded together. It is difficult to establish with certainty which formation these siltstones represent, but this does not appear to be particularly relevant to the evaluation of the gold mineralisation. The strike and dip of beds near the vein are consistent with the regional trend and show a tendency, very widespread in the area, to vary in dip to a large entent over a small distance.

A number of shears nearer Moline contain auriferous material and one of the shear zones as mapped by B.M.R. can be projected fairly precisely along the line of this vein. Outcrop of the vein across a width varying from about 4' to 20' of clearly defined exposure is discontinuous along the 1000' of strike mapped, and occurences of material possibly extending the vein further south-east are extremely sporadic. The straightness of the outcrop of the vein suggests that it is nearly vertical, while the relatively constant width suggests a tabular shape. Consideration of the strike in relation to topography suggests a minimum possible angle of dip of about 50° to the south-west, if the body is tabular.

Gold occurs in greatest amounts with iron sulphides in the green arsenical rock first sampled. Another occurence of similar rock near 400S (Sample E8038R) yielded a gold content of only 4.6 dwts/ton, and none of this appears to be free-milling.

It is presumed to be bound up within sulphide grains, the principal sulphide present being arsenopyrite. Quartz reefs apparently associated with metasomatic alteration of the siltstone and in places constituting the main surface expression of the vein probably contain very small amounts of gold in arsenopyrite.

GOLD MINERALISATION

On the basis of what is at present known about this occurence it seems unlikely that it will yield economic amounts of gold. Sampling and assay has indicated the following details:

(i) Gold occurs only along a narrow zone of altered rocks, generally in small amounts (i.e. sub-economic) and is absent from unaltered country rock.

(ii) Distribution of gold is erratic, apparently associated with arsenic and sulphur metasomatism, and only a proportion of the gold could be recovered simply by milling.

These facts almost certainly establish a hypogene origin for the gold, and it would appear that the amount of gold present is approximately proportional to the degree of visible alteration. of the siltstone. Another occurence of green altered rock similar to that originally sampled is known about half a mile south of the Northern Hercules Mine, and also contains free milling gold: any further occurence of this rock type could therefore warrant further attention. Such occurences may be found elsewhere in the system of shears extending south-eastwards from the Northern Hercules Mine, but testing of these by any means other than sub-surface exploration would present difficulties. The fact that a chip sample taken across the full width of the vein at present under consideration at the original sampling point gave a value of only 0.92 dwt/ton does not seem encouraging: downward entension of the material originally sampled is possible, but it seems unlikely that minable quantities of good-grade ore are present.

RECOMMENDATIONS

Unless further evidence can be found suggesting an economic potential for the vein, no sub-surface or other work seems justified.

A.B. McCulloch.
March 1970.

APPENDIX

Sample Details:

Location, length sampled, depth of weathered cover removed, description of lithological characteristics of sample, panning and assay results.

PLAN

Surface expression of vein at 1" to 40'.

