

State of Alaska
Department of Natural Resources
DIVISION OF MINES AND MINERALS
Box 1391, Juneau, Alaska 99801

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TWO NEW OCCURRENCES OF ORE MINERALS
IN THE DENALI AREA

Introduction

During the summer of 1963, M. A. Kaufman, Mining Geologist for the Alaska Division of Mines and Minerals, with the aid of John Patterson, field assistant, mapped the geology of a large area on the south slopes of the Alaska Range between the Susitna and Maclaren Rivers. During the course of this mapping, two new mineral occurrences were found which merit further exploration work. The following report on these showings consists of excerpts from the complete geologic report which will be published at a later date before the 1964 field season. This preliminary report with its index map will enable interested persons to find the localities on the U. S. Geological Survey 1/63,360 quadrangle maps of the area. The copper occurrence is in the Healy (A-1) quad area, pinpointed on the quad at approximately 11.25 inches east of the west edge of the map (which is the 147°30'W Long line) and 9.90 inches north of the south edge of the map (63°00'N Lat). The molybdenum occurrence is in the Mt. Hayes (B-6) quad at approximately 5.40 inches east of the west edge (147°00'W Long) and 0.25 inches north of the south edge (63°15'N Lat). These excerpts from Kaufman's forthcoming geologic report constitute the first release of this information.

