PE-049-17

REPORT ON THE EXAMINATION OF TRENCHES AT THE TOLOVANA MINE, LIVENGOOD QUADRANGLE

The Tolovana Mine is in the southeastern part of the Livengood quadrangle at 65° 03' N latitude and 147° 27' W longitude. It is in the northeastern part of Section 25, Township 3 north, Range 1 east, Fairbanks Meridian. The mine is at 1300 feet altitude on the right limit side of Willow Creek, tributary to Cleary Creek. It is accessible by automobile from the Steese Highway by way of the Cleary Hill Mine road and a trail up the valleys of Cleary Creek and Willow Creek. The distance by road from Fairbanks to the mine is 30 miles.

The Tolovana is one of the better-known lode-gold properties in the Fairbanks District; it was in production for several years prior to World War I. It was described by Philip S. Smith in U. S. Geological Survey Bulletin 525, 1913, pages 183 to 185, and by James M. Hill in U. S. Geological Survey Bulletin 849-B, 1933, pages 91 and 92. Underground workings described by Smith and Hill are no longer accessible, and buildings on the property have deteriorated beyond use.

The property now is owned by Malter Lindgren of Fairbanks. Recent work on the property has included trenching on the hillside above the old Tolovana portal. The trenches were examined on June 19, 1963.

One trench, about 100 feet higher in altitude than the old portal, has exposed a short segment of a gold-bearing quartz vein. A pit has been dug by hand in the bottom of the trench to excavate part of the vein. The vein in the pit is 12 inches wide; it strikes N 60° E and dips 80° S. Northeast of the pit the vein can be traced along the bottom of the bulldozer trench to a point 15 feet from the pit; there it pinches out. Southwest of the pit the vein can be traced 30 feet to a fault. The exact point of intersection of the vein and the fault is not exposed, but the vein probably has been offset by the fault. Digging in line with the vein southwest of the fault has failed to uncover any vein material. The fault is exposed for a few feet along the bottom of the bulldozer trench. It appears to strike about N 60° W; its dip is not apparent in the present exposures. A large amount of gouge lies along the fault.

According to the owner, samples have indicated that the vein carries $300 per ton in gold. No samples were taken during the examination; however, free gold is visible in fractures in the quartz, and it is obvious that the vein is high-grade. While digging the pit, the owner selected specimens from the vein and sold them to a Fairbanks jeweler, who cut and polished them and sold them as souvenirs. Five to ten tons of broken vein material is in sacks and piles in and around the trenches. This ore eventually will be either milled or shipped to a smelter.

Twenty feet north of the hand-dug pit on the high-grade vein, another vein is exposed in a bulldozer trench. This second vein is five feet wide. It strikes east-west; its dip cannot be determined. The owner reported that samples taken from this vein have assayed from $1 to $3 per ton.

In U. S. Geological Survey Bulletin 525, Philip S. Smith described the vein in the Tolovana Mine underground workings as consisting of small quartz stringers one to three inches wide separated by considerable thicknesses of schist. The two veins now exposed consist of quartz from wall to wall with no intervening bands of schist. The vein underground strikes east-west and dips 60° S; thus, it is parallel, at least in strike, to the wide vein in the trench. Smith reported that, 130 feet in from the portal, the vein in the underground workings was cut by a fault that offset the vein 30 feet to the north. The same fault was encountered in workings 50 feet below the adit. The strike and dip of the fault are not stated. The information presently available is too meager to indicate what relationship, if any, exists between the fault encountered in the underground workings and the one now exposed in the trench.

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