

DEPARTMENTAL REPORT ON RECENT PROSPECTING OPERATIONS  
IN THE VICINITY OF THE LADY HAVELOCK AND LARANDA  
MINES, SOUTH MOUNT VICTORIA.

INTRODUCTION. This report was prepared after a brief examination, in June last, of the Lady Havelock and adjacent areas with the view of determining the advisability of making provision for crushing facilities by establishing a state battery in the district.

LOCATION AND ACCESS. The area 50 acres was held under prospector's licence No. 3366. It is situated about eight or nine miles north of the Mathinna township, on the north bank of a western tributary of the Dan Rivulet and at the south eastern end of the Strickland spur; about 20 chains west of the Alberton track.

A fairly good motor road extends up the valley of the Dan Rivulet, a distance of approximately six miles; beyond this, the road continues a further two miles to Chesterman's timber mill, but owing to the heavy nature of the traffic is passable only in dry weather. Foot tracks, overgrown with light scrub, lead to the old workings on the steep slopes of the Strickland spur.

PREVIOUS REPORTS. A description of the earlier mining activities of this area will be found in W.H. Twelvetrees report "On the South Mount Victoria Mining Field 1904".

GEOLOGY. The vein system occurs in Cambro-Ordovician slates and quartzites of the Mathinna series. The general strike is north  $30^{\circ}$  west, with steep dips to the north east. Minor undulations and dislocations are a common feature.

PROSPECTING OPERATIONS. Little mining work has been done since Twelvetrees visited the area in 1903 but it is sufficient to indicate the nature of the deposits.

At the Lady Havelock, a short adit has been driven north  $50^{\circ}$  west, approximately 20-25 feet below the No. 1 adit. This was driven to test the downward extension of the vein, just inside the entrance of No. 1, on which a winze was put down 10 or 12 feet. Nothing of value was located in the adit.

Four samples taken from the formation in No. 1 adit indicate the value of the quartz.

NUMBER	LOCATION	AVERAGE WIDTH		ASSAY RESULT.		
				oz.	dwt.	grns
No. 1	West Cuddy	5 inches	Gold	0	0	13
			Silver	0	0	19
No. 2	North wall east crosscut (5' sample)	2"-3"	Gold	0	0	13
			Silver	0	0	13
No. 3	Top lode, south east crosscut (4 foot sample)	3"	Gold	0	1	14
			Silver	0	0	19
No. 4	Bottom lode, south wall east crosscut (5 foot sample)	2"	Gold	0	3	16
			Silver	0	3	16

On the slope of the hill approximately 30 or 40 feet above No. 1 adit is a shaft which was filled in at the time of Twelvetreets examination. It was put down eleven feet on a formation coursing north  $84^{\circ}$  east, with a southerly dip of  $60^{\circ}$ . The formation shows on the footwall up to ten inches quartz, pinching to a mere track at the bottom of the shaft, followed by four feet of soft lode channel material, with two inches of quartz on the hanging wall. The hanging wall quartz is in the form of a lense three feet long. The whole formation shows considerable reduction in width even in the short distance exposed in the shaft.

The following three samples indicate the value of this formation:-

NUMBER	LOCATION	AVERAGE WIDTH	ASSAY RESULTS		
			oz.	dwt.	grn.
5.	Lady Havelock shaft footwall reef (5' sample)	4"-5"	Gold 0	8	2
			Silver 0	6	19
6.	L.H. Shaft between reef (4' sample)	4'	Gold 1	5	8
			Silver 0	6	19
7.	L.H. Shaft, hanging wall reef.	2"	Gold 0	4	4
			Silver 0	2	15

From assays shown above taken from No. 1 adit, on what was apparently the downward extension of the formation exposed in the shaft, although subjected to minor displacements, the strike ranging from  $112^{\circ}$  to  $135^{\circ}$  and the dip varying from  $28^{\circ}$  to  $62^{\circ}$ ; it is obvious that there has been a serious diminution of the gold content.

Prospecting operations undertaken last year by Messrs. Beck and Cox revealed the presence of a number of quartz veins. For descriptive purposes approximate distances are given in relation to the shaft of either the Lady Havelock or the Laranda.

NO. 1 PROSPECT (BECK & COX No. 7). Two chains north of east of the Lady Havelock shaft a trench eleven feet long has uncovered a vein of quartz two or three inches in width, with a strike approximately east and west and dipping south at  $85^{\circ}$ . A grab sample gave the following results:-

SAMPLE NO.	AVERAGE WIDTH.	ASSAY RESULT	Oz.	dwt.	grs.
No. 8	$2\frac{1}{2}"$	gold	0	11	6
		silver	0	6	7

A parallel and smaller vein is exposed three feet to the north. Trenches to the east and west failed to locate any extension of the veins.

