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-025	CORDILLERAN
Vol. 1	MINERALS
	LIMITED



SUMMARY REPORT FOR THE CAMOLY PROJECT, YUKON TERRITORY

YUKON GEOLOGICAL SURVEY - PROSPECTING PROGRAM YMIP 05-025

2005

By Mark Lindsay Cordilleran Minerals Ltd

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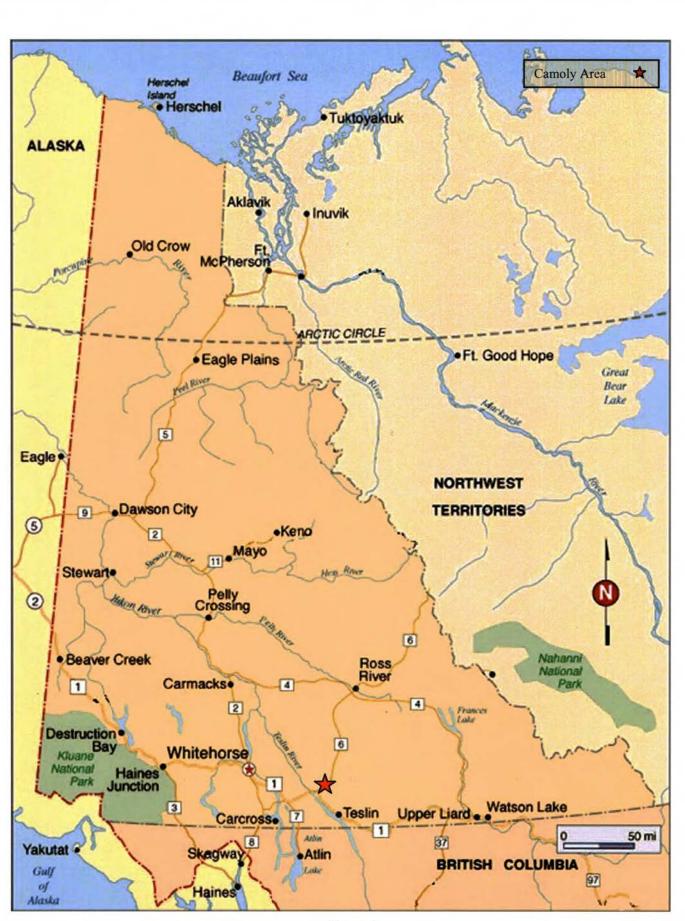


Figure 1

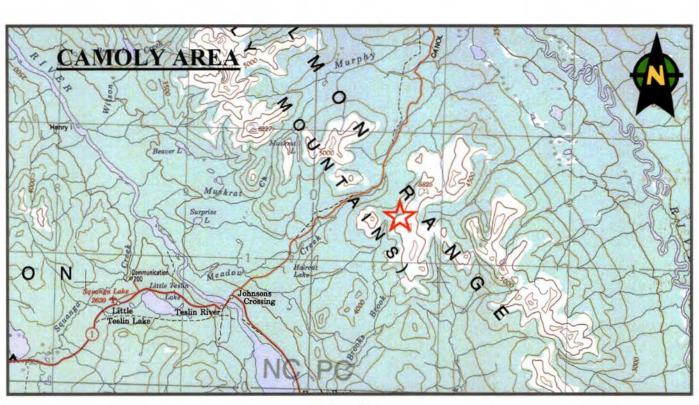


Figure 2

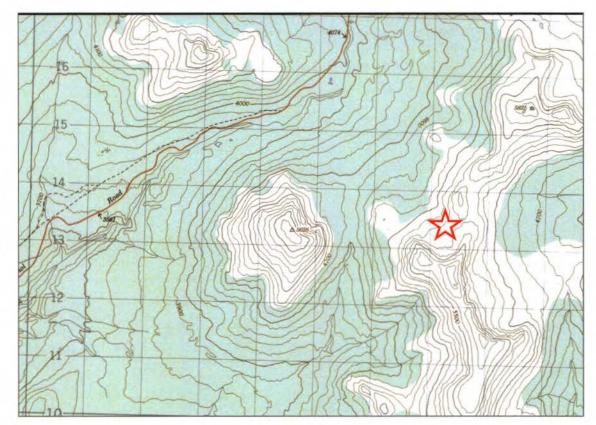


Figure 3

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## **SUMMARY**

In August 2005 a reconnaissance prospecting trip was taken to an area near the Canol Road (on Map 105C 11) to examine granitic rocks that were staked in the 1960's on a molybdenum showing.

The rocks observed in the area of interest consisted of mainly unaltered granite rock intruding metasedimentary units. A few un-mineralized skarn horizons were also noted. A rusty zone of minor pyrite mineralization occurs within carbonaceous metasediments along the southwest side of the target area. The granite is relatively well exposed in the higher elevations. No significant mineralization was observed within its outcrops. Rock samples were taken within the minor rust zone.

The area does not appear to have any economic concentrations of minerals and no important concentrations of molybdenum were located in the target area.

## **INTRODUCTION**

The area of interest regarding this report is known as the Camoly Project.

In August 2005 a prospecting program was conducted in the Camoly area. The program was conducted to prospect for molybdenum mineralization associated with the granitic rocks in the area. Prospecting was conducted by Cordilleran Minerals Limited staff. A few rock samples were collected from the area.

The Camoly Area was selected as a target because it was staked in the past as a molybdenum target and old-time prospectors, familiar with the area, had said that a molybdenum showing existed at this location.

## **LOCATION AND ACCESS**

The Camoly Area is located in south-central Yukon. The target is accessible by traveling 14 kilometers north from Johnson's Crossing, along Canol Road, and then traversing another 3 kilometers southeast into the Big Salmon Mountains.

The target area is within the Watson Lake Mining District.

## **PHYSIOGRAPHY, VEGETATION AND CLIMATE**

The Camoly area is located in a lightly vegetated area within the Big Salmon Range of the Pelly Mountains. The highest point in the area is 1780 m. Drainage in the upper alpine areas is very good. Numerous wetlands are located in mid and lower creek valleys.

