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PE 87-9

TERRITORY OF ALASKA

DEPARTMENT OF MINES

COLLEGE, ALASKA

March 3, 1952

MEMORANDUM REPORT

TO: Leo H. Saarela, Commissioner of Mines, Juneau, Alaska

FROM: Robert H. Saunders, Associate Mining Engineer, College, Alaska

SUBJECT: Report on the Prospecting Program of the Alaska Copper Company on Glacier Creek, Copper River Region, Alaska. 1×87-1 87-25 87-26 87-27

INTRODUCTION

In the summer of 1951, the Alaska Copper Company, under the supervision of Mr. Wm. O'Neill, Consulting Mining Engineer, began prospecting for copper on the left limit of Glacier Creek in the Copper River Region, Alaska. In September 1951, James A. Williams and Robert H. Saunders, Associate Mining Engineers of the Territorial Department of Mines, visited the site of the prospecting to acquaint the Department with the general plan of the prospecting program and to determine how the Department could aid in that program.

PHYSICAL FEATURES

Glacier Creek heads on the western slopes of Mt. Bona in the Wrangell Mountains and flows northwestward to the Chitistone River. The valley of Glacier Creek is about eight miles long, and the upstream half of the valley is occupied by a glacier. The floor of the valley below the glacier is between 2000 and 3000 ft in elevation, and the ridges rise to 7000 ft on both sides of the valley. The mouth of the creek is at approximately 61°25' N latitude and 142°25' W longitude.

PROPERTY AND OWNERSHIP

The Alaska Copper Company has leased and optioned three groups of claims on Glacier Creek. C. A. Nelson owns a group of six patented claims near the mouth of Glacier Creek. Martin Radovan owns a group of twelve claims at the head of Radovan Gulch, tributary of Glacier Creek, and a smaller group of claims upstream from the mouth of Radovan Gulch. The outcrops on the Nelson prospect were discovered by C. A. Nelson in 1928. In 1929 the Kennecott Copper Corporation took an option on the property; after driving about 1100 ft of exploratory tunnels, the Corporation returned the property to the owner in 1930. The outcrops at the head of Radovan Gulch are called the "binocular prospect;" they are visible from the Glacier Creek

valley, but for many years they were considered to be inaccessible until Radovan succeeded in reaching them in 1929. He sank several shallow pits on the outcrops and drove two tunnels totalling more than 100 ft in length.

GEOLOGY AND MINERAL DEPOSITS

Several reports have been written describing the geology and mineral deposits of the district. The most recent of these is U.S.G.S. Bulletin 947-F, COPPER DEPOSITS OF THE NIZINA DISTRICT, ALASKA by Don J. Miller. The underground workings on the Nelson and Radovan prospects were examined in 1931 by E. R. Pilgrim, Associate Mining Engineer for the Territorial Department of Mines. The report of his examination was published in MINING INVESTIGATIONS AND MINE INSPECTION IN ALASKA, BIENNIUM ENDING MARCH 31, 1933.

The oldest rocks exposed on Glacier Creek are members of a group of altered basaltic lava flows called the Nikolai greenstone. The total thickness of greenstone exposed on Glacier Creek is about 5000 ft. The greenstone is mostly of Permian age, but the upper flows in the greenstone may be of Triassic age. Overlying the Nikolai greenstone is the Chitistone limestone, of Upper Triassic age, which attains a thickness of 2000 ft in this area. Between the limestone and the greenstone, there is a layer of shale about three feet thick. In the stream beds there are recent glacio-fluvial deposits. There are intrusive rocks of Jurassic to post-Eocene age in the general area, but none of these outcrop in the Glacier Creek valley.

Normally the limestone-greenstone contact in this area is at an elevation of about 6000 ft. Folding and thrust faulting, however, have left a block of limestone at about 3000 ft near the mouth of Glacier Creek (as shown on the map in the appendix). The claims of the Nelson prospect cover outcrops in this block of limestone. The geological setting and the mineralogy of the deposits are the same as at Kennecott.

The "binocular prospect" was inaccessible at the time of this examination because of snow. The claims of the "binocular Prospect" cover outcrops in the limestone at the head of Radovan Gulch at about 6000 ft elevation. The other Radovan claims, upstream from Radovan Gulch, cover outcrops in the Nikolai greenstone.

