KJ5 - Reports Various 7956 145-0

013499

REPORT ON THE VENUS MINE

WINDY ARM DISTRICT, YUKON TERRITORY

BY

WILLIAM P. IRWIN

January 13th, 1947.

REPORT ON THE VENUS MINE

WINDY ARM DISTRICT, YUKON TERRITORY

The Venus mines are in the Windy Arm District, about 10½ miles S 17 E of Carcross, Yukon Territory. They are on a steep hillside at an average elevation of 900 ft. above the western shore of Windy Arm on Tagish Lake (Elev. 2148'). The mines may be reached by a wagon road from Carcross via Conrad, or by air or water travel. The wagon road, approximately 15 miles long, is suitable only for foot travel, due to numerous windfalls and abundant brush. Chartered aircraft and water-craft are available in Carcross.

Transportation rates into the district are high. Supplies probably can be moved to the mine from Carcross most economically by water during the summer and over the ice by tractor train during the winter. Tidewater at Skagway is 70 miles from Carcross over the White Pass and Yukon Railroad. Steamers ply from Skagway to Vancouver and Seattle, a distance of about 1,000 miles.

Abundant water power can be obtained from Pooly Canyon during four months of the year. It is probable that sufficient cord wood can be found along the shores of the lakes to supply power for the winter months. Timber suitable for mining purposes grows on the eastern shore of Windy Arm about a mile from the mine.

History

The early history of the mining operations on the Venus vein is given as compiled from several government and private reports. For convenience it is divided in (1) the Venus group, the area covered by the Venus and Venus No. 2 claims, and (2) the Venus Extension group, the area covered by the Maybelle, 100, 105 and Nipper No. 2 claims. Much of the work was done in conjunction with work on other properties in the Windy Arm district.

Actual mining on the Venus group was begun by Col. J. H. Conrad in 1905, and was continued by him until 1911. During that period he spent considerable sums of money driving development workings and erecting a mill and serial tramway.

In 1911 the group was taken over by McKenzie and Mann through a mortgage foreclosure. The property was leased from them in 1916, and in 1918 for a period of 5 years. The lessees did considerable stoping but no development work. W. L. Phelps of Whitehorse acquired the property in 1943 through purchase for taxes.

Dail and Fleming did the first assessment work on the Venus Extension group in 1904. In 1905 they sold a tenth interest to John Miller of Seattle. The group was bonded to the Anglo-American Consolidated Mining Co. in 1906. This company sank the Venus Extension shaft and drove the appended drifts, but lost their option after 2 years. Col. J. H. Conrad obtained a 3-year option but forfeited it on failure to do the required work. Dail and Fleming drove the Venus Extension Tunnel as assessment work for 1910, 1911, and 1912. H. L. Van Wyck optioned the group from 1913 to 1914 and sank the Venus Extension

.............2

shaft to its present depth. Dail lost his interest in the group in 1916, making Fleming and Miller the owners. The property was bonded in 1917 to the Caribou Mining Co. which extended the Venus Extension tunnel to its present length and drove several raises from it. Presumably due to lack of funds, the company gave up its option in 1918. Yukon Gold Mines Limited was incorporated in 1928 to develop the group, but financial difficulties arose and mining operations ceased shortly after development work had begun.

Records from the Mining Recorder's office in Whitehorse give the total production from April, 1910, to January, 192D , presumably from all of the Venus and Venus Extension workings, as 2,694 tons containing 1,733 oz. Au., 183,071 oz. Ag., and 281,927 lbs. Pb. The tonnage probably represents both sacked ore and concentrates.

The Venus and Venus Extension groups were acquired in 1945 by Trnascontinental Resources Ltd. under the formation of a new company named Windy Arm Mines Ltd. In the remainder of this report the two groups of claims will be considered as combined, and will be referred to as the Venus group. The Venus group consists of 21 mineral claims, including the Uranus, M and M, Venus Fraction, Vault, Venus, Venus No. 2, Ruby Silver, Maybelle, Nipper No. 2, Humper No. 2, Beach 100, 101, 102, 104, 105, 106, 107, 108, 109, 110 (See Claim Map). The first six are crown granted and, with the exception of the first three, all of the claims are controlled by Windy Arm Mines Ltd. Other claims controlled by Windy Arm Mines Ltd. in the district are the Pride of Yukon, Caribou, Jeam, Patricia, Muriel, Gladys, Grizzly, and Gopher, constituting the Big Thing Group. The first two claims are crown granted. The company also controls the Kodak, Jeam, Hazel M. and Eleanor mineral claims on Montane Mountain.

Examination of the Venus mine was begun by Transcontinental Resources Ltd. and in the early part of April and continued until the latter part of July, 1946. A triangulation network with a 1-mile base line was required for control because of the rugged topography. A plane table map was prepared at a scale of 1 inch to 500 feet. Underground workings were mapped with transit control at a scale of 1 inche to 50 feet. Most of the portals were caved or covered with talus or ice, so that considerable work was required to gain access to the underground workings. Approximately 140 channel samples and a 500 pount mill sample were taken. A number of mineral claims were staked to cover fractions or open ground.

