

State Department of Geology and Mineral Industries

1069 State Office Building
Portland 1, Oregon

ELKHEAD MINE (Quicksilver)

Nonpareil-Bonanza Area

Owner: A. G. Hovey and associates, c/o Blaine Hovey, 722 Lincoln Street,
Eugene, Oregon.

Schuette 38:145-147 describes the property as follows:

"This mine is located in the NE $\frac{1}{4}$ of sec. 21, T. 23 S., R. 4 W., about ten miles east of Yoncalla. It was discovered in 1870 and is said to have produced in those early days although there is no record of such production. In 1895 a small Scott furnace was built but again there is no record of any production. U.S.G.S. Bulletin 850 on Plate 12 shows a plan and section of the mine, and Plate 13 shows the geology of the mine area.

"The rock alteration along the ore zone is similar to that at Black Butte forming the typical iron ribs. The formation strikes northwest and the dip is southeast. The lowest formation is an amygdaloidal basalt. On this lies a tuffaceous sandstone and this is overlain by shales. The alteration and mineralization of the rock occurred along the basalt-sandstone contact. Cinnabar is disseminated throughout the altered amygdaloid near the contact. The fractures which permitted mineralization must have been localized along the amygdaloid-sandstone contact by a differential movement on flexing. The sandstone must have been too 'tight' and 'soft' at the time of mineralization to permit of open fractures in it. If it had been a hard open-textured sandstone it would have fractured and let the mineralization concentrate in it under the overlying shale cap rock. As it was, the sandstone itself was a semi-permeable cap rock on the poorly-fractured basalt and only low-grade ore could form.

"This mine also has been the scene of recurrent activity for many years. In 1931 J. W. Wenzel was in charge of development work at the property and considered repairing the old 20-ton Scott furnace on the property. Then C. O. White of Seattle optioned the property in 1931 and installed his patented retort.

"A satisfactory test run was reported in 1934. Despite all this activity the production in all those years is reported as being only 16 flasks."

References: Schuette 38:145-147 quoted.
Wells and Waters 34:34.

Informant: J. E. Morrison, 39.

MAR 3 1939

Nonpareil Bonanza Dist
Douglas County

Name: Elkhead Mine (Quick Silver)

Owner: The Douglas County Assessor's Records show A. G. Hovey and others as owners of 31 acres in the N.E. $\frac{1}{4}$ of Sec. 21, T. 23 S., R. 4 W. which includes the Elkhead Mine. Elevation 900 feet.

Mr. Hovey can be reached in care of Mr. Blaine Hovey, 722 Lincoln Street, Eugene, Oregon. See Page 34, U.S.G.S. Bulletin 850, and Page 145 of S.D.G.M. Bull. 4.

Informant: J. E. Morrison. 2/11/39.

RECORD IDENTIFICATION

RECORD NO..... MC60823
 RECORD TYPE..... X1M
 COUNTRY/ORGANIZATION. USGS
 MAP CODE NO. OF REC..

REPORTER

NAME..... PUFFETT, WILLARD P.
 DATE..... 73 12
 UPDATED..... 81 03
 BY..... FERNS, MARK L. (BROOKS, HOWARD C.)

NAME AND LOCATION

DEPOSIT NAME..... ELKHEAD MINE

MINING DISTRICT/AREA/SUBDIST. ELKHEAD-BLACK BUTTE MINING DISTRICT

COUNTRY CODE..... US
 COUNTRY NAME: UNITED STATES

STATE CODE..... OR
 STATE NAME: OREGON

COUNTY..... DOUGLAS
 DRAINAGE AREA..... 17 ELK CREEK-UMFQUA RIVER
 PHYSIOGRAPHIC PROV..... 13 MIDDLE CASCADE MOUNTAINS
 LAND CLASSIFICATION..... 01

QUAD SCALE QUAD NO OR NAME
 1: 62500 ANLAUF, OREGON

LATITUDE LONGITUDE
 43-33-33N 123-10-10W

UTM NORTHING UTM EASTING UTM ZONE NO
 4822710.6 486314.3 +10

TWP..... 025S
 RANGE..... 004W
 SECTION.. 21 16 15
 MERIDIAN. WILLAMETTE

ALTITUDE.. 900 FT

POSITION FROM NEAREST PROMINENT LOCALITY: 6 1/2 MILES ESE FROM YENCALLA, OREGON.