APENDIX

SAMPLE DETAILS

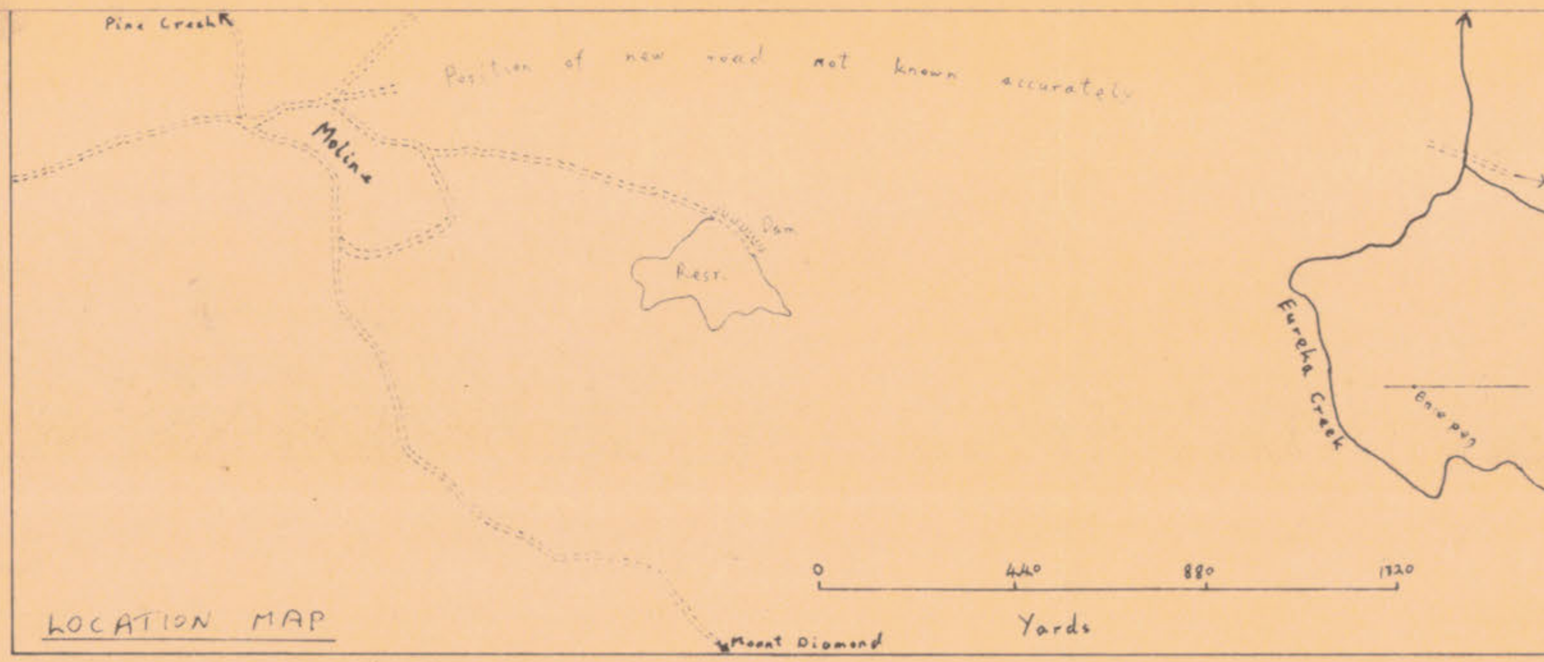
SAMPLE NUMBER	LOCATION	LENGTH SAMPLED	DEPTH TO ROCK	DESCRIPTION OF SAMPLE	PANNING RESULT	ASSAY GOLD dwt/ton
E8008R	Outcrop at base point specimem from boulder.			Green altered rock rich in sulphur and arsenic.	Visible Gold	16.0
8018	200'N 0 - 13'6"E.	13'6"	6"	Weathered ferruginous siltstone	No Visible Gold	0.04
8019	150'N 0 - 18'E.	18'0"	6"	Quartz rubble and weathered siltstone.	Trace of Gold	0.72
8020	100'N 0 - 20'E.	20'0"	4"	Ferruginous siltstone and quartz from in situ.	No Visible Gold	0.04
8021	50'N 7'E - 7'W.	14'0"	0 - 6"	Siltstone and vein rock consisting of quartz and green rock as E8008R	No Visible Gold	0.56
8022	Base Point 5'E - 15'W.	20'0"	6"- 9"	Siltstone and quartz and green rock as E8008R.	No Visible Gold	0.92
8023	50'S 5'E - 15'W	20'0"	9"	Well-weathered siltstone.	No Visible Gold	0.32
8024	100'S 5'E - 15'E	10'0"	0 - 6"	Gossanous siltstone and minor quartz.	Trace of Gold	0.34
8025	150'S 8'E - 20'E	12:0"	0 - 6"	Much altered ferruginous siltstone	Trace of Gold	0.72
8026	200'S 10'E - 20'E	10'0"	6"- 8"	Decomposed ferruginous siltstone and soil.	One Colour of Gold	0.24
8027	250'S 10'E - 25'E	15'0"	0 - 8"	Gossanous and slightly haematitic siltstone breccia? and minor green material as E8008R.		0.56
8028	300'S 0 - 25'E	25'0"	0 - 8"	Slightly brecciated or sheared gossanous siltstone.		0.32
8029	350'S 0 - 15'E	15'0"	0 - 6"	Grey-green rock with much arseno pyrite and quartz and siltstone.	Sulphide Fragments	1.60
8030	400'S 1'E - 10'W	11'0"	Surface	Limonite-stained siltstone.	No Visible Gold.	0.04
8031	450'S 5'E - 5'W.	10'0"	3" - 4"	Limonite-stained siltstone.	No Visible Gold.	0.04
8032	500'S 5'E - 5'W	10'0"	Surface	Limonite-stained siltstone and quartz - Haematite vein rock.		0.04
8033	550'S 7'W - 12'E	19'0"	Surface	Limonite-stained siltstone.		0.04
8034	600'S 0' - 10'E	10'0"	2" - 3"	White quartz and limonite-stained siltstone.		0.04
8035	650'S 10'E - 10'W	20'0"		Quartz-veined gossanous siltstone.		0.04
8036	700'S 30'W - 10'W	20'0"	Surface	Quartz-veined gossanous siltstone and traces of green material as E8038R.		0.12
8037	750'S 34'W - 14'W	20'0"	Surface	Grey-green rock similar to E8008R but less gossanous.		4.6
8038	400'S Boulder (in situ)					

Additional assays of sample E8038R gave the following values: silver 1.40 ozs/ton; lead 0.25%; zinc 0.01%; copper 0.02%; arsenic 10.2%. Examination of pulverised material from sample E8008R indicated the presence of clastic quartz grains and fragments of green shaly material plus gold and arsenopyrite.

CR 70/96

GOLD-BEARING VEIN NEAR EUREKA CREEK

1½ MILES SOUTH-EAST OF MOLINE



Vein occurs entirely within siltstone.

LEGEND

- ⊙ Peg sample
- · Intermediate point
- --15-- Line of sampling, length indicated
- Approx. limit of vein where obscure
- " " " " well-defined.
- Form lines interpolated from elevations of pegs. Based on arbitrary datum of 100' at base point. Vertical interval = 20'
- Strike & dip of bedding

A.B.M'C. 4/3/70.

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