Workings

The main workings are on the 100, Maybelle, and Venus No. 2 claims (See map of Venus Mine area). They consists of approximately 2,500 feet of drifts, 700 feet of crosscuts, 200 feet of inclined shafts, 400 to 500 feet of raises, a reported 600 feet of winzes; and 50,000 square feet of stopes measured in the plane of the vein (see plan and underground projection of underground workings). All of the workings are in the plane of the vein except the two entry crosscuts on the Venus No. 2 claim.

In general the workings are very wet and in poor condition. Considering the broken nature of the ground and the moderate inclination of the workings, the backs appear to have required originally little support. The backs of most of the

...........3

drifts have sluffed to some extent. The Venus No. 2 workings are in the poorest condition. The southernmost end is caved completely, and the other portions are in dangerous condition. The Venus Extension and Maybelle tunnels, however, could be put in safe condition with small expense.

Other workings presumed to be on the same vain are on the Venus and Vault claims. An inclined shaft on the Venus claim, about 1,700 feet north of the portal of the main cross-cut of the Venus No. 2, is reported to be 50 feet deep with 50-foot drifts extending north and south from the bottom. During the writer's examination the shaft was caved. The tunnel on the Vault claim is in the bottom of Pooly Canyon, about 1,600 feet north of the Venus shaft. It follows the vein for 370 feet in a southerly direction. Many small workings are present south of the Venus Extension tunnel but are not believed to be on the Venus vein.

Geology

The area of the Venus group is underlain by the Windy Arm series consisting of andesite, andesite porphyry and basalt. Cairnes assigns the Windy Arm series to the Jurassic, and as younger than the Coast Range granite. Cockfield and Bell believe the series to be Mesozoic but older than the Coast Range granite. Coast Range granite crops out at the Big Thing mine, about 4 miles northwest of the Venus area. In general the rocks of the area are well exposed by bold outcrops and deep, steep-walled canyons. Locally, particularly on the lower slopes and gentle upland surfaces, the geology is obscured by glacial till, talus and soil.

The Venus vein occurs as fissure-filling in the Windy Arm series, and consists principally of quartz with pyrite, arsenopyrite, galena, and a number of oxidation products. Several silver-sulfide minerals are reported by other writers. Locally the sulfides are more abundant than the quartz. In places the vein shows a well-developed comb structure with small pockets of sulfides, principally galena, distributed throughout. More commonly it is crustified with several alternating bands of massive quartz and sulfides. Generally it is heavily weathered within a few tens of feet of the outcrop. Below that depth oxidation commonly is subdued, or merely incipient along fractures.

Gold, silver and lead values occur in the sulfides. Lead values range from a trace to 7 per cent. The average of 140 samples is 0.86 per cent. Gold values range from a trace to 1.42 oz/ton over 2.5 ft., according to the writer's sampling: Silver values range from a trace to 108.7 oz over 2 ft.

There is no apparent quantitative relationship in the occurrence of these three elements in individual samples. Nevertheless, it is notable that the percentage of lead and the ratio of silver to gold increases from south to north along the vein. There is some evidence to suggest that the ratio decreases down the dip of the vein. The silver to gold ratios of the Venus Extension tunnel, Maybelle tunnel, south drift of Venus No. 2, north drift of Venus No. 2, and Vault (about 2,000 ft. north of Venus No. 2 workings and presumably on the same vein) are, respectively about 20 to 1, 26 to 1, 35 to 1, 80 to 1 and 1480 to 1.

The vein is a sinuous, roughly tabular body that in general strikes N 15 E and dips at an average of about 40 degrees

...............4

to the west. Its strike ranges from N 20 W to N 60 E, but its dip is relatively uniform. The vein pinches and swells from a fraction of an inch to a maximum observed thickness of 6 feet, giving rise to a number of irregular lenticular bodies connected by thin stringers. The average thickness is about 1½ feet. Secondary and tertiary structures are superimposed on the original lenticular structure of the vein by sheeting along the vein contemporaneous with the period of mineralization and post-mineralization movement along the vein which, in places, has completely separated the lenticular bodies.

The continuity of the Venus vein on the 100, Maybelle, and Venus No. 2 claims is reasonably well established for a strike distance of 2,800 feet. Two short tunnels a few hundred feet south of the Venus Extension tunnel expose thin veins, but are not believed to be on the main Venus vein. It is probable that the Venus shaft and Vault tunnel to the north are on the Venus vein although exposures are absent for considerable distances on the intervening ground. If such is the case, the vein measured from the Venus Extension tunnel to the Vault tunnel would have a strike length of more than 5,000 feet. Its vertical continuity would be more than 1,000 feet measured from the reported bottom of the south winze of the Venus No. 2 to the highest surface trace on the Vault claim.

Offshoots from the vein are common. Stringers, a fraction of an inch thick, ordinarily with sparse sulfide mineralization and with fairly uniform strike and dip, probably represent joint filling contemporaneous with formation of the main vein. In general, they strike east with a northerly dip averaging 30 degrees. Other offshoots are thicker, relatively irregular, and well mineralized with sulfides. Several of them may be more suitably described as splits in the main vein.

