Office of Minerals Exploration
Building 20 - Room D2011

December 3, 1965

MEMORANDUM

To: Chief, Office of Minerals Exploration
Geological Survey, Washington, D. C.

From: J. William Hasler
Field Officer, Region III

Subject: OME-6407 (Silver)
Kendall-Columbine Mining Co.
Mighty Monarch et al claims
San Juan County, Colorado

Enclosed is a report of examination on the subject property, prepared by R. L. Bolmer, Mining Engineer, U. S. Bureau of Mines, recommending denial. The examining engineer concludes that the veins on the Mighty Monarch claims do not appear promising enough to warrant exploration with government assistance as proposed by the applicant. The applicant's ability to adequately execute such a program financially or otherwise appears questionable.

I concur with the conclusion and recommendation that the application be denied.

Enclosure

JWHasler/mc/12/3/65

J. William Hasler

cc: Chief OME (2)
File ✓
Chron
M. H. Salsbury, BM
R. L. Bolmer, BM

AREA V

Mineral Resource Office December 2, 1965

Memorandum

To: Chief, Office of Minerals Exploration
Geological Survey, Washington, D. C.

From: R. L. Bolmer, Mining Engineer
Area V Mineral Resource Office
Bureau of Mines, Denver, Colo.

Subject: Field examination for OME-6407 (Silver), Kendall-Columbine Mining Co., Mighty Monarch et al claims, San Juan County, Colo.

The Mighty Monarch claims were examined July 30, 1965, in response to the subject application for financial assistance in minerals exploration. The examination was made with Mr. Howard Bowles, vice-president of the applicant company, and Mr. Alfred G. Butler. Butler is president of The Silverton Mining Co., the owner and lessor of the property.

Project proposal

The applicant proposes to drive a 2,200-ft. tunnel southeasterly into Kendall Mountain from a point on the Animas River adjacent to the town of Silverton. The stated objective of such a tunnel is the "apex" of the Titusville and Silver Lake veins, or the Silver Lake vein alone if the Titusville vein is not encountered. An aggregate of 500 feet of drifting on any discoveries made by the tunnel also is proposed.

Total estimated cost of the proposed project is $205,000. Contract tunneling and drifting (at rates of $50 and $55 a foot, respectively) account for two-thirds of this amount. Fully one-third of the total cost, or $67,500, represents such indirect work as project supervision, surface labor, consulting services, surface construction, site preparation, power-line extension, and so on.

Location and extent of property

The unpatented mining property included in the application consists of 10 lode and 1 placer claims situated in T 41 N, R 7 W, NMPM, San Juan County, Colo. These contiguous claims occupy an irregular area, some 1,200 feet wide by 4,000 feet long, lying between Swansea and Idaho Gulches on the steep slope of Kendall Mountain, immediately southeast of the Animas River and the townsite of Silverton. Elevations of the property range from about 9,300 feet along the Animas River to about 12,200 feet on the higher slopes of Kendall Mountain.

The claim map submitted with the application is not tied to any obvious reference point, and the exact relationship of the Mighty Monarch group to a number of patented claims around its periphery can not be determined. However, no serious conflict is apparent.

Ownership

The Silverton Mining Co. is the owner and lessor, and Messrs. Howard Bowles, W. E. Lile, and Thomas E. Howard (all officers of the applicant company) are the lessees, of the Mighty Monarch group of claims. The 10-year lease, dated August 18, 1964, calls for a rental or royalty payment of 10 percent of the net returns on all ore produced from the property. Evidently, the owner and lessor will not subordinate its interest in the property to the Government should an exploration contract be executed.

Existing development

The property is developed by several adits driven southeasterly into Kendall Mountain on what may be, but probably is not, the same vein structure. Only the lowest and most recent workings on the Mighty Monarch No. 1 claim remain open for inspection. The latter probably correspond to the "Main Tunnel" on the applicant's claim map, but the details shown there are incomplete and inaccurate.

