

REPORT

ON

SILT, SOIL AND ROCK GEOCHEMICAL SURVEYS

CHAPPELLE NO. 7 GROUP

(Chappelle Mineral Claims 101-108,122,128,139,146 147,156,158,160-167,170,172-178,184-189,198,199,201)

Situated 16 miles northwest of Thutade Lake, Omineca Mining Division, British Columbia

| <u>57 17 11, 127 02 11</u> | Department of | |
|---|-------------------------------|--|
| | Mines and Petroleum Resources | |
| | ASSESSMENT REPORT | |
| By | NO. 3419 MAP | |
| S.C. Gower And P.N. Stowargen P. Fr | | |

Work done from July 12 to August 17, 1971

December 13, 1971

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Kennco Explorations, (Western) Limited

CHAPPELLE AREA

Situated northwest of Thutade Lake

Omineca Mining Division British Columbia

R. H. Stevenson

LOCATION MAP of SURVEY AREA

Scale: 1:250,000

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INTRODUCTION

-1-

The mineral property discussed in this report is situated about 16 miles northwest of Thutade Lake, B.C. The exploration work on these claims consisted of a silt geochemical survey, followed by a preliminary soil and rock geochemical survey. The objective of the soil and rock survey was to search for mineralization that was indicated by the silt survey and by rock alteration. The position of these surveys is shown on the Location Map.

The personnel employed are listed in the Statement of Costs. The work was done under the immediate supervision of S.C. Gower, B.Sc., and the general supervision of R.W. Stevenson, P. Eng.

LOCATION AND ACCESS

-2-

The property is situated at Latitude 57°17'N; 127° 02'W, about 16 miles northwest of Thutade Lake, and 285 miles northwest of Prince George. The survey area ranges from 4500' to 6200' above sea level. The ridges are above treeline, but there is considerable scrub alpine fir in the valley and on the lower slopes.

Access to the property is by fixed wing aircraft from Smithers to Black Lake, a distance of about 180 miles, and by helicopter from there. Local travel in the survey area is hampered by the thick growths of scrub alpine fire, and by the differences in valley and ridge elevations.

SILT GEOCHEMICAL SURVEY

Silt Survey Field Work

Sample Site Control

Sample sites were plotted in the field, on a topographic map having a scale of 1'' = 2640'. These maps were obtained by enlarging portions of the 1:250,000 topographic map. Each sampling traverse was started from a point which could be identified easily on the topographic map. Sample site locations were plotted by pace and compass until another easily identifiable checkpoint was reached. Crews were set out by helicopter so as to utilize as much as possible of the working day in sample collection. A drainage base map with a scale of 1'' = 10 chains was compiled for use in plotting the sample results for office interpretation.

Silt Sample Collection

In general, the samples were taken at 200 to 400 foot intervals on the main stream, depending on where suitable silt could be found. More detail was added by sampling some of the side streams.

Samples were taken from "active" material; that is under flowing water, either in streams or seepages. The samples were taken with a shovel. Fine-grained silt was selected. Care was taken to avoid high organic material, and well washed clay.

The sample site and number were then plotted on the field map. A note was made of the sample number; the width, depth, and speed of flow of the stream; the type of sediment sampled; and any peculiarities of nearby drainage, such as above or below a pond or swamp.

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Packaging

The samples were placed in $3" \ge 4 1/2"$ brown paper envelopes on which the sample numbers had been marked. These were closed with a triangular triple fold. (The bags are not anomalous in trace metals).

Sample Preparation

The samples were taken to base camp, and partly air-dried. The samples were then shipped to our laboratory in North Vancouver, where they were oven-dried at 80°C and sieved through an 80-mesh size stainless steel screen. (These sieves do not show noticeable wear even after several thousand samples have been sifted). The minus 80 mesh fraction was collected for all the analyses involved.

Analysis

The samples were analysed in the North Vancouver laboratory of Kennco Explorations, (Western) Limited, under the supervision of H. Goddard, laboratory manager. Total extraction from a weighed sample is achieved by digestion with concentrated nitric acid and 70% perchloric acid. Determination of the Cu, Mo, Zn, Pb, Ag, Co, Ni content is made by aspiration in a Techtron AA5 Atomic Absorption Spectrophotometer. To determine the gold content, a weighed sample is digested in aqua regia, filtered, and the gold removed by solvent-solvent extraction in an organic solvent, MIBK (methyl-isobutyl-keytone). This is aspirated in the Techtron AA5.

Interpretation

The purpose of the silt survey was to explore the potential of this part of the property prior to the soil and rock survey. The configuration of streams made this a practicable goal. The results are plotted on the same maps as the soil samples. Each silt sample site is marked by a small open circle.

Sample stations that are considered to be background are uncoloured. Sample stations that are considered to be only weakly anomalous are coloured yellow; those that are anomalous are coloured red. The weakly anomalous levels vary somewhat with the size of the stream and the drainage area. For example, a value of 300 ppm Cu would be only weakly anomalous in a small seepage, but would be definitely anomalous in a large stream.