Vegetation in the area is very sparse in the upper elevations of the target area, but is quite dense in the valley bottoms (fig.4). Moss, lichen and grasses cover all of the target area. Willow, buckbrush and Black Spruce are also found spread-out through the area.

The climate of the area is typical of the interior continental region at this latitude.

Winters are long with short hours of daylight and average daily temperatures of -20 Celsius. Summers are pleasant and warm with long days (20 hours of daylight on June 21), although it can be quite rainy at times. The average summer temperature is 19 Celsius with highs ranging into the low 30's (Celsius).



Figure 4

## HISTORY AND PREVIOUS WORK

The exploration history of the Camoly area is not extensive. In 1968 claims were staked over an area that was said to host a molybdenum showing (MINFILE # 105C 014). There was no work filed on the claims. Local natives and some older prospectors also confirmed the occurrence of what they thought was a molybdenum showing.

The area was also visited by GSC geologist R. Mulligan in the 1960's when 1:250,000 data for the Teslin Map area (105C) was first being collected.

## PROPERTY AND CLAIM STATUS

No mineral claims exist in the area.

## **2005 WORK COMPLETED**

Cordilleran Minerals Limited conducted preliminary prospecting work over the Camoly Area in August 2005. Employees Mark Lindsay, Richard Baker and along with Trans North Helicopters provided support for the venture. Prospecting was carried out during the period from August 16-20 2005.

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## **REGIONAL GEOLOGY**

The rocks of the Camoly area appear to be dominated by granite rocks intruding Yukon Tanana Terrane. Yukon Tanana Terrane was part of a package of rocks that was rifted off the ancient continental margin of North America in the Devonian period and reattached during the Cretaceous.

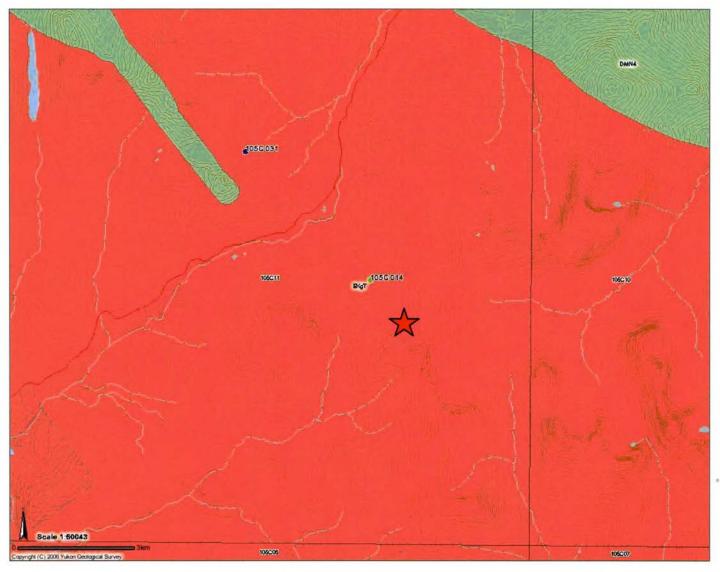


Figure 5

EKgT

Leucocratic, fine to coarse-grained, equigranular, hornblende- biotite granite, granodiorite, quartz monzonite and quartz monzodiorite, locally with sparse grey and pink potassium feldspar phenocrysts; associated aplitic phases and dykes.

DMN

Quartzite, micaceous quartzite, quartz muscovite (+/-chlorite; +/- feldspar augen) schist, and minor metaconglomerate and metagrit as in (1), but may locally include significant Klondike Schist Assemblage

## **STRUCTURE**

The only structure in the target area appears to be a large fault that cuts through the main ridge (red line in fig. 6) near camp. The fault may be an eastern counterpart to a fault seen on the west side of the Canol Road (see fig.5).

The granite appears to be part of large granitic batholith that extends for 73 kilometers along the immediate eastern boundary of the Teslin Fault on the 105C 6,7,10 and 11 map-sheets.

#### **ALTERATION**

The rocks of the target area have did not appear to be altered in any significant manner.

#### **ECONOMIC GEOLOGY**

Minor sulphide (pyrite) mineralization was found in the target area. The mineralization appeared to be primary in origin within a dark carbonaceous metasedimentary rock. The mineralization did not appear to be of economic interest.

Two areas hosting minor skarn mineralization were located and are marked on the map in figure 6.

No molybdenum mineralization was observed in any rocks examined in the target area.

#### **ROCK ANALYSIS**

6 rock grab samples were collected from the area (Fig.6).

The samples were sent to Acme Laboratories Ltd. in Vancouver, British Columbia for analysis. At Acme Labs the rocks will be crushed and sieved to -150 mesh, digested in hot HCL / HNO3 and analyzed by ICP-MS.

The assay results were not available at the time of writing this report.

Assays will be submitted as an addendum as they are received.

#### SOIL ANALYSIS

No soil samples were collected in the area.

