

GOLD POTENTIAL  
OF THE GOLDEN WONDER MINE AND ENVIRONS  
HINSDALE COUNTY, COLORADO

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## Introduction

The Golden Wonder mine, located southeast of Lake City, Colorado, was discovered in 1880 after prospectors found extremely high grade gold mineralization in surface float on Gold Hill. Since its discovery, the Golden Wonder mine has earned a reputation as containing very substantial gold assay values; surprisingly, the mine area has never been adequately prospected or developed to determine its potential or the potential of the surrounding area.

Previous reports written by the author have discussed in detail the geology, structure and mineralization of the Golden Wonder mine and the reader is referred to these reports for a detailed description of the geology of the mine. The purpose of this present report is to present information, with emphasis on recently developed knowledge concerning the geology of the mine area, which provides insight into the gold potential of the mine and its environs.

The Golden Wonder vein structure, as exposed within the confines of the underground workings of the mine, is of modest lateral extent, although the breast of the development on the principal working levels is still in ore.

A review of the known geology of the mine area, interpreted in light of relatively recent geological studies of the Lake City region, suggests that the area of the Golden Wonder mine and its environs is deserving of more detailed exploration/evaluation as a target for a substantially larger mineralized zone than is presently known, and it is hoped that this report will provide a stimulus for a re-evaluation of the gold-silver telluride potential of the area.

## Conclusions

During early-day mining activities at the Golden Wonder mine, high grade gold ore was extracted upwards of the third level. During a five month pilot mining program conducted in 1984, LKA Minerals, Inc. extracted more than one half million dollars in ore in the interval between the third and fourth levels of the mine. During this latest period of activity, workings were advanced on the fifth level of the mine to intersect the Golden Wonder vein structure; assaying has proven the continuance of similar high grade ore on the fifth level of the mine.

Except for development work, there has been extremely minimal mining activity below the fourth level of the mine; additionally, considerable ore still remains in the interval between the third and fourth levels of the mine. The lowermost level of the mine (sixth level) has been driven to intersect a mineralized vein structure. Although this vein structure was previously believed to be a continuation of the Golden Wonder vein, there exists certain evidence to suggest that this may be part of an auxiliary vein system, and the main Golden Wonder vein may not have yet been penetrated on this level. Limited diamond drilling within

the mine has encountered multiple vein structures. In a short crosscut driven off the sixth level of the mine, another auxiliary structure has been discovered which is characterized by the presence of an abundance of elemental gold mineralization. Crosscutting brecciated structures have been recognized on the sixth level of the mine, comprised of gold-mineralized rhyolitic breccia fragments contained within an argillic matrix which is devoid of gold mineralization. Mine studies have suggested that these mineralized breccia fragments may have been derived from a source area below the sixth level of the mine. It is believed that the mineralized vein system in the Golden Wonder mine extends to a yet undetermined depth below the sixth level of the mine. Additional exploration within the mine may well reveal the presence of additional similarly mineralized vein structures.

Although the Golden Wonder mine has earned a reputation for its high grade gold-silver telluride mineralization, similar high grade mineralization has been found in the Golden Fleece mine. Additionally, gold telluride mineralization has been recognized at the Gold Quartz mine and at a number of prospects and exposed vein structures on Gold Hill. It is believed that the Gold Hill area is an excellent target area for potential high grade ore bodies. The rhyolite and rhyolitic porphyry intrusion, in which the



Golden Wonder, Gold Quartz, and many of the prospects are located, are of especial interest. Although the exact origin of this intrusive is unknown, it is believed that it may be localized in the ring fracture zone of the collapsed Uncompahgre caldera, and field studies show that this intrusive has very significant areal extent. Recent investigations at the Golden Fleece mine have demonstrated the gold-silver telluride mineralization to be much older than previously thought, and related to the development of the Uncompahgre caldera instead of the more recent development of the Lake City caldera, with which the base metal veins of the lake City district are related. Recent studies have suggested similarities of the structure and mineralization to that of the rich pipe and chimney ores of the Red Mountain district near Silverton, while other investigations have suggested a similarity to a mineralized hot spring environment.

Based on all the knowledge available concerning the characteristics of the high grade mineralization at the Golden Wonder mine and in similarly mineralized mines and vein structures in the area, it is believed that the Golden Wonder mine and its environs warrant detailed exploration as a target for the discovery of additional high grade ore bodies, in addition to those already known to exist within the Golden Wonder but which await extraction.