UR 1947/125-135

THE SUNRISE MINE.

NARRAWA CREEK, MOINA.

The Sunrise Mine is situated on the south bank of Narrawa Creek about a mile east from the main road from Wilmot to Moina and about three quarters of a mile west from and 300 feet below the old Squib Wolfram Mine. The Sunrise Mine has previously been known as the Squib Gold Mine.

Surface workings extend for a distance of about 800 feet along a line parallel with the creek but development has taken place only in the eastern end of the line. To the south of the mine, the country is heavily covered with scrub and rises steeply till the road from the Squib Wolfram Mine to Moina is reached. Above the road, the country rises more gently.

An examination of the Sunrise Mine was made after a series of samples supplied by the proprietor and assayed by the Department of Mines indicated the possibility of economic mining operations. The examination occupied the period 4th to 11th June, 1947 inclusive during which time 62 samples were taken from the mine and surface workings. The samples were sent to the Mines Laboratory for assay.

The history of gold mining in the Narrawa Creek district dates back to the year 1893 when two leases each of 20 acres were granted as reward claims to Thomas Bessel and Charles Lennox Stewart respectively. Some development took place on these leases but as early as 1913, Twelvetrees reported that the mine had been idle for a long time. He also stated that on his "previous visit I found that on the north side of Narrawa Creek and 30 feet above the stream a tunnel had been driven north 25° west for about 250 feet on a silicious formation.....selected pieces assaying 4 dwt. gold and 3 oz. silver."

Twelvetrees also refers to Packett's workings as having been worked 15 years ago (1898) and refers to a sample by J. Harcourt Smith as yielding 6 dwt. 12 grs. gold per ton.

Packett's workings are situated about a quarter of a mile south from the creek and samples taken during this examination returned only 1 dwt. 13 grs. of each gold and silver per ton.

Although gold was first discovered in the district in the year 1893, it was not until the year 1934 that mining operations were commenced at the present site.

In that year, A.H. Higgs applied for lease No. 11335/M over an area of 20 acres and in 1936, George Washington Kemp took up lease No. 11737/M over an area of 80 acres. Both these leases were later transferred to William S. Henderson and were finally surrendered in June, 1943.

During the ten years of operation, the mine was developed to its present state. The workings consist of a crosscut adit driven south to cut the lode at approximately 190 feet from the portal. Two small veins 13 feet and 37 feet from the portal were cut in driving the adit and these have been opened in an easterly direction for 10 feet and 7 feet respectively. In the main workings a level has been driven towards the east for a distance of 70 feet and a section of the lode has been stoped to surface with stopes lengthening to about 150 feet as the surface is approached. In the main

workings the lode varies to 12 feet with fairly well developed hanging and foot walls. To the east of the main adit and at a slightly higher level a second adit connects with the eastern end of the stopes.

In September 1937, the mine was the subject of a report by Mr. F. Blake, Acting Government Geologist. In that report it is quoted that production commenced in November, 1934 by ground sluicing and by June, 1935, 43 oz. gold had been won. Mill treatment commenced in August, 1935, and continued to September, 1936, when a new battery was installed. Blake quotes in 1937 a production of 188.5 oz. gold from the treatment of 1,118 tons of ore. A recovery of 3.46 dwt. per ton was, therefore, made.

Departmental records show production over a period of six years as follows:-

Quarter Ending	Ounces Au.	Valued at £
March 1935	21.45	154
June	16.40	117
Sept.	10.92	77
Dec.	17.85	128
March 1936	47.58	335
June	61.43	429
Sept.	47.90	331
Dec.	56.52	401
March 1937	48.69	346
June	42.99	303
Sept.	44.48	311
Dec.	60.81	431
March 1938	49.83	348
June	37.39	262
Sept.	30.46	217
Dec.	9.89	73
March 1939	22.42	167
June	8.35	62
Sept.	12.726	99
Dec.	3.89	33
March 1940	Nil	Nil
June	Nil	Nil
Sept.	8.92	75
Dec.	7.896	66
March 1941	Nil	Nil
Total	668.792	£4,765

The mine has lain idle from 1941 until March, 1946, when Mr. J.P. Godwin applied for two leases each of 20 acres to cover the area of the mine property. In June, 1947, these leases were covered by a further application for a lease of 80 acres to include outside prospects.

