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REPORT

ON THE

PARADISE VALLEY MINE.

STATE OF NEVADA.

BY

THOMAS PRICE

SAN FRANCISCO, CALIFORNIA, JANUARY 28TH, 1870.

SAN FRANCISCO:

1879.

REPORT

ON THE

PARADISE VALLEY MINE.

Geographical Position.

The "Paradise Valley" Mine is located about 50 miles northeast of Winnemucca, a town on the Central Pacific Railroad and only some three miles from the fertile and well known valley of the same name.

Geological Characteristics.

The vein is enclosed in a fissure in a metamorphic slate formation and has a general north and south course, dipping at the west at an angle varying from 60° to 80° . The slate belt, in which the vein is inclosed, is at least 1,000 feet in width and is both under and overlaid with porphyry. At the open cut, near the mouth of the third level, the porphyry is in very close proximity to the vein, and this material may soon form the hanging wall. The vein can be distinctly traced from the open cut at the mouth of the third level, up to the small cut at the top of the hill, immediately over the first level, it can also be seen cropping out several hundred feet south of the third level at a point that is one hundred and fifty feet

deeper than bottom of the winze, at the mouth of the third level, thus assuring that the vein penetrates to the depth of at least four hundred feet from surface evidence alone, and from the general appearance of the vein, as developed by the mining explorations, the chances seem favorable for a continuation of the fissure to a still much greater depth.

Explorations.

The first tunnel has been extended on the vein for a distance of eighty feet, where it encountered a horse marked *a* on accompanying map. Up to this point the vein averages from three to eight feet in width. Nearly all the ore has been extracted above this point. The face of the stope shows a vein still standing varying from ten to eighteen inches in width.

From point *a* to the end, a distance of one hundred feet, this level has been in slate.

Winze No. 1, has been sunk from this level to the depth of fifty-eight feet—all in good quartz—the average width being four feet. The bottom of this winze was covered with about four feet of debris so that I could not sample it. The vein at the depth of fifty-four feet was very strong and four feet in width. An average sample from the vein yielded

Gold,	\$17.57
Silver,	146.36
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	\$163.93

Winze No. 2, on the same level, has been sunk to the depth of forty-eight feet, at the bottom of which I found the vein considerably mixed with slate and apparently making

into the hanging wall. Average sample for the bottom yielded

Gold,	\$14.47
Silver,	40.86
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	\$55.33

This winze is entirely in slate from *b* to *c*. At the latter point the quartz is intersected and continues to the bottom at *c*. Between *d* and *c* the quartz has been removed. From *d* to *e*, a depth of fifteen feet, the winze is in quartz and the vein is fully three feet wide. The average sample from the same yields:

Gold,	\$17.57
Silver,	48.10
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	\$65.67

An average sample from the other side of the winze from *c* to *e* assayed :

Gold,	\$13.18
Silver,	122.00
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	\$135.18

From *d*, in this winze, a drift has been extended northerly a distance of fifty feet, for the first thirty feet of the drift the roof is in slate, the bottom and end being in quartz.

At point *f*, or the end of the drift, the quartz is five feet wide and the vein will average fully three feet for the whole length of this drift. A sample taken from the quartz, in the face, yielded:

Gold,	\$16.54
Silver,	118.95
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	\$135.49

The whole of this drift was carefully sampled by blasting rock from the bottom, and seven samples obtained yielded the following results:

Gold, \$17.57—\$ 8.27—\$ 5.17—\$ 5.17—\$10.34—\$ 4.13—\$ 7.24						
Silver, 28.44	23.01	29.41	12.61	32.97	56.63	71.11
<u>\$46.01</u>	<u>\$31.28</u>	<u>\$34.58</u>	<u>\$17.78</u>	<u>\$43.31</u>	<u>\$60.76</u>	<u>\$78.35</u>