Several streams on the west side of the main branch of Canyon Creek are anomalous in zinc, lead, silver, and gold. One of the streams on claim 175 is also anomalous in cobalt and molybdenum. These metals are not co-anomalous at every site; however, each stream that is anomalous in one or more metals should have detailed sampling done on it.

A side stream on claim 185 is anomalous in zinc, lead, silver, and copper. The main stream below this site is also anomalous in zinc and lead; one site is co-anomalous in cobalt. The large side stream on claim 187 is anomalous in zinc and silver only.

Nickel is not anomalous within the survey area.

SOIL GEOCHEMICAL SURVEY

Soil Survey Field Work

Control Survey Lines

A control grid was established by chain and compass survey. The lines were laid out so as to explore as much of the property as possible in the limited time available. They were run relative to topography in areas where soil sampling was practicable. The intersections of the grid with drainage lines were used as control points. Stations were marked with surveyor's flagging. The grid was compiled on a map with a scale of 1'' = 10 chains.

Soil Sample Collection

The samples were taken at 100-foot intervals along the grid lines. They were taken from the top of the "B" (rusty) horizon where possible. In some rocky areas, sufficient soil could not be found to take a sample. At some stations, only the "A" (humus) horizon was accessible; these sample sites are marked A on the maps.

The samples were collected by digging a small hole with a spade. By this means it was possible to examine the soil horizon development. A note was made of the grid line location, the sample number, the depth of sample, the horizon sampled, the direction of drainage, the type of vegetation, and the soil type.

Packaging

The samples were placed in $3" \ge 4 1/2"$ brown paper envelopes on which the sample numbers had been marked. These were closed with a triangular triple fold. (The bags are not anomalous in trace metals).

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Sample Preparation

The samples were taken to base camp, and partly air-dried. The samples were then shipped to our laboratory in North Vancouver where they were oven-dried at 80°C, and sieved through an 80-mesh size stainless steel screen. (These sieves do not show any noticeable wear even after several thousand samples have been sifted). The minus 80 mesh fraction was collected for all the analyses involved.

Analysis

The samples were analysed in the North Vancouver laboratory of Kennco Explorations, (Western) Limited under the supervision of H. Goddard, laboratory manager.

The analytical procedures used on the soil samples were the same as those used on the silt samples. These are described in the section entitled 'Silt Geochemical Survey'.

Interpretation

The depth of overburden varies from a few feet to probably about 10' over most of the area sampled. Considering the type of soil, it would seem likely that soil geochemistry is a reliable technique on these parts of the property. The samples were analysed for total metal content in copper, molybdenum, zinc, lead, silver, gold, cobalt, and nickel.

Sample stations that are considered to be background are uncoloured. Sample stations that are considered to be only weakly anomalous are coloured yellow. The weakly anomalous levels are 100 ppm to 199 ppm for copper, 10 ppm to 19 ppm molybdenum, 200 ppm to 499 ppm for zinc, 70 ppm to 149 ppm for lead, 2.0 ppm to 3.9 ppm for silver, 0.06 ppm to 0.29 ppm for gold, 50 ppm to 99 ppm for cobalt, and 200 ppm to 499 ppm for nickel. Sample stations that are definitely anomalous are coloured red. Zinc, lead, and to a lesser extent copper, are anomalous along much of the lower branch of Canyon Creek. Molybdenum is anomalous at several sites, all but one of which are also anomalous in zinc and copper. Silver and gold are weakly anomalous at several scattered sites, but are nowhere coanoamlous. Cobalt is only anomalous at four sites.

On claims 186 and 187, on the right bank of the northeast flowing branch of Canyon Creek, many of the soil sample sites are anomalous in lead, and to a lesser extent in zinc. Several of the lead-anomalous sites are also weakly anomalous in silver and gold. This area, in conjunction with the silt anomaly on claim 185, should have more soil sampling done.

The line of soils across the gossanous quartz feldspar porphyry on claims 128, 189, 188, was not anomalous in any metal except lead, which is weakly anomalous in much of the gossanous area. Silver was weakly anomalous at one site.

Nickel was not anomalous within the survey area.

ROCK GEOCHEMICAL SURVEY

Rock Survey Field Work

Sample Site Control

Sample sites were plotted with reference to the soil sample lines on a map at a scale of 1'' = 10 chains.

Sample Collection

The samples were taken at intervals along the soil traverse lines. The frequency of sampling was determined by changes in lithology, and by the degree of alteration.

Sample chips about 1" to 2" were taken with a standard prospector's hammer. About four pounds of these chips were collected from an area up to about 25' in diameter at each sample site.

The sample site and number were then plotted on the field map, and a note made of sample number, line location, and rock type.

Packaging

The samples were placed in a $12" \ge 18"$ plastic sample bag. The sample number was written on both sides of the bag, and the top tied with string.