The Venus vein splits down the dip as shown in the south winze of the Venus No. 2 workings. The upper and lower limbs of the split dip 20 to 50 degrees, respectively, to the west (see cross section at south winze of Venus No. 2). The axis of intersection of the two limbs is about 20 feet below the level of the main drift, appears to be horizontal, and trends N 20 E. A split, probably a projection of the above-described split, is reported to have been exposed in the north winze. Another major split in the vein occurs in the Venus Extension workings. The two limbs intersect at the level of the tunnel about 200 feet in from the portal. The axis of intersection pitches gently to the north, and trends about N 20 E, so that the face of the tunnel is above and east of the axis of intersection (See cross section of Venus Extension workings). The lower limb is opened by the lower Venus Extension incline. The upper limb is opened by the Venus Extension shaft and appears to be the continuation of the main portion of the Venus vein.

Sampling

About 140 channel samples were taken by assistants under the supervision of the writer. The samples ranged from 10 to 20 pounds and, where feasible, were taken at a minimum width of 3.5 feet at 10-foot intervals. The assaying was done by G. S. Eldridge and Co. Ltd., of Vancouver, B. C.

Results of examinations by T. A. MacLean in 1912, F. P. Burrall in 1912, A. A. Mackay in 1922, E. H. Lovett in 1937, and J. Scott in 1944 were available to the writer. About 190 samples taken by these engineers could be located on the accompanying map with reasonable accuracy and were confined to the Venus Extension and Venus No. 2 workings. In general, their sampling results indicate considerably higher values than those obtained by the writer. It is possible that some of the values in the vein material exposed by the workings have been leached.

..........5

During the writer's examination it was commonly necessary to scrape a thick cludge of sulfides from the walls to avoid contamination of the samples. For the purpose of this report, only the samples taken by the writer are used in the computation of ore reserves.

The following is a list of samples with numbers corresponding to those on the accompanying map (See plan of underground workings). In computing values, gold was taken at $35.00 per ounce and silver at $0.90 per ounce.

No.	Sampler	Width (ft.)	Ox. Au.	Oz. Ag.	Value ($)
1	Lovitt	2.75	0.02	2.4	2.86
2	MacKay	1.5	0.48	3.72	20.14
3	Lovitt	0.5	0.02	1.2	1.78
4	MacKay	2.33	trace	1.0	.90
5	Lovitt	2.0	0.06	18.8	19.00
6	Scott	3.0	trace	1.10	.99
7	MacKay	1.5	0.10	22.09	24.38
8	MacKay	5.0	0.02	0.08	1.58
9	Lovitt	1.0	0.18	6.2	11.88
10	MacKay	5.0	0.02	5.68	5.82
11	MacKay	1.5	0.02	4.88	5.09
12	Lovitt	1.66	0.26	26.0	32.50
13	MacKay	1.5	0.08	18.42	19.39
14	Lovitt	1.42	0.20	20.0	25.81
15	MacKay	1.33	trace	11.0	9.90
16	MacKay	3.0	0.02	1.48	2.03
17	Lovitt	0.66	0.25	11.5	19.10
18	MacKay	3.66	trace	0.60	.54
19	MacKay	1.5	0.24	9.26	16.73
20	MacKay	1.5	0.12	46.48	46.00
21	Lovitt	1.5	0.01	1.6	1.74
22	MacKay	1.5	trace	2.50	2.25
23	MacKay	4.0	trace	0.50	.45
24	MacKay	3.0	trace	0.80	.72
25	MacKay	3.33	trace	0.60	.54
26	MacKay	1.5	0.02	1.48	2.03
27	Lovitt	1.0	0.10	7.0	9.80
28	MacKay	1.5	0.06	6.94	8.34
29	MacKay	2.0	0.06	4.44	6.09
30	Lovitt	2.58	0.02	5.6	5.74
31	MacKay	1.25	trace	1.80	1.62
32	Lovitt	1.16	0.26	6.9	15.31
33	MacKay	2.0	0.02	7.78	7.70
34	Lovitt	1.42	0.28	7.8	16.82
35	MacKay	2.0	0.12	8.48	11.83
36	Lovitt	1.25	0.07	6.8	8.57
37	MacKay	3.0	0.02	3.92	4.23
38	Lovitt	2.5	0.12	10.2	13.38
39	Lovitt	2.33	0.10	37.4	37.15
40	MacKay	1.75	0.04	2.56	3.70
41	Lovitt	1.84	0.06	6.5	7.95
42	MacKay	2.0	0.10	15.80	17.75
43	Lovitt	2.0	0.08	4.8	7.12
44	MacKay	2.5	trace	2.20	1.98
45	Scott	2.0	0.20	10.40	16.27
46	Lovitt	3.33	0.05	2.7	4.18
47	MacKay	3.8	trace	1.50	1.35
48	Lovitt	4.33	0.11	2.3	5.92
49	MacKay	4.5	trace	1.70	1.53
50	Scott	2.5	0.03	24.07	22.70
51	Lovitt	3.0	0.04	4.0	5.00
52	MacKay	4.3	trace	2.00	1.80
53	Lovitt	2.42	0.02	1.3	1.87
54	MacKay	5.0	trace	1.10	.99
55	Scott	4.0	trace	1.20	1.08

