

## ABSTRACT

The recently discovered Mahogany Mountains hot-spring gold prospect is located within the mid-late Miocene (Barstovian) Succor Creek Formation of the Owyhee region of southeast Oregon and southwest Idaho. Unconformities within the Succor Creek Formation indicate that Basin and Range-type normal faulting was syndepositional. The DeLamar Silver Mine, 40 kilometers to the southeast, is hosted by porphyritic rhyolite which possibly interfingers with the volcanoclastic sandstones and tuffs of the Succor Creek Formation.

Lithologies mapped include lithic tuff; interbedded vitric tuff and tuffaceous sediments; basalt flows and dikes; coarse-grained volcanoclastic sediments and a variety of breccias. Mineralization is hosted by a stratigraphically low unit of thick (75 meters) lithic (palagonitic?) tuff, which has been severely altered to zeolites, calcite and clays.

Major structures in the area are down-to-the-east normal faults which trend approximately north. The deposit itself is localized at the intersection of two faults, one of which is a prominent north-trending normal fault. Repeated overpressing and fracturing has resulted in concentrations of gold values of up to 7400 ppb which are confined mainly to stockworks, banded quartz veins and breccia dikes within the lithic tuff.

Rytuba et al. (1985) have mapped the Mahogany Mountains caldera, the eastern rim of which lies less than 5 kilometers west of the Mahogany prospect. The thick sequence of predominantly water-laid ash-fall tuffs and lithic ash-flow tuff in the study area could be outflow facies related to caldera collapse.