Pocket

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
So. 157 Howard Street
Spokane, Washington 99204
May 20, 1964

Memorandum

To: Chief, Division of Field Operations

From: Acting Field Officer, Region I

Subject: Application examination
~~OME-6355~~ (Cinnabar-Manganese)
C. E. Pierce and J. W. Chisholm
Chisholm Mine
Jackson County, Oregon

6335
T.K.
&
J.W.
note
MAPS Docket #'s

INTRODUCTION

The Chisholm mine was visited April 22 and 23, 1964, and an inspection was made in the company of J. W. Chisholm, one of the partners. C. E. Pierce was present during the second day. About 1 hour was spent at Chisholm's cabin clarifying claim ownership and other questions relative to the application and to the workings of the OME program.

The applicants propose two exploration projects, one on the Red Dog and Kathleen claims comprising 580 feet of drift and crosscut, the other on the Quinault claim comprising stripping about 20,000 cubic yards of material overlying old workings that have been nearly worked out. Their estimated total cost for both projects is $31,272.29.

It is concluded that there is little chance of a significant discovery resulting from the first project. Moreover, after tying in a claim corner with the proposed area of exploration, it was found that most of the work would be north of the Kathleen claims, and none of it more than 100 feet inside an exterior boundary line.

It is also concluded that the second project would be preparation for mining. The possibility of exploring beneath the mined out areas was considered, but the most feasible location for a tunnel portal is northerly from the workings on the Flora Belle claim which is subject to another application (OME-6336, Joseph T. Murray). As Chisholm has been authorized by Murray to act as guide, he was asked if the two applications could be combined. According to him, that was suggested to Murray who refused to accept the proposal.

See Plate 1
in Envelope

It was made clear that this was merely a suggestion on my part and that, even should Murray decide to combine the two applications, it was in no way to be considered as assurance that such a combined application would be approved.

Finally, the history and the record of production from the Chisholm property indicate that, although colors can be panned at many places, lenses of high-grade ore have been relatively few and small. Workings have been shallow and there is a possibility that there may be larger deposits found at depth, but the location of the best target area with respect to exterior property boundaries precludes participation by OME in a deeper tunnel.

It is therefore recommended that the application be denied without prejudice.

PROPERTY, LOCATION, AND ACCESSIBILITY

The Chisholm claims were originally owned by right of location by Dr. W. P. Chisholm, now deceased. After working the claims for several years, Dr. Chisholm reportedly deeded them to his son, Stewart Chisholm. Assessment lapsed and the claims were relocated by the applicants, except for the Hazel claim which was located by T. Webber in 1961. Webber did no assessment work and none was recorded, so in 1963, the applicants relocated it in their name. Originally, the Quinault claim was recorded as Little Jean, but in 1934 Dr. Chisholm relocated it as Quinault.

The claims subject to the application as now recorded at the Jackson County Courthouse are:

Claim	Book	Page
Jackson	64	90-91
Quinault	59	351-352
Hazel	59	349-350
Red Devil	69	250
Kathleen	73	438-439

A Quit Claim Deed to the Red Devil claim is recorded in Book 70, page 411, and a Lease and Agreement by which the applicants control the same claim is recorded in Book 76, page 3.

Workings visited during the examination were three bulldozed trenches said by Chisholm to be along the boundary line between the Red Devil and the Kathleen claims, and three bulldozed trenches, a shaft, and a tunnel on the Quinault claim. There are other shallow and caved trenches on the property and at least two other completely caved tunnels on the Quinault claim.

After spending about 2 hours unsuccessfully searching for Kathleen and/or Red Devil claim corners said to be near and west of these claims, and finding only the southeast corner of Ripper No. 1, the more distant southeast corner of Kathleen was found. From here, a Brunton and tape survey was run to a blazed bush at the side of the road near Trench No. 1 (pl. 1). This blaze was one of many said by Chisholm to be along the west side line of the Kathleen claim. Indeed the blazed line was followed westerly, crossing the three trenches, when we attempted to find the southwest corner of Kathleen, and was followed easterly to the southeast corner. However, a line on the map connecting the southeast corner post with the blazed bush by the road and extended westerly passes through the trenches and shows that most of Trench No. 1 and all of Trenches No. 2 and No. 3 are on the Venus claim. It also passes north of the southeast corner of Ripper No. 1 as did the actual blazed line on the ground.