From *a* to *c* the drift follows on the back of the vein, the roof being in slate. The vein will average fully three feet. The quartz along the bottom of this drift, from *a* to *c*, will average three feet in width. Four samples were taken promiscuously from various points along the bottom of this drift and with the following results:

Gold, \$72.35—\$27.91—\$32.04—\$25.84			
Silver, 505.11	359.26	143.23	119.73
<u>\$577.46</u>	<u>\$387.17</u>	<u>\$175.27</u>	<u>\$145.57</u>

At the mouth of the first level I found several dumps of ore extracted from the level, drifts, winzes and stopes from which I was informed all the first-class ore had been selected out. I estimate these piles to contain not less than three hundred tons of ore. The whole was carefully sampled and assayed with the following results:

Gold, \$9.30—\$12.40—\$9.30		
Silver, 43.44	91.02	120.11
<u>\$52.74</u>	<u>\$103.42</u>	<u>\$129.41</u>

At the Bray Cut, twenty-five feet in vertical depth below the first level, the vein has been uncovered by means of an open cut exposing five feet in width of quartz.

A sample was taken across the whole face of the vein which gave the following results:

Gold, \$9.30
Silver, 175.53
<u>\$184.83</u>

The second level has been driven on the course of the vein for a distance of eighty feet. The quartz is very wide, being fully eight feet in places, but is barren and will not pay to remove, consequently no value can be placed upon the ore exposed in this part of the mine.

From the second down to the third level the only work done is one or two small cuts exposing the vein, thus proving that the vein continues between these points, although small. In the open cut which has been extended thirty-five feet above the third level, the vein is very wide, being sixteen feet at one point, and will average fully ten feet for the whole length of the cut. Assays from average samples taken from the face of the cut yielded the following results:

Gold, \$5.17—\$7.24—\$26.87		
Silver, 102.27	298.31	175.80
<u>\$107.44</u>	<u>\$305.55</u>	<u>\$202.67</u>

The third level has been extended for a distance of ninety feet, all in good ore, the vein being very wide, occupying the whole width of the drift and quartz still standing on the foot-wall. No crosscut having been made, I am unable to state the width, but, from the appearance at the mouth where the vein is eight feet wide, and from the width of the quartz in

the open cut immediately above, the prospect for an extensive ore body at this point is very favorable.

A sample taken from the face of this level yielded the following results :

Gold,	\$15.50
Silver,	173.43
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	\$188.93

Samples taken promiscuously from various parts of this level yielded as follows:

Gold,	\$10.34—	\$27.91—	\$12.40—	\$7.24
Silver,	177.23	125.28	149.22	125.16
	<hr/>	<hr/>	<hr/>	<hr/>
	\$187.57	\$153.19	\$161.62	\$132.40

Two samples taken from ore broken down at several points around the mouth of the third level yielded :

Gold,	\$8.27—	\$7.24
Silver,	56.63	221.23
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	\$64.90	\$228.47

The winze at mouth of third level and of the open cut has been sunk to the depth of thirty-five feet, and a drift extended northerly for a distance of thirty feet. Quartz is then encountered, but of a low grade, both in the shaft and drift. The latter only being in good quartz for the last six feet.

Sample taken from the face yielded as follows:

Gold,	\$10.34
Silver,	100.20
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	\$110.54

At the mouth of the third level, and below the open cut and around the ore houses, I found several piles of ore designated as second class, and from which the best ore had been selected out for shipment. I estimate that these piles contain not less than four hundred tons.

The whole was carefully sampled and assayed, yielding as follows:

Gold,	\$5.17—	\$7.24—	\$8.27—	\$6.20—	\$7.24
Silver,	174.50	144.15	103.95	98.65	152.60
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$179.67	\$151.39	\$112.22	\$104.85	\$159.84

On the last day of my examination of the mine, I took a careful sample from the ore placed in the chute as first-class ore, for shipment to the Rye Patch Mill. The sample assayed as follows:

Gold,	\$8.27
Silver,	181.52
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	\$189.79

Reserves.