Sample Preparation

The samples were shipped to our laboratory in North Vancouver. Particular care was taken to avoid contamination in the preparation of these samples, because the analyses were to be done in parts per million. The sample was primary crushed to 1/4" mesh; secondary crushed to minus 10 mesh; dried; and then pulverized to minus 100 mesh. The pulverizer was flushed with "clean" rock after each sample. The average analysis of this cleaning rock is as follows:

| 7 | ppm | Cu |
|------|-----|----|
| 0 | ppm | Mo |
| 30 | ppm | Zn |
| 4 | ppm | Pb |
| 0.3 | ppm | Ag |
| 0.00 | ppm | Au |
| 10 | ppm | Co |
| 10 | ppm | Ni |

Analysis

The samples were analysed in the North Vancouver laboratory of Kennco Explorations, (Western) Limited under the supervision of H. Goddard, Laboratory manager.

The analytical procedures used on the rock samples were the same as those used on the silt samples. These are described in the section on the Silt Geochemical Survey.

Interpretation

The purpose of the rock geochemical survey was to examine the trace metal content of the various rock units in the area that appeared most promising for mineralization; and with this information attempt to establish background values, and trenching targets. In order to achieve the necessary precision, the sample were analysed as geochemical samples in parts per million, rather than being assayed to the nearest 0.01%.

The rock geochemical survey area is underlain by a group of acid igneous rocks, as illustrated on Plate No. 1, and consequently the background levels for the trace metals are moderately low. Sample stations that are considered to be only weakly anomalous are coloured yellow. The weakly anomalous levels are 100 ppm to 199 ppm for copper, 7 ppm to 19 ppm for molybdenum, 200 ppm to 499 ppm for zinc, 70 ppm to 149 ppm for lead, 2.0 ppm to 3.9 ppm for silver, 0.06 ppm to 0.30 ppm for gold, 50 ppm to 99 ppm for cobalt, and 200 ppm to 499 ppm for nickel. Sample stations that are definitely anomalous are coloured red. The results for the rock survey are plotted on Plates No. 1 to 9. Samples in which visible sulphides were noted are marked p = pyrite, and c = chalcopyrite.

The quartz feldspar porphyry and the syenite, where they are unaltered, appear to have similar background levels for all the elements analysed.

Several sites in syenite near the southwest corner of claim 201 are weakly anomalous in copper and molybdenum. Many of the samples in syenite along the north branch of Canyon Creek are weakly to strongly anomalous in copper. A few of these are also variously anomalous in molybdenum, zinc, lead, silver, and gold. Every sample that is anomalous in gold is coanomalous in silver. Minor amounts of disseminated pyrite are common in the syenite, but there is no discernible relationship between the weaker anomalies and visible mineralization. Sample No. S9200, at the north edge of the syenite plug has an interesting metal assemblage; the 12.7 ppm silver may be associated with undetected galena, as indicated by 1400 ppm lead. Zinc and copper are also anomalous in this sample, at 1200 ppm Zn and 430 ppm Cu.

Vancouver, B.C.

December 13, 1971

S.C. Gower

R.W. Stevenson, P. Eng.

STATEMENT OF COSTS

The costs incurred on assessment work on the Chappelle No. 7 Group of mineral claims were as follows:

SILT GEOCHEMICAL SURVEY

| Analysis of 48 si | lt samples for Cu | 1,Mo,Zn,Pb,Ag,Au,Co,Ni | \$ 264.00 |
|-------------------|---------------------------------------|--|--------------|
| Wages & Board: | · · · · · · · · · · · · · · · · · · · | n an an an Anna an Ann Anna an Anna an Anna an Anna an | |
| S.C. Gower | July 12 | \$35.00 + \$10.00 | 45.00 |
| G.T. Davies | July 12 | \$35.00 + \$10.00 | 45.00 |
| G. Kaine | July 12 | \$13.00 + \$10.00 | 23.00 |
| R.S. Lopasc | huk July 12 | \$17.00 + \$10.00 | 27.00 |
| G.J. Allen | July 12 | \$16.00 + \$10.00 | 26.00 |
| Helicopter setout | on the property, | , 1:10 hrs @ \$175/hr | 204.00 |
| Drafting | | | 30.00 |

SOIL & ROCK GEOCHEMICAL SURVEY

| Analysis of 180 soil | samples for Cu,Mo,Pb,Zn,Ag,Au,Co,Ni | \$ | 990.00 |
|-----------------------|-------------------------------------|-----|--------|
| Analysis of 56 rock s | samples for Cu,Mo,Pb,Zn,Ag,Au,Co,Ni | | 364.00 |
| Wages & Board: | | | |
| S.C. Gower | Aug. 11,17 \$35.00 + \$10.00 | | 90.00 |
| G.T. Davies | Aug. 11-14 \$35.00 + \$10.00 | | 180.00 |
| E.A. Black | Aug. 11-14,17 \$21.00 + \$10.00 | | 155.00 |
| G.E. Kaine | Aug. 11-14,17 \$13.00 + \$10.00 | | 115.00 |
| Helicopter setouts or | n the property, 3:40 hrs @ \$175/hr | | 641.00 |
| Drafting & Typing | | • . | 130.00 |

\$3,329.00 Total =

R.W. Stevenson, P. Eng.

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