The lowest adit level, at elevation 9,480 feet, reportedly attained a length of about 650 feet but is now accessible with difficulty for a distance of only 470 feet from the portal. Several short crosscuts and two short raises complete the level development. The final sections of the adit are in very heavy ground, and neither the walls nor back of the excavation are exposed behind the closely spaced lagging and spiling.

The raises from the lower adit apparently connect with an older adit starting some 60 feet southeast of the lower portal and some 30 feet higher on

on the hillside. This older adit probably corresponds to the "Lonegan Tunnel" on the claim map. It is no longer accessible but reportedly attained a length of about 190 feet.

Other, very early, and also inaccessible, workings occur about 1,000 feet farther to the southeast and about 600 feet higher on the mountain. One of the upper adits reportedly was driven 1,000 feet along a structure that may correspond to the "Cabin vein" of the claim map.

Production

Total recorded production from the property is 167 tons of ore averaging 0.04 oz/T gold, 1.65 oz/T silver, 0.38 pct copper, 1.75 pct lead, and 1.32 pct zinc. Source of this production is not indicated but is believed to be the lower adit workings.

Description of deposit

The lower adit workings expose two well-defined fissure veins that either junction or intersect about 140 feet inby the portal. What appears to be the principal structure strikes about N10°W; the other, about N20°W. Both dip steeply to the northeast. The veins occur in the Burns quartz latite of the Silverton volcanic series but appear to extend from, and may be genetically related with, the Sultan Mountain quartz monzonite stock that immediately adjoins the workings on the west and south. Sections of the lower adit may have penetrated this stock. The lower workings on the property probably fall within the 1- to 1-1/2-mile-wide ring-fault zone that marks the southern edge of the Silverton caldera. Movement along this series of faults offsets the veins and masks their true structural relationship, particularly in the final sections of the lower adit.

The veins exposed along the lowest adit level range from about 1-1/2 to 6 or 7 feet in width. Disseminated base-metal sulfides, with some gold and silver values, occur sporadically along the principal (footwall) structure. Small streaks of high-grade sulfides, 1/2 to 2 inches in width, occur in a few places; but many sections are virtually barren of all mineralization. The hanging wall vein is largely void of all mineralization except for occasional small streaks or pods of hubnerite. Small sections of the footwall vein, just inby its junction with the hanging wall structure, evidently were stoped through short raises from the lower level. However, no other concentration of mineral that could be considered an ore shoot is exposed along the accessible sections of that level.

A sample taken during the examination across a 5-foot width of the footwall vein, where last exposed in the back of the lower adit (some 400 feet inby the portal), assayed 0.012 oz/T gold, 0.36 oz/T silver, <0.05 pct copper, <0.10 pct lead, and 0.35 pct zinc.

Very little is known of the early-day development higher on the mountain. According to the owner, the Cabin vein reportedly contained high-grade silver ore over widths ranging from 1/2 to 5 feet.

Much of the lower northwestern slope of Kendall Mountain is covered by glacial till as well as a heavy growth of timber, and few outcrops of any kind are evident in the vicinity of the Mighty Monarch claims.

The Silver Lake and Titusville veins, which are the stated objectives of the proposed tunnel, are very prominent, northwesterly-trending, fault-fissure-dike structures that crop out across the summit of Kendall Mountain. The last known surface exposures of these structures lie some 5,700 to 6,200 feet east and southeast of the portal of the lower adit (3,200 to 3,700 feet beyond the property line) and some 1,800 to 3,500 feet higher in elevation.

The claim map incorrectly shows the Silver Lake and Titusville veins intersecting within the boundaries of the property. Actually, the Silver Lake vein crops out some 3,200 to 4,800 feet northeast of the Titusville vein; and any reasonable projection of the structure to the lower slopes of Kendall Mountain would pass about 3,000 feet outside the property line. The Titusville vein projects into Idaho Gulch on the lower slopes of the mountain, immediately southwest of the property; and what may be a more northerly branch of the main vein, follows Sunnyside Gulch to lower slope. The Mighty Monarch claims lie between these two most probable northwesterly projections of the Titusville structure.

