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Subject: Silver Hill area, Aurora district, Mineral County, NV.

Electra's efforts

Electra's unsuccessful forays into the Silver Hill area in 1983 & 1988, when contracts were signed with only 4 of 7 claim owners, emphasized the difficulty of attaining an adequate land position. Both campaigns failed.

In 1983, 3 vertical r.c. holes were drilled on the Utah claim of J Peters, for a total of 320 ft, cutting the strong Cortez-Utah vein below old workings, but without result. Adits at 2 levels and tunnels along the vein were sampled, but were barren (Report by A Glatiotis, Feb 29, 84, and recent comments). It seems the stopes were confined to narrow root-zones.

In 1988, several r.c. holes drilled on the Lab claims further S also failed to find ore. No work was done on Clifford Green's claims (Lady Jane, Cortez) or on Inter-mountain Resources' 13 claims other than a little (valueless) geology and geophysics by Stan Reamsbottom.

Recent activity

This summer Alex von Hafften has explored his newly staked "Von" claims along the foot of Brawley Heights, several old patented claims sub-leased from Nevada Gold-fields (Esmeralda, Ruth, South End), as well as his older claims (Hornet, etc), which form a contiguous group at the extreme SW end of Aurora. The work was carried out by Ed Lawrence, consultant geologist with offices in Winnemucca NV and Birmingham AL.

Lawrence began by resampling the 5-6 adits that penetrate Silver Hill. The longest, starting from the Clarence claim on the northern side of Silver Hill, extends over 1,900 ft southwards, crosses the Cortez-Utah vein and cuts the big quartz veins that outcrop on the hilltop, but without values (also sampled in 1983). Others, driven NW from the southern side of the hill, also cut the vein systems, but again without values.

Lawrence drilled 12 inclined r.c. holes into the Esmeralda vein, which has a massive outcrop of quartz 10-30 ft wide by 500 ft long and up to 25 ft high, and into its possible SW extension towards Brawley Heights. The latter were totally barren, with different volcanic rocks, and indicated that the geology of Brawley Heights is not the same as the Aurora district, perhaps with an erosional or fault contact.

Several holes into the vein were no deeper than adits, and cut quartz without Au. Others were a little deeper, and cut less quartz. One hole, close to an old shaft, had one 5 ft sample with over 1 oz/t Au, but lacked support from other samples or holes nearby. Mineral County data indicate that the Esmeralda produced 2,333 oz of Au from 3,504 t of rock between 1886-88, for a grade of 0.665 oz/t, and that seems to have exhausted the potential.

Lawrence's policy had been to find easily mined ore, probably for sale to N.G. or for heap leaching. But his holes really showed no more than is visible in old workings, where a few tons of high grade had been mined in isolated shallow pods, probably derived from secondary enrichment. I doubt if work will continue.

Geological conclusion

I've been through all the adits on Silver Hill and compared the many quartz veins that are visible with those that outcrop on the hill above. Veins which are massive on surface become more like stockworks at depth, with many wide open fractures now filled with clay from percolating rainwater. The lack of attempts to widen adits or make raises indicates the old miners found nothing of value, confirmed by recent sampling campaigns by at least 3 companies.

The last serious workings going SW are tiny shallow stopes on the Cortez and Esmeralda veins, but values failed 50-100 ft below surface. Judging from its name, Ag must have more abundant than Au on Silver Hill.

The Aurora district seems to have been tilted after ingress of mineralization, with the NE end dropping and the SW end rising. The highest level of mineralization, and therefore the most complete hydrothermal system, is preserved in the East Humboldt vein, despite its lower elevation, with Au continuing for a height of about 600 ft. Below that level, Au values are confined to rich but discontinuous roots, then diminish rapidly. Ag will continue a little further. At greater depth, even big quartz veins lose their coherence, giving way to smaller veins, open fractures and gouge seams.

On this interpretation, rich ore reached less depth from surface going from NE to SW across the district, with ore zones being more deeply eroded despite their higher elevation. The great Del Monte mine on Last Chance hill reached 500 ft, but smaller workings further SW were shallower, the last being the Cortez and Esmeralda. On Silver Hill, only the roots of the system are seen, and little mineable Au remains.

Recommendation and comment

On Silver Hill and the southern part of Middle/Summit hill, do nothing, but watch other people's efforts. The many claim holders still have dreams, and perhaps front-end payments from newcomers to the district may be their only reward.

The reputed former richness of the Aurora district - in excess of 1,400,000 oz of gold mined from 1859 to 1869 - is certainly a myth. The Mangum mill from 1914-18 treated some 659,027 t by stamp and ball mill and cyanide circuit, mostly from the

West Humboldt vein, some from the Prospectus and a little from the Juniata, all u/g. The recovered grade was 0.136 oz/t equivalent Au; since the tailings contain very little value, a recovery over 90% can be supposed, for a mine grade of about 0.150 oz/t. Total Au production in the 5 years was 89,402 oz, which was a remarkable achievement - A.P. has produced 66,449 oz Au in 3 years !

Comparing figures, it seems doubtful that the Aurora district could have produced much in excess of 300,000 oz before 1900, despite the extraordinary richness of the old Del Monte mine and multiplicity of small workings, yet with lower recoveries. The figures quoted for Mineral County must include production from elsewhere.

Nevada Goldfield's recent exploration.

N.G. drilled 2-3 r.c. holes on Summit hill - next east of Silver Hill - on ground that seems to lie in Mrs Winslow's claims, without agreement, and also without result.

N.G.'s geologist, Clint Milne, took me down their new decline at the W end of the Juniata pit. The vein varies rapidly in dip ($20-50^{\circ}$), strike and thickness, and is cut by numerous faults in odd directions. The decline is no more than a gopher hole, 12 x 12 ft in X-section and 250 ft long, twisting and turning to follow the vein. Dilution must be high, and reserves limited to a few hundred tons.

The nearby Philadelphia openpit, west of the Juniata pit, has similar problems, but with many small veins already stoped out. Again, reserves must be limited to a few thousand tons.

According to Milne, N.G.'s hopes lie in the known tonnage - 50,000 t ? - lying between the bottom the Prospectus pit and the u/g workings, which they will mine when Honeywell has finished stripping the walls of the pit. Milne also has high hopes for proving a W extension to the Prospectus vein towards the Aurora townsite, beneath low-grade rocks at surface, perhaps 100-200 ft deep. He has not yet had funds to drill the area.