

Queen of the Hills Project

Data Review & Recommendations

Eureka Mining District
Lemhi County, Idaho, USA

N 45.242250° W113.94550°

Formation Capital Corp., US
812 Shoup St. Salmon, Idaho 83467
November 24, 2009

By
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The Queen of the Hills mine is located about seven road miles from Salmon, Idaho on a combination of paved and good forest road. At the present time the property held by Formation Capital Corporation USA consists of 7 claims owned by John E. Gaston of Fairbanks, Alaska.

The initial claims were located in located in the 1880's and has several names and been operated over several years by several different companies. Umpleby in the USGS Bulletin 528, page 158, 1913 states:

"The Queen of the Hills mine, owned by the Copper Queen Mining & Smelting Co., is situated 7 miles northwest of Salmon at an elevation of 5,800 feet on Dryer gulch. Location was made in the early eighties but active development did not commence until 1898. Since then, about 9,000 feet of work has been done, the mine being opened on five levels and to a maximum depth of 400 feet. The production is about \$80,000 in gold bullion, most of which has been extracted by a 15-stamp mill situated on the property.

Three veins, all in granite, have been explored. The strike N27E and one (Queen Vein) dips $80^{\circ} = 85^{\circ}$ SE; the other two (Nellie and Eva veins) dip in the opposite direction at about the same angle. The Eva, the most westerly vein, occurs as a band of quartz 8 to 14 inches wide, following one or the other wall of a 5-foot brecciated zone. The Queen (the central vein) follows a zone about 1 foot wide, possibly one-half of which is made up of quartz, either as distinct bands or filling interstices between granite fragments. The Nellie vein is similar to the Queen.

The ore occurs in shoots, five of which have been found--two in the Nellie vein, two in the Queen, and one in the Eva. They all pitch from 45° to 55° S. In the the quartz is of the coarsely crystalline variety common to all parts of the vein, but scattered through it irregularly are crystals of pyrite, chalcopyrite, and a little galena, together with their oxidation products, chief of which are limonite and malachite. Gold is thought to be associated with the pyrite, for it is said to vary in amount with that mineral. The average gold content for the Eva shoot is said to be \$3.50 per ton, though in a small stope near the surface the average was \$18 and in another on the fifth level it was \$19.40 per ton. The better ore in the Nellie vein is said to run from \$5 to \$8."

The U.S. Official Price for gold in 1880 through 1933 was \$20.67 per ounce. The grades reported in the Umpleby report range from \$3.50 per ton (0.169 opt) to \$19.40 per ton (0.938 opt) with the average range for the Nellie between \$5 and \$8 per ton (0.241 to 0.387 opt).

In the Idaho Geological Survey Staff Report 91-16 titled History of the Queen of the Hills Mine, Lemhi County, Idaho, Victoria E. Mitchell outlines the history of companies known to have operated the Queen of the Hills mine as well as the known aliases of the mine itself. The mine has also been known as the Amagosa, Copper Queen, and the Queen and Crescent or Last Chance. The mine was first operated by the Queen & Crescent Mining Company, date of incorporation unknown. It is believed the company operated the mine during 1905 through 1907? The mine was operated by the Copper Queen Mining and Smelting Company from 1907(?) through 1921(?). Between 1926 and 1929 the mine was leased by either the Golden Queen Mining & Milling Company or the Gold Ore Mines of Idaho, Inc. . Between 1938 and 1942 the property was controlled by Frank Glennon, and Joe Hughes, and Carol Medbury.

In the 1903 Idaho Mine Inspectors Report, the Queen of the Hills mine was being mined from a 300 foot deep shaft and the company was developing the cross cut to access the 400 level. This was to increase access, water drainage, and haulage costs. In the 1907 IMIR report the indicates that the grade of the ore had increased on the 400 level. Mention is also made of "several other strong fissures in addition to the main vein". By 1909 development on the 400 level had encountered 5 ore shoots totaling 1000 feet in length. From an old map it appears that the strike of the Queen vein exceeds 1600 feet. It is not known what controls the extent of the vein in the mine. At one point the Queen vein has been faulted and offset a small distance. It was felt that the Eva and the Queen veins would converge together in about 200 more feet of depth.

The mine closed around 1910 and was operated intermittently through about 1942. In the 1980's Gaston did some rehabilitation work on the portal, but was unable to access the stoping areas of the mine because of ground failures in the stoping areas.

