TERRITORY OF ALASKA

DEPARTMENT OF MINES

REPORT ON A RECONNAISSANCE BY MARTIN W. JASPER AND ROBERT H. SAUNDERS ON UPPER BUTTE CREEK, TRIBUTARY OF THE SUSITNA RIVER

by

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The first discovery of copper minerals in the headwater tributaries of the Susitna River was made prior to 1913. U. S. Geological Survey Bulletin 608, THE BROAD PASS REGION, ALASKA, by Fred H. Moffitt, contains the following paragraph on page 128:

> "Copper-bearing minerals have been found in the lava flows between Butte and Wachana creeks and Susitna River and are reported from localities on the upper part of Chulitna River. A rather large vein of chalcopyrite was found several years ago south of the eastward bend in Butte Creek. This locality was not visited by the Survey party, but a specimen of the ore furnished by Mr. Peter Monahan, of Valdez Creek, shows olivine basalt carrying disseminated chalcopyrite. No effort has been made to exploit the lode."

The Denali Highway, which is now under construction, will cross the Susitna River about 12 miles from the eastward bend in Butte Creek. The highway, by providing a new form of transportation to the region, will increase the importance of the reported copper deposits. In June 1954, the Alaska Road Commission had a construction camp on the highway 41 miles from Cantwell. The men at this camp were working with earth-moving equipment between the camp and the Susitna River. The last few miles of road from Cantwell to the camp had not been completed, but the road was passable for the trucks that were used to supply the camp.

A reconnaissance of the upper Butte Creek valley and of the area south of the eastward bend in Butte Creek was made during June 25 to 30, 1954, by Martin W. Jasper and Robert H. Saunders,

Associate Mining Engineers. The area covered lies partly in the Healy Quadrangle and partly in the Talkeetna Mountains Quadrangle. Primarily, the reconnaissance was made to acquire more information about the copper deposit reported in U. S. Geological Survey Bulletin 608.

The geology of the mountainous area south of Butte Creek has not been mapped. The higher parts of the mountains consist of basic igneous rocks that probably belong to a group of rocks of Mesozoic age that have been described as basic lavas, tuffs, and greenstone. The rock exposed along Butte Creek between the eastward bend and the mouth of Gold Creek is mostly slate; it belongs to a group of metamorphosed sediments of Mesozoic age. North of Gold Creek, the bedrock is a granitic Mesozoic intrusive.[1]

Transportation for both members of the party from Cantwell to the Road Commission camp at 41-mile was furnished by Alaska Road Commission truck. The supplies and equipment required for the trip were carried by back pack from the Road Commission camp to an abandoned cabin on the second right-limit tributary of Butte Creek downstream from Butte Lake, and the reconnaissance was begun from there.

Three pans of gravel from bars in the creek near the cabin yielded one small flake of gold, and several pans of gravel from bars in the northernmost left-limit tributary of Butte Creek yielded only black sand. About one mile above the mouth of Gold Creek, some slatethat appears to be suitable for flagstone outcrops in the canyon wall beside Butte Creek.

