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TERRITORY OF ALASKA

DEPARTMENT OF MINES

REPORT ON AN INVESTIGATION FOR RADIOACTIVE MINERALS NEAR WISEMAN, ALASKA

MI 30-1
MI 30-19

by

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C O P Y C O P Y

Memo from P. R. Holdsworth dated Apr. 26, 1954

POSSIBLE RADIOACTIVE MATERIAL

We have been corresponding with a Mr. Elias Glenn of Route 1, Box 131, Elma, Washington, who was a freighter in the Upper Koyukuk region about 1916. His first letter states that he had located a vein of "pitchblend" (hornblende)? on which apparently no further work has been done. We inquired as to the exact lacation of this material and his second letter described it as follows:

"There are two little mining towns on the Upper Koyukuk -- Coldfoot and Wiseman, about 15 miles apart. This little creek I speak of is about 10 miles up river from Coldfoot and on the left side going upstream. The place I got the mineral was about 100 yards from the river and almost in the water."

From this , we assume the creek he mentions is Moose Creek. He has also stated that another oldtimer, now dead, reported several vein outcrops along the hill side not far from there.

We would suggest you investigate this report as time and itinerary permit. Should anything worthwhile develop, it would be proper that we notify Mr. Glenn and give him the opportunity to get someone to cover the ground for him, or at least with a partial interest on his part. Evidently Mr. Glenn is too old to take care of this matter himself.

PRH

ABSTRACT

In 1954 the Territorial Department of Mines received a letter from Mr. Elias Glenn of Route 1, Box 131, Elma, Washington. In his letter Mr. Glenn stated that during or about 1916 he found a vein containing a mineral thought to be pitchblende. The vein was found in the bed of a small stream that flows into the Middle Fork of the Koyukuk River.

In July 1954, in conjunction with other field investigations in the Upper Koyukuk Region, a reconnaissance was made of four streams in the area where the vein was reported to be. A thorough search of the lower part of each of those streams failed to disclose a vein or any indication of radioactive minerals.

INTRODUCTION

In accordance with instructions contained in an Office Memorandum dated April 26, 1954, I made a reconnaissance of four creeks near Wiseman, Alaska, searching for a reported pitchblende deposit. The memorandum stated that the mineral that was thought to be pitchblende had been found by Mr. Elias Glenn near the mouth of a small stream that is about 10 miles upriver from Coldfoot on the left side going upstream. The mineral was found about 100 yards from the river and almost in the water. All four creeks covered by the reconnaissance are right limit tributaries to the Middle Fork of the Koyukuk River.

The maps of this region show few details of the topography. Wiseman is about 10 miles from Coldfoot by straight-line measurement and about 15 miles by river. Moose Creek is about six miles upstream from Coldfoot by straight-line measurement; this is probably equivalent to about 10 miles by river. Emma Creek is about four miles upstream from Coldfoot by straight-line measurement. There is one small stream between Moose Creek and Wiseman Creek, and there is another small stream between Moose Creek and Emma Creek. The creeks covered by the reconnaissance were: Moose Creek, Emma Creek, and the two small, unnamed streams on either side of Moose Creek.

GEOLOGY

The Geology of the region has been described by A. G. Maddren in U. S. Geological Survey Bulletin 532, THE KOYUKUK-CHANDALAR REGION, ALASKA. The map that accompanies Bulletin 532 shows that the bedrock along the west side of the Middle Fork of the Koyukuk River between Coldfoot and Wiseman is Birch Creek Schist. The map also shows a granitic intrusion that extends from the head of Emma Creek northward nearly to Wiseman Creek. The granitic rocks form the top of the ridge that separates the North Fork drainage from the Middle Fork drainage. All of the streams that lie between Emma Creek and Wiseman Creek head against the granitic ridgetop and flow across Birch Creek Schist to the floodplain of the Middle Fork.

EQUIPMENT

The instrument used was a Beckman Model MX3 Radioactivity Detector; it was checked with a known radioactive sample before and after this trip was made. The instrument has been calibrated with a series of known samples; a small crushed sample containing five-thousandths of one per cent (0.005%) equivalent uranium oxide held against the Geiger tube causes an increase of 13 clicks per minute over the background count.