The center post on the north end line of the Quinault claim was found without difficulty and compass and tape lines were run to all accessible workings.

The claims are in secs. 17 and 20, T. 34 S., R. 2 W. W.M., in the Meadows district, Jackson County, Oregon, and are easily accessible from Medford, Oregon, about 22 miles distant. Starting in Medford at the junction of U. S. Highway 99 and Midway road, follow the latter northerly for 12.4 miles, taking the right fork at 0.6 mile, to State Highway 234. Turn right and follow Highway 234 for 0.6 mile to Evans Creek road. Turn left and follow Evans Creek road for 8.4 miles to East Evans Creek road, just across East Evans Creek. Turn right proceeding northerly for 0.3 mile to the mine road. To this point the road is paved, except for the final 200 to 300 yards which is gravel surfaced and is passible throughout the year. Turn left and follow a poor dirt road, slick and probably impassible, when wet, for about 0.5 mile to the Chisholm cabins. The nearest workings are about 0.5 mile farther north.

GEOLOGY

The geology of the Meadows district and the Chisholm claims is described in the following papers:

Wells, Frances G., and Waters, Aaron C., 1934, Quicksilver deposits of southwestern Oregon: U. S. Geol. Survey Bull. 850, p. 50-56

Brooks, Howard C., 1963, Quicksilver in Oregon: State of Oregon Department of Geology and Mineral Industries Bull. 55, p. 67-74

Most of the following description of the geologic setting is freely taken from Brooks (1963).

The oldest rocks in the Meadows district are the Applegate group of Triassic(?) age which includes schistose amphibolites with subordinate biotite schists and quartzites. These rocks were called the "May Creek formation" by Wells and Waters (1934). The Applegate group is unconformably overlain by the Umpqua formation of Eocene age which consists of arkosic sandstones, in part tuffaceous and in part conglomeratic, interbedded with shales and lignitic coal. Locally, these rocks are cut by diabase dikes and, north of the Chisholm claims, by a massive quartz-rich intrusive.

Planes of schistosity in the Applegate group have wide variety, but the majority strike N. 20°-60° E. and dip SE at angles in excess of 30°. Attitudes in the Umpqua formation are also highly variable, but dips rarely exceed 15° in any direction.

Both north and south of the Meadows area the contact between the Umpqua sediments and the underlying schists appear to be largely depositional. In the Meadows area, however, faulting has occurred along the contact and thick accumulations of gouge are exposed in several excavations on the Chisholm claims.

The quicksilver deposits are associated with subordinate faults of divergent trends cutting the rocks on either side of the contact, or are confined within diabase dikes which were probably intruded along zones of weakness produced by faulting. No quicksilver mineralization has been found along the contact, possibly because the accumulation of gouge was sufficient to prevent access to quicksilver-bearing solutions.

Scattered throughout the Chisholm claims are many adits, pits, and shallow shafts that explore mineralized fault zones cutting the Umpqua formation east of and within a few hundred feet of the

northerly trending contact with metamorphic rocks of the Applegate group. Some of the workings explore the contact zone for short distances and locally pass beyond into the schists. Where exposed, the contact dips 25° to 50° easterly and is marked by several feet of intensely sheared gouge. Cinnabar is rarely found in the sheared contact, but along with metacinnabar and native quicksilver it is sparsely distributed along many fault zones that cut the adjacent Umpqua formation, diverging in strike only slightly from the contact. Only in a few and widely scattered places have the quicksilver minerals been found in sufficient concentration to be considered ore.