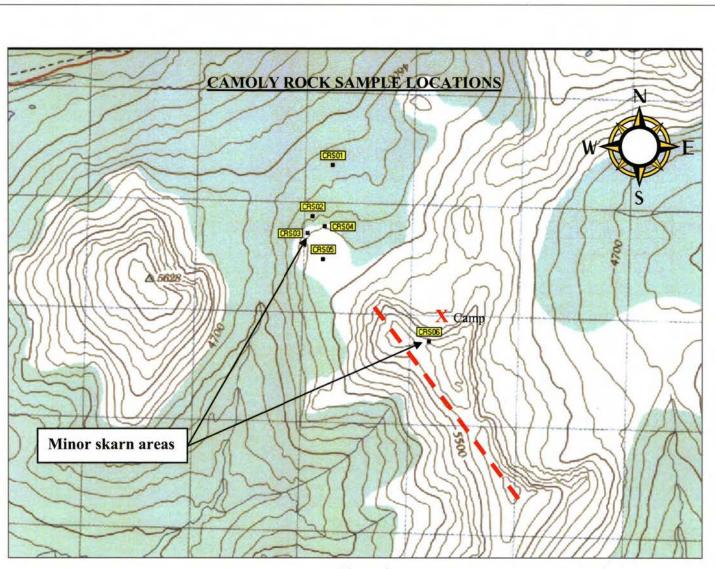


Figure 6

## **CONCLUSIONS AND RECOMMENDATIONS**

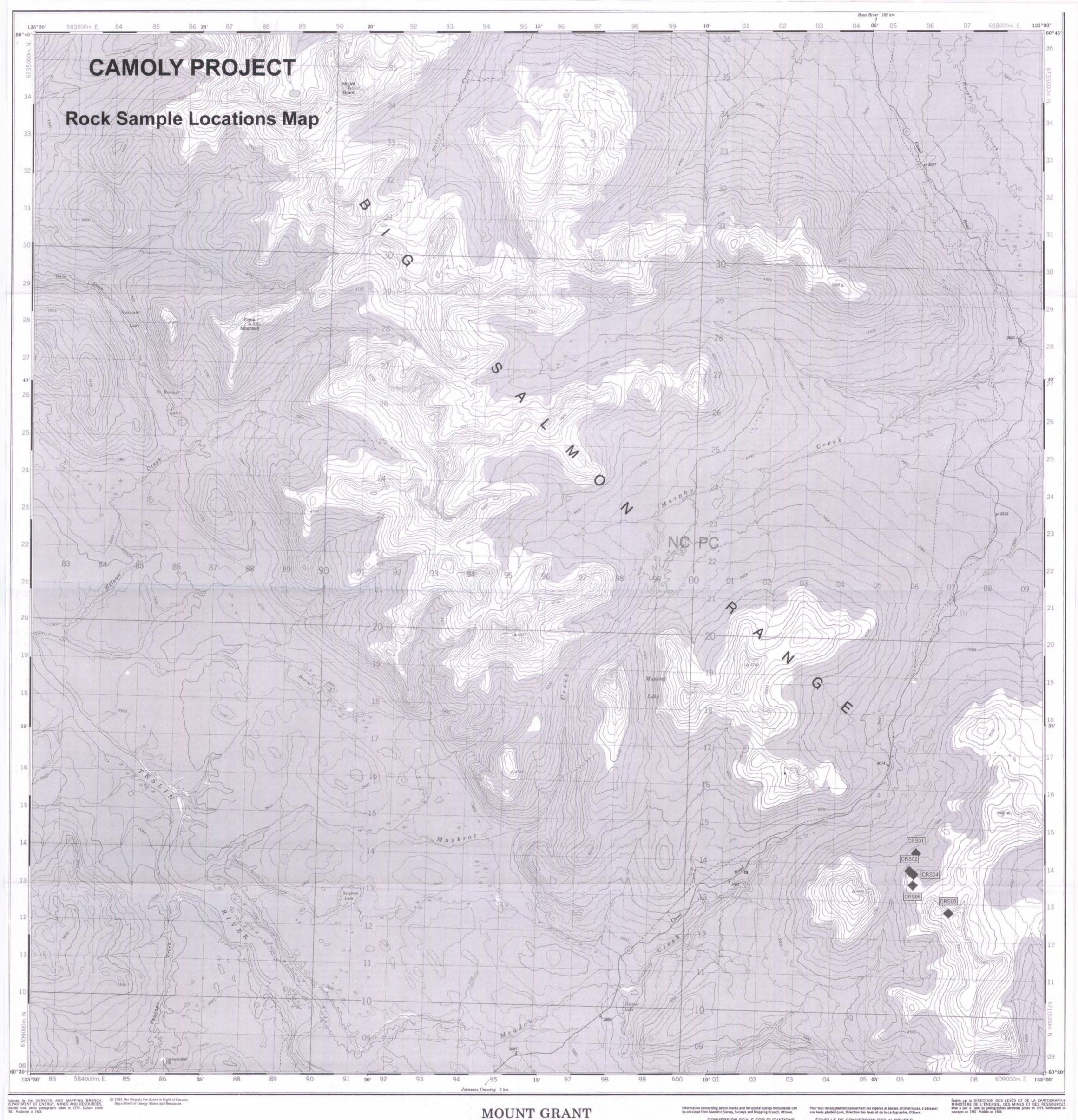
The Camoly target area appears to host some very minor (primary) sulfide mineralization that is associated with metasedimentary rocks of the area. Molybdenum mineralization, said to be associated with local granites, was not located.

No intrusion related sulfide mineralization was found in the area.

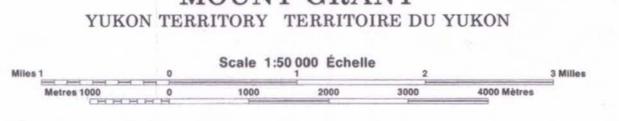
The August 2005 prospecting program in the Camoly area did not find any mineralization that was of economic interest.

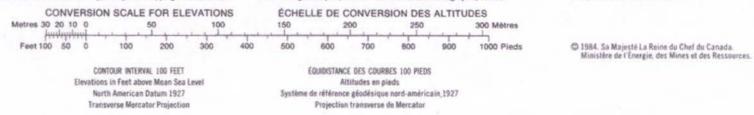
No further work is recommended on the Camoly target area.