COMMODITY INFORMATION

COMMODITIES PRESENT..... HG

ORE MATERIALS (MINERALS, ROCKS, ETC.):

CINNABAR, METACINNABAR, NATIVE QUICKSILVER

MAIN ORE MINERALS:

CINNABAR, METACINNABAR, NATIVE QUICKSILVER

ANALYTICAL DATA (GENERAL)

ORE GENERALLY LOW GRADE, CONTAINS LESS THAN 5 POUNDS MERCURY PER TON

EXPLORATION AND DEVELOPMENT

STATUS OF EXPLOR. OR DEV. 6

PROPERTY IS INACTIVE

YEAR OF DISCOVERY..... 1870

NATURE OF DISCOVERY..... A

YEAR OF FIRST PRODUCTION. 1882

YEAR OF LAST PRODUCTION. 1971

PRESENT/LAST OWNER..... WILLIAM J. HOLLY (ALCONA MINING CO.)

PRESENT/LAST OPERATOR.... ALCONA MINING CO.

WORK DONE BY USGS

YEAR WORK TYPE GEOLOGIST AND RESULTS

1) 1930 GEOLMAP WELLS, F.G. AND WATERS, A.C., USGS BULL. 850

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:

MINERALIZED SHEAR ZONE

FORM/SHAPE OF DEPOSIT: IRREGULAR

SIZE/DIRECTIONAL DATA

SIZE OF DEPOSIT..... SMALL

DEPTH TO TOP 0

DEPTH TO BOTTOM..... 150 FT

MAX LENGTH..... 1100 FT

MAX WIDTH..... 200 FT

MAX THICKNESS..... 30 FT

STRIKE OF OREBODY.... NE

DIP OF OREBODY..... 75 DEG SE

COMMENTS (DESCRIPTION OF DEPOSIT):

SPARINGLY AND IRREGULAR DISSEMINATED CINNABAR

DESCRIPTION OF WORKINGS

SURFACE AND UNDERGROUND

DEPTH OF WORKINGS BELOW SURFACE. 150 FT

LENGTH OF WORKINGS..... 1800+ FT

OVERALL LENGTH OF MINED AREA.... 400 FT

OVERALL WIDTH OF MINED AREA..... 150 FT

PRODUCTION
YES
SMALL PRODUCTION

ANNUAL PRODUCTION (ORE, COMMOD., CONC., OVERBURD.)

CUMULATIVE PRODUCTION (ORE, COMMOD., CONC., OVERBUR.)

ITEM	ACC	AMOUNT	THOUS. UNITS	YEAR	GRADE, REMARKS
15 HG	ACC	0000.464	FL	1965-1971	
16 ORE HG	ACC	0017.647	TONS	1965-1971	RECOVERY AVERAGED 1.995 LBS HG PER TON

PRODUCTION YEARS..... 1882 , 1887 - 1889 , 1916 - 1919 , 1931 - 1935 , 1957

SOURCE OF INFORMATION (PRODUCTION).. BROOKS

PRODUCTION COMMENTS.... MINE YIELDED \$30,000 WORTH OF ORE BEFORE 1903; 50 FLASKS PRODUCED IN 1887. SOME UNRECORDED PRODUCTION IN 1919; 16 FLASKS PRODUCED IN 1934-1935; 5 FLASKS IN 1957 AND 464 IN 1965-1971. TOTAL RECORDED PRODUCTION IS 551 FLASKS