The west wall (uphill side) of Trench No. 1 (pl. 1) was for the most part sloughed and weathered but at one place was cleaned off to expose bedrock. Here the apparent bedding strikes N. 70°-80° W. and dips 22° northerly and is cut by an indefinite and irregular weak cleavage that strikes westerly and dips vertical to steeply south. Along the cleavage one hairlike stringer about 2 inches long contained visible cinnabar. A sample of this material assayed 2.6 pounds mercury per ton over a width of 14 inches. About 30 feet southerly from this location another sample was taken from a pit in the west wall of the trench although no cinnabar was visible; it assayed 0.4 pound mercury per ton over a width of 12 inches (pl. 1).

About 150 feet westerly (uphill) from Trench No. 1 is Trench No. 2. This trench is cut through fairly shallow overburden, but bedrock is completely covered by wash and debris. Two shallow hand-dug pits exposed bedrock, but no cinnabar could be seen. Chisholm said that careful panning would disclose a few colors but that he did not consider the pits worth sampling.

About 200 feet westerly of Trench No. 2 is Trench No. 3. This trench is shallow and barely through overburden; the sides are too badly broken and sloughed to show any structure or any evidence of cinnabar.

The rock exposed in the three trenches, or suggested by fragments in the bulldozed material, is well weathered and ranges from very fine-grained sandy shale in Trench No. 1 to fine-grained sandstone in Trench No. 3. There is little visible cinnabar in any of the exposures and no evidence of sulfides although some of the vertical joints are weakly stained by hematite and limonite.

The applicants believe that the trenches are in a zone 40 to 60 feet wide that may contain enough mercury to be mined by open pitting. They base this on the fact that "colors can be panned anywhere within this zone" but admit that more often the colors are very few and the samples panned show no visible cinnabar. The fact that the two samples taken by the examiner, one containing visible cinnabar and the other containing no visible cinnabar, respectively assayed

only 2.6 and 0.4 pounds per ton, does not indicate that the applicants' "ore zone," if it is truly existent, will average as much as a pound of mercury per ton. To approach a profitable venture, 4 pounds per ton (19 tons per flask) would be a minimal grade.

On the Quinault claim no mercury was seen in the only tunnel that could be entered or in the shaft that was tightly timbered and caved at a depth of about 30 feet. However, in a bulldozed bench about 20 feet southerly from the shaft a small trench has been hand dug in sandstone. An exposure about 10 feet below overburden showed a few blebs and streaks of cinnabar in a shear zone striking approximately S. 20° W. and dipping vertical to steeply southeasterly. Because Chisholm was critical of the sampling done in this area by the Bureau of Land Management engineers, he was asked to select a location and take a sample; it assayed 3.0 pounds mercury per ton over a width of 3 feet. About 30 feet farther south along the same zone, he took another sample that assayed 0.4 pound mercury over a width of 4.5 feet.

Although Chisholm could not outline the stoped area on the surface, he reported that ore shoots found in the three tunnels shown on his sketch accompanying the application had been mined out above a depth of 60 feet below the shaft collar. The samples he took were therefore from pillars above the stopes or just south of the stope limits.

Accompanying the application is a report from the Oregon State Department of Geology and Mineral Industries showing assays of two samples submitted by the applicants. Both are grab samples; one, of kaolin clay, taken at a depth of 20 feet in the shaft, assayed 0.6 pound mercury per ton, the other, described as "4' depth - top of ridge," assayed 1.4 pounds mercury per ton.

Assay data and the map showing sample locations prepared by Collins, whose report accompanied the application, have been lost, but parts of two paragraphs on page 3 of his report are worth quoting:

> "The stringers or veins on the Little Jean (sic Quinault) claim, from which Dr. Chisholm mined his small body of high-grade ore, is worked out above his 'upper tunnel' (it is now worked out above the lower tunnel), and none of the ore is showing. It is evident from the shape of the openings, that it is very irregular; but it is possible it and other stringers near the surface might be more regular in depth . . . I however attach little importance to these narrow rich seams, which are likely to be irregular and discontinuous. The important question is to determine whether or not they are sufficiently numerous to make the zone in which they occur, as a whole workable ore."