The total reported production from the mine given in the IGS Staff Report 97-16 is as follows; "between 1909 and 1947 11,654 tons of ore, 6 tons of reprocessed tailing, and 30 yards of placered tailing. This material yielded 1,713 ounces of gold, 364 ounces of silver, 188 pounds of copper, and 6,993 pounds of lead.

Several studies have been completed on the Queen of the Hills property by Formation Capital employee, or consultants working for Formation Capital or one of Formation's joint venture partners. The first report believed to have been written around 1989 by Formation Capital at the time of acquisition. The conclusion of this report is as follows:

"The Queen of the Hills Mine is well situated in prime exploration country and offers an excellent opportunity for the discovery of a large gold deposit. Past production of over 75,000 ounces of gold gives some indication of the properties potential. Most of the underground workings are in good shape and are easily accessible allowing for efficient exploration and development."

J. Douglas Blanchflower, published a report titled "Geological and Geochemical Report of the Queen of the Hills Project" for Jetta Resources Limited dated **July 8, 1991**. This report covered the Queen of the Hills mine and the Tendoy mines which are located to the north and on strike with the vein structures in the Queen of the Hills. Since this report the Tendoy claims have been dropped. Structures on these properties trend with the NE striking Trans-Challis faults or the NW striking Trans-Lemhi system. The Queen, Nellie and Eva veins of the Queen of the Hills mine all trend in the northeasterly direction. The Queen property was the most extensively developed mine in the Eureka Mining District, which consisted of the three main veins, the Tendoy property has seven vein on the surface which have been rudimentarily explored using adits, short shafts, and trenches. No modern exploration drilling has been done to date on any of these properties with the exception of 5 poorly placed RC holes from the area of the Silver Queen Shaft. The mineralization section from Blanchflower's report is as follows:

"Mineralization

Limonic fracture coatings and disseminations are often the first indication of the presence of an altered and possibly mineralized structure. Goethite and hematite are usually more restricted to the structures themselves and the immediate alteration selvages.

Pyrite, chalcopyrite, and minor galena, arsenopyrite and sphalerite are the most common sulphide minerals. Pyrite occurs as fracture fillings and disseminations and is most often associated with fracture infilling quartz and calcite within fissure veins and stockworks spatially associated with faults shears and fractures. It may represent up to 5 per cent of the rock volume but more commonly it varies from less than 1 to 3 per cent. Chalcopyrite and lesser galena, arsenopyrite and sphalerite occur associated with pyrite, quartz and calcite as very fine to fine grained fracture filling and disseminations.

Based on the geological and geochemical results, gold and silver values appear genetically and spatially associate with sulphide mineralization and their oxidation products. There is a very close geochemical association of gold values with high copper and lead geochemistry which the miners obviously recognized. In the Tendoy No. 1 adit, the most extensive workings and highest gold lithogeochemical results are where the writer observed malachite within the fissure veins. Further most of the higher gold lithogeochemical results show correspondingly high lead values; although, the sulphide mineralization in these samples was too fine-grained to distinguish their mineralogy.

Coarse particulate native gold was discovered in mine dump material at the northeastern of the Blondie Zone. **The most notable specimen contains a native gold nugget that measures 5 mm in diameter and approximately 1 to 2 mm thick.** It has a dark gold yellow colour; probably indicating a high fineness. Other **visible gold** specimens from this dump were usually less than 1 mm in diameter. They are all hosted by hematitic chalcedony veins infilling intensely sheared and altered quartz monzonite. Based upon the thickness of the chalcedonic vein float the individual veins could be more than a foot thick, but the adit is completely sloughed-in so no bedrock samples of the veins or the shear zone could be collected. A grab sample (sample 9112-51) of apparently **unmineralized** vein material from this mine dump returned a gold analysis of 8,320 p.p.b. (0.243 o.p.t.) gold. Other samples that were collected from within the Tendoy No. 1 adit and the Tendoy No. 2 winze which returned gold values in excess of 1 o.p.t., had very fine-grained sulphide mineralization and no visible gold."

