12.3, 7.5

PE-112-09

134°41'W
58°15'0

PRELIMINARY REPORT OF AUKE GROUP, AUKE BAY, KX 112-48
JUNEAU GOLD BELT, ALASKA
June 12, 1937.

112-9

48

Location and Accessibility:

The Auke group of claims is located 3 miles northwest of Auke Bay, which is located 12 miles north of Juneau, Alaska. An old road leads to the lower end of the group, beginning at Mile 13, Glacier Highway.

History:

This group contains the two old prospects originally called the Gold Knob and Treasury Hill. The discoveries were made by Vic Spaulding and Perry Wiley, partners, during the summer of 1908. Considerable stripping was done during the remaining season. James Bradley examined the property this same year. Canadian Exploration Company obtained an option at this time. Representatives Irving and Pierce started the lower long tunnel below the Gold Knob showings. The following year this company sold their option to a London company. This company was represented by D. Moering and the Gold Knob tunnel was driven its present length over 700 feet. This company held the property for two years. The property was examined by Thayer Lindsley in 1913. The same year it was optioned by J. B. Thompson, representing the Hammond interests. H. R. Platts was engineer and development work started February 1914. This work continued to July, 1914 and the option was again dropped. It was examined and sampled by the Gugenheim interests this same year. From 1914 to 1930 this property has been idle.

In the summer of 1930 the property was staked by A. Zenger and D. L. Dutton. No work was done and the property was restaked by Vic Spaulding in 1935. Since this year annual assessment work has been done, which has consisted of clearing out the old trenches and tunnels.

Owners:

The present owners are the Spaulding family. Vic Spaulding died shortly after this examination.

Development:

The development work prior to 1910 is described in Bull. 502 of the U. S. G. S., "Eagle River Region, Alaska," by Adolph Knopf, pp. 55-57. The Gold Knob and Treasury Hill showings are located 2500 feet apart. On the Gold Knob several opencuts and trenches are scattered along the side of an east sloping ridge. Heavy moss and dense timber has made surface work very difficult. The long crosscut tunnel (Plate No. 1) was driven under the surface showings and has a length over 700

feet with one short crosscut. On Treasury Hill, extensive stripping and trenching was done and two short crosscut tunnels were driven. Only one (note Plate No. 2) remains open, and this has a length of 90 feet and is located only a few feet below the surface.

Geology and Showings:

The showings of the Gold Knob are confined to the sill of Augite melaphyre that extends northwest from Auke Bay. This sill is here inclosed in slate and graywacke schist. Quartz veins, stringers and masses occur in the fractured and altered melaphyre. The general strike of this sill is N. 30 to 40° W. and the dip could not be determined. The width could not be determined due to extensive overburden, however, it appears to have a width of over 200 feet. The long crosscut tunnel, located on the west side of the creek and vertically 200 feet below the showings, starts in a porphyritic diorite dike. This dike has a width of 35 to 40 feet. It strikes N. 32° W. and dips 34° E. The tunnel cuts this dike for a distance of 40 feet and thence cuts interbedded graywacke and gray slates the remainder of its length. The lava sill must apparently dip toward the west as the end of the tunnel is vertically under surface cuts of the melaphyre, and the melaphyre was not intercepted in the tunnel. Nothing shows along the tunnel other than a slight mineralization in some of the schisted slate areas. The major showing of the Gold Knob is a quartz showing in a long curved trench that lies between the discovery posts. This exposure has a length of over 100 feet. To determine the kind of deposit and structure it will necessitate more exposure. It appears to be a flat-lying vein with a flat dip to the northeast. Free gold shows in spots along this outcrop, but channel samples taken over long widths were low in values.

Other quartz showings near the west contact of melaphyre and slate contain visible gold in spots. Due to the filled condition of the trenches, they were not sampled.

The showings of the Treasury Hill discovery are numerous and are confined to a highly altered and fractured greenstone dike. This dike is well described in U. S. G. S. Bull. 502 as follows:

> "The orebody consists of a grayish-green dike cut by quartz veins, generally trending transverse to the course of the dike and ranging up to several feet in thickness. The quartz is white and of coarse texture and in places is heavily charged with coarsely crystalline arsenopyrite. The dike rock is also interlaced with smaller veinlets, of which those under an inch in thickness are composed mainly of calcite and albite. Near the veinlets the rock is considerably impregnated with sharply crystalline arsenopyrite and irregular grains of pyrrhotite."

