

Ladue District

Avalon Development Corporation

Summary Report 2015

The Peak zone gold-copper-silver deposit was discovered by Avalon Development on Contango ORE's Tetlin project in the summer of 2012. This high grade gold mineralization (783,115 Au-equiv. oz @ 4.08 gpt Au-equiv.), with variable copper and silver values, is unique in Alaska. Nothing like it has been described previously in Alaskan literature and none of the currently known gold deposit models are permissive for the type of mineralization encountered at the Peak zone. Because of its unique geochemical signature, Avalon Development has conducted a review of existing geological, geochemical and geophysical databases to see if other areas of Eastern Interior Alaska host occurrences that may in fact be similar to Peak zone style mineralization.

The possibility that Peak zone style mineralization has been overlooked is enhanced by the fact that Eastern Interior Alaska was the site of intense porphyry copper exploration in the late 1960's to mid-1970's but during this period, geochemical analyses were commonly restricted to copper, molybdenum and in some cases, lead, zinc and silver. Gold and gold pathfinders such as those present at the Peak zone, including arsenic, bismuth, tungsten, tin, cobalt and antimony were not analyzed for during this period, primarily because of the low price of gold and the high cost of multi-element analyses. Numerous copper prospects were discovered during this period and a few of these targets were drilled, but other than the Taurus deposit, none have moved beyond the preliminary exploration stage. Most of these targets have not been explored in this century. All of these copper occurrences were classified as possible porphyry copper deposits, due partly to the porphyry copper exploration frenzy of that period and to the fact that copper was sometimes the only metal sought and therefore, the only metal detected.

Avalon Development's knowledge of the Peak zone mineralization currently gives them a significant advantage over their competitors in the mineral exploration sector. For this reason a thorough search of known copper prospects in the Ladue district of the Tanacross and southern Eagle quadrangles was made using Avalon's internal GIS database. The results of this effort suggest several areas of the Ladue District are prospective for gold-silver-copper mineralization, perhaps genetically similar to that at the high grade Peak zone deposit. The Ladue District is bordered by the Alaska Highway which crosses from east to west through the southern margin of the study area, the Taylor Highway which crosses from north to south through the western and northern half of the study area and the Canadian border to the east. Much of this prospective land is State of Alaska land open to mineral location.

Based on the preliminary compilation of geological, geochemical and geophysical data available on the Ladue District, the following conclusions are warranted:

1. The Ladue District hosts two converging belts of mid Cretaceous to early Tertiary porphyry belts hosting Cu-Mo-Au mineralization. Further work is needed to define the mineral potential of this district.

2. Gold mineralization in the Ladue District appears to be genetically, temporally and chemically identical to several intrusive related gold deposits in Interior Alaska and the White Gold District in the Yukon.
3. Recent discovery of the Peak zone at Contango ORE's Tetlin project highlights the potential for high grade gold-copper-silver mineralization in a deposit type not previously recognized in the Ladue District.
4. Several mineral exploration companies have conducted varying degrees of exploration over numerous prospect areas in the Ladue District in the last 15 year however, none of these companies are currently active and most of the ground they held is open to claim staking.
5. Until the rest of the mining industry learns more about the Ladue District, interested parties should not be faced with significant competition for lands in the district;
6. Geological, geochemical and geophysical data compiled by Avalon have identified a series of high priority multi-element targets in the district. Other lower priority targets also were identified, most of which rank lower only because of the lack of empirical data on which they can be evaluated.

Additional exploration of the Ladue District is warranted with emphasis on phased, success dependent bedrock trenching, geologic mapping, geochemical sampling and exploration-scale diamond core drilling. Avalon has generated a complete GIS-database of the Ladue District and prepared a detailed geological report summarizing its findings. These data can be made available to interested clients.

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<u>Prospect</u>	<u>Primary metals</u>	<u>Primary Alteration</u>	<u>Host rocks</u>	<u>Genesis</u>
<u>Target 1</u>	<u>Au, As, Cu, Mo, Pb, Zn</u>	<u>Strong hydrothermal alteration</u>	Precambrian or early Paleozoic gneiss and schist, mid-Cretaceous to early Tertiary porphyritic quartz monzonite and granodiorite intrusions	<u>Porphyry copper-molybdenum and possible Peak zone style mineralization.</u>
<u>Target 2</u>	<u>Au, Ag, Cu, Pb</u>	Sericite-limonite-silica alteration and patchy somewhat irregular concentric zones of potassic, phyllic and propylitic alteration.	Precambrian or early Paleozoic gneiss and schist, Paleozoic phyllite and schist, and Tertiary mafic to felsic volcanic rocks	<u>Possible Peak zone style mineralization. Previously described as porphyry Cu/high-sulfidation Au-Ag epithermal</u>
<u>Target 3</u>	<u>As, Cu, Zn, Au?</u>	<u>unknown</u>	Precambrian or early Paleozoic gneiss and schist; Paleozoic phyllite and schist; Tertiary mafic volcanic unit	Structurally-controlled copper-zinc(?)
<u>Target 4</u>	<u>Au, Cu, Mo, Pb</u>	Extensive hydrothermal alteration and silicification	Augen ortho(?)gneiss, Cretaceous-Tertiary, fine-grained biotite granite, granodiorite, monzodiorite, and a coarse-grained alkali granite intrude Tertiary (?) volcanics.	Possible Peak zone style mineralization. Plutonic-related (?) deposit along NE-trending faults
<u>Target 5</u>	<u>Cu, Co</u>	<u>unknown</u>	Paleozoic and/or Precambrian biotite gneiss, amphibolite grade	<u>Porphyry copper(?)</u>
<u>Target 6</u>	<u>Cu, Pb, Au?</u>	<u>unknown</u>	Tertiary mafic and felsic volcanic rocks and amphibolite facies Paleozoic and/or Precambrian biotite gneiss and schist	<u>Porphyry copper(?)</u>
<u>Target 7</u>	<u>Cu, Mo, Au?</u>	<u>unknown</u>	Tertiary mafic and felsic volcanic rocks, Paleozoic and/or Precambrian biotite gneiss, and schist	<u>Porphyry copper- molybdenum</u>
<u>Target 8</u>	<u>Au, Ag, Cu, As, Bi, Mo, Pb, Zn, Sb</u>	<u>Hydrothermal</u>	Tertiary hypabyssal syenite and associated felsic volcanic rocks	<u>Porphyry copper- molybdenum</u>
<u>Target 9</u>	<u>Cu, Co, Mo, Ni, Zn, Au?</u>	<u>Unknown</u>	<u>Mesozoic hornblende granitic rocks and Paleozoic schist and quartzite</u>	<u>Unknown</u>
<u>Target 10</u>	<u>Cu, Co, Ni, Zn, Au?</u>	<u>Unknown</u>	<u>Mesozoic hornblende granitic rocks and Paleozoic schist and quartzite</u>	<u>Unknown</u>
<u>Target 11</u>	<u>Cu, Co, Ni, Zn, Au?</u>	<u>Unknown</u>	<u>Hornblende granodiorite</u>	<u>Unknown</u>
<u>Target 12</u>	<u>Cu, Pb, Sn, Co</u>	<u>Unknown</u>	Paleozoic and/or Precambrian quartz-mica schist, Mesozoic porphyritic granitic rocks and Tertiary felsic volcanic rocks	<u>Unknown</u>