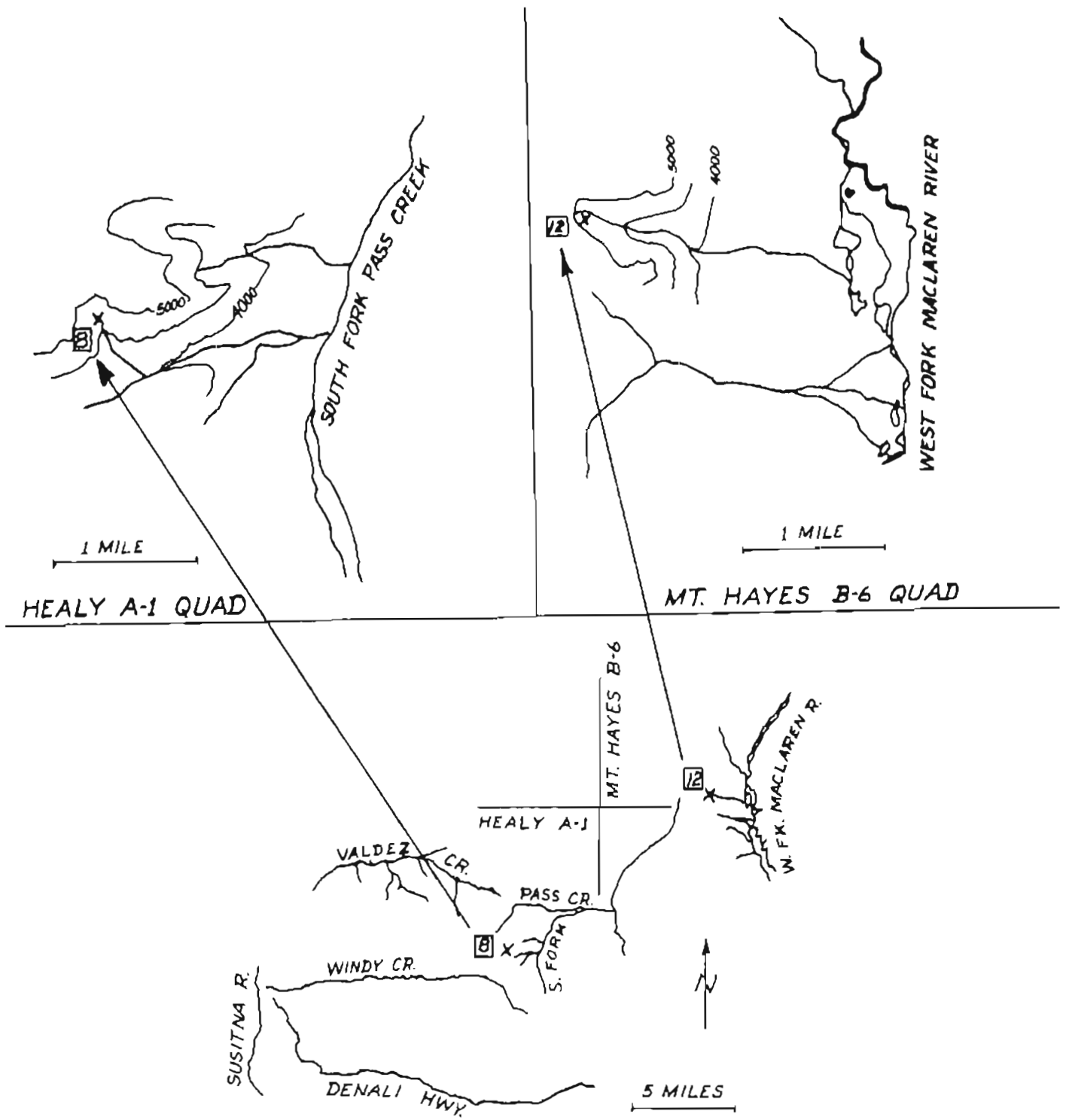
DESCRIPTION OF DEPOSITS

M. A. Kaufman
Mining Geologist

Location 8: (See attached special 1=500' map of Area 8). At 4650' elevation on a southeasterly flowing drainage which flows into the south fork of Pass Creek, a copper showing occurs in a fragmental unit consisting of limestone fragments in an andesitic matrix. The fragmental unit, which is cut by irregular dikes of gabbroic composition, is in contact with greenstone both above and below. Limestone units are interbedded with the greenstone. The fragmental formation appears to be a volcanic breccia rather than a structural zone of brecciation. The gossan consists chiefly of limonite, malachite, azurite, and minor visible chalcopryrite. The stronger mineralization replaces limestone fragments while sparser mineralization occupies fractures in the andesitic matrix. Two zones of mineralization occur along the northeasterly bank of the drainage. The showing further northwest (upstream) measures 33 feet across strike and the downstream showing measures 2 feet across strike. The two occurrences are separated by 200 feet of barren breccia and volcanics. The mineralized zones appear to strike between N40E and N60E and dip steeply. They may possibly represent one folded unit with a nose to the northeast. Mineralized float, some showing spectacular oxidized copper assaying up to 25%, can be traced for over 500 feet along the side of a talus slope on the southwest side of the drainage. Some mineralized material occurs in place on the southwest side of the drainage, so the float is probably near its source.

Although the exposure along the creek is not strongly mineralized, the geological environment of a mineralized breccia zone in interbedded volcanics and limestones with a sizable acidic intrusive body to the west lends encouragement to careful prospecting in the area. A chip sample for the 33-foot width of the exposure assayed 2.9% copper.