PROSPECTING PROGRAM

The tunnels driven by the Kennecott Copper Corporation on the Nelson property have all caved. A diamond drill has been set up about 20 ft above the lowest of these old tunnels. A dam across the portal of the tunnel impounds water for drilling. The first hole drilled at this location was slanted downward 12° from the horizontal. It was bottomed at 200 ft when it reached the greenstone. The second hole was slanted downward 10° and turned 1° to

the north from the first hole. It was bottomed when it reached the greenstone at 244 ft. The third hole was started into the hill horizontally; at the time of this examination, it was in 500 ft and still in limestone. Some narrow mineralized fractures have been crossed by the drill holes, but no large ore-bodies have been intersected. The winch on the drill is used to pull supplies 700 ft up a 65% grade from the valley floor to the drill set-up,

On the upstream side of Radovan Gulch, a mineralized fissure outcrops in the greenstone at an elevation of 3900 ft. A tunnel has been started into the mountain side at about 3700 ft to intersect the fissure below its outcrop. The fault that is shown on the map at the head of Radovan Gulch cuts across the greenstone between the tunnel portal and the outcrop. The tunnel will cross this fault before it reaches the fissure. At the time of this examination, the tunnel had been driven about 130 ft in from the portal. A road has been built from the camp to the portal; parts of this road have a 30% grade.

During most of the summer, Martin Radovan and one helper worked on the "binocular prospect," but this work ceased when snow made the trail up to the prospect impassable.

At the end of the 1951 season, the crew on Glacier Creek consisted of the following:

1-foreman
2-miners driving tunnel
1-mechanic
1-diamond drill operator
2-diamond drill helpers
1-prospector (Martin Radovan)
1-cook
9-total.

During the early part of the summer a larger crew was employed, and the additional men worked on construction of the airfield, the camp, and the roads around the camp.

EQUIPMENT

The Alaska Road Commission loaned to the Alaska Copper Company a Ford dump truck and a crawler-type tractor that had been used on the roads at Dan and Chititu Creeks. These two vehicles were brought up the flood plain of the Chitistone River to the Glacier Creek camp under their own power. The tractor was used to construct the airfield, and all the other equipment has been brought in by air. Two jeeps were dismantled and brought in; one is used to haul supplies and men up the steep road to the tunnel; the other has not been completely reassembled. The equipment used at the tunnel consists of one size 125 Jaeger compressor, one size 12-B Eimco mucker, and one Jackhammer with vertical bar and carriage. The diamond drill, which is being used on the Nelson prospect, uses an AX bit and

recovers a one-and-one-eighth inch core. The camp consists of tent houses on frames.

PROPOSALS

At the present time the only maps of the areas being prospected are the small-scale reconnaissance maps published by the U.S.G.S. A large—scale map (such as 1 inch equals 100 ft) would be a useful guide to the prospecting and would also serve as a permanent record of geological features disclosed by the prospecting. The examining engineers have, therefore, planned to return to the area in July 1952 to start a mapping program. Mr. O'Neill has offerred to furnish a man to help with the survey.

Before the mapping begins, a triangulation net will probably be established over the entire area (a transit can probably be borrowed from Mr. O'Neill). The triangulation net will make possible the mapping of widely scattered areas on one co-ordinate system, so that when plane table mapping starts, those areas considered to be most favorable for mineralization can be mapped first.

