

State of Alaska
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A NEW ORE MINERAL OCCURRENCE AND GEOCHEMICAL
ANOMALY IN THE SLANA AREA

by

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During the course of the Alaska Division of Mines and Minerals 1963 geologic investigations in the Slana area by D. H. Richter with the aid of Walter Phillips, field assistant, a silver-lead occurrence and a strong geochemical anomaly were discovered. These discoveries warrant further exploratory work. The Slana area lies south of the main part of the east end of the Alaska Range between the Chistochina River and Lake Mentasta. In the area of the discoveries the country rock is composed principally of interbedded sediments and volcanic flows; to the north and west large igneous intrusives ranging in composition from diorite to quartz monzonite are present. A number of base metal-silver vein deposits have been prospected and a few gold placers have been mined in the area. The discoveries reported here are accessible by trails leading north from the Glenn Highway near Ahtell Creek (Figure 1). This is the first public release of this information.

Silver-lead prospect: A quartz vein containing minor galena but assaying relatively high in silver outcrops on a steep hillside

about 500 feet northeast, and 200 feet above, a small lake $2\frac{1}{4}$ miles north of mile 58 on the Glenn Highway (Figures 1 and 2). Elevation of the vein outcrop is approximately 3,300 feet. The lake shown in the SW part of Figure 2 is the tiny lake found on the Gulkana (D-1) quad at approximately 14.8 inches east of the west edge of the map (which is the $144^{\circ}30'W$ Long line) and 0.1 inch north of the south edge ($62^{\circ}45'N$ Lat).

The quartz vein, which is poorly exposed over a length of approximately 10 feet, trends northeasterly and has a width of at least 5 feet. Reddish calcareous mudstone forms the hanging wall, which strikes $N52^{\circ}E$ and dips $80^{\circ}NW$. A gray siliceous tuff probably forms the footwall, but the actual contact is covered by talus. The vein is composed principally of limonite-stained massive milky quartz. Vuggy zones lined with quartz crystals are common and patches of coarse white calcite are occasionally present. Coarsely crystalline galena, constituting not more than 5% by volume of the vein material, appears to be restricted to a 2-foot zone along the hanging wall. No other sulfide minerals were observed. A number of thin and apparently barren quartz veins are also present in the tuff 10 to 15 feet east of the main vein.

A 3-foot channel sample across the galena-rich portion of the vein assayed 19.8 oz. silver and 1.6% lead. A one-foot sample containing more visible galena assayed 21 oz. silver and 2.4% lead. Both samples contained a trace of gold. Although silver-bearing tetrahedrite has been reported from the area, preliminary laboratory studies of the vein material indicate that the silver is present in the galena.

Two pyritized and limonite-stained areas occur in the vicinity of the vein (Figure 2). A small outcrop of greenish-buff grit (?) containing abundant pyrite is exposed on the wall of a small ravine southwest of the vein, and a larger area of pyritized sediments is exposed along a hornblende diorite porphyry dike northeast of the vein.

A sediment sample from the lake below the vein outcrop indicated enrichment in copper and zinc. No lead was detected.

Geochemical anomaly: A geochemical anomaly of unknown origin occurs at the head waters of Willow Creek, a southeasterly flowing tributary of Ahtell Creek (Figure 1). Stream and lake sediment samples indicate an anomalous concentration of zinc extending over a length of 4,000 feet but apparently confined to the main Willow Creek drainage (Figure 3). The area surrounds the lake located in the SW corner of the Nabesna (D-6) quad at 1.1 inches east from the west edge ($144^{\circ}00'W$ Long) and 0.6 inch north of the south edge of the map ($62^{\circ}45'N$ Lat). One sample (A-8, Figure 3), which contained a very high concentration of zinc, was also enriched in copper and lead.

The immediate anomaly area is underlain by thin glaciofluvial deposits; the country rock of the drainage area consists of interbedded sediments and flows that strike northeasterly and dip moderately to the southeast. No base metal deposits are known to occur in the drainage area.

The Division of Mines and Minerals plans to carry out a detailed soil sampling program over the anomalous area during the 1964 field season.

