## REPORT

## ON

SOIL GEOCHEMICAL SURVEYS

CHAPPELLE NO. 1 \& 2 GROUPS (Chappelle Mineral Claims 1-22, 25-30, 33-56, $81-86,95-97,100,109-115,247-249,256-263$ )

Situated 17 miles northwest of Thutade Lake, Omineca Mining Division, British Columbia


September 13; 1971
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## Scale:

The mineral property discussed in this report is situated about 17 miles northwest of Thutade Lake, British Columbia. The exploration work on these claims consisted of three soil geochemical surveys. The relative position of the three soil survey areas is shown on the Location Map. Soil Survey area No. I is on Chappelle No. 2 Group of mineral claims. Soil survey areas No. 2 and 3 are on Chappelle No. 1 Group of mineral claims.

The personnel employed are listed in the Statement of Costs Incurred. The work was done under the supervision of R. W. Stevenson, P. Eng.

The property is situated at Latitude $57^{\circ} 17^{\prime} \mathrm{N}$, Longitude $127^{\circ} 07^{\prime} \mathrm{W}$, about 285 miles northwest of Prince George. This is about 17 miles northwest of Thutade Lake. Soil survey area No. 2 is at an elevation of about $4900^{\circ}$, and there is considerable scrub alpine fir present. Soil survey area No. 1 is at about $5400^{\prime}$, and area No. 3 ranges in elevation from $5200^{\prime}$ to $5500^{\prime}$; both being above tree-line.

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 areas is easy, except through small patches of scrub alpine fir.

SOIL SURVEY FTELD WORK

## Control Survey Lines

A control grid was established by chain and compass survey in each area to be sampled. Laths and surveyor's flagging were used to mark the stations because the three areas are at or above tree-ine. In each case, a base map with scale $i^{17}=400^{\prime}$ was compiled for plotting the sample results.

Area No. 1
These samples were taken at $100^{\prime}$ intervals along the $5400^{\prime}$ contour line, as shown on Plate No. A-1. This line was chosen so as to explore an area suitable for soil sampling that lies between talus and deeper sojl.

Area No. 2
Samples were taken at $100^{\prime}$ intervals along two lines, as shown on Plate No. B-I. The purpose of the sampling was to explore an area of continuous drift cover, and the crooked course of the lines avoided numerous smal. clumps of alpine fir where soil conditions were not suitable for sampling.

Area No. 3
This area is in a broad, U-shaped valley, and samples were taken at $100^{\prime}$ intervals along lines $400^{\prime}$ apart, as shown on Plate No. C-l. In the northwest corner of the survey area, locally rugged topography necessitated a minor change in the grid.

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 much of the grassland area above tree-line, soil horizon development is relatively poor. In some rocky areas, sufficient soil could not be found to take a sample; and in wet areas, only the humus zone could be sampled.

The samples were collected by digging a small hole with a mattock or with a trenching tool type of 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 $3^{\prime \prime} \times 41 / 2^{\prime \prime}$ 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 airdried. They were then shipped to our laboratory in North Vancouver, where they were oven-dried at $80^{\circ} \mathrm{C}$, 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 $\mathrm{Cu}, \mathrm{Mo}, \mathrm{Zn}, \mathrm{Pb}, \mathrm{Ag}$, 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 depth of overburden varies from a few inches to probably about $20^{\prime}$ over most of the areas 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 150 ppm to 299 ppm for copper, 10 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, 0.10 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 anomaious are coloured red.

Soil Survey Area No. 1
Most of the soil survey line is weakly anomalous in copper and silver. A short section near the boundary of claims 27 and 51 is strongly anomalous in silver, lead, and molybdenum. Gold is only weakly anomalous at several points along the line. Zinc, nickel, and cobalt are generally not anomalous. The survey area should be extended to the south, where overburden is suitable for soil sampling to be effective.

Soil Survey Area No. 2
Molybdenum is strongly anomalous in two areas; on claims 256-258, and on claim 109. Zinc has a similar anomalous pattern, particularly on claims 256-258. Copper, lead, silver, nickel, and cobalt are either sporadically anomalous, or non anomalous. Gold is non anomalous except for one strongly anomalous sample on claim 261. It would be difficult to extend the soil grid area because of the extensive scrub alpine fir. However, further geochemical work may be possible in limited areas as an aide to determining trenching sites.

