

# State Department of Geology and Mineral Industries

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## SENATOR DUNCAN'S QUICKSILVER PROSPECT

Visited: November 25, 1939  
Nixon and Treasher

Name of property: SENATOR DUNCAN'S QUICKSILVER PROSPECT.

Operating company or individual: Senator Rober M. Duncan and G. Earl Hagey.

Address: Burns, Oregon

Location of property: SE $\frac{1}{4}$ , T. 23 S., R. 29 E., about 5 miles west of South Burns, and about 2 miles off the Burns-Bend Highway on the north side. Harney.

Acreage of holdings: Patented land owned by a land grant company. May be purchased by Duncan.

History of property: Was prospected and a shaft sunk a few years ago by men looking for gold. It was then abandoned. Recently a prospector, working for Senator Duncan panned the dump and found quicksilver present. Property now under option of purchase.

History of production: No production.

Development: One shaft about 25 feet deep with cross cut east at the bottom about 20 feet long. Bottom of shaft is partially back-filled so that crosscut seems lying at an incline.

Equipment: None. Topography: Rolling mesa type. Country rocks: Acid tuffs of various kinds. Elevation: About 5,000 feet. Timber: None. Water: Would be served by thermal spring within a mile. Snow fall: and Climate: Same as at Burns. Power: Could bring in power from South Burns.

Geology: Shaft is in a shallow wash. Location selected as result of panning the was for gold. Shaft is located a couple of hundred feet west of a series of hard tuff exposures which cap or pour the ridge. At location of shaft, the four or five feet below grass roots are a hard capping of consolidated caliche-like opalized tuff or opalite. Beneath this is very badly fractured and granular acid tuff carrying some opalitic material and alleged to carry up to 14 or 15 pounds of quicksilver per ton. Entire series cut by shaft seems to have been hydrothermally altered. One band (sampled) shows white talcose member with very little grit.

## SENATOR DUNCAN'S QUICKSILVER PROSPECT (cont.)

Regional geology is unknown to me (Treasher). The rocks are volcanic and consist of salic pyroclastics and flows which tend to form rimrocks. At the west side of the ridge and also forming the top is a salic flow (?) with a burned contact with tuff. Contact dips E. or NE at about 15°. This flow (?) may be a reconsolidated tuff--consolidated while tuff was hot. Bits and chips of obsidian are scattered over the surface but none could be found in place. Along E. side of the ridge, a fine-grained, dark-colored lava (basalt?) is highly fractured into  $\frac{1}{4}$  inch plates that are standing on end. This may represent a dike or a fault zone.

The tuff is resilicified in upper portions; forming an "opalite." Lower portion is less silicified and somewhat broken. Sequence is interpreted as: tuff was invaded from below by thermal waters which abstracted silica. Solution became more concentrated in silica until deposition and solution became nearly balanced. Solutions outcropped near the surface and excess silica was deposited as sinter and as opalite. Cinnabar-bearing solutions invaded the tuff, the opalite acting as a sort of capping, and cinnabar was deposited in tuff and in opalite. (See discussion of Analyses.)

Analyses: State Assay Laboratory reports 12# Hg in opalite and 12# Hg in tuff. Thermal solutions, carrying mercury, may have deposited cinnabar contemporaneously with a development of opalite.

Metallurgy: Ore is normal opalite type, could be crushed and retorted like any quicksilver ore.

(Treasher)--None at present but in event of operation, it is planned to retort the cinnabar at the property.

Remarks: If samples taken indicate a few pounds of quicksilver per ton, plan of development, including cross cutting and test pitting, should be outlined; might indicate a substantial open pit operation.

(Treasher)--If the ore proves to be of commercial grade, there should be a fair tonnage "in sight." It is doubtful if the ore will increase in value, and may decrease with depth if the interpretation of method of silicification is correct. Fuel is scarce--scrap from a Burns mill, or fuel oil. Mr. Duncan is quite enthusiastic about the quantity of ore present, --at least as to the quantity of tuff available to act as a carrier of cinnabar if cinnabar vapors were widespread in their occurrence. Only drilling or other prospecting will prove this point.

At the locality visited, mining methods could probably be reduced to open-pit variety and tuff might be handled by steam shovel operations. Mining costs should be low.