.........6

No.	Sampler	Width (ft.)	Ox. Au.	Oz. Ag.	Value ($)
56	Lovitt	2.84	0.12	2.3	6.27
57	MacKay	5.5	trace	1.90	1.71
58	Lovitt	3.5	0.01	1.8	1.97
59	MacKay	5.5	trace	1.80	1.62
60	Lovitt	3.25	0.06	3.4	5.16
61	MacKay	4.0	0.08	4.22	6.60
62	Lovitt	4.0	0.08	3.9	6.31
63	MacKay	4.16	0.08	5.28	7.55
64	Scott	3.0	trace	1.80	1.62
65	Lovitt	6.5	0.08	1.6	4.24
66	MacKay	4.84	0.08	4.72	7.05
67	Lovitt	5.0	0.10	1.6	4.94
68	MacKay	5.5	0.04	2.46	3.61
69	Lovitt	4.25	0.20	21.2	26.08
70	MacKay	3.4	0.20	1.58	8.42
71	Lovitt	3.84	0.08	1.6	4.24
72	Lovitt	4.42	0.04	1.0	2.30
73	MacKay	4.8	0.08	1.66	4.29
74	Scott	5.0	0.02	13.02	12.42
75	Lovitt	3.0	0.08	1.4	4.06
76	MacKay	4.5	trace	0.80	.72
77	Lovitt	5.0	0.15	1.3	6.42
78	MacKay	3.66	0.08	2.56	5.10
79	Lovitt	4.0	0.12	2.9	6.81
80	MacKay	3.33	0.02	1.18	1.76
81	Scott	2.0	trace	trace	--
82	MacKay	2.0	trace	1.30	1.17
83	MacKay	0.84	trace	0.60	.54
84	MacKay	1.0	0.02	0.58	1.22
85	MacKay	0.84	trace	0.80	.72
86	MacKay	1.5	trace	0.80	.72
87	MacKay	2.0	0.02	0.88	1.49
88	MacKay	1.25	trace	0.60	.54
89	MacKay	2.0	0.02	2.88	3.29
90	Lovitt	3.66	0.02	7.2	7.18
91	MacKay	4.0	trace	2.20	1.98
92	Lovitt	6.5	0.2	10.0	16.00
93	MacKay	4.42	0.06	1.08	3.07
94	Lovitt	5.5	0.10	8.3	10.97
95	MacKay	4.0	0.02	1.08	1.67
96	MacKay	1.10	0.04	1.56	2.80
97	Scott	4.0	trace	2.0	1.80
98	MacKay	4.16	0.20	16.4	21.75
99	MacKay	0.66	2.12	13.88	86.69
100	MacKay	2.0	0.48	16.32	31.50
101	Irwin	3.5	0.15	8.20	12.63
102	MacKay	2.1	0.56	24.17	41.35
103	Irwin	3.5	0.23	14.4	21.01
104	MacKay	3.0	0.36	5.28	17.35
105	Irwin	6.0	0.05	4.9	6.16
106	Lovitt	5.42	0.24	20.2	26.58
107	MacKay	2.0	trace	1.84	1.65
108	Irwin	3.5	0.14	7.0	11.20
109	MacKay	2.5	0.40	7.92	21.12
110	Scott	1.33	0.28	5.52	14.77
111	Irwin	3.5	0.19	5.1	11.23
112	Lovitt	2.16	0.34	4.3	15.77
113	Irwin	3.5	0.08	4.0	6.40
114	Lovitt	1.84	0.15	6.8	11.37
115	Irwin	3.5	0.18	3.8	9.72
116	Irwin	3.5	0.07	1.2	3.53
117	Lovitt	6.5	0.28	3.9	13.30
118	Lovitt	2.25	0.23	14.0	20.65
119	Irwin	3.5	0.12	4.3	8.07

