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Report On

IAO GOLD PROPERTY

Atlin, B.C.

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Report written for owners' files;
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Dr. A.E. Aho
Consulting Geological Engineer. June, 1961.

SUMMARY

A small piece of float of very high grade epithermal gold ore was found around an altered and mineralized area in serpentine on the Iao property 3 miles southeast of Atlin, B.C.

The source of the float is probably in one of several east-west fracture zones characterized by minor faulting, dikes, and epithermal mineralization.

Some close, careful trenching, bulldozing and panning should be done in an effort to locate the source of the float.

INTRODUCTION

The Atlin gold district of northern B.C. has been a steady producer of placer gold since 1898.

Lode gold prospects of two distinct types occur: mesothermal quartz veins with free gold and sulfides, and epithermal quartz lodes with free gold. The only significant lode production, said to total nearly a million dollars, has come from the Engineer Mine, an epithermal deposit. Quartz

veins on the Iao property and the high grade float found nearby are both epithermal in type.

Epithermal deposits are characterized by fine grained, colliform, or varied mineral textures, open space and fracture fillings, shallow depth (rarely over 1500 feet) and often extreme richness if not erratic values. Most of the bonanza gold and silver camps of the Western States are of this type, but the Atlin district has virtually the only known deposits of this type in British Columbia.

GENERAL INFORMATION

The Iao gold property straddles McKee Creek road 3 miles SE of the village of Atlin, B.C., and can be easily reached by automobile in five minutes. It is situated on an open, rocky, westerly facing bedrock slope partly mantled by overburden and traversed by a small creek which lies only a few hundred feet south of the mineralized area.

The property, consisting of eight claims Iao 1-8 in good standing until March 13, 1962, is owned by T.H. Anderson, Hans H. Buhr, and the writer Aaro E. Aho, each holding one-third interest.

Previous work on the property consists of a 15-foot adit driven ESE on the main NW carbonate zone and a 6-foot-deep open cut on E-W zone No.5; nothing else appears to have been done or reported on.

The writer spent several days on the property with Anderson and Buhr, mapping and working on it in June, 1961.

GEOLOGY AND MINERALIZATION (See Figure 1)

Rocks on the property consist entirely of serpentinite and derived carbonatite zones cut by basic dikes. The serpentinite is cut by two sets of steep- to vertical-dipping fractures -- a general N 55°W set and a local N 50°E to E-W set. In the mineralized locality two or more of the NW zones have been intensely carbonatized and six or more of the E-W zones carry epithermal mineralization and alteration or basic dikes, and show evidence of minor faulting. One area of float and one of outcrop of carbonate occur east of the main mineralized area, on the north side of the creek.

The main NW zone of alteration and mineralization appears to consist largely of intense crystalline carbonatization with development of mariposite and minor pyrite, cut by bull quartz stingers up to several inches wide, striking parallel to the zone with varying dips averaging about 60° northeast. Minor cross-stringers of similar quartz cut the main stringers and these in turn are cut by later chalcedonic quartz seams.

The E-W zones are characterized by weaker, less extensive fine-grained carbonatization of the walls, horizontal slickensided walls, veinlets and lenses of the younger chalcedonic quartz, open breccias, and basic dikes. One appears to have a left lateral displacement of the order of 40 feet. Crusts of chalcedonic quartz coat most of the slickensides. Dikes within these fractures consist of two types: a hard aphanitic to medium-grained basic dike up to 100 feet wide, and friable altered lamprophyre dikes up to 15 feet wide. Minor granodioritic float may also occur as a dike. The basic dikes also cut across the northwest carbonatized zones and are in turn fractured, altered, locally pyritized, and veined by quartz and carbonate.

The younger chalcedonic quartz occurs in light grey to black resinous masses, sometimes drusy or brecciated and veined by dolomite and other carbonate with minor specks of pyrite, an unidentified soft silvery mineral, and rare chalcopyrite. Millerite occurs in a compact variety of this quartz which mingles with the altered wall rock. Nearly all of this quartz occurs along the E-W zones, with the exception of a narrow NW vein on the road and one apparent NE breccia zone on the hillside.

GOLD FLOAT

Near the carbonatized outcrop on the lower road, a very high grade piece of gold-bearing float was found by Hans Buhr. The specimen was an angular, pointed shard about one inch thick and two and a half inches long, consisting mainly of black chlorite heavily disseminated with very fine specks of pale yellow gold, and with one end showing botryoidal and drusy, finely crystalline quartz as a breccia filling, cut by later buff-coloured carbonate with a trace of calcite. One cubic crystal of rare pyrite shows gold along one plane. Minute tabular silvery crystals with one cleavage, apparently very soft and brittle, are probably sylvanite. The black gold-bearing chlorite portion of the specimen assayed about 870 ounces per ton of gold, or over $30,000/ton.

Test pits beside the roads, a strip trench 60 feet long around the float locality, and a few trenches across two of the E-W zones on the hillside failed so far to reveal gold either in pannings or in assays taken from several localities (see Figure 1).

Since both the specimen and the E-W zones have similar epithermal mineralogy, there is little doubt that the float was derived from such a mineralized zone. The repeated movement, dike intrusion, and mineralizing activity along the E-W zones show that these are the most promising to prospect for source of the float. The gold can be expected to occur in a narrow vein either in, or near, such zones.

DIP NEEDLE RESULTS

Sharpe dip needle readings over the intensely carbonatized zones were up to 13 degrees lower than on unaltered serpentine, while less altered serpentine and dikes show a lesser variation, a few degrees lower than the serpentine.