Also directly from Blanchflower's conclusions:

"The results of the 1990-91 exploration program show that there are at least ten old-bearing shear-hosted vein structures on Queen of the Hills - Tendoy property over a northeasterly distance of 8,800 feet, and that several of these structures have the dimensions and grades to host sizable bulk tonnage gold mineralization. Five high priority target areas have been identified with good to excellent exploration potential, including: the Tendoy No. 1, Queen-Nellie, Tendoy No. 2, Blondie and Tendoy West areas. All of these target areas have favourable geologic settings, known gold-bearing mineralization, evidence of past production, and very positive exploration results. Further detailed exploration, especially trenching and drilling, is certainly warranted and recommended."

Blanchflower continued the next exploration season to dig trenches on the Blondie and other Tendoy properties. His recommendation at the end of this season was virtually to abandon the property or spend a lot of money on a drilling program he could not

guarantee. Blanchflower is correct, this property nor any property in this district will make a large open pitable low grade gold mine. Every geologist describes the depositional setting as being a structurally controlled narrow vein systems which are silicified, hydrothermally altered and bear sulphide and gold mineralization in the quartz veining. The Queen of the Hills vein systems as well as the observed veining along miles of strike is what should be expected from a depositional system such as the one found in this area. In order to test for ore shoots, recover data relating to the controlling structure in the area the ground in question must be diamond drilled. It is fortunate to have this type of ore body possible this close to an infrastructure that has already been developed along the Salmon River Valley.

It is believed that good potential for increased gold grade exist below the 400 level. Not only are the Eva and Queen expected to converge at depth, but they should also converge along strike to the south (in house 1992). One target suggest for further investigation in the afore mentioned report was the northerly extension of the Queen structure exposed in a pit 1000 feet from the present workings.

In the 1992 in house report there is a list of five different lode gold deposits found in the Salmon area they are: 1) quartz veins and stockworks in adamellite, containing pyrite, sphalerite, specularite, and minor galena; 2) replacement veins along fault planes in meta-sedimentary rocks and adamellite, containing quartz and pyrite; 3) replacement deposits along a shear zone in schist, containing garnet, epidote, and magnetite; 4) mineralized lenses in schist and probably monzonitic rocks, possibly the source of much of the placer gold; 5) quartz veins along adamellite dykes, containing chalcopyrite, sphalerite, and subordinate pyrite and galena. All five types are reportedly of equal economic importance as lode gold producers (Ross, 1941) do not know where this came from.

It appears that the Queen, Eva and Nellie veins of the Queen of the Hills mine would be of the second on the list. A replacement vein along fault planes in meta sedimentary rocks and adamellite, containing quartz and pyrite.

The veins at the Queen of the Hills are entirely in granite. Also the face of the Tendoy #2 adit is also in intensely altered granite. In the FCC 1992 report there are five different exploration programs proposed. This report is obviously attempting to make the properties (Queen of the Hills & Tendoy) into bulk minable properties. This report also demonstrate that where the higher grade ore shoots have been found is also where an underground mine would expect to find higher grade, at the junctures of veins and at the points of dilation on the existing veins. Dilations are usually caused at flexure points along the strike of the veins. Dilations can also be found at points where the faults have been folded through tectonic movements.

- 1) surface geology has been investigated by several geologist with the same conclusion, this is not an open pit deposit
- 2) Gold exists from the Leesburg area through the Gibbonsville area following a wide trend on strike with the NE trending Trans Challis fault

- 3) Gold is hosted in replacement quartz veins, hosted in granites in the NW trending Trans-Lemhi, NE trending Trans-Challis, the Sharkey Shear Zone, and link structures between the systems.
- 4) Several targets exist with unknown past production, adits, shafts and very limited historic information
- 5) Very limited modern exploration has been used to explore vein systems from the surface. No diamond drilling.
- 6) Areas of interest are very accessible to a diamond drill
- 7) Our property position is minimal
- 8) Claims should be expanded carefully to cover the known veins, extensions of known veins.
- 9) Map needs to be developed which contains the known veins w/strike, dip, with, host rock, strike length, rock composition, host rock, grades, and constituents
- 10) Adits are available to be reopened on the Queen of the Hills property and possibly the Giltedge and Tendoy properties.
- 11) Outline exploration program; expectations of the programs, targets, geological information collection, reporting and analysis of information collected. locations, costs.
- 12) Properties in consideration; Queen of the Hills, Giltedge, Tendoy, King Solomon, Red Cross, Bromide Silver,
- 13) Thorium people are staking claims in the Tendoy area.
- 14) Outline possibilities