In 1943, during an inspection of the Moina field, the writer visited the mine, then known as the Squib Mine, and took two samples from the lowest bench of the stopes. These samples on being assayed, returned 17 dwt. 5 grs. gold, 3 dwts. 1 gr. silver and 3 dwt. 6 grs. gold, and 6 dwt. 1 gr. silver per ton from widths of 3 feet 9 inches on each of the footwall and hanging wall sides of the lode. The mid-section of the lode was then not sampled.

In 1946, during a routine inspection by the Inspector of Mines, samples were taken from the stopes and when assayed yielded results as follows:-

		Gold dwt.	Silver dwt.	Pb. %	Zn. %.
No. 10	Dump	Nil.	Nil.	Nil.	Nil.
11	4' Centre of lode.	4.0	22.0	3.6	0.7
12	4' Outside Sect.	3.0	18.0	4.0	0.9
13	8' In Stopes.	19. 6	36.0	3.5	1.4
14	3' " "	5.2	20.0	3.4	1.7
15	3'6" In Stopes.	1.2	20.0	2.9	3.9

These samples were tested for Copper, Arsenic, and Antimony but with negative results.

The results of the foregoing sampling led to a request for more samples representative of the ore from the mine. Samples were supplied by the proprietor and were of such a grade as to suggest the possibility of economic mining.

The following table shows the assay results obtained from the samples supplied. For purposes of comparison, the weighed average grade is also shown of samples taken during the present examination from positions more or less identical with the positions selected by Mr. J.P. Godwin:-

No.	Position.	Width	GOLD		SILVER		LEAD	
			dwt.gr.	Wght.Av. dwt.gr.	dwt.gr.	Wght.Av. dwt.gr	%	Wght.Av. %
1	No.1 Stope No. 3 lode above tunnel.	8'0"	9.2	2.6	25.6	6.0	2.8	0.6
2	No.2 Stope No. 3 lode above tunnel.	10'0"	2.0	3.7	2.4	16.4	Nil	Nil
3	No.3 Stope No. 3 lode above tunnel.	10'0"	8.0	11.4	30.0	26.2	4.0	3.7
4	Face of drive No.3 lode tunnel level	6'0"	8.0	2.13	32.8	26.11	3.8	4.45
5	Surface, 60 ft. E. from end of drive No. 3 lode 30 ft. above tunnel.	-	48.0	-	43.6	-	1.4	-
6	Surface, 60 ft. E. from end of drive No, 2 lode 30 ft. above tunnel	-	2.0	-	39.6	-	1.3	-
7	No.2 lode, tunnel level.	18'0"	2.0	1.7	38.8	19.20	5.8	2.8
8	300ft. west of tunnel, toe of Spur? No. 5 lode.	6'0"	0.4	-	8.4	-	0.3	-
9	60ft. from toe of Spur.	10'0"	6.8	-	1.6	-	Nil	-

A composite of the above samples was tested for Bismuth with negative results.

During the present examination of the mine and surroundings a series of 62 samples was taken. These were taken from the ends of the various levels, from the open stopes and from positions outside the mine where the proprietor claimed that economic grades of ore occurred. A plan of the workings showing the positions from which the samples were taken and a tabulated list of the assay results accompanies this report. As the proprietor has been influenced in his opinions to a marked degree by the use of the divining rod particular attention was given to his assertions relative to the occurrence of minerals other than gold and silver, and quantitative determinations for these minerals were made by the Laboratory staff. The full assay results are tabulated in the following table, the minerals suggested by divining being marked *. It is of interest to note that in practically every instance where minerals other than gold and silver were suggested by divining rod, analysis failed to confirm their presence.