| To Cordille     | ran Min     | erals      |        |           |            |        |            |           |        |           |         |          |          |          |        |     |
|-----------------|-------------|------------|--------|-----------|------------|--------|------------|-----------|--------|-----------|---------|----------|----------|----------|--------|-----|
| Acme file #     | A6000       | 69         |        |           |            |        |            |           |        |           |         |          |          |          |        |     |
| Analysis: GROUP | 1DX - 15 GM | N SAMPLE L | EACHED | WITH 90 M | ML 2-2-2 H | CL-HNO | 3-H2O AT ! | 95 DEG. ( | FOR ON | E HOUR, I | DILUTED | TO 300 M | L, ANALY | SED BY I | CP-MS. |     |
| ELEMENT         | 1(14)-155   | Cu         | Pb     | Zn        | Ag         | Ni     | Co         | Mn        | Fe     | As        | U       | Au       | Th       | Sr       | Cd     | Sb  |
| SAMPLES         | ppm         | ppm        | ppm    | ppm       | ppm        | ppm    | ppm        | ppm       | %      | ppm       | ppm     | ppb      | ppm      | ppm      | ppm    | ppm |
| CRS-01          | 6.5         | 120        | 6.8    | 55        | 0.3        | 33.3   | 15.8       | 543       | 3.06   | 58.2      | 2.6     | 4.7      | 2        | 23       | 0.4    | 0.1 |
| CRS-02          | 13          | 94.3       | 7.6    | 189       | 1.6        | 82.5   | 6.9        | 33        | 1.74   | <.5       | 3.2     | <.5      | 2        | 25       | 1.7    | 0.1 |
| CRS-03          | 154.6       | 90.1       | 10.7   | 410       | 1.1        | 69.9   | 6.8        | 32        | 1.03   | 5         | 6.4     | 0.9      | 1.7      | 22       | 9.3    | 0.2 |
| CRS-04          | 1.8         | 23.2       | 15.2   | 84        | 0.3        | 43     | 10.6       | 451       | 3.14   | 1.9       | 0.6     | 1.4      | 3.4      | 10       | 0.1    | 0.1 |
| CRS-05          | 4.1         | 33.8       | 18.3   | 39        | 0.5        | 36.6   | 9.1        | 68        | 1.37   | 0.6       | 1.3     | 2        | 1.9      | 15       | 0.5    | 0.3 |
| CRS-06          | 1.2         | 41.4       | 5.2    | 61        | 0.2        | 19.6   | 10.1       | 763       | 2.12   | 57.9      | 3.9     | 8        | 3.4      | 9        | 0.4    | 0.1 |
| ELEMENT         | Bi          | V          | Ca     | Ρ         | La         | Cr     | Mg         | Ba        | Ti     | В         | AI      | Na       | K        | W        | Hg     | Sc  |
| SAMPLES         | ppm         | ppm        | %      | %         | ppm        | ppm    | %          | ppm       | %      | ppm       | %       | %        | %        | ppm      | ppm    | ppm |
| CRS-01          | 0.2         | 114        | 0.92   | 0.09      | 5          | 32.1   | 1.01       | 62        | 0.1    | 1         | 1.92    | 0.1      | 0.67     | 0.4      | <.01   | 4.1 |
| CRS-02          | 0.3         | 13         | 0.55   | 0.1       | 4          | 23     | 0.05       | 45        | 0.07   | <1        | 0.49    | 0.1      | 0.03     | 0.4      | <.01   | 0.5 |
| CRS-03          | 0.4         | 268        | 0.67   | 0.15      | 5          | 47.4   | 0.07       | 71        | 0.08   | <1        | 0.22    | 0.02     | 0.05     | 2.2      | 0.01   | 1.5 |
| CRS-04          | 2           | 90         | 0.22   | 0.04      | 11         | 74.8   | 0.99       | 45        | 0.01   | <1        | 1.04    | 0.03     | 0.05     | 0.1      | <.01   | 3.1 |
| CRS-05          | 0.3         | 34         | 0.18   | 0.02      | 4          | 23.8   | 0.08       | 22        | 0.08   | <1        | 0.18    | 0.03     | 0.03     | 0.4      | <.01   | 1.1 |
| CRS-06          | 0.2         | 46         | 0.21   | 0.06      | 5          | 31     | 1.08       | 30        | 0.13   | <1        | 1.2     | 0.02     | 0.72     | 0.3      | <.01   | 3.1 |
| ELEMENT         | TI          | S          | Ga     | Se        |            |        |            |           |        |           |         | 4        |          |          |        |     |
| SAMPLES         | ppm         | %          | ppm    | ppm       |            |        |            |           |        |           |         | -1       |          |          | 1      |     |
| CRS-01          | 0.4         | 1.6        | 6      | 1.3       |            |        |            |           | 5      |           |         |          |          |          |        |     |
| CRS-02          | <.1         | 0.92       | 2      | 20.2      |            |        |            |           |        |           |         |          |          |          |        |     |
| CRS-03          | 0.1         | 0.6        | 2      | 25.4      |            |        |            |           |        |           |         |          |          |          |        |     |
| CRS-04          | 0.1         | 0.81       | 8      | 4.7       |            |        |            |           |        |           |         |          |          |          |        |     |
| CRS-05          | 0.1         | 0.65       | 1      | 7.3       |            |        |            |           |        |           |         |          |          |          |        |     |
| CRS-06          | 0.5         | 0.8        | 5      | 0.6       |            |        |            |           |        |           |         |          |          |          |        |     |

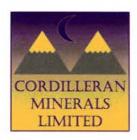








YEIP 2005 -025 Vol. 2





# SUMMARY REPORT FOR THE COUGHLAN PROJECT, YUKON TERRITORY

YUKON GEOLOGICAL SURVEY - PROSPECTING PROGRAM YMIP 05-025

2005

By Mark Lindsay Cordilleran Minerals Ltd

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Figure 1

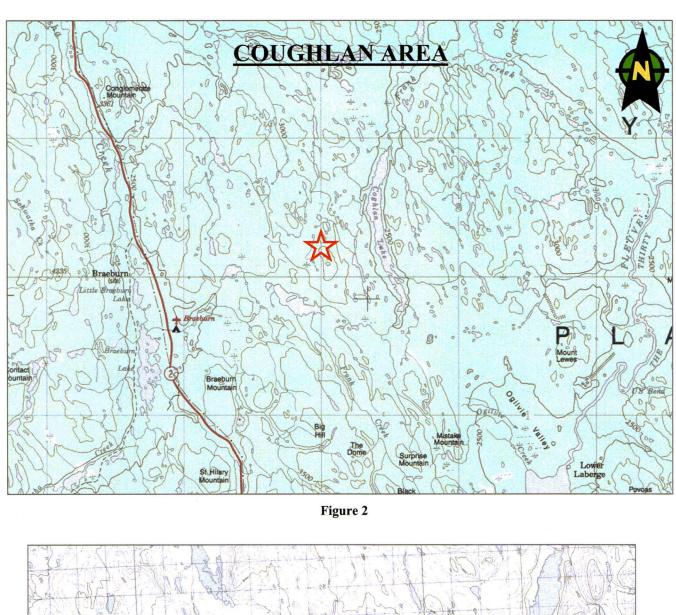




Figure 3

## **SUMMARY**

In October 2005 a reconnaissance prospecting trip was taken to the Coughlan area on Mapsheet 105E 12 to examine the area for the cause of a prominent stream sediment gold anomaly that exists at that location.

