

GEOLOGICAL SURVEY OF THE GOLD HILL AREA, VICINITY OF THE QUE RIVERINTRODUCTION:

In connection with the Syndicate's intention to further test this area, by means of a comprehensive boring campaign, a geological examination of the area was undertaken, as a first consideration, in order to -

- (1) Trace and define the belt of sheared porphyries
- (2) Locate the presence of sedimentary xenoliths if such exist.

Owing to the paucity of rock exposures, due to the covering of dense forests of myrtle and undergrowth of ferns, horizontal scrub etc., it was necessary to systematically "pot-hole" the area in order to map the rock-types. Despite this tedious procedure, approximately 200 acres were surveyed and mapped, representing an area, roughly north and south, at least one mile long by over a quarter of a mile wide.

LOCATION AND ACCESS:

The area under review is situated approximately 12 miles south east from Guildford Junction. It is reached by means of a pack-track constructed from Brown's Panel, about eight miles south of Guildford Junction, near the 46 mile peg on the Emu Bay Railway line from Burnie to Zeehan.

For the first mile the track crosses the open country near the southern boundary of the V.D.L. Company's Surrey Hills Block, in a general south easterly direction; it then turns east to follow undulating, basaltic country, covered with dense myrtle forests and undergrowth, a distance of about three miles and then turns south, skirting button grass plains to the east, through a jungle of cutting grass, bauera, eucalypts etc. for another mile to the Que River, approximately five miles from Brown's Panel. Crossing the Que River by means of a substantial, low level bridge, the track rises gradually, bearing away to the south east for another mile until a small tributary of the Que is crossed; here the track to the prospecting area continues on in a general east to south easterly direction for over half a mile, while the main track turns south along the creek to Mt. Charter and the Mackintosh River.

TOPOGRAPHY:

The area is generally of low relief, although, being portion of the deeply dissected Waratah peneplain. The country rises gently from the Que River to the edge of the southwell River gorge where it drops away almost sheer for at least 1,000 feet.

The headwaters of the Que River of which Gold Creek is a tributary, drain the area and flow generally north west through it.

GEOLOGY:Igneous

With the exception of several small xenolithic areas of sedimentary rocks, the whole of the area consists of a series of massive and sheared porphyries, schists etc.,

known as the Porphyroid Series and of Devonian age.

The rock types observed belong to the following groups:-

- (1) Quartz porphyries and felsites
- (2) Massive felspar porphyries
- (3) Sheared felspar porphyry chloritic schists and quartz sericite schists.

To avoid unnecessary repetition, only brief references to the types etc. will be made as the relationship and association of the various rock-types already have been described in great detail in a departmental report on the type area, the Rosebery District, by K.J. Finucane.

- (1) Quartz porphyries and felsites occur near the mine track, approximately half a mile south of the junction with the main pack-track. The quartz porphyry is a fine grained, dense rock, light green in colour, with abundant phenocrysts of quartz, which are particularly prominent on weathered surfaces. The felsites associated with quartz porphyries are homogeneous felsitic rocks in which are no visible phenocrysts.
- (2) The belt of massive quartz porphyry described above strikes across the area in a general south westerly direction and passes by insensible gradations into a massive felspar porphyry. This rock is darker in colour, with phenocrysts of felspar and occasionally quartz.
- (3) These rocks are alteration products of the massive porphyries, formed as a result of the shearing and hydro-thermal action accompanying dynamic earth movements. With the exception of the belt of massive porphyries and the several small xenolithic areas of sedimentary rocks, the whole of the area is occupied by rocks of this group.

The quartz sericite schists occur as a narrow belt east of the massive porphyries; they are typical of similar schists developed at Rosebery and contain zones of intensive pyritization. The belt is very narrow at the north end but increases to a width exceeding 20 chains at the southern end.

Chloritic schists, regarded as variants of the quartz sericite schists, are characterised in the hand specimen by large streaks and flakes of chlorite. Their greatest development occurs north of the massive porphyries; another area occurs between the massive porphyry and the quartz sericite schists in the south.

In the field, every gradation may be observed from massive felspar porphyries to sheared porphyries and to highly altered schist.

Sedimentary:

Only three small xenolithic areas of sedimentary rocks were located within the area examined and all are situated in the extreme south of it. Two of the areas are approximately 20 and 30 chains respectively south of McDonald's shaft, while the other lies some six chains west of the others; it is quite probable that the first mentioned two are continuous. They appear to be typical buff to purple coloured, fine grained breccias and on purely lithological grounds are referred to Cambro-Ordovician Age.

PROSPECTING OPERATIONS:

Since recommending prospecting by means of trenches to define the belt of sheared porphyries, certain work has been carried out. How this has deviated from the original two chain grid can be seen by reference to the accompanying plan.

The results of sampling are appended herewith. Numbers given in brackets refer to location.

Registered Number	Constituents	Per Cent	Per Ton		
			Oz.	Dwts.	Grs.
2202	(55) Gold	Nil			
	Silver	Nil			
3	(56) Gold	Nil			
	Silver	Nil			
4	(57) Gold	Nil			
	Silver	Nil			
5	(58) Gold	Nil			
	Silver	Nil			
6	(59) Gold	Nil			
	Silver	Nil			
7	(60) Gold		0	0	15
	Silver		6	3	5
8	(61) Gold	Nil			
	Silver		0	6	0
9	(62) Gold	Nil			
	Silver	Nil			
2210	(63) Gold	Nil			
	Silver	Nil			
1	(64) Gold	Trace	0	0	
	Silver		0	15	10
2	(65) Gold	Trace			
	Silver	Trace			
3	(66) Gold	Trace			
	Silver		0	1	1

Registered Number	Constituents	Per Cent	Per Ton			
			Oz.	Dwt.	Grs.	
2214	(68)	Gold Silver	Trace	0	2	11
5	(69)	Gold Silver	Trace	0	0	18
6	(70)	Gold Silver		0	0	12
				0	9	6
7	(71)	Gold Silver		0	0	9
				0	2	14
8	(72)	Gold Silver	Trace	0	5	11
9	(74)	Gold Silver	Trace	0	3	12
2220	(75)	Gold Silver		0	1	4
				0	19	11
1	(77)	Gold Silver	Trace	0	6	6
2	(78)	Gold Silver	Trace	0	5	2
3	(79)	Gold Silver	, Trace	0	7	7

There appear to be two more or less parallel zones of more intensive pyritization; one along the line of the original workings and the other approximately eight chains east of the first, and apparently following a structural weakness associated with the xenoliths of sedimentary rocks.

CONCLUSIONS AND RECOMMENDATIONS:

As a result of this brief examination it is apparent that little more can be gained by further surface prospecting and that some method of prospecting at depth must be undertaken.

Two zones of more intensive pyritization have been located, of which the eastern one appears the more favourable.

As the alteration and pyritic impregnation of the sheared porphyries and quartz sericite schists depends on the permeability of the wall rock and at Rosebery, lateral extensions up to 200 feet, from the ore-bodies, have been observed in the quartz sericite schists, in which the pyritic zones occur in this area; when any drilling campaign is contemplated, it should be designed with a minimum depth of 200 feet.

Drilling costs will be high in this area due to heavy transport charges and the cost of clearing tracks to new sites. It will mean clearing a track from the main pack-track to the first proposed site, a distance of approximately ten chains or more.

The area is undoubtedly worthy of further prospecting and much good could be achieved by continuing the geological mapping in detail in adjacent areas.

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