"Green schists dipping northeastward at a moderate angle form the hanging wall of the dike, but the contact is obscured by oxidation, and it is not improbable that the green schist may represent the sheared margin of the dike. Black slates form the principal country rock in the hanging wall, striking N. 65° W. (magnetic) and dipping 40° N. A diorite porphyry dike is exposed in the creek a few hundred feet to the northeast. The width of the ore-bearing dike is not well shown, but is probably between 100 and 150 feet. The footwall consists of clay slate underlain by greenstone."

This greenstone dike in which the ore and quartz showings occur is exposed over 2,000 feet, of which the following sketch shows a major portion and has a width 150 feet. Its strike is N. 30-35° W. and appears to have a dip to the northeast. The hanging wall is considerably schisted and mineralized. It has been subject to considerable fracturing with most of the fractures across nearly at right angles to the strike of the dike itself. These fractures are filled with a white to milky white quartz. Intersecting fractures formed masses of the same character of quartz. These numerous fractures and fillings account for the numerous showings revealed in the trenches, and the nature of the fracturing accounts for their distribution. Also in the hanging wall schist area, as cut by the tunnel, small veinlets of quartz follow the schistosity. Located 50 feet west of the discovery posts of the Auke claim (note sketch) a small greenstone dike shows in the long cut. This dike is enclosed in black clay slates, strikes N. 35° W. and dips 52° E. It has not been schisted or fractured. It appears of the same color and is porphyritic. In thin section this dike shows porphyritic crystals of augite in a fine ground mass of quartz, feldspar and altered ferromagnesium minerals. This dike appears very similar to the ore-bearing dike. The latter shows very extensive alteration until the matrix shows in thin section mainly altered feldspar, albite, calcite, chlorite, sericite and quartz. Thus, judging from the ferromagnesium, calcium and silica content of this dike with the porphyritic altered crystals of augite, this dike was probably an augite diorite. Numerous small fractures are filled with albite and quartz mixed.

The quartz showings are mainly cross veins, scattered irregularly along the strike of the dike; and have various widths up to a few feet. None were noted in the slate, however, they may exist as the contacts are covered with various shallow depths of glacial moraine.

Mineralization:

The mineralization of the two prospects varies somewhat in the mineral content. However, the quartz appears to be of the same character. A thin section from the 30-inch vein that crosses the cut to the portal of the tunnel on Treasury Hill shows a large well developed

crystal growth and is lacking in fine mineralization. Visible gold is found in an occasional spot and the values are noticeably spotty in both prospects. Arsenopyrite is common in both, but is in greater quantities and larger crystals on Treasury Hill. The gold appears to be mostly associated and contained in the large arsenopyrite crystals. Pyrite is sparsely distributed as very fine crystals in the quartz, but occurs more abundantly in the schist. The Gold Knob veins lack the large arsenopyrite crystals, but an occasional small crystal was noted. Pyrite is also very fine and sparse, and more visible gold was noted in these showings. Pyrrhotite in small amounts with an occasional speck of galena was noted in the ore of Treasury Hill. These minerals were lacking in the Gold Knob showings.

The gangue minerals other than quartz are considerable albite, calcite, chlorite, sericite and altered rock pieces.

Assays:

Assays of samples taken on Treasury Hill are combined with results, localities and widths on the sketch. Wide channel samples were taken where trenches were cleaned out, and known high grade spots were avoided. These assay values do not represent average values for the whole deposit, nor do they represent any continuous orebody, but do show values contained in both veins and mineralized rock at various spots along the dike. These values vary from a trace to .20 oz. gold per ton.

Mr. Spaulding reported that the tunnel was channel sampled by H. Townsend over its entire length across the schist band of the dike and an average value of 77¢ per ton (old price) was received.

Timber and Water Power:

Timber of medium size is available on the lower end of the claim group and considerable could be obtained in the immediate vicinity along the road.

Water power is lacking, however, water for milling purposes could be obtained from the small creek that runs through the property.