Detailed descriptions of the Silver Lake, Titusville, Mayflower-Shenandoah, and other major veins in the South Silverton Area are given by Varnes in Professional Paper 378-A and, except for brief mention of the development on the Titusville structure, will not be repeated here.

The Titusville vein (also known as the Letter U vein) is a dike- and fissure-filled shear or fault zone that ranges from only a few feet to more than one hundred in width over an exposed length of some 2-1/2 miles across the top of Kendall Mountain. Shallow, early-day development along its outcrop included the Buckeye mine at 12,600 feet in Arrastra Basin and the Titusville mine at 13,000 feet on the south side of Kendall No. 1 Peak. A number of shallow pits, trenches, and adits also were opened along the outcrop, farther to the northwest. Ore from these early mines and prospects consisted largely of galena and chalcopyrite, with some sphalerite, tetrahedrite, and pyrite, in a gangue of quartz and rhodochrosite. Vein material was neither universally nor uniformly mineralized, and the ore shoots mined generally were low grade. However, narrow streaks of higher grade base-metal ore and a few small pockets of high-grade gold and silver ore were reported. It probably was these latter streaks and pods that attracted and supported the early-day operations.

The most extensive development of the Titusville vein was carried out through two long crosscuts extending southward from working on the Silver Lake vein at elevations of about 12,400 and 11,700 feet. Sections of the vein under both Arrastra Basin and Kendall No. 1 Peak were mined during 1904-06. Records for the period do not segregate the production from the Titusville vein alone, but it appears that only low-grade milling ore was recovered from these sections.

In 1953-54, the Titusville vein was explored at an elevation of about 11,200 feet (some 500 feet below its earlier development) through a long crosscut driven southward from the main level of the Shenandoah-Dives mine. The exploration project, which was performed under DMEA Contract Idm-2558, also included about 1,600 feet of drifting along the vein and was supplemented by more than 1,200 feet of diamond drilling by the company. Only very low grade mineralization was encountered on the vein at this depth, and the planned exploration program was not completed.

Other considerations

It is apparent from statements appearing in the application, as well as from those made during the field examination, that neither the owner nor the lessees of the property have appreciable knowledge of the structural relationships of the veins in the area. Some of the geologic "theories" of the owner, in particular, have no scientific bases; and it is he who evidently is advising the others.

Reportedly, the applicant company also holds certain other claims high on Kendall Mountain from which it has attempted to recover the old mine dumps. A long, rather elaborate, and obviously high-cost access road recently was constructed to the property. The company is believed to have declared voluntary bankruptcy sometime this summer, apparently as a result of a dispute between the officers and/or stockholders. At any rate, most of the company's assets (trucks, carryalls, and other equipment) subsequently were offered at auction by the county sheriff. Evidently, no sales were made, and the equipment was still stored on a vacant lot in Silverton on the date of examination. Present legal or financial status of the company is unknown.

Conclusions and recommendations

The veins on the Mighty Monarch claims, which are presently accessible for examination, do not appear promising enough to warrant exploration with Government assistance. Detailed maps showing the relationship of these veins to the old workings, surface prospects, and other known structures in

the general area would be needed before the exploration potential of the property, if any, can be appraised. Without such information, the long tunnel proposed by the applicant must be considered prospecting rather than exploration.

The Silver Lake vein -- one of the stated targets of the tunnel -- obviously does not project anywhere near the property. Minor splits or branches of the Titusville vein possibly may, but more probably do not, cross the property. The formerly productive sections of the latter structure lie considerable distances beyond the property line and at much higher elevation than the proposed tunnel. Production from these sections was predominately a low-grade milling ore that evidently diminished in mineral content with depth below the surface. Consequently, the possibility of making a significant discovery on the Titusville vein through a low-level tunnel is quite remote, even if this vein or any branch thereof should extend onto the property.

Inasmuch as other exploration worthy of Government assistance is not apparent, it is recommended that the subject application be denied.

R. L. Bolmer

R. L. Bolmer

cc: OME - WO
Docket file
Chron. file
M. M. Salsbury, BM
R. L. Bolmer, BM