NO. 2 PROSPECT (BECK & COX No. 8). This prospect is 20 feet north of No. 1 and two and a half chains north east from the Lady Havelock shaft. A quartz vein, one inch wide, striking  $340^{\circ}$  has been stripped for a few feet.

NO. 3 PROSPECT (BECK & COX NO. 9). Three chains north west from the Lady Havelock shaft more quartz has been uncovered but insufficient work has been done to determine the true nature of this occurrence.

NO. 4 PROSPECT (BECK & COX NO. 2). This is situated three chains south of the 31 foot Laranda shaft. A small cut reveals a lense of quartz 12 to 15 feet long, with a maximum width of three feet; pinching to mere track at each end. The western or footwall dips east at  $81^{\circ}$  while the eastern wall dips west at  $37^{\circ}$ . The footwall / slate is heavily veined with quartz stringers, averaging in width from  $\frac{1}{8}$  to  $\frac{1}{4}$  inch. A channel sample gave the following result:-

SAMPLE NO.	AVERAGE WIDTH		ASSAY RESULT.		
			Oz.	dwt.	grs.
No. 9	6" - 8"	gold	0	1	20
		silver	0	1	7

NO. 5 PROSPECT (BECK & COX NO. 3). A small trench two chains north west from No. 4 (B & C No. 2) exposes a quartz vein of average width from two to three inches striking  $340^{\circ}$  with a strong easterly dip. Intensive prospecting failed to reveal any better prospects in this part of the area.

NO. 6 PROSPECT. This is the small open cut excavated by the old Laranda company and two samples indicate its low gold content.

SAMPLE NO.		ASSAY RESULT.		
		Oz.	dwt.	grs.
No. 10	gold	0	1	1
	silver	0	0	6
No. 11	gold	0	1	1
	silver	0	1	14

NO. 7 PROSPECT (BECK & COX NO. 4). Eight chains north west from the Laranda shaft, a small trench, has uncovered a vein six inches in width, striking north and south with a westerly dip. A grab sample gave the following result:-

SAMPLE NO.	AVERAGE WIDTH		ASSAY RESULT.		
			Oz.	dwt.	grs.
No. 12	6" (15' sample)	gold		Trace	
		silver	0	0	19

NO. 8 PROSPECT (BECK & COX NO. 5). Six trenches, the most northern, five chains north west from No. 7 (B & C No. 4) prove this vein which has an average width of ten inches, over an apparent length of four chains. It strikes north west-south east and dips north east at  $83^{\circ}$ . An average sample over a length of 15 feet gave the following assay result:-

SAMPLE NO.	AVERAGE WIDTH	LENGTH		ASSAY RESULT.		
				Oz.	dwt.	grs.
No. 13	10 inches	15 feet	gold	1	0	9
			silver	0	9	22

Several other prospects were examined but were not of sufficient interest to warrant sampling.

Since Twelvetreets examination in 1903, to test at depth a rich vein just west of the Laranda shaft, an adit was driven 200 feet in a northerly direction and then a cross-cut was driven west a distance of approximately 25-30 feet, locating the downward extension where it was of no value. From where the cross-cut turned west, Messrs. Beck and Cox drove in a north-easterly direction a distance of 50 feet through grey slates with occasional bands of quartzites. At 23 feet a soft, mullocky formation seven feet wide and containing a number of quartz veins was cut. Dish prospects did not indicate any gold. This is undoubtedly the lode channel which outcrops east of the Laranda (Prospect No. 6).

#### CONCLUSIONS AND RECOMMENDATIONS.

The work completed to date has proved the existence of a number of independent, and with one exception, short, narrow quartz veins, in part highly mineralised; arsenopyrite being the predominating sulphide.

The general strike is from north west-south east to north and south; the exceptions being No. 1 Prospect and the formation in the Lady Havelock shaft which strike east and west.

Although a number of prospects were uncovered two only gave assay results indicating quartz which would pay to mine. Of these, one the formation in the Lady Havelock shaft has been proved to be unpayable at a depth of 25 feet. The other, Prospect No. 8 has been prospected on the surface only.

No tonnage could be estimated as available for milling.

No. 8 Prospect is worthy of a small amount, at least of further prospecting work and is admirably situated for testing by means of a short adit.

Unless No. 8 prospect is developed and maintains without serious diminution its gold content, there is not sufficient tonnage in sight available to warrant the establishing of a State battery in the district and if it were established provision would have to be made for the treatment of quartz with a high sulphide content.

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ACTING FIELD GEOLOGIST.

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