Rocks observed in the area of interest consisted of mainly Laberge sedimentary packages, with a conglomerate unit being the most apparent. A volcanic unit also appears to be intruding into the central part of Coughlan Ridge in the middle of the target area. An apparent paleo-stream bed is found preserved within conglomerate beds on the east side of the central Coughlan Ridge. This feature may be responsible for the strong gold geochemical anomaly in the area. Further sampling will be needed to confirm this idea!

No sulfide mineralization was observed within outcrops in the Coughlan target area.

Soil and rock samples were taken along the north end of the target area. Samples results will be ready in late January 2006.

At this time there does not appear to be any economic concentrations of minerals located within the Coughlan target area.

## **INTRODUCTION**

The area of interest regarding this report is known as the Coughlan Project area.

In October 2005 a prospecting program was conducted in the Coughlan area. The program was conducted to prospect for gold mineralization potentially associated with intrusive rocks in the Coughlan Lake area. Prospecting was conducted by Cordilleran Minerals Limited staff. Several soils and few rock samples were collected from the area.

The Coughlan Area was selected as a target because of a prominent regional stream sediment gold anomaly that exists around the main ridge in the target area, which the author is calling Coughlan Ridge.

## **LOCATION AND ACCESS**

The Coughlan area is located in south-central Yukon. The target is accessible by helicopter from Braeburn Lodge (80 kilometers north of Whitehorse) or directly from Carmacks or Whitehorse. The target is approximately 13 kilometers east of the Braeburn airfield.

The target area is within the Whitehorse Mining District.

#### **PHYSIOGRAPHY, VEGETATION AND CLIMATE**

The Coughlan area is located in an area of dense forest cover within the Yukon Plateau. The area appears to have been extensively affected by glaciers and erosion in the past and the subdued, rounded landscape is a result of that activity. The highest point in the area is 1219 m. Drainage in the upper alpine areas is very good. Some wetlands are located in the lower valley.

Vegetation in the area is relatively dense in most areas but is patchy on the top of Coughlan Ridge. Tree cover is quite dense in the valley bottoms (fig.4). Moss, lichen and grasses cover all of the target area. Willow, buck-brush and Black Spruce are also found spread-out through the area.

The climate of the area is typical of the interior continental region at this latitude.

Winters are long with short hours of daylight and average daily temperatures of -20 Celsius. Summers are pleasant and warm with long days (20 hours of daylight on June 21), although it can be quite rainy at times. The average summer temperature is 19 Celsius with highs ranging into the low 30's (Celsius).



Figure 4

## HISTORY AND PREVIOUS WORK

The exploration history of the Coughlan area is not extensive. The area was first staked in July 1989 by Noranda ECL. Mundessa Dev. Corp staked 10 claims over the southern extent of the area in 1992. No work was filed on claims staked by either party.

The area was also visited by GSC geologist D.J. Templeman-kluit in the late 1970's when 1:250,000 data was being collected for the Laberge Map area (105E).

## PROPERTY AND CLAIM STATUS

No mineral claims exist in the area.

## **2005 WORK COMPLETED**

Cordilleran Minerals Limited conducted preliminary prospecting work over the Coughlan Area in August 2005. Employees Mark Lindsay, Taelin Free and Rick Costea and along with Trans North Helicopters provided support for the venture. Prospecting was carried out during the period from October 17-22 2005.

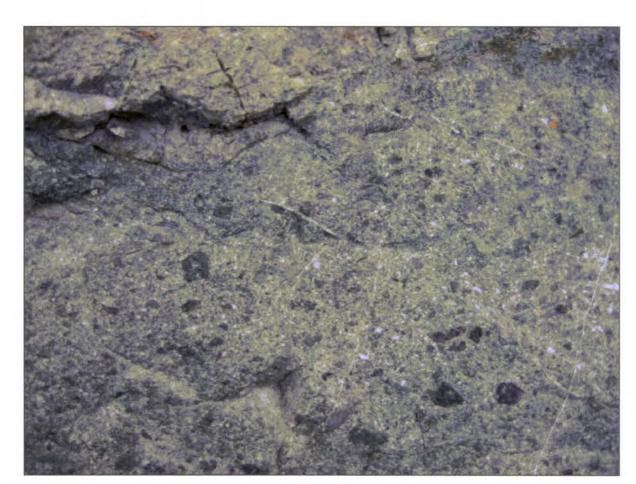
## **REGIONAL GEOLOGY**

The Coughlan area is located within a large package of Jurassic aged Laberge sediments. All of the rocks of the target area are located within Stikinia Terrane. The dominant rock unit in the area is conglomerate. An unmapped volcanic unit is also present (intruding) in the central target area (see fig. 6).



| -              |    |   |    | - |
|----------------|----|---|----|---|
| - HC           | iσ | u | -0 | 5 |
| - <b>1</b> - 1 | 12 | u |    | - |

| JL     | Poorly sorted, medium bedded to massive arkosic sandstone and minor shale with interbeds and thick<br>members of resistant heterolithic pebble and boulder conglomerate; recessive, dark brown<br>weathering, thin bedded, dark brown to greenish, silty shale |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| uTrAK  | Brown shale, black and minor red siltstone, greenish, calcareous greywacke and interbedded<br>bioclastic, argillaceous limestone; igneous- or limestone-clast pebble and cobble conglomerate;<br>lahaaric debris flows; rare feldspar-augite porphyry flows    |
| uTrAK2 | Massive to thick bedded limestone; minor thin bedded argillaceous to sooty limestone; coarsely crystalline, massive dolostone; minor laminated chert; massive to poorly bedded, limestone conglomerate debris flows and fanglomerate                           |



#### Figure 6

#### **STRUCTURE**

Structures in the Coughlan area are dominated by two large faults that are seen on the map in figure 5. The conglomerate sedimentary unit in the area is massive in character and is found along the entire length of the north end of Coughlan Ridge.