...........7

No.	Sampler	Width (ft.)	Ox. Au.	Oz. Ag.	Value ($)
120	Irwin	3.5	0.10	2.8	6.02
121	Lovitt	2.84	0.10	5.4	8.35
122	Irwin	3.5	0.19	7.1	13.04
123	Irwin	3.5	0.24	3.0	11.10
124	Lovitt	3.0	0.40	12.9	25.60
125	Irwin	3.5	0.13	3.8	7.97
126	Irwin	3.5	0.18	7.2	12.78
127	Lovitt	5.42	0.41	12.8	25.86
128	Irwin	3.5	0.20	7.9	14.11
129	Irwin	3.5	0.04	8.7	9.23
130	Lovitt	9.0	p.10	17.7	19.42
131	Irwin	3.5	0.30	6.6	16.44
132	Scott	2.0	8.07	1.48	283.78
133	Scott	3.0	0.22	20.93	26.53
134	MacKay	3.66	0.28	8.28	17.25
135	MacKay	5.0	0.40	12.40	25.17
136	MacKay	2.5	0.28	15.40	23.66
138	MacKay	2.5	0.40	13.60	26.23
139	MacKay	2.16	0.20	25.56	29.99
140	MacKay	1.84	0.32	14.08	23.87
141	Scott	2.0	0.35	8.22	19.64
142	Scott	3.0	0.15	2.85	7.81
143	MacKay	--	0.22	9.82	16.54
144	MacKay	--	1.00	39.64	70.65
145	MacKay	0.84	0.36	13.64	24.88
146	MacKay	2.16	0.28	16.92	25.03
147	MacKay	3.75	0.80	2.64	30.37
148	MacKay	3.82	0.36	9.88	21.49
149	MacKay	1.66	0.04	1.56	2.80
150	MacKay	1.56	0.40	4.24	17.81
151	MacKay	2.0	0.12	4.68	8.41
152	MacKay	2.0	0.12	5.98	9.58
153	MacKay	3.33	0.32	15.78	25.40
154	Irwin	2.0	0.05	1.7	3.28
155	Irwin	2.0	0.06	2.8	4.62
156	Irwin	2.0	0.08	1.3	3.97
157	Irwin	2.0	0.30	4.3	14.36
158	Irwin	3.0	1.02	7.7	42.63
159	Irwin	3.5	0.26	7.8	16.12
160	Irwin	3.5	0.36	9.5	21.15
161	Irwin	3.5	0.64	42.6	60.75
162	Irwin	3.0	0.30	13.6	22.74
163	Irwin	2.0	0.18	trace	6.30
164	Irwin	2.0	0.24	2.8	10.94
165	Irwin	3.5	0.36	9.5	21.15
166	Irwin	3.5	0.76	21.7	46.13
167	Irwin	2.5	0.17	6.8	12.07
168	Irwin	2.0	0.05	3.1	4.54
169	Irwin	2.0	0.04	5.1	5.99
170	Irwin	3.5	0.04	0.72	2.05
171	Irwin	2.5	0.05	4.0	5.35
172	Irwin	2.5	0.04	0.86	2.17
173	Irwin	3.5	0.06	3.8	5.52
174	Irwin	3.5	0.05	1.1	2.74
175	Irwin	2.0	0.15	6.2	10.83
176	Irwin	1.5	0.10	1.4	4.76
177	Irwin	2.0	0.02	1.3	1.87
178	Irwin	1.5	0.01	0.84	1.11
179	Irwin	3.5	0.13	0.52	5.02
180	Irwin	3.5	0.15	0.78	5.95
181	Irwin	3.5	0.84	4.7	33.63
182	Irwin	3.5	0.33	3.5	14.70
183	Irwin	3.5	0.12	4.8	8.52
184	Irwin	2.0	0.16	2.4	7.76

...........8

No.	Sampler	Width (ft.)	Ox. Au.	Oz. Ag.	Value ($)
185	Irwin	2.0	0.03	1.3	2.22
186	Irwin	1.0	0.77	5.0	31.45
187	Irwin	3.5	0.24	1.5	9.75
188	Irwin	3.5	0.58	7.7	27.23
189	Irwin	3.5	0.56	6.3	25.27
190	Irwin	3.5	0.17	1.9	7.66
191	Irwin	2.5	1.44	13.1	51.58
192	Irwin	3.5	0.62	2.0	23.47
193	Irwin	2.0	0.79	3.7	30.89
194	Irwin	3.5	0.53	1.8	20.17
195	Irwin	3.5	0.52	1.5	19.55
196	Irwin	3.0	0.27	2.9	11.06
197	Irwin	2.0	0.23	3.3	12.77
198	Irwin	2.0	0.89	5.3	35.92
199	Irwin	2.5	1.42	10.5	59.15
200	Irwin	2.0	0.75	12.6	37.58
201	Irwin	3.5	0.36	2.7	15.03
202	Irwin	2.5	0.51	2.7	22.23
203	Irwin	3.0	0.31	1.6	12.29
204	Irwin	3.0	0.34	5.0	16.40
205	Irwin	2.5	0.68	2.6	26.14
206	MacLean	4.2	0.27	trace	9.45
207	Burrall	2.0	1.24	6.2	48.98
208	Burrall	2.75	0.64	3.5	25.55
209	MacLean	4.0	0.66	2.64	25.47
210	Burrall	1.5	0.98	7.3	40.87
211	MacLean	3.3	0.44	3.13	18.21
212	Burrall	0.84	1.20	9.1	50.19
213	MacLean	3.3	1.83	4.53	68.12
214	Burrall	1.5	1.68	78.4	129.30
215	Burrall	1.16	0.48	10.0	25.80
216	MacLean	5.0	0.66	153.15	161.00
217	Irwin	2.0	0.03	18.1	17.35
218	Irwin	2.0	.002	0.08	.77
219	Irwin	2.0	0.07	0.22	2.65
220	Irwin	3.5	0.01	0.24	.57
221	Irwin	2.5	0.05	0.36	2.07
222	Burrall	0.42	4.76	4.3	170.47
223	Irwin	3.0	0.15	0.52	5.72
224	Burrall	1.25	0.72	1.4	26.46
225	MacLean	2.0	0.43	7.11	21.45
226	Irwin	3.5	0.20	0.28	7.25
227	Irwin	4.5	0.20	0.16	7.14
228	Burrall	1.33	0.23	0.9	10.61
229	MacLean	2.5	0.31	4.05	14.50
230	Irwin	3.5	0.31	1.4	12.11
231	Burrall	2.5	0.20	4.3	10.87
232	Lovitt	1.6	0.48	4.0	20.40
233	Irwin	3.5	0.13	2.5	6.80
234	Irwin	2.0	0.27	0.38	9.79
235	Irwin	3.5	0.16	27.9	30.70
236	MacLean	3.0	0.08	1.60	4.24
237	Burrall	1.5	1.12	0.8	39.92
238	Lovitt	1.8	0.20	0.9	7.81
239	Burrall	0.84	1.26	5.4	48.96
240	MacLean	3.5	0.38	30.22	40.50
241	Irwin	2.0	0.10	6.8	9.62
242	Burrall	1.25	0.88	8.3	38.27
243	Irwin	2.0	0.01	0.36	.67
244	Lovitt	3.5	0.26	46.6	51.10
245	Irwin	3.5	0.08	0.28	3.05
246	Lovitt	1.5	0.32	8.5	18.85
247	Lovitt	2.4	0.22	3.3	10.67
248	MacLean	3.0	0.15	9.45	13.76
249	Irwin	3.0	0.45	2.8	18.27
250	Irwin	1.5	0.24	1.6	9.84
251	Irwin	1.4	0.27	1.6	10.89