FIGURE 1

INDEX MAP
Slana area, Alaska

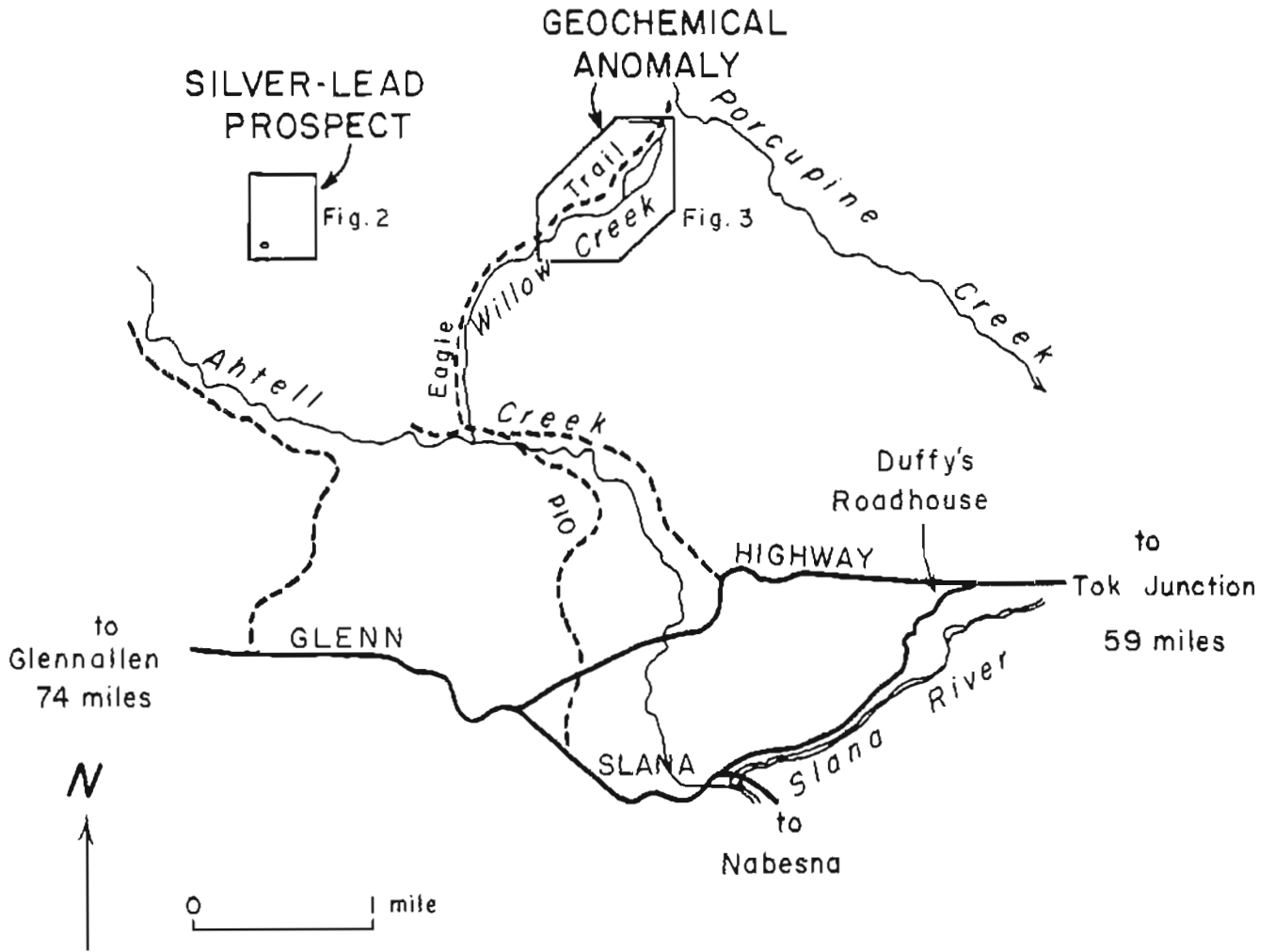






FIGURE 2

MAP
of
SILVER-LEAD PROSPECT
Slana area, Alaska

-  Hornblende diorite porphyry.
-  Pyritized sediments with strong limonite staining.
-  12 Strike and dip of bedding.
-  Fault, known and inferred.