The only reference to ore tenor by Wells and Waters is: "Mr. Miller, who was leasing these claims in 1930, stated that some of the rock ran as high as 4 pounds to the ton."

The indicated pattern of small tonnages of high-grade ore is typical of that on adjacent and nearby properties which are described in various War Minerals Reports. The War Eagle mine has a recorded production up to 1937 of 640 flasks from 3,300 tons of ore indicating an average grade for that one ore body of 15 pounds per ton. Elsewhere on the War Eagle vein assays have ranged from 6 to 10 pounds per ton. Assays of ore from the Pacific Syndicate mine range from 3 to 15 pounds per ton, the average grade being about 8 pounds per ton. Assays of ore from the Ruby Prospect average 7.6 pounds per ton.

Brooks (1963) tabulates U. S. Bureau of Mines production figures without indicating the tonnage of ore from which it came; for the years 1916-17, 1919, and 1930 through 1935, a total of 31 flasks, 2 of which came from the Ripper No. 1 and No. 2 claim area, were produced from the old Chisholm property. According to Chisholm, "several flasks were also produced during the late 1930's and early 1940's." There is no record of this latter production which was sold locally to dredges, gold mines, hardware stores, etc.

For the entire Meadows district, the total recorded production from all sources through 1960 is:

Property	Flasks
War Eagle	657
Mountain King	93
Cinnabar Mountain	63
Chisholm Group	31
Roxana	7
Bonita	7
Stanley and Brown Prospects	3
Total	863

Thus, about 76 percent of the production of the entire district has come from one mine, the remaining 24 percent from six mines, and only 3.6 percent from the Chisholm claims.

CONCLUSIONS AND RECOMMENDATIONS

In the Red Dog-Kathleen-Venus area there is evidence of the existence of mercury in scattered and small amounts. Because of the weak mineralization and the apparent lack of any structure that might contain an ore body, it is concluded that the chance of making a significant discovery in this area is poor.

Most of the 31-flask production from the Chisholm property came from the workings on the Quinault claim. The ore shoot here is reportedly small and irregular in shape and has been mined out to a depth of about 60 feet. It has been suggested by Collins in his report accompanying the application that the high-grade shoot may become more regular and larger at depth. However, he does not place much hope that, should this prove true, the expected high-grade shoot would be of much significance. His hope is for the development of a large low-grade deposit that could be mined by an open-pit operation. The chance of finding such an ore body without the inclusion of high-grade lenses and pockets is considered less than fair.

Most of the workings in the Meadow district have been shallow, the deepest stoping being 200 feet at the War Eagle mine and 100 feet at the Mountain King mine. Both of these mines are in the Applegate group near small masses of intruding pegmatite, diorite, and unclassified quartz-rich intrusives. As the quicksilver-bearing solutions probably emanated from the intrusives, there is reason to believe that the ore shoot mined on the Quinault claim may continue downward; but that it will increase in size and grade is doubtful. The chance of making a significant discovery at depth is little more than fair.

A considerable amount of surface prospect trenching and road construction in heavily timbered country south of the mined area will be necessary to trace the mineral zone and locate a suitable portal site on the applicants' claims. A more feasible and reasonable approach would be to crosscut 50 feet westerly from the face of the workings on the Flora Belle claim and if a strong structure is found, which may or may not contain mercury at the point of intersection, drift along it for about 500 feet southerly. However, the applicant does not have, and says he cannot get, control of the Flora Belle claim. Neither approach offers more than a fair chance of making a significant discovery.

It is therefore recommended that the application be denied without undue prejudice to the property.

D. R. MacLaren

Enclosure
Distribution:
QME(3) Docket
USGS(SRO) MacLaren

U.S. Department of the Interior

OME
Application Examination

OME-6335 Chisholm and Pierce
OME-6336 Joseph T. Murray

Field Office Copy

Sketch Showing
Chisholm and Pierce Claims and Murray Claim
Meadows Mining District
Jackson County Oregon
100 50 0 100 Feet
April 1964

Plate 1