.........9

No.	Sampler	Width (ft.)	Ox. Au.	Oz. Ag.	Value ($)
252	Irwin	2.0	0.26	1.5	10.45
253	Irwin	2.0	0.18	3.0	9.00
254	Irwin	2.5	0.36	7.1	18.99
255	Irwin	3.5	0.04	3.7	4.73
256	Irwin	1.5	0.15	1.5	6.60
257	Irwin	1.5	0.78	4.2	31.08
258	Irwin	1.5	1.12	10.5	48.65
259	Irwin	3.0	0.31	2.4	13.01
260	Irwin	4.0	0.02	2.8	3.22
261	Irwin	2.0	0.10	20.7	22.13
262	Irwin	1.3	0.28	6.3	15.47
263	Irwin	2.0	0.01	1.6	1.79
264	Lovitt	4.4	0.16	32.3	34.67
265	Irwin	2.0	0.01	0.86	1.12
266	Lovitt	3.3	0.02	3.6	3.94
267	Irwin	3.0	0.02	2.6	3.04
268	Irwin	4.5	0.06	2.4	4.26
269	Irwin	5.0	0.07	4.1	6.14
270	Lovitt	4.0	0.03	2.9	3.66
271	Irwin	2.5	0.33	2.8	14.07
272	Irwin	3.0	0.32	0.86	11.97
273	Irwin	2.0	0.18	108.7	104.00
274	Irwin	3.5	0.02	4.4	4.66
275	Irwin	2.0	0.19	0.64	7.22
276	Lovitt	1.3	0.14	95.5	90.80
277	Lovitt	2.0	1.03	8.5	43.70
278	Lovitt	2.8	0.03	10.8	10.12
279	Irwin	3.5	0.35	8.4	19.81
280	Irwin	2.0	0.34	3.6	15.14
281	Irwin	1.0	1.62	1.3	57.87
282	Irwin	2.0	0.36	4.2	16.38
283	Irwin	2.3	2.68	5.7	98.93
284	Irwin	2.5	0.26	9.1	17.28
285	Lovitt	3.0	0.34	4.7	16.13
286	Irwin	0.9	0.38	2.6	15.64
287	Irwin	2.0	0.12	7.1	10.59
288	Lovitt	1.2	0.33	5.5	16.50
289	Irwin	2.0	0.26	1.1	10.09
290	Irwin	3.5	0.16	4.2	9.38
291	Lovitt	1.8	0.15	3.5	8.40
292	Irwin	3.0	0.28	1.3	10.97
293	Lovitt	2.0	0.48	3.5	19.95
294	Irwin	3.5	0.33	1.8	13.17
295	Irwin	2.5	0.14	0.66	5.49
296	Lovitt	1.5	0.35	1.4	13.51
297	Irwin	2.0	0.34	0.52	12.37
298	Irwin	2.5	0.35	2.9	14.86
299	Lovitt	2.5	0.34	2.9	14.51
300	Irwin	2.5	0.24	0.44	8.79
301	Irwin	4.0	0.22	1.7	9.23
302	Lovitt	3.0	0.50	trace	17.50
303	Irwin	2.0	0.28	4.4	13.76
304	Irwin	3.5	0.16	0.94	6.44
305	Lovitt	5.0	0.14	6.7	10.93
306	Irwin	3.0	0.15	0.64	4.82
307	Lovitt	5.5	0.44	3.1	18.19
308	Irwin	3.5	0.28	1.4	11.06
309	Lovitt	1.7	0.27	1.2	10.53
310	Irwin	2.5	0.31	1.1	11.84
311	Lovitt	3.0	0.82	4.6	32.84
312	Lovitt	7.0	0.56	12.0	30.40
313	Scott	2.0	0.22	17.63	23.57
314	Lovitt	1.53	0.06	4.1	5.79