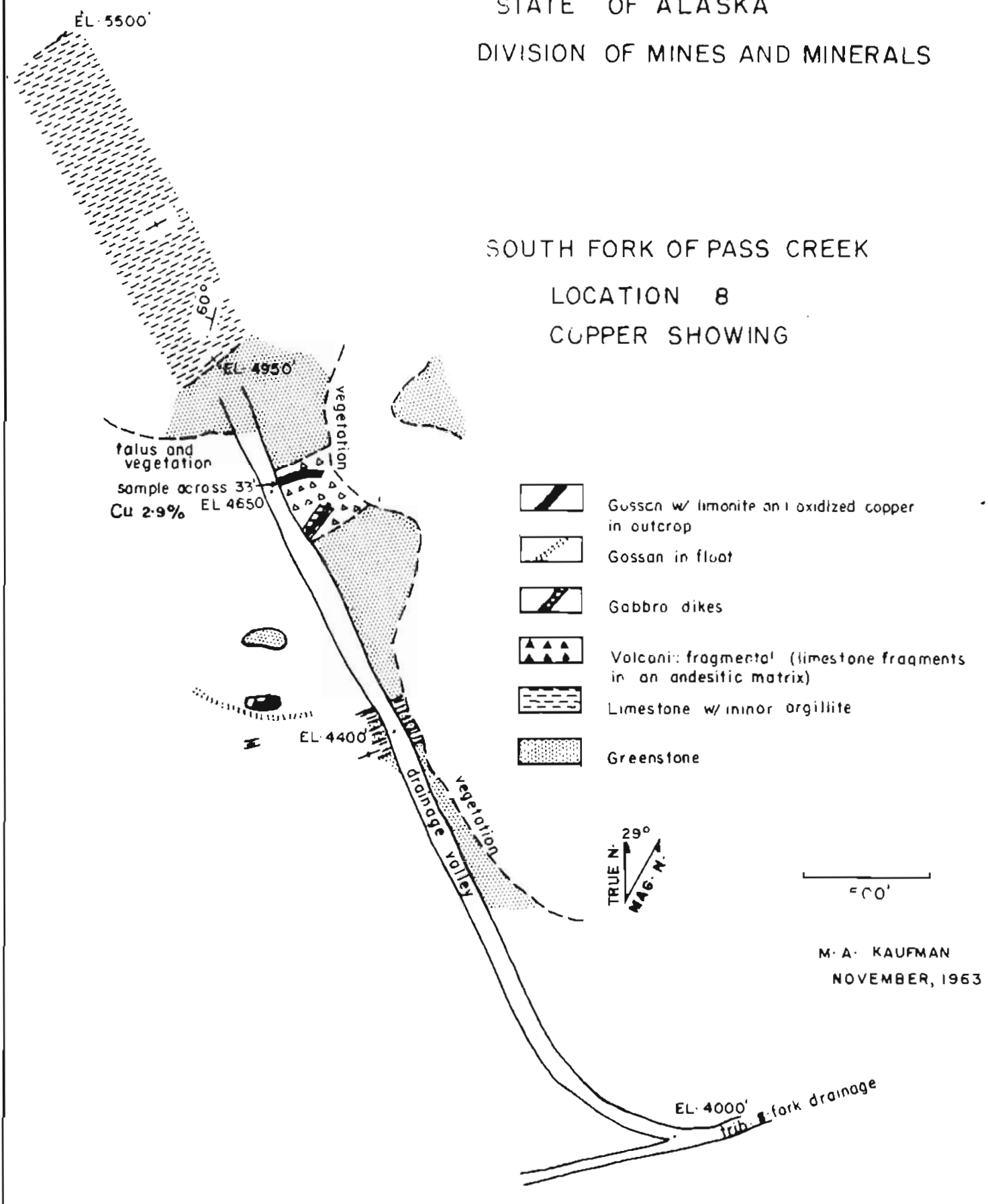
Location 12: An extensive rusty-colored iron-stained area caused chiefly by oxidation of iron carbonate and disseminated pyrite occurs in northeasterly-striking folded argillites. Talus reveals a considerable amount of fine to medium grained acidic intrusive rock which must come from the center of the stained zone. Most of the intrusive contains an anomalous amount of disseminated pyrite, and some of the pieces revealed disseminated chalcopyrite and molybdenite. An assay of a grab sample revealed 0.15 to 0.25% molybdenum. Minor amounts of molybdenite-bearing quartz also occur in the talus. Because of the severe topography and lack of outcrop due to talus, it was not possible to properly evaluate the extent of the mineralization in the intrusive. It is probable that most of the intrusive found in the talus represents dikes, but it is possible that a small stock occurs somewhere in the stained zone.









INDEX MAP OF NEW DISCOVERIES IN THE DENALI AREA

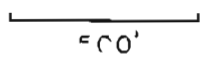
STATE OF ALASKA
 DIVISION OF MINES AND MINERALS

SOUTH FORK OF PASS CREEK
 LOCATION 8
 COPPER SHOWING



talus and
 vegetation
 sample across 33'
 Cu 2.9% EL 4650'

-  Gossan w/ limonite and oxidized copper in outcrop
-  Gossan in float
-  Gabbro dikes
-  Volcanic fragments (limestone fragments in an andesitic matrix)
-  Limestone w/ minor argillite
-  Greenstone



M. A. KAUFMAN
 NOVEMBER, 1963