Respectfully submitted,

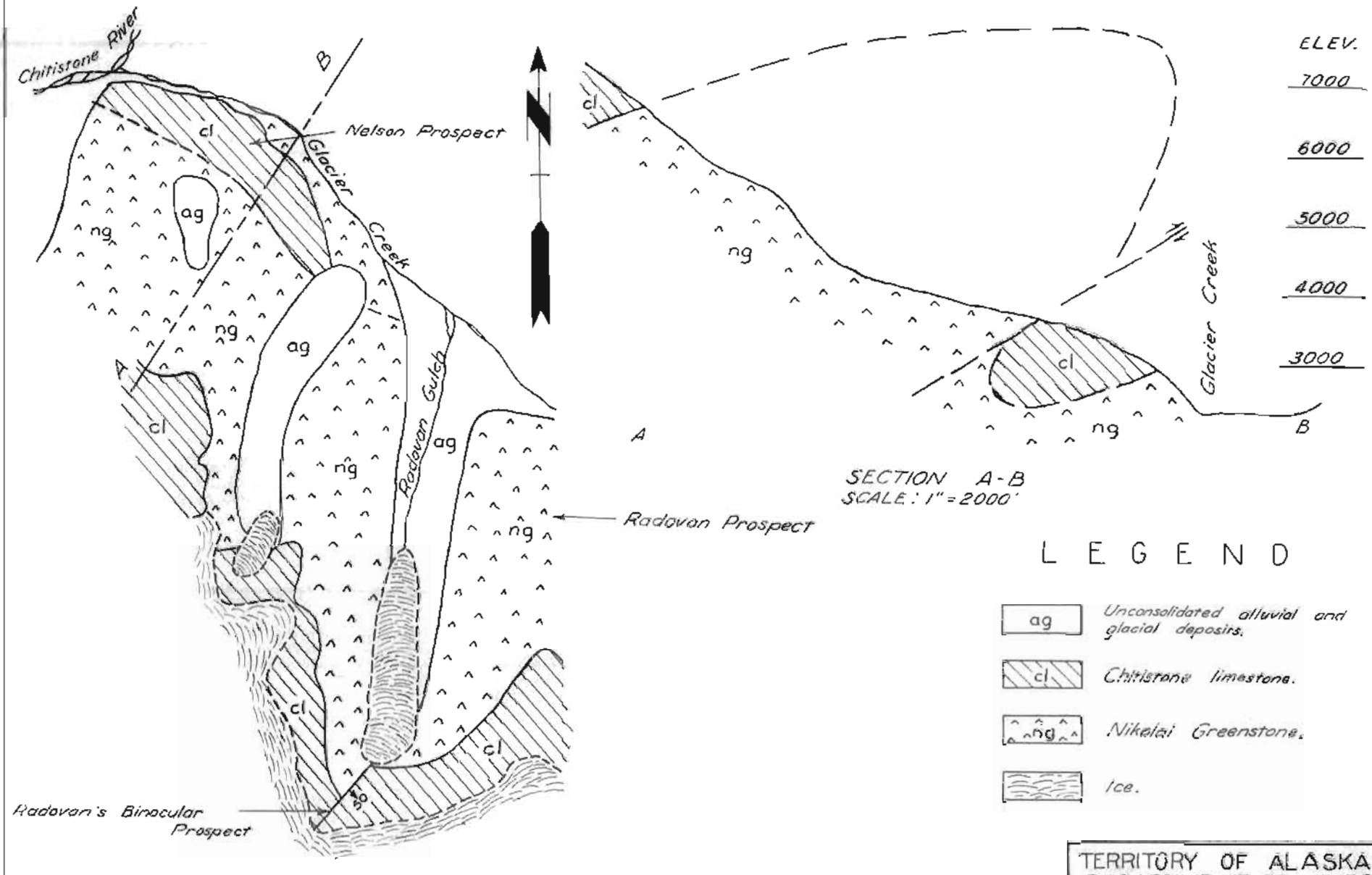
Robert H. Saunders
Associate Mining Engineer

Valley of Glacier Creek looking
toward Chitistone River.

Camp on Glacier Creek.

"X" marks portal of tunnel in Nikolai greenstone.
-Radovan Gulch to the right.

Portal of tunnel.


Chitistone River
B
Nelson Prospect
Glacier Creek
cl
ag
ng
A
Radovan Gulch
Radovan Prospect
Radovan's Binocular Prospect
SCALE: 1" = 4000'
ELEV.
7000
6000
5000
4000
3000
Glacier Creek
SECTION A-B
SCALE: 1" = 2000'
LEGEND
Unconsolidated alluvial and glacial deposits.
Chitistone limestone.
Nikolai Greenstone.
Ice.
TERRITORY OF ALASKA
DEPARTMENT OF MINES
GEOLOGIC SKETCH MAP
LOWER GLACIER CREEK
Adapted from U.S.G.S. Bull. 947-F
by R.H. Saunders, Assoc. Min. Engr.