#### ALTERATION

The rocks of the target area have did not appear to be altered in any significant manner.

## **ECONOMIC GEOLOGY**

No sulphide (pyrite) mineralization was found in the target area.

There is an odd formation of rock in the eastern part of the target area. The formation appears to be an old stream bed or paleo-beach (see figure 6 & 7). If the sandstone in this paleo formation is gold bearing it may be the source of the gold anomaly in the area?



Figure 7



Figure 8

## **ROCK ANALYSIS**

3 rock grab samples were collected from the area.

The samples were sent to Acme Laboratories Ltd. in Vancouver, British Columbia for analysis. At Acme Labs the rocks will be crushed and sieved to -150 mesh, digested in hot HCL / HNO3 and analyzed by ICP-MS.

The assay results were not available at the time of writing this report.

Assays will be submitted as an addendum as they are received.

#### SOIL ANALYSIS

27 soil samples were collected from the target area between October 17 and October 19, 2003. The samples were collected in wet strength Kraft sample bags and air-dried at Whitehorse.

The soils were collected along the 1066m contour elevation. Samples were taken at 50 m intervals along the west ridge line of Coughlan Ridge (fig. 9).

A small number of reconnaissance soil samples were taken from a small rusty side-hill to the north and from more eastern areas of Coughlan Ridge.

Sample sites were dug with a grub hoe and samples were taken, by hand, from the "B" horizon.

The assay results were not available at the time of writing this report.

Assays will be submitted as an addendum as they are received.

The soils were sent to Acme Laboratories LTD. in Vancouver, British Columbia for analysis. At Acme labs the soils were dried and sieved to -80 mesh, digested in hot HCL/HNO3 and analyzed by ICP-MS.

## **CONCLUSIONS AND RECOMMENDATIONS**

The Coughlan target area appears to have an associated gold component due to the fact that there is a very strong regional stream sediment gold anomaly around the north end of Coughlan Ridge. The origin of the gold anomaly seems to be very enigmatic. No sulfides were seen in the visit to the area. No mineralization of any kind was noted in the area.

An interesting formation of sandstone beds and conglomerate was seen on the east side of Coughlan Ridge. This formation (although not sampled at the time) may be an old paleo-beach or creek bed and could be the source of the strong gold anomaly in the area? This hypothesis will have to be tested at another time.

At this time, barring some good assay results from the area, the Coughlan Project does not hold much promise of hosting any mineralization that is of economic interest.

No further work is recommended on the Coughlan Project area.

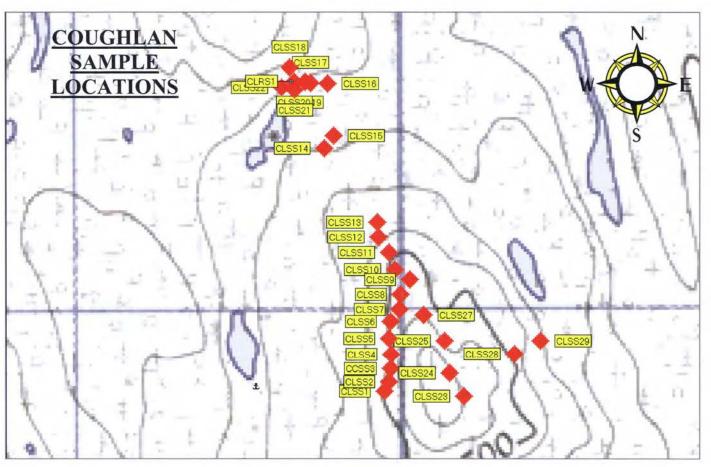
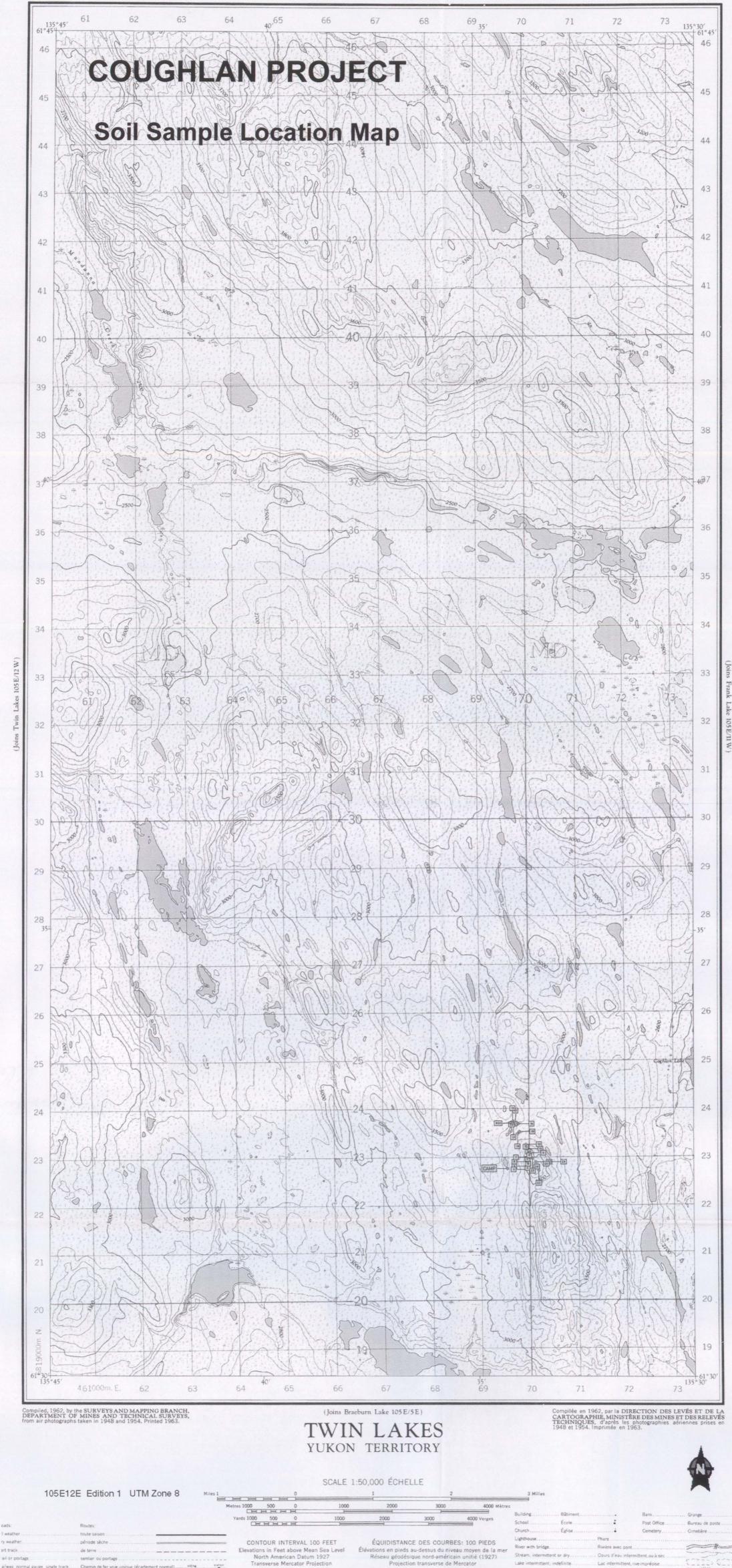


