

## REPORT ON EXPLORATION AT RUBY CREEK, KOBUK DISTRICT, 1962

During August 21 and 22, 1962, James A. Williams, Director of the Division of Mines and Minerals, and Robert H. Saunders, State Mining Engineer, visited Ruby Creek in the Kobuk District, where the Bear Creek Mining Company is exploring a copper deposit. The trip to Ruby Creek was made from Bettles via Wien Alaska Airlines.

At the peak of the 1962 season, 58 men were employed on the Ruby Creek exploration project, and five diamond drills were in operation. By August 21, preparations were being made for the end-of-season shut-down; only two diamond drills were still in operation, and most of the crew remaining on Ruby Creek was employed in survey work. Norman Lutz is in charge of the exploration project.

In 1962, a Butler building was erected at the camp for use as a messhall. Other sheet metal buildings have been erected for core storage. Most of the men are quartered in tent houses, but there are a few log cabins and a few small frame buildings. A helicopter is used for transportation of crews between the camp and the more remote drilling sites. Motor scooters of the "Tote-goat" type are used to some extent for transportation to and from the closer drill sites; the scooters seen around the camp actually were not "Tote-goats" but were Cushman "Trailmasters" sold by Sears, Roebuck and Company. It was reported that the 17-mile-long trip to Kobuk village could be made in one-and-three-quarters hours on a motor scooter. A Nodwell tracked vehicle is used for hauling freight from the Kobuk River and to the drill sites.

Wire-line core barrels are being used on the diamond

drilling project; the change from standard equipment to wire-line equipment is made when a drill hole has reached 380 feet in depth. In the floor of the Ruby Creek valley, holes are drilled through the overburden with a churn drill; casing is driven to bedrock and is left in place for diamond drilling. Water under artesian pressure flows from many of the cased holes. The cores recovered by drilling are split; half is sent out for assay and the other half is stored at Ruby Creek for study. Core boxes of corrugated cardboard are used for storage. They are shipped to Ruby Creek in the form of flat sheets cut so that they can be assembled by folding. The boxes are made by Midland Container Corporation of St. Louis, Missouri.

The ore is in two limestone reefs, one above the other, separated by a quartzite layer. The beds within the reefs have only short continuity, as is usually the case with reef limestones. When drilling first began, little was known about the geologic structure. Because of the short continuity of beds, correlating drilling results from adjacent holes was difficult, and the difficulty of correlation was attributed to faulting. As drilling progressed, however, the drill holes penetrated a phyllite basement underneath the limestones, and the top of the phyllite was found to be continuous and not faulted. It was then realized that the limestones were reef limestones, and this has been confirmed by other studies.

The richest ore is at the base of the upper limestone reef. It was reported that at that horizon one drill hole went through a 70-ft-thick layer of metallic sulfides - chalcopyrite, bornite, and chalcocite, and that surrounding drill holes penetrated lesser thick-

nesses of the same layer. Cobalt is present in the ore, but not in recoverable amounts. Some of the ore runs three times background in EU content.

Drilling was begun recently on another copper prospect at Partner's Hill, some three miles west of Ruby Creek. The geology at Partner's Hill is said to be similar to that at Ruby Creek, and the drilling results obtained so far are reported to be encouraging. *K. 38-9*

Although several of the drill holes on the Ruby Creek deposit have entered the phyllite underlying the two limestone reefs, none of the holes has gone completely through the phyllite. There is some possibility that the phyllite is an interval between reefs, like the quartzite below the upper reef, rather than a true basement to the structure. There is a possibility, therefore, that one or more additional mineralized reefs underly the phyllite.

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