Limited dip needle traversing supplied some of the continuity shown in dikes and carbonate zones in Figure 1. A systematic detailed dip needle or magnetometer survey would be very valuable for tracing the buried mineralized zones once their relationship to the gold mineralization is established.

CONCLUSIONS

High grade epithermal gold-bearing float assaying over $30,000 per ton, found on the Iao property, has probably been derived from one of several E-W epithermal vein and dike zones.

Source of the gold can be expected to be a narrow vein limited in extent but extremely rich.

The property therefore warrants very careful prospecting and exploration on a scale in keeping with the size and value of the expectable prize.

SUGGESTED WORK (see Figure 1)

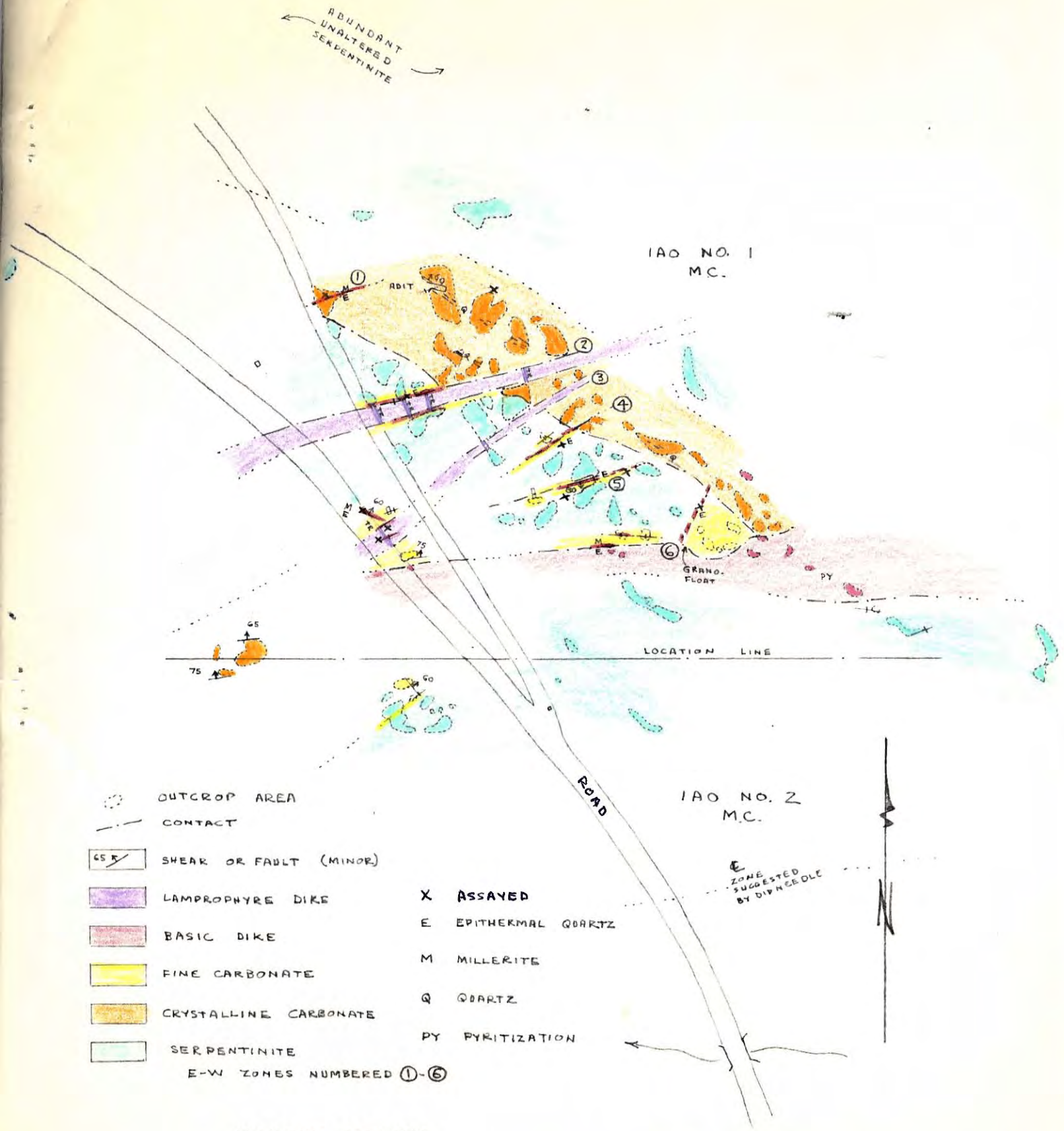
1. All known or suspected east-west zones or any localities of epithermal quartz should be trenched or stripped in one or more sections, and panned in an effort to discover gold-bearing sections.

2. If this hand work fails to lead to the source of the float, a few days' bulldozer trenching should be carried out to reveal continuous exposures across the strike of the zones near the float locality. All exposures should be meticulously cleaned, inspected, panned, and checked by assays where warranted.

3. Detailed dip needle or magnetometer work should be very useful to trace buried zones once their relationship to source of the gold is established.

A.E. Aho

Vancouver, B.C.
June 20, 1961.



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GEOLOGY OF MINERALIZED AREA
IAO GOLD PROPERTY

ATLIN, BC

SCALE 1 IN. = 100 FT.

A.E. AHO JUNE 17/61