Soll Survey Area No. 3
Copper, zinc, lead, gold, cobalt, and nickel are virtually non anomalous. Molybdenum is weakly anomalous along the east half of Line $0+00 N$, at the southeast corner of the grid area. There is an interesting development of weak silver anomalies in an area about $400^{\prime} \times 1000^{\prime}$ near the east edge of the soil survey area. Two samples are definitely anomalous, with 5.5 and 6.4 ppm Ag. Further exploration is warranted within this zone.

Vancouver, B. C.
September 13, 1971
R. W. Stevenson, P. Eng.

The costs incurred on assessment work on the Chappelle No. 1 and 2 Groups were as follows:

## Chappelle No. 2 Group

Soil Survey Area No. 1: Chappelle Claims No. 1,27,28,51 Chemical analyses of 30 samples for $\mathrm{Cu}, \mathrm{Mo}, \mathrm{Zn}, \mathrm{Pb}, \mathrm{Co}, \mathrm{Ni}$, $\mathrm{Ag} \& \mathrm{Au} \quad \$ 165.00$
Wages \& Board-
G. DAvies July 5 @ $\$ 35.00+\$ 10.00 \quad 45.00$
G. Froebel July 5 @ $\$ 21,00+\$ 10.00 \quad 31.00$
D.R. Mackey July 5 @ $\$ 17.00+\$ 10.00 \quad 27.00$

Drafting- $\quad 10.00$
Total $=\$ 278.00$

## Chappelle No. I Group

Soil Survey Area No. 2: Chappelle Claims No. 109,256-259, 261
Chemical Analyses of 84 samples for $\mathrm{Cu}, \mathrm{Mo}, 2 \mathrm{n}, \mathrm{Pb}, \mathrm{Co}, \mathrm{Ni}$, $\mathrm{Ag} \& \mathrm{Au}$
$\$ 462.00$
Wages \& Board-
G. Davies July 8 @ $\$ 35.00+\$ 10.00$ 45.00
A. Vanderhorst July 8 @ $\$ 22.00+\$ 10.00$ 32.00
D.R. Mackey July 8 @ $\$ 17.00+\$ 10.00 \quad 27.00$
R.S.Lopaschuk July 8 @ $\$ 17.00+\$ 10.00$ 27.00
G.E. Kaine July 8 @ $\$ 13.00+\$ 10.00 \quad 23.00$
R.W. Stevenson July 8 @ $\$ 50.00+\$ 10.00$. 60.00

Drafting-
25.00

Tota1 $=\overline{\$ 701.00}$
Chappelle No. I Group
Soil Survey Area No. 3: Chappelle Claims No. 7-10,12,15,16
Chemical analyses of 117 samples for $\mathrm{Cu}, \mathrm{Mo}, \mathrm{Zn}, \mathrm{Pb}, \mathrm{Co}, \mathrm{Ni}$,
Ag \& Au $\quad \$ 643.50$
Wages \& Board-
R.W. Stevenson July $9,10 @ \$ 50.00+\$ 10.00$ 120.00
A. Vanderhorst July 9,10 @ $\$ 22.00+\$ 10.00 \quad 64.00$
D.R. Mackey July 9 @ $\$ 17.00+\$ 10.00$ 27.00
R.S. Lopaschuk July 9,10 @ $\$ 17.00+\$ 10.00$ 54.00
G.E. Kaine July 10 @ $\$ 13.00+\$ 10.00 \quad 23.00$

Station markers: 70 lamps @ 9¢ each + flagging- 7.30
Drafting \& typing- $\quad 45.00$
Total $=\$ 983.80$




















Chappelle No.l Group
Chappelle Mineral Claims $7-12,15-16$
Omineca M. D., B. C
Soil Survey Area No. 3
Copper in Soil
o Accompony Soil Geochemical Survey Report by R. W. Stevenson P. Eng.
on Chappelle No. 1 Group, 17 Miles Northwest of Thutade Lake
Omineca Mining Division, Dated Sept. 13, 197
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KENNCO EXPLORATIONS (WESTERN) LIMITED
Chappelle No.l Group
Chappelle Mineral Claims $7-12,15-16$
Omineca $M$. D., B. C
Soil Survey Area No. 3
Molybdenum in Soil
To Accompony Soil Geochemical Survey Report by R.W. Stevenson P. Eng on Chappelle No. 1 Group, 17 Miles Northwest of Thutade Lake, Omineca Mining Division, Dated Sept. 13, 1971

| DATA BY: A.V. |  | N.T.S. $94-\mathrm{E}$ | PL. NO.: C - 3 |
| :---: | :---: | :---: | :---: |
| DRAWN BY: A.V. | DATE:10/7/71 | SCALE: |  |
| traced byiJ.Q.L | DATE:14/7/71 |  |  |
| REVISIONS: | , | FILE NO. |  |