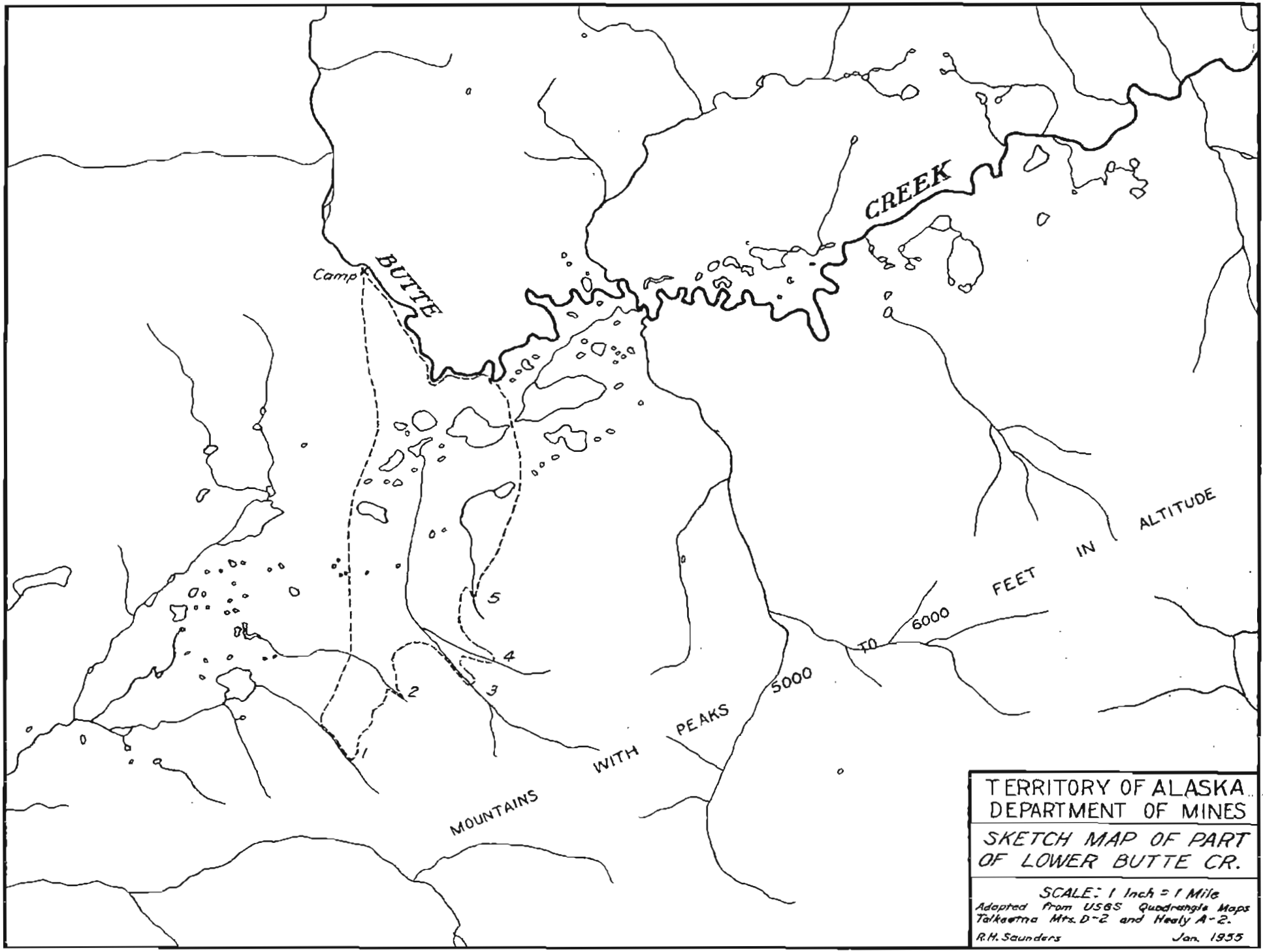
[1] Capps, Stephen R., GEOLOGY OF THE ALASKA RAIL ROAD REGION, U. S. Geol. Surv. Bulletin 907, Plate 2, 1940.

After the work in the upper part of the Butte Creek valley had been completed, a temporary camp was established on the eastward bend in Butte Creek, and the search for copper minerals was begun in the mountains south of Butte Creek. The accompanying map shows the route that was followed. The search covered the gulches numbered from 1 to 5, and copper float was found in the gulches numbered 4 and 5.

Across the heads of the five gulches examined, there is a conspicuous rust-colored, basic, igneous rock. A spectroscopic examination of a specimen of this rock was made at the College Assay Office; no elements of economic importance were found.

A composite sample of several pieces of the copper float was assayed at the College Assay Office, and it was found to contain 1.44 per cent copper and no gold nor silver. The pieces of float were similar in appearance, so that all of them could have come from the same deposit, and they appeared to fit the description given by Moffitt. They were stained with malachite, but most of the copper was contained in chalcopyrite.

The specimens found were too low-grade to justify any further search for the bedrock source of the float.


CREEK
BUTTE
Camp
1
2
3
4
5
MOUNTAINS
WITH
PEAKS
5000
TO
6000
FEET
IN
ALTITUDE
TERRITORY OF ALASKA
DEPARTMENT OF MINES
SKETCH MAP OF PART
OF LOWER BUTTE CR.
SCALE: 1 Inch = 1 Mile
Adopted From USGS Quadrangle Maps
Talkeetna Mts. D-2 and Healy A-2.
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