..........10

No.	Sampler	Width (ft.)	Ox. Au.	Oz. Ag.	Value ($)
315	Scott	2.0	trace	1.24	1.11
316	Scott	1.8	1.25	1.2	44.83
317	Scott	2.1	0.53	1.6	20.00
318	Scott	1.4	0.36	2.6	14.94
319	Scott	1.5	0.32	4.9	15.61
320	Scott	1.5	0.92	4.3	36.07
321	Scott	1.5	2.36	26.7	106.61
322	Scott	3.0	1.22	42.9	81.30
323	Scott	2.5	0.26	1.5	10.45
324	Scott	1.5	0.25	8.0	15.95
325	Scott	3.0	0.26	15.1	22.69
326	Scott	3.0	0.18	7.2	12.78

Ore Shoots

In computing the ore shoots it was found advisable to convert the sample widths to a width of 2 feet where the vein is less than 2 feet thick. Where the vein is more than 2 feet thick the sample width has been converted to the width of the vein. The following are the various ore shoots, listed by workings, as computed from the assay results of the writer's sampling.

Venus No. 2

No.	Sample Width	Converted Width	Value at Sample Width	Sample Width times Value
101	3.5	2.0	12.63	44.20
103	3.5	2.0	21.01	73.50
105	6.0	6.0	6.16	36.96
108	3.5	2.0	11.20	39.20
111	3.5	3.0	11.23	39.25
113	3.5	2.5	6.40	22.40
116	3.5	2.0	9.72	34.00
120	3.5	2.0	6.02	21.07
122	3.5	2.0	13.04	45.60
129	3.5	2.0	9.23	32.30
131	3.5	2.0	16.44	57.50
		11)27.5		11)445.98
		2.5		25)40.54
				16.22
128	3.5	3.0	14.11	49.40
126	3.5	2.5	12.78	44.70
125	3.5	2.0	7.97	27.90
123	3.5	2.5	11.10	38.82
119	3.5	2.5	8.07	28.25
115	3.5	2.0	9.72	84.20
111	3.5	3.0	11.23	39.33
		7)17.5		7)312.60
		2.5		2.5)44.66
				17.88

.............11

Maybelle

No.	Sample Width	Converted Width	Value at Sample Width	Sample Width Times Value
160	3.5	3.0	21.15	74.00
159	3.5	3.5	16.12	56.40
157	2.0	2.0	14.36	28.70
158	3.0	2.0	42.63	127.90
		4)10.5		4)287.00
				2.6)71.75
		2.6		27.60
161	3.5	2.0	60.75	212.60
162	3.0	2.0	22.74	68.22
		2)4.0		2)280.82
		2.0		2.0)140.41
				70.20
167	2.5	2.0	12.07	30.20
166	3.5	3.0	46.13	161.50
165	3.5	3.2	21.15	73.85
164	2.0	2.0	10.94	21.88
		4)10.2		4)287.43
		2.5		2.5)71.85
				28.75
190	3.5	2.0	7.66	26.80
189	3.5	3.0	25.27	88.50
188	3.5	2.5	27.23	95.30
187	3.5	2.0	9.75	34.13
186	1.0	2.0	31.45	31.45
185	2.0	2.0	2.22	4.44
184	2.0	2.0	7.76	15.52
183	3.5	2.0	8.52	29.80
182	3.5	2.0	14.70	51.45
181	3.5	2.0	33.63	117.70
180	3.5	2.0	5.95	20.80
179	3.5	2.0	5.02	17.57
				12)533.46
		12)25.5		2.1)44.45
		2.1		21.15

Venus Extension

No.	Sample Width	Converted Width	Value at Sample Width	Sample Width Times Value
191	2.5	2.0	51.58	129.00
192	3.5	3.5	23.47	82.20
193	2.0	2.0	30.89	61.78
196	3.0	2.0	11.06	33.18
197	2.0	2.0	12.77	25.54
199	2.5	2.0	59.15	147.80
202	2.5	2.0	22.23	55.60
204	3.0	2.0	16.40	49.20
205	2.5	2.0	26.14	65.35
		9)19.5		9)649.65
		2.2		2.2)61.06
				27.75

