

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon
Reported by N. S. Wagner
Date of Examination
March 3, 1943.

Name The North Powder Mine (gold). Baker District, Baker County.

Owner Dr. A. M. Koester and Louise Mills, North Powder, Oregon.

Location E. $\frac{1}{2}$, S. 24; T. 6 S.; R. 39, in the edge of the foot hills 2 miles
due east of North Powder.

Area Ranch of 963 acres held by deed.

History Original development consists of three vertical shafts, averaging
50 feet or so in depth. The most recent work was done in 1930-31 when
the property was leased to Zigler and Merritt. This consists of two
small shafts, one inclined and one vertical, plus a considerable
amount of shallow drifting and cross cutting. Production consisted of
one shipment to Tacoma, Washington.

Topography The property is situated in the foot hills on the east side of North
Powder valley at an elevation of about 100 feet higher than the valley
floor. It is accessible by means of a good ranch road.

Geology The property occurs in a rather vaguely defined zone constituting the
contact between the Clover Creek Greenstone and an albite granite,
although much of the latter intrusive is locally very dark and full of
ferromagnesian minerals, suggesting the proximity of gabbro such as
contacts this formation on Magpie Peak, a few miles to the south. The
greenstone is badly shattered, with material of hot spring origin forming
a patchwork of veinlets. This condition makes it difficult to pick and
follow any given lead in mining and as a result, drifts and crosscuts
radiate in all directions. These, while extensive, were shallow.
Sampling shows erratic occurrence of rather high grade gold and silver.
The ore is completely oxidized, but the former operator, Mr. William L.

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Merritt reports that an 18 inch lense of almost pure arsenopyrite was encountered in deeper workings now inaccessible.

The relationship between this mineralization and hot spring activity is further emphasized by active hot springs which flow in the flats a few hundred feet west of the workings and apparently are connected therewith by a shear zone as evidenced by a few outcrops of rock, the general alignment of the more dominant fractures revealed by the underground development, and topographically, by a poorly developed gully.

This investigation was made primarily because of reported antimony showings, but examination of accessible portions of the mine and of various pits in the zone leading to the hot springs failed to reveal any special antimony mineralization. Two samples, assayed in the laboratory of the State Department of Geology and Mineral Industries, ran 0.3% and 0.4% Sb.

A.S. Wagner

SBE CONF. FILE

North Powder Mine

Gold

PRINCIPAL ORE

MINOR MINERALS

NAME

OLD NAMES

T6S

R39E

E¹/₂ sec.24

T

R

S

PUBLISHED REFERENCES

DEPARTMENTAL RECORDS on file in

EQUIPMENT AND VESSEL RECORDS

Handwritten notes:
North Powder Mine
963 acres deeded
Dr. A. M. Koester
1930

..... Baker COUNTY
..... Baker AREA
..... 3300 ELEVATION
..... ROAD OR HIGHWAY
..... 2 mi. North Powder DISTANCE TO SHIPPING POINT

MISCELLANEOUS RECORDS

~~Unpat. report 8/1/13~~

PRESENT LEGAL OWNER (S) ... Dr. A. M. Koester

Address Baker, Oregon

OPERATOR

Name of claims Area Pat. Unpat.

963 acres deeded

Name of claims Area Pat. Unpat.

B. J. Ford G.P. B

EQUIPMENT ON PROPERTY

REPORTS

North Providence Gold Mine NSW 3-3-43

X

X

SHIPMENT AND ASSAY RECORDS

Metalurgical Test Rept by W.L. Ziegler 1-10-30
Assorted assay records (not Departmental)

X

X

X

X

MAPS

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NORTH POWDER MINE

BAKER DISTRICT

BAKER COUNTY

BUNKER HILL SMELTER
(Hand Sample Assay)

Wm. L. Merritt
Standard Stock Exchange Building
Spokane, Washington

Oct. 18, 1930.

North Powder Gold Mine.