RESERVES AND POTENTIAL RESOURCES

ITEM	ACC	AMOUNT	THOUS. UNITS	YEAR	GRADE OR USE
1 ORE	EST	00000580	TONS	1959	1 LB HG PER TON

SOURCE OF INFORMATION (RESERVES/POT RESOURCES).. ERICKSON AND SAMPLE

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS..... EO
HOST ROCK TYPES..... TUFFACEOUS SANDSTONE BASALT

AGE OF ASSOC. IGNEOUS ROCKS.. EO
IGNEOUS ROCK TYPES..... BASALT

AGE OF MINERALIZATION..... TERT

PERTINENT MINERALOGY..... CHALCEDONY, SIDERITE, LIMONITE, CLAY MINERALS

IMPORTANT ORE CONTROL/LOCUS.. BROAD FRACTURE ZONE ALONG FAULT CONTACT BETWEEN TUFFACEOUS SANDSTONE AND BASALT

GEOLOGY (SUPPLEMENTARY INFORMATION)

REGIONAL GEOLOGY
MAJOR REGIONAL STRUCTURES.. EAST LIMB OF NE TRENDING RED HILL ANTICLINE

LOCAL GEOLOGY

NAMES/AGE OF IGNEOUS UNITS OR IGNEOUS ROCK TYPES

- 1) NAME: GABBRO-NORITE DIKES AND SILLS
AGE: TERT

SIGNIFICANT ALTERATION:

HOST ROCKS ARE BLEACHED AND SOFTENED, CUT BY CHALCEDONY-SIDERITE-LIMONITE VEINLETS AND LOCALLY SILICIFIED

GEOLOGICAL PROCESSES OF CONCENTRATION OR ENRICHMENT:

HYDROTHERMAL SOLUTIONS

GENERAL COMMENTS

RECORD (M055180) MERGED WITH THIS RECORD AND DELETED FROM OREGON FILE.

GENERAL REFERENCES

- 1) BROOKS, H.C., 1963, QUICKSILVER IN OREGON: OREGON DEPT. GEOL AND MIN. IND. BULL. 55, P. 41-43.
- 2) WELLS, F.G., AND WATERS, A.C., 1934, QUICKSILVER DEPOSITS OF SOUTHWESTERN OREGON: USGS BULL. 850, P. 34-35
- 3) SCHUETTE, C. N., 1938, QUICKSILVER IN OREGON: ODGMI BULL. 4, P. 145
- 4) ERICKSON, E. G. AND SAMPLE, R. D., 1959, FINAL REPORT, CONTRACT IDM-E1216, MONETA PORCUPINE MINES, LIMITED, ELKHEAD MINE: OFFICE OF MINERALS EXPLORATION UNPUBLISHED REPORT
- 5) BAILEY, E. H., USGS, PERSONAL FILES

From the Ore-Bin January 1971 (Vol. 33 #1)

page 2. "In the face of a declining world price for mercury, Oregon production increased nearly seven times over the previous year. A total of 295 flasks was produced with the bulk of the metal coming from the old Elkhead Mine operated by Alcona Mining Inc. in Douglas County."

Nonpareil Bonanza District
Douglas County

Name: Elkhead Mine
Owners: Blaine H. and Bessie S. Hoovey
722 Lincoln Street
Eugene, Oregon
Area: 31 acres of patented land in the N. E. cor.
Sec. 21, T. 23 S., R. 4 W. Elevation 900
feet.

According to Mr. Hoovey this mine was under
lease to Mr. D. B. Bubar of Roseburg from
1929 to June, 1938.

Mr. C. O. White had a sublease on the
property.

Other than the above, there is no correction
in your write up.

January 1971

*Mr. W. Holley of Springfield is now operating
the Elkhead - shut down temporarily at the
moment - sticky ore + weather.*

Info from Richard Letson - Eugene.