No.	Description.	Width Ins.	Gold dwt.gr.	Silver dwt.gr.	Pb. %	Zn. %	Bi. %	Cu. %	WO_3. %
1	Face 1st X-cut E.lower Adit	46	1. 7 *	19.20 *	2.8	2.5*			
2	" 2nd " " " " Northern Section.	8	tr. *	2. 5 *	Tr.	Tr. *			
3	Face 2nd X-cut E. Lower Adit. Mid Section.	13	Tr. *	2. 8 *	Tr.	Tr.			
4	Face 2nd X-cut E. lower adit. Southern Section.	26	1.13 *	20. 2 *	3.2	2.0			
5	W. bank Narrawa Ck., E. Section open cut workings. West Spur.	54	0. 9	11.21 *	0.3	Tr.			
6	150 yards W. No. 5 W. side open cut. Sth. Section	21	Nil	Nil	Nil	Nil		Nil*	
7	Gossan. Mid section face. Nth. and adj. No. 6.	10	0.6 *	tr. *	0.2	Nil			
8	Quartzitic mat. Nth. and adj. No. 7.	24	Nil*	Nil *	Nil	Nil			
9	Quartzitic mat. adjoining but W. 8.	32	2.15 *	1. 7 *	Nil	Nil			
10	Quartzitic mat. 9' Sth.No. 6 and 8' above.	17	Tr. *	Tr. *	Nil	Nil			
11	Quartzitic mat. 50' West No. 9.	34	1. 7 *	5. 5	Tr.	Nil			
12	Immediately W. of No. 11.	28	7.13 *	3.9	Nil	Nil			
13	Perp. to & S. of No. 11.	54	Nil	Nil	Nil	Nil			

No.	Description	Widths Ins.	Gold dwt.gr.	Silver dwt.gr.	Pb. %	Zn. %	Bi. %	Cu. %	WO_3. %
14	Costean 20' N.E. No. 11 betw. and N. of 9 and 11.	66	0. 6	0.15	Nil	Nil			
15	40' W. and 15' above 12.	34	Nil *	Nil *	Nil	Nil			
16	E. and adjoining 15	34	Nil *	Nil *	Nil	Nil			
17	E. and adjoining 16	30	Nil *	Nil *	Nil	Nil			
18	" " " 17	30	Nil *	Nil *	Nil	Nil			
19	" " " 18	30	Tr. *	5.11 *	0.3	Nil			
20	" " " 19	30	1. 7 *	1. 7 *	Nil	Nil			
21	Borehole perp. and S. from mid face. 17 to 20.	12	Tr.	0.12	Nil	Nil			
22	Sth. from 21 Borehole	12	Nil	Nil	Nil	Nil			
23	" " 22 "	12	0. 6	4.23	Nil	Nil			
24	Packett's Wkgs. Chip Samp. Sth. 300' alt. above adit.	46	1.13 *	1.13 *	0.6	Tr.			
25	150' W. from 24.	59	Nil *	Nil *	Nil	Nil			
26	40' E. of No. 10 end of face.	33	4. 4 *	1. 0 *	Nil	Nil			
27	W. and adjg. No. 26.	33	1. 0 *	0.12 *	Nil	Nil			

No.	Description	Width Ins.	Gold dwt.gr.	Silver dwt.gr.	Pb. %	Zn. %	Bi. %	Cu. %	WO_3. %
28	W.of and adj. but 3' N. 27.	29	6.13 *	1. 7 *	Nil	Nil			
29	W.of and adj. 28	29	0.18 *	0.12 *	Nil	Nil			
30	W. and Ajng. No. 29	44	Tr. *	Tr. *	Nil	Nil			
31	Face E. and level No. 3 lode, N. Section.	28	2.21 *	31.17 *	5.1	1.2			
32	Face E. end level No. 3 lode, S. & Adj. No. 31	28	2. 5 *	21. 6 *	3.8	1.7			
33	3'6" from face level No. 3 lode on N.W.	9	0.15 *	8.5 *	1. 3	0.7			
34	Cuddy 10' from face No. 3 lode, S. side of level.	21	1.13 *	8. 8 *	1. 3	0.9			