......12

No.	Sample Width	Converted Width	Value at Sample Width	Sample Width Times Value
203	3.0	2.0	12.29	36.87
201	3.5	2.0	15.03	52.60
198	2.0	2.0	35.92	71.84
200	2.0	2.0	37.58	75.16
194	3.5	3.5	20.17	70.50
		6)14.5		6)375.37
		2.4		2.4)62.56
				26.07
223	3.0	2.0	5.72	17.16
226	3.5	3.0	7.25	25.35
227	3.5	4.0	7.14	32.10
230	3.5	3.5	12.11	42.40
233	3.5	3.5	6.80	23.80
235	3.5	2.0	30.70	107.45
		6)18.0		6)248.26
		3.0		3.0)41.38
				13.79
259	3.0	2.0	13.01	39.03
258	1.5	2.0	48.65	73.00
257	1.5	2.0	31.08	46.65
256	1.5	2.0	6.60	9.90
		4)8.0		4)168.58
		2.0		2.0)42.14
				21.07
249	3.0	2.5	18.27	54.81
254	2.5	2.0	18.99	47.40
253	2.0	2.0	9.00	18.00
252	2.0	2.0	10.45	20.90
251	1.4	2.0	10.89	15.24
250	1.5	2.0	9.84	14.77
		6)12.5		6)171.12
		2.1		2.1)28.52
				13.59
284	2.5	2.0	17.28	43.20
279	3.5	3.0	19.81	69.35
280	2.0	2.0	15.14	30.28
281	1.0	2.0	57.87	57.87
282	2.0	2.0	16.38	32.76
283	2.3	2.0	98.93	227.54
		6)13.0		6)461.00
		2.1		2.1)76.83
				36.60

.......13

No.	Sample Width	Converted Width	Value at Sample Width	Sample Width Times Value
272	3.0	2.0	11.97	35.91
375	2.0	2.0	7.22	14.44
284	2.5	2.0	17.28	43.20
286	0.9	2.0	15.64	14.08
292	3.0	2.5	10.97	32.91
290	3.5	2.0	9.38	32.85
289	2.0	2.0	10.09	20.18
287	2.0	2.0	10.59	21.18
294	3.5	2.5	13.17	46.10
295	2.5	2.0	5.49	13.73
297	2.0	2.0	12.37	24.74
298	2.5	2.0	14.86	37.15
300	2.5	2.0	8.79	21.97
301	4.0	3.5	9.23	36.92
303	2.0	2.0	13.76	27.52
304	3.5	2.0	6.44	22.53
306	3.0	2.0	4.82	14.46
308	3.5	2.0	11.06	38.69
310	2.5	2.0	11.84	29.62
		19)40.5		19)528.18
		2.1		2.1)27.80
				13.23

The following calculations are made to arrive at an average value of the ore shoots.

Section	Width	Length	Value	W X L X V
157-160	2.6	25	27.60	1793.75
164-167	2.5	30	28.75	2155.50
179-190	2.1	110	21.15	4889.50
191-205	2.2	90	27.75	5495.40
194-203	2.4	55	26.07	3440.80
161-162	2.0	20	70.20	2808.20
223-235	3.0	50	13.79	2069.00
256-259	2.0	40	21.07	1685.60
249-250	2.1	70	13.59	1996.40
283-284	2.1	55	36.60	4225.65
272-310	2.1	210	13.23	5838.00
101-131	2.5	120	16.22	4864.80
111-128	2.5	90	17.88	4019.40
	13)30.1	965		965)45282.00
	2.3			2.3)46.92
				20.40

The following assumptions are made to arrive at an estimate of the value of the ground outlined by the level of the Venus Extension tunnel, the surface trace of the vein, the south drift of the Venus No. 2 and the south winze of the Venus No. 2.

1 - Area of vertical plane is 310,000 sq. ft.
2 - Average dip of vein is 40 degrees
3 - Half of area is ore
4 - Eleven cubic feet of ore weighs 1 ton
5 - Average value of unexplored ground equals average value of explored ground

$\frac{310,000 \times 0.643}{2}$ - 241,000 square feet

$\frac{241,000 \times 2.3}{11}$ - 50,390 tons of ore

50,390 tons @ 20.40 - $1,027,956.00

Mill Tests

Flotation tests of ore were made by the Department of Mines and Resources, Ottawa, in 1937, by J. Scott in 1944, and by the Denver Equipment Company Limited in 1946. The Department of Mines and Resources tested ore from the Big Thing group, however the ore is very similar to that of the Venus Group. A concentration ratio of 4.5 to 1 was obtained with a 79 and 87 per cent recovery of gold and silver respectively. The grind was 64.4 per cent minus 200 mesh. Cyandiation tests of the same ore gave 78.6 per cent gold and 45.1 per cent silver recovery:

Scott obtained over 95 per cent gold recovery in two different tests, and estimates that he would have a concentrate of over $100 with 90 per cent recovery: He made no attempt to recover the silver.

The Denver Equipment Company Limited states, regarding the mill tests performed by them:

> "The results of these tests show that the gold and silver values are too closely associated with the arsenopyrite to permit high gradeshipping concentrates to be produced by flotation or by a combination of gravity concentration with flotation. The tests also show that a rougher tailing loss from the combined gravity and flotation methods will be 18.6 per cent of the total gold and 26.3 per cent of the total silver.
>
> "Investigation of the possibility of cyanidation of the bulk concentrate with and without roasting was not within the scope of the present investigation. If the quantity of ore available would warrant such treatment it is recommended that further test work by cyanidation of the concentrates be conducted."

Costs

The following approximate costs are based on the assumption that the gold and silver values can be recovered by cyanidation at the property. Sacking, handling, transportation, and smelter charges on hand-sorted ore or concentrates would preclude operation of the property.

...........15