In testing concentrates obtained by panning, the clicks from the instrument were counted for one minute with the Geiger tube directly over the concentrate in the pan. Traverses were run by walking slowly with the instrument turned on and held down toward the ground. Whenever the number of clicks appeared to increase, the instrument was held stationary for one-half minute or longer until it was apparent that the instrument was recording no higher than the normal background count. Where traverses were run up stream courses, the distance in paces from the mouth of the stream was recorded on a mechanical tally, so that only the clicks of the instrument had to be counted mentally.

PROCEDURE

Between Wiseman and Coldfoot there is a trail on each side of the river. On the west side of the river between Emma Creek and Wiseman Creek, the trail lies on the lower slopes of the ridge, and it crosses the tributary streams one-quarter to one-half mile from

the river. At each creek it was necessary to travel along the creek bed from the trail down to the river, and this provided an opportunity to search for rock outcrops and signs of mineralization.

The first creek below Wiseman Creek has a steep gradient, and the wash is not well-sorted; there are many large boulders. There are no bedrock exposures in the lower part of the creek. Gravel from a bar at the mouth of the creek was panned and the concentrates were checked with the Geiger counter. A continuous traverse with the counter was run from the mouth of the creek upstream for 150 yards.

The second creek below Wiseman Creek is Moose Creek. On the south side of the mouth of Moose Creek there is a rock bluff, which is composed of contorted schist. At the top of the bluff a partly cemented gravel lies in horizontal layers over the schist. The outcrop was checked with the counter, and concentrates obtained by panning the gravel also were checked with the counter. There is another outcrop on the left limit side of the creek near its mouth, and there is a third outcrop in the creek bed 60 to 70 yards from the river. These outcrops also were checked with the counter. A continuous traverse was run over the gravel bars at the mouth of the creek, and another traverse was run 150 yards up the creek from its mouth.

In the next creek south of Moose Creek there was no water running at the time. On both sides of the mouth of the creek, gravel bluffs rise steeply 100 feet or more above the river, which here flows along

the west side of the valley floor. The creek has cut a narrow, steep-walled canyon through the thick layer of gravel. Sixty yards from its mouth the creek valley is choked by a large gravel slide that has slid into the creek bed from the steep cut-bank on the north side of the creek. Trees and brush, some of them still living, are mixed with the gravel in the slide. The slide extends for a few hundred yards up the creek valley. There are no rock outcrops along the lower part of the creek. A traverse was run with the counter over the wash at the mouth of the creek, and another traverse was run 60 yards up the creek to the lower end of the gravel slide.

Emma Creek is larger than the other streams that have been described. The lower one-quarter to one-half mile of the creek flows through a broad valley. The gravel bars along the lower part of the creek consist of finer, better-sorted gravel than the bars in the other streams. There are no outcrops along the lower course of the creek. The valley floor is a floodplain over which the course of the creek changes from time to time to follow different channels. A traverse was run with the counter across the floodplain of the creek.

RESULTS

In all of the tests made the Geiger counter registered no more than the normal background count.

SUMMARY

The lack of any trace of radioactivity in concentrates panned from the gravel bars indicates, but does not prove, that the streams do not cut across any radioactive deposits.

The large gravel slide in the creek south of Moose Creek undoubtedly has covered the creek bed within the past few years: perhaps within the past year. Above and below the slide the creek bed consists of boulders and coarse gravel, and there are no rock outcrops in the lower part of the creek. It therefore seems unlikely that there were any bedrock exposures before the slide occurred.

Moose Creek is the only one of the four creeks on which there are rock outcrops within 150 yards of the river. The outcrop in the bed of the creek 60 to 70 yards from the river fits Mr. Glenn's description as to location, but in that outcrop there is neither a vein nor any structural feature that resembles a vein. Spring floods probably cause noticeable changes in these streams each year, and perhaps an area of bedrock that was exposed in 1916 could have been covered or eroded away since then.