## KENMCO EXPLORATIONS (WESTERN) LIMITED

To Accompany Soil Geochemical Survey Report by R.W. Stevenson P. Eng.
on Chappelle No.l Group, 17 Miles Northwest of Thutade Lake,
Omineca Mining Division, Doted Sept. 13, 197

Chappelle No.l Group Chappelle Mineral Claims 7-12, 15-16

Omineca M. D., B. C
Soil Survey Area No. 3
Zinc in Soil




## KENNCO EXPLORATIONS (WESTERN) LIMITED

Chappelle No.l Group Chappelle Mineral Claims $7-12$, 15 - 16
omineca $M . D$., B. C
Soil Survey Area No. 3 Lead in Soil
Survey Report by R.W.Stevenson P.Eng
on Chappelle No. 1 Group, 17 Miles Northwest of Thutode Loke
Omineca Mining Division, Dated Sept. 13, 1971

| DATA BY: A V. |  | N.t.s. 94 - E | PL. No.t C - 5 |
| :---: | :---: | :---: | :---: |
| DRAWN BY: A. V | DATE:IO/7/71 | SCALE, $1^{\prime \prime}=400$ |  |
| traced byiJ.Q.L | DATE:14/7/71 |  |  |
| REVISIONS: |  | FILE NO. |  |



To Accompany Soil Geochemical Survey Report by R.W.Stevenson P. Eng. on Chappelle No. 1 Group, 17 Miles Northwest of Thutade Lake, Omineca Mining Division, Dated Sept. 13, 1971

KENMCO EXPLORATIONS (WESTERN) LIMITED
Chappelle No.I Group
Chappelle Mineral Claims $7-12,15-16$ Omineco M. D., B. C
Soil Survey Area No. 3
Silver in Soil

| DATA BY: A.V. |  | N.T.S. $94-\mathrm{E}$ | PL. NO.: C - 6 |
| :---: | :---: | :---: | :---: |
| DRAWN BY: A. V | DATE:10/7/71 | SCALEt | $1^{\prime \prime}=400^{\circ}$ |
| TRACED Byid. Q.L. | DATE:14/7/71 |  |  |
| REVISIONS: |  | FILE NO. |  |



KENNCO EXPLORATIONS (WESTERN) LIMITED
Chappelle No.l Group
Chappelle Mineral Claims $7-12,15-16$
Omineco M. D., B. C
Soil Survey Area No. 3 Gold in Soil

To Accompany Soil Geochemical Survey Report by R. W. Stevenson P. Eng. on Chappelle No. 1 Group, 17 Miles Northwest of Thutade Lake, Omineca Mining Division, Dated Sept. 13, 1971 Gold in Soil

| DATA BY: A. V. |  | N.T.S. $94-\mathrm{E}$ | PL. NO.: C - 7 |
| :---: | :---: | :---: | :---: |
| drawn byia.v. | Date:10/7/71 | SCalet | $1^{\prime \prime}=400^{\prime}$ |
| traced byid. Q.L | DATEIL/7/71 |  |  |
| REvisions: |  | FILE No. |  |



KENMCO EXPLORATIONS (WESTERN) LIMITED
Chappelle No.l Group
Chappelle Mineral Claims $7-12,15-16$
Omineca M. D., B. C
Soil Survey Area No. 3
Cobalt in Soil

| DATA BY: A.V. |  | N.T.S. $94-\mathrm{E}$ | PL. NO.: C - 8 |
| :---: | :---: | :---: | :---: |
| DRAWN BY: A.V. | DATE:10/7/71 | SCALE, | $1^{\prime \prime}=400^{\prime}$ |
| traced byiJ.Q.L | DATE:14/7/71 |  |  |
| REVISIONS: |  | FILE NO. |  |



## KENNCO EXPLORATIONS (WESTERN) LIMITED

Chappelle No.l Group
Chappelle Mineral Claims 7-12, 15-16
Omineca M. D., B. C
Soil Survey Area No. 3
Nickel in Soil
n Choppelle No. 1 Group, 17 Miles Northwest of Thutade Lake,
Omineco Mining Division, Doted Sept. 13, 1971.