Figure 9

| To Cordille                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | LYTICAL             |                                        |            |           | 10.002         |           |      |           | 1   |           |          |          |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------|------------|-----------|----------------|-----------|------|-----------|-----|-----------|----------|----------|------------|
| Part of Acm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     | 8                                      |            |           |                |           |      |           |     |           |          |          |            |
| Analysis: GROUP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     | State of the state of the state of the | VITH 90 MI | 2-2-2 HCI | -HNO3-H2C      | AT 95 DEG |      | IE HOUR D |     | 300 ML AN | ALYSED B | Y ICP-MS | -          |
| ELEMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Cu                  | Pb                                     | Zn         | Ag        | Ni             | Co        | Mn   | Fe        | As  | U         | Au       | Th       | Sr         |
| SAMPLES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ppm                 | ppm                                    | ppm        | ppm       | ppm            | ppm       | ppm  | %         | ppm | ppm       | ppb      | ppm      | ppm        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 31.9                | 6.5                                    | 38         | <.1       | 16.2           | 9.5       | 453  | 2.12      | 6.4 | 0.3       | <.5      | 2        | 58         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 49.2                | 7.3                                    | 45         | <.1       | 19.7           | 9.3       | 368  | 2.51      | 7.3 | 0.5       | 2.5      | 2.9      | 68         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 24.6                | 6.8                                    | 62         | <.1       | 19.8           | 9.9       | 567  | 2.57      | 6.1 | 0.8       | 1.7      | 2.6      | 44         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 23.9                | 6.8                                    | 35         | <.1       | 18.9           | 9.1       | 233  | 2.54      | 6.9 | 0.3       | <.5      | 3.1      | 37         |
| CLSS-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20.8                | 5.9                                    | 37         | <.1       | 17.8           | 8.8       | 265  | 2.4       | 6.7 | 0.5       | <.5      | 2.9      | 29         |
| RE CLSS-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 21.6                | 6                                      | 37         | <.1       | 17.4           | 8.7       | 258  | 2.36      | 6.7 | 0.5       | <.5      | 3        | 28         |
| CLSS-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 18.8                | 6.5                                    | 41         | <.1       | 19             | 8.8       | 215  | 2.84      | 6.3 | 0.4       | <.5      | 2.3      | 27         |
| CLSS-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 69.5                | 6.2                                    | 46         | <.1       | 15.7           | 12.8      | 564  | 3.72      | 6.6 | 0.6       | 1.2      | 2.4      | 26         |
| CLSS-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 27.9                | 6.6                                    | 45         | <.1       | 23.6           | 9.3       | 308  | 2.7       | 7.4 | 0.6       | 0.6      | 2.9      | 32         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 23.3                | 6.8                                    | 33         | <.1       | 14.9           | 8         | 357  | 2.32      | 6.5 | 0.4       | 7.3      | 1.9      | 33         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 14.6                | 3.8                                    | 18         | <.1       | 8.6            | 4.1       | 111  | 1.43      | 2.9 | 0.3       | 14.7     | 0.9      | 21         |
| CLSS-12A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Sector Sector                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 22.6                | 6                                      | 33         | <.1       | 13.9           | 7.8       | 336  | 2.18      | 4.8 | 0.4       | 0.6      | 1.5      | 31         |
| and the second sec | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 52.3                | 8.2                                    | 40         | <.1       | 17.1           | 10.2      | 453  | 2.78      | 8.3 | 0.4       | 5.8      | 2.6      | 52         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 43.8                | 5.6                                    | 41         | 0.1       | 17             | 8.1       | 450  | 2.08      | 7.3 | 0.6       | 5.6      | 1.4      | 166        |
| and the second se                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.3                 | 3.2                                    | 23         | <.1       | 7.1            | 4         | 167  | 1.26      | 2.5 | 0.2       | <.5      | 0.7      | 13         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 49.7                | 5.7                                    | 50         | 0.1       | 13.4           | 13.9      | 909  | 3.82      | 6.2 | 0.2       | 3        | 1.7      | 82         |
| CLSS-10<br>CLSS-17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 40.5                | 4.5                                    | 43         | <.1       | 11.7           | 9.6       | 666  | 2.22      | 4.4 | 0.2       | 2.2      | 0.5      | 90         |
| CLSS-17<br>CLSS-18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 66.6                | 4.1                                    | 52         | <.1       | 14.5           | 17.6      | 1380 | 3.3       | 5.4 | 0.2       | 4.6      | 0.4      | 112        |
| CLSS-18<br>CLSS-19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 69.6                | 3.8                                    | 50         | <.1       | 14.8           | 16.9      | 1141 | 3.56      | 3.9 | 0.3       | 2.3      | 0.4      | 121        |
| CLSS-19<br>CLSS-20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 62.9                | 6.5                                    | 65         | 0.1       | 14.0           | 18.9      | 1699 | 3.36      | 8.3 | 0.3       | 3.7      | 0.5      | 209        |