<u>Gold</u> oz/ton	<u>Silver</u> oz/ton	<u>Cu</u> %	<u>Pb</u> %	<u>Iron</u> %	<u>Insol.</u> %	<u>Lime</u>	<u>Sulphur</u>	<u>Zn</u>	<u>Sb</u>	<u>As</u>
1.36	0.8	Tr.	0.0	10.8	64.4	1.3	0.7	trace	trace	2.02

H. P. Lawrence, Chief Chemist

E. W. Lazell, Ph D.
Chemical & Efficiency Engineer
Chemical & Physical Laboratories
Portland, Oregon

May 8, 1933.

	<u>Au</u> oz/ton	<u>Gold Value</u>
North Powder Outside Dump	2.70	54.00
North Powder Inside Old Intersection	2.30	46.00

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R. L. Graves
H. B. Williams
Montana Assay Office
142 1/2 Second St., Room 34
Portland, Oregon

(20.67 Au)
Feb. 26, 1924.

The results on samples submitted for assay by W. E. Mills.

<u>Our No.</u>	<u>Description of Sample</u>	<u>Gold</u> oz/ton	<u>Ag</u> oz/ton	<u>Value</u> per ton	
(130)	No. 1	4.96	.40	99.44	Red Ore
(131)	2	7.20	.50	144.30	Turn in tunnel.
(132)	3	.56	.10	11.26	Six feet from turn.
(133)	4	1.00	.20	20.12	Face of drift.

By Ben Matten
per M.K.

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C O P Y

W. L. Zeigler

Metallurgical Engineer

Wallace, Idaho
Jan. 10, 1930

W. L. Merritt - North Powder River Ore.
Ore high in iron and completely oxidized Silver .2 oz- Au 1.41 oz.

Flotation tests. Grind ore in ball mill with .05 ppt Aerofloat.
Reagents in machine Sodium Xanthate .25 ppt Pine oil .15 ppt.

	% Wgt	oz Au	Recovery
Conct.	12.8	4.18	36.4
Tails	<u>87.2</u>	<u>1.07</u>	<u>63.6</u>
Heads	100.0	1.46	100.0

Same reagents with finer grind

Conc	6.8	27.60	15.1
Mids	8.3	2.07	11.6
Tails	<u>90.9</u>	<u>1.20</u>	<u>73.7</u>
Heads	100.0	1.48	100.0

Several other tests were run with no better success.

Cyanide Tests .05 ppt sodium cyanide 48 hours percolation.
ore ground 90% passing 200 mesh.

Ore assay 1.41 oz Au Tails assay .09 oz Au Extraction 93.6%

This tests shows a very good extraction but the ore grinds into a colloidal state that it is impossible to filter even in a high pressure filter. Several other tests were run with a coarser grind but the extraction drops in proportion to the fineness.

If a large tonnage of this ore could be developed a counter current process might be successful but would be very complicated for a small mill.

Several smelters in the Northwest desire this character of ore and if this grade can be maintained it seems it would be the most economical to smelt it direct.

W. L. Ziegler (signed)

Copied by N.S.Wagner, March 15, 1943

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Copies of smelter and assay data from North Powder Mine
(continued)

Tacoma Smelter
American Smelter & Refining Co.

June 13, 1931

Bought of — North Powder Mine
North Powder, Oregon 6/6/31

<u>Smelter Lot</u>	<u>Net Weight</u>	<u>Net Tons</u>	<u>Gold</u>	<u>Total Content</u>
# 767	28,330 lbs.	13,135 (dry)	(at 19.00)	22.23 oz.

<u>Fe</u>	<u>Al₂O₃</u>	<u>Pb</u>	<u>Zn</u>	<u>As</u>	<u>Sb</u>	<u>Ni</u>	<u>Bi</u>	<u>S₂O₃</u>	<u>C₂O</u>	<u>S</u>
10.4	7.2	no	0.30	-	-	-	-	50.2	2.6	0.2

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Copied by H. S. Wagner, March 26, 1949