

Gold in North Dakota By John P. Bluemle

Gold in North Dakota? We get a lot of calls at the North Dakota Geological Survey from people, mainly from the eastern U.S., who want to come "out west" on vacation and prospect for gold. Many of them call us by mistake they apparently confuse us with South Dakota, where gold is a major resource in the Black Hills.

Ransom County

The earliest "gold rush" in North Dakota that I know of took place in the southeastern part of the state, about 1884, when gold was discovered in the Sheyenne River valley about six miles north of Fort Ransom. The gold-bearing deposit there is probably a cemented placer, consisting of gravel that was deposited by a preglacial stream or river. The river flowed northeastward over the preglacial surface in Pliocene or early Pleistocene time, maybe two or three million years ago. It probably had its origin in the Black Hills, which was the likely source area for the gold.

When glaciers advanced over the area during the Ice Age, they completely covered the gold-bearing stream deposits with thick layers of glacial sediment. However, the modern Sheyenne River has eroded downward in the area, removing the covering of glacial sediment, and at the point where the Sheyenne River valley crosses the old preglacial river, the gold-bearing gravel has been exposed. The gravel is cemented by minerals deposited by groundwater that long ago seeped through the gravel, resulting in a concrete-like conglomerate. Springs occur where the cemented gravel is exposed along the wall of the Sheyenne River valley.

Stream gravels similar to the ones found near Fort Ransom are found along the Oahe Reservoir in Emmons County and in a few places in northwestern South Dakota, in areas that were not glaciated. The gravel deposits in South Dakota commonly occur as caprock layers on buttes and ridges. All of these gravel deposits were probably deposited by the same river or system of rivers that flowed from the Black Hills and crossed the Fort Ransom area before the area was glaciated.

The Ransom County gold operation was known as the Griswold Mine. It apparently lasted about two years, but the material being processed did not contain sufficient gold to make the operation profitable. According to an engineering report published in 1936, the gravels there assayed between \$5 and \$11 per cubic yard, but I am unsure whether the assay referred to was done at the time the mine was in operation or whether it was done as part of the 1936 study.

Lake Souris - Denbigh Deposit

Since the early 1900's, gold has also been known to occur in the sand and gravel deposits associated with glacial Lake Souris in McHenry, Bottineau, and Pierce counties. The first discovery of gold there that I know about dates to May, 1908, when mining claims were recorded about three miles east of Denbigh in McHenry County.

I don't know exactly how much gold was involved in the Denbigh discovery, but by August of 1908, a company that called itself the "Eldorado Gold Mining Company" had been organized, and the articles of agreement stated that the participants would "cooperate and purchase a dredge or mining boat of sufficient capacity to do the work in the best possible manner." Several other similar companies were formed at about the same time, but the search for gold was unsuccessful and did not continue long. All of the companies soon ceased to exist.

The gold-bearing deposits associated with the glacial Lake Souris sediments in McHenry County were "rediscovered" in 1931 when reports from Chicago claimed that gold nuggets had been taken from the crops of turkeys grown near Denbigh. As soon as this information became general knowledge, the "rush" was on. Individuals and organizations filed placer claims and took mining leases until every available piece of ground over a large area surrounding Denbigh and Towner was covered.

So where did the gold actually come from? The gold contained in the glacial Lake Souris gravel deposits was apparently derived from rocks of the Canadian Shield to the north. The glaciers that transported the gold to north-central North Dakota flowed over what are today the Gods Lake, Flin Flon, and Lac La Ronge mining districts of northern Manitoba and Saskatchewan. This part of the Canadian Shield is situated about 500 miles straight north of the Denbigh area and, based on our understanding of the flow directions of the glacial ice, it is in a likely position to serve as a source for the gold.

After the glacial sediments were dropped by the melting glacial ice, they were washed by streams of meltwater, which helped to concentrate the gold by removing the lighter weight material. Finally, the gold-bearing sediments were deposited on the floor of glacial Lake Souris as undercurrent fans at the mouths of the Souris and other rivers.

No systematic method of prospecting or sampling was carried out in the Denbigh area in the 1930's, and rumors affirming and denying the existence of gold in commercial quantities were widespread. Many small plants, using a variety of methods of processing such as jigging, tabling, sluicing, cyanidation, and flotation were attempted. All operated unsuccessfully for short periods of time at various places throughout the area.

In the summer of 1934, the School of Mines at the University of North Dakota obtained assistance from the Federal Emergency Relief Administration (FERA) and conducted a "Gold Investigation" project. Approximately 1,500 samples from the Denbigh area were assayed and 200 showed traces of gold. About 40 samples had values ranging from \$0.17 a ton (a value corresponding to a gold content of 0.005 oz. per ton) to \$2.10 a ton (0.06 oz. per ton). These values are based on a price of \$35 an ounce for gold; at a price of \$400 an ounce, the material would range in value from \$2.00 to about \$24.00 a ton. The samples with these values were scattered over 15 different plots of ground and they failed to indicate anything of commercial importance in the area.

The particles of gold found in the Denbigh area were small, well-rounded pitted, and flattened grains. Their well-worn condition suggested that the gold had been subjected to stream erosion and weathering, similar to gold found in modern placer deposits. The largest nugget found in the FERA survey was about twice the size of a grain of wheat. I believe this is the largest single piece of naturally occurring gold ever found in North Dakota (if anyone knows otherwise, I'd appreciate hearing from you).

Bentley Lake Deposit

Mr. John Alden Bethke, of Drake recently related to Ms. Kay A. Buri that gold was once mined near Bentley Lake, about three miles west of the town of Drake in McHenry County (the lake was apparently originally known as "Brush Lake," but the name was changed to Bentley Lake to avoid confusion with a Brush Lake near the town of Mercer, McLean County).

Mr. Bethke said that the gold that was mined at Bentley Lake (located in Spring Grove Township:

T. 151 N., R. 76 W.) was known as "flour gold," which is extremely fine-grained placer gold that is almost the consistency of flour; flakes of gold of this consistency are also known as "gold dust." A mine was attempted by Mr. T. E. Sleight at about the same time that the Denbigh area gold was being mined, about 1908. The venture was not e31-Aug-2007ot warrant continuing the operation for very long.

The gold that occurred in the Bentley Lake area likely had the same source as the gold found near Denbigh. The same water that washed and sorted the glacial deposits to the north and deposited sediments in glacial Lake Souris also flowed southeastward out of Lake Souris, over the Bentley Lake area. As it flowed through the area, the water deposited gravel and sand, which apparently included small amounts of finely divided gold. As in the Denbigh area, only small amounts of gold were found. The likelihood of finding commercial concentrations of gold in the sediments related to glacial Lake Souris is only slight.

Summary

What are the chances of finding gold in commercial quantities in North Dakota? Not real good. However, the fact that even small amounts of gold have been found in the state has helped to maintain at least some interest over the years in prospecting for it.

Many more "discoveries" of gold besides the two I described have been reported over the years in North Dakota, as well as a number of "scams" designed to incite "gold fever" and separate people from their money in various ways. I won't go into any of these schemes here. The fact that North Dakota has none of the rock types normally associated with gold-bearing deposits makes it unlikely that significant amounts of gold will ever be found here.

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