1st. I estimate the reserves, as developed in the explorations of the First Level and Bray Cut, at two thousand tons of ore of an average assay value of one hundred and twenty dollars in gold and silver.

2nd. The reserves developed in the workings of the open cut, Third Level, winze and prospecting drift, I place at three thousand tons of an average assay of one hundred and forty dollars per ton.

3d. Dumps at mouth of first tunnel and Bray Cut, three hundred tons, which assay ninety-five dollars in gold and silver per ton.

4th. Dumps at mouth of Third Level, open cut and ore houses, four hundred tons, which assay one hundred and thirty dollars in gold and silver per ton.

Recapitulation of Reserves.

FIRST LEVEL AND BRAY CUT RESERVES :	
2,000 tons @ \$120 per ton.....	\$240,000 00
FIRST LEVEL DUMPS :	
300 tons @ \$95 per ton.....	28,500 00
THIRD LEVEL AND OPEN CUT RESERVES:	
3,000 tons @ \$140 per ton.....	420,000 00
DUMPS AT THIRD LEVEL, OPEN CUT AND ORE-HOUSES:	
400 tons @ \$130 per ton.....	52,000 00
In transit from the mine to the mill at Rye Patch, 350 tons first-class ore, of assay value \$185 per ton	64,750 00
Total.....	\$804,750 00
Deduction of 25% for overestimate and loss in milling.....	\$185,125 00
Discount on silver, 16%.....	88,860 00
Cost of mining and milling which, with a properly constructed mill near the mine, and proper management, should not exceed \$28 per ton....	159,600 00
	<hr/> 433,585 00
	\$371,165 00
Less amount shipped to Rye Patch Mills.....	64,750 00
Net Value of Reserves and Dumps.....	\$306,415 00

Net value of Reserves and Dumps.....	\$306,415 00
In transit from the mine to the mill at Rye Patch, 350 tons first-class ore of assay value, \$185 per ton.....	\$64,750 00
Deduct 10 per cent. loss in amalgamation.....	\$6,475 00
16 per cent. discount on bull- ion, produced.....	9,324 00
Cost of hauling to mill at \$16 per ton.....	5,600 00
Cost of milling and rent of mill at \$40 per ton.....	14,000 00
Total cost of treating 350 tons of ore....	<hr/> 35,399 00
Profit on 350 tons shipped to Rye Patch exclusive of cost of mining	29,351 00
Total net value of all reserves....	<hr/> \$336,266 00

In view of the value of the aforementioned available reserves, of the limited amount of work done in the mine, and of the fact, that the ore is good in the bottom of the winzes, and ends of drifts and levels, it is fair to presume that the mine will, by working, produce a much larger quantity of ore than estimated.

Recommendations.

No time should be lost in pushing forward the fourth level.

The second level should be connected as early as possible with winzes No. 1 and No. 2 from the first level so as to reduce the cost of removing the ore from this part of the mine.

From the assays of the various dumps and of the ores from the levels, it is evident that the ore is very uniform and that but little is gained by selecting it.

By far, the most economical mode of operating would be to have the mill as near the mine as possible, and have all the ore passed directly from the mine to the mill, thus saving the expense of handling and sorting, which is very costly work even under the most favorable circumstances.

Appended, you will find a list of all the assays made for this investigation and report.

Respectfully submitted.

THOMAS PRICE.

To the PRESIDENT OF THE PARADISE VALLEY MINING Co.

Dated San Francisco, January 28, 1879.