ELKHEAD MINE

History, production, and workings.—The Elkhead mine is in the NE $\frac{1}{4}$ sec. 21, T. 23 S., R. 4 W., about 6 miles east of Yoncalla, a station on the Southern Pacific Railroad. The deposit was discovered about 1870, and for many years the ore was mined from an open pit and retorted in primitive furnaces. In 1895 a 10-ton Scott furnace was built, but shortly after the erection of the furnace the principal owner died and the property was shut down. Since that time the mine has been worked by different lessees, who have mined and retorted some ore. Newland (Newland, D. H., Mineral Industry, vol. 12, p. 311, 1904.) states that the mine had yielded \$30,000 worth of quicksilver up to 1903, but no figures for later production are available. Much of the production came from two glory holes. These and the other workings, which consist of a tunnel about 1,000 feet long and a raise, are shown in plate 12.

Rocks.—The Elkhead mine is on a zone of altered rock that follows the contact between tuffaceous sandstone and underlying amygdaloidal basalt that marks the boundary between upper and lower members of the Umpqua formation. (See pl. 13.) The tuffaceous sandstone is about 100 feet thick and is overlain by a bed of shale. These beds lie on the east limb of the Red Hill anticline (see p. 27) and dip about 40° SE. A fault that strikes N. 50° E. and dips 58° SE. is crossed at the entrance to adit 5. (See pl. 12.) This fault causes the shale to abut against the tuffaceous sandstone.

Rock alteration and mineralization.—Although the rocks at this locality differ somewhat from those at Blackbutte, the net result of their alteration has been the same. In the Elkhead area the outcrop of the altered zone is marked, as at Blackbutte, by a covering of hard brown rubble derived from the disintegration of the resistant oxidized silica-carbonate veinlets. These veinlets cut both the amygdaloid and the overlying tuffaceous sandstone, but they are most abundantly developed along joints and fractures in the sandstone. The amygdaloid has been bleached to a light gray or pale purple, but the sandstone preserves its original color except where oxidation of the siderite has changed it to dark brown.

The original microscopic textures have been very well preserved in the altered amygdaloid. In ordinary light the original outlines of the feldspars and ferromagnesian constituents of the rock and of the amygdaloidal fillings can be very clearly seen, although under crossed nicols nothing but a minutely granular mat of cryptocrystalline silica, siderite or limonite, and other alteration products is visible. As most of the workings are in the oxidized zone most of the original siderite is represented in the specimens studied by films of limonitic material. Cinnabar is disseminated throughout the altered amygdaloid in very minute irregular grains. Locally the rock is so thoroughly impregnated with these minute masses of cinnabar that it has a dull-red appearance, but large masses of pure cinnabar are never found.

Iron ribs are conspicuously developed in the thoroughly altered and much fractured tuffaceous sandstone, but here and there microscopic remnants of siderite can be seen. Locally these ribs branch irregularly from the main fissures.

Relation of mineralization to structure.--In the Elkhead district rock with sufficient cinnabar to form ore is confined, so far as known, to a relatively small area, but outcrops of altered rock containing iron ribs can be found along a zone of variable width nearly 4 miles long. This zone closely follows the contact between the amygdaloid and the overlying tuffaceous sandstone. This contact afforded a place for the deposition of the ore, partly because the fractures that were developed along it during folding later admitted the ore-bearing solutions and partly because the overlying shale formed an impermeable cover.

Ore reserves.--The ore found in the Elkhead mine, like that at Blackbutte, is of low grade, generally running 5 pounds or less of quicksilver to the ton. As the adits are not far below the summit of the ridge, the amount of ore to be developed above them is correspondingly limited. The amount of ore below them may be large but it must be hoisted, thereby adding to the cost of mining. There is nothing to indicate that the ore below the adit is richer than that above.

The above excerpt taken from "Quicksilver Deposits of Southwestern Oregon" Geological Survey Bulletin 850, pp. 34 & 35.

Elkhead Mine.

Nonpariel Bank &
Douglas Co.

A. G. Hovey et al.

N.E. 1/4 Sec 21 T 23 S R 4 W.

31 acs.

Elev. 900 ft.

To Blaine Hovey 722 Lincoln St. Eugene

U.S.G.S. Bull. 850 pp 34

S DG. M Bull 4 pp 145.