No.	Description.	Width Ins.	Gold dwt.gr.	Silver dwt.gr.	Pb. %	Zn. %	Bi. %	Cu. %	WO_3. %
35	Along wall of level 5' from 34.	58	1. 1*	3. 9*	1.0	0.5			
36	H.W. side No.3 level opp. No. 35. -	30	20.6*	49.22 *	8.5	5.8	Nil*	tr. *	Nil *
37	Mineralised slates S. side level immed. E. of timber.	58	0.9	3. 0	Nil	Tr.			Nil *
38	Cuddy immed. E. Ladder.	34	0.12	1. 7	0.3	Nil			Nil *
39	At bend of level No.3 lode.	48	Tr.	1.13	Nil	Nil			Nil *
40	Brown band W. face of level.	13	1. 1	2. 5	Tr.	Nil			Nil *
41	Sth. & adjoining No. 40.	21	0.12	0.18	Nil	Nil			Nil *
42	Nth. & adjoining No. 40	21	0.15	3.12	Nil	Nil			
43	Leading stope edge of bench H.W. side.	36	2. 8	9. 4	1.3	0.7	Nil *		
44	Sth. & adjoining 43.	31	18. 7	64.20	9.7	4.9	Nil *		
45	" " " 44.	31	5.11	23.21	4.2	2.0	Nil *		
46	" " " 45	22	4.4	12.20	0.7	0.2	Nil *		
47	" " " 46 to F.W.	21	34. 0	21. 3	2.1	1.3	Nil *	0.1*	
48	H.W. edge 2nd bench up about 16' E. 44.	38	4.23*	26.9	3.6	2.9			

No.	Description	Width Ins.	Gold dwt.gr.	Silver dwt.gr.	Pb. %	Zn. %	Bi. %	Cu. %	WO_3. %
49	Sth. & adjoining 48.	25	7. 1	19.14	2.1*	1.5			
50	Sth. & adjoining 49.	25	1. 7	8. 2	0.8	0.6			
51	" " " 50.	41	2. 8*	9.16	0.8	0.6			
52	Along F.W. of stope of 37.	34	5.11*	27.16*	3.8	3.0			
53	H.W. edge 3rd bench up.	30	3. 9	27.16	0.6	1.7			
54	Sth. & adjoining 53.	30	2. 2	4.23	0.4	0.2			
55	" " " 54	30	1.23	4.1	0.3*	0.4			
56	" " " 56 to F.W.	30	1.13	7. 7	1.1	0.9			
57	Floor top level adit.	38	7.13*	21. 3	2.6	2.2	Nil*		
58	W. of & adjoining 57.	38	3.22*	11. 0	1.3	1.8	Nil*		
59	Top bench H.W. side.	30	3.15	26.15	1.9	1.9			
60	Sth. & adjoining 59.	30	4. 4	37. 3	5.1	2.6			
61	" " " 60.	30	3. 9	21.22	3.0	1.5			
62	" " " 61 to F.W.	30	5.11	18.13	2.8	2.3	Nil*		

The sampling of the mine has shown that some gold bearing ore has been left in the edges of the benches in the stopes and at one or two points in the walls. The grade is erratic and suggests that only portions of the margins of a shoot of ore have been left and that the quantity of high grade ore would be small.

The longitudinal section of the mine suggests that a shoot of ore of economic grade has been won during mining operations. The shoot is pitching to the west at a low angle and is a comparatively narrow one, Its downward continuation should be found below the level of the lower adit at its junction with the main ore body and extending for a few feet to the westward of that position. Further development may prove its extension but it is doubtful if the shoot is large enough to produce ore in a quantity sufficiently large for economic treatment.

Sampling outside the main workings has covered a fairly extensive area to the westward. Of all the samples taken only two have shown an economic grade, and prospects of further development there are not bright.

As stated earlier in this report the presence of minerals, other than gold and silver, suggested by the use of the divining rod was not confirmed by assay of samples taken at the positions suggested.

K.G.W. Keid, M.Sc.

CHIEF GEOLOGIST.

Department of Mines,
HOBART.

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