No.	Oz. Gold.	Oz. Silver.	Value Gold.	Value Silver.	Total Value.
1	$\frac{8}{100}$	92	\$ 16 54	\$118 95	\$135 49
2	$\frac{8.5}{100}$	22	17 57	28 44	46 01
3	$\frac{4}{100}$	17 $\frac{8}{100}$	8 27	23 01	31 28
4	$\frac{1}{4}$	22 $\frac{3}{4}$	5 17	29 41	34 58
5	$\frac{1}{4}$	9 $\frac{3}{4}$	5 17	12 61	17 78
6	$\frac{1}{2}$	25 $\frac{1}{2}$	10 34	32 97	43 31
7	$\frac{2}{100}$	43 $\frac{8}{100}$	4 13	56 63	60 76
8	$\frac{3.5}{100}$	55	7 24	71 11	78 35
9	$\frac{1.5}{100}$	14	3 10	18 10	21 20
10	$\frac{7}{100}$	31 $\frac{6}{100}$	14 47	40 86	55 33
11	$\frac{8.5}{100}$	37 $\frac{2}{100}$	17 57	48 10	65 67
12	$3 \frac{5}{100}$	390 $\frac{7}{100}$	72 35	505 11	577 46
13	$1 \frac{3.5}{100}$	277 $\frac{9}{100}$	27 91	359 26	387 17
14	$1 \frac{5.5}{100}$	110 $\frac{8}{100}$	32 04	143 23	175 27
15	$1 \frac{1}{4}$	92 $\frac{6}{100}$	25 84	119 73	145 57
16	$\frac{4}{100}$	19 $\frac{2}{100}$	8 27	24 82	33 09
17	$\frac{4.5}{100}$	135 $\frac{8}{100}$	9 30	175 53	184 83
18	$\frac{1}{4}$	79 $\frac{1}{100}$	5 17	102 27	107 44
19	$\frac{3.5}{100}$	230 $\frac{7}{100}$	7 24	298 31	305 55
20	$1 \frac{3}{100}$	136	26 87	175 80	202 67
21	$\frac{7.5}{100}$	134 $\frac{1}{100}$	15 50	173 43	188 93
22	$\frac{1}{2}$	137 $\frac{1}{100}$	10 34	177 23	187 57

No.	Oz. Gold.	Oz. Silver.	Value Gold.	Value Silver.	Total Value.
23	$1\frac{35}{100}$	$96\frac{9}{10}$	27 91	125 28	153 19
24	$\frac{6}{10}$	$115\frac{4}{10}$	12 40	149 22	161 62
25	$\frac{35}{100}$	$96\frac{8}{10}$	7 24	125 16	132 40
26	$\frac{4}{10}$	$43\frac{8}{10}$	8 27	56 63	64 90
27	$\frac{35}{100}$	$171\frac{1}{10}$	7 24	221 23	228 47
28	$\frac{1}{2}$	$77\frac{1}{2}$	10 34	100 20	110 54
29	$\frac{85}{100}$	$113\frac{2}{10}$	17 57	146 36	163 93
30	$\frac{45}{100}$	$33\frac{6}{10}$	9 30	43 44	52 74
31	$\frac{45}{100}$	$92\frac{9}{10}$	9 30	120 11	129 41
32	$\frac{6}{10}$	$70\frac{4}{10}$	12 40	91 02	103 42
33	$\frac{1}{4}$	$13\frac{8}{10}$	5 17	17 84	23 01
34	$\frac{1}{4}$	135	5 17	174 50	179 67
35	$\frac{35}{100}$	$111\frac{1}{2}$	7 24	144 15	151 39
36	$\frac{4}{10}$	$80\frac{4}{10}$	8 27	103 95	112 22
37	$\frac{4}{10}$	$140\frac{4}{10}$	8 27	181 52	189 79
38	$\frac{3}{10}$	$76\frac{3}{10}$	6 20	93 65	104 85
39	$\frac{35}{100}$	118	7 24	152 60	159 84
40	$\frac{1}{2}$	$110\frac{7}{10}$	10 34	143 11	153 45

NOTE.—Grand average of all assays, by calculation \$135.83

Assay of sample derived from mixing all of the
above 153.45