| CLSS-20<br>CLSS-21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 53                  | 7.1                                    | 68         | 0.1       | 13.1           | 15.8      | 1719 | 3.71      | 7.5 | 0.4       | 5.7      | 0.8      | 163        |
| CLSS-21<br>CLSS-22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 35.4                | 5.3                                    | 45         | <.1       | 10.5           | 8.4       | 624  | 1.93      | 5.8 | 0.2       | 1.8      | 0.6      | 54         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 17.5                | 4.6                                    | 28         | <.1       | 11.8           | 5.9       | 323  | 1.79      | 4.1 | 0.2       |          |          | 33         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 31.7                | 7.2                                    | 52         | <.1       | 28.3           | 9         | 306  |           | 9   | 0.5       | <.5      | 0.8      | 22         |
| A second capacity of the second second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.25 YOU WAR ALC 12 |                                        |            |           | 57.555MZ303423 |           |      | 3.04      |     |           | <.5      |          | 2012/02/02 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 44.1                | 7.4                                    | 43         | <.1       | 25.6           | 13.2      | 596  | 2.77      | 6.7 | 0.6       | 1.5      | 0.9      | 45         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 34.8                | 5.3                                    | 45         | <.1       | 11             | 8.6       | 648  | 2.03      | 5.7 | 0.3       | 53.7     | 0.7      | 51         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 21.7                | 6.5                                    | 38         | <.1       | 15.9           | 7.8       | 206  | 2.77      | 6.4 | 0.3       | <.5      | 1.2      | 26         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 39.3                | 8.1                                    | 39         | <.1       | 19.2           | 8.4       | 261  | 2.71      | 8.9 | 0.9       | 1.3      | 2.8      | 31         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 27                  | 6.5                                    | 37         | <.1       | 13.7           | 7.6       | 292  | 2.16      | 6.4 | 0.4       | 0.6      | 1.7      | 27         |
| ELEMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sb                  | Bi                                     | V          | Ca        | P              | La        | Cr   | Mg        | Ва  | Ti        | В        | AI       | Na         |
| SAMPLES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ppm                 | ppm                                    | ppm        | %         | %              | ppm       | ppm  | %         | ppm | %         | ppm      | %        | %          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.1                 | 0.2                                    | 111        | 2.75      | 0.045          | 9         | 43.2 | 1.09      | 488 |           | 6        | 1.87     | 0.06       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.4                 | 0.1                                    | 47         | 1.04      | 0.039          | 8         | 22.4 | 0.44      | 100 | 0.07      | 6        | 1.16     | 0.02       |
| CLSS-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.7                 | 0.1                                    | 56         | 2.05      | 0.06           | 10        | 29.1 | 0.61      | 94  | 0.07      | 3        | 1.3      | 0.03       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.4                 | 0.1                                    | 56         | 0.75      | 0.057          | 10        | 30.8 | 0.54      | 131 | 0.08      | 2        | 1.59     | 0.02       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.5                 | 0.1                                    | 57         | 0.57      |                | 8         | 31.1 | 0.46      | 84  | 0.1       | 5        | 1.37     | 0.02       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.5                 | 0.1                                    | 53         | 0.48      | 0.015          |           | 28.9 | 0.44      | 89  | 0.08      | 2        | 1.32     | 0.02       |
| RE CLSS-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.5                 | 0.1                                    | 53         | 0.5       | 0.015          |           | 29.3 | 0.48      | 90  | 0.09      | 3        | 1.47     | 0.02       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.4                 | 0.1                                    | 66         | 0.31      |                | 7         | 31.9 | 0.45      | 82  | 0.08      | 1        | 1.66     | 0.01       |
| CLSS-8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.7                 | 0.1                                    | 46         | 0.43      | 0.032          |           | 16.8 | 0.27      | 127 | 0.01      | 3        | 1.04     | 0.01       |
| CLSS-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.5                 | 0.1                                    | 58         | 0.52      | 0.025          | 9         | 32.5 | 0.6       | 128 |           | 2        | 1.65     | 0.02       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.4                 | 0.1                                    | 58         | 0.51      | 0.022          | 7         | 24.8 | 0.35      | 135 | 0.05      | 2        | 1.54     | 0.02       |
| CLSS-11A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | a second s | 0.2                 | 0.1                                    | 34         | 0.33      | 0.018          |           | 14.1 | 0.2       | 62  | 0.04      | 1        | 0.85     | 0.02       |
| CLSS-12A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.4                 | 0.1                                    | 57         | 0.49      | 0.031          | 7         | 21.9 | 0.33      | 149 | 0.04      | 2        | 1.4      | 0.02       |
| CLSS-13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.7                 | 0.1                                    | 65         | 1.82      | 0.042          | 11        | 26.9 | 0.5       | 116 | 0.06      | 2        | 1.24     | 0.02       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |            | +         | +                     | -           | -                           |          | -                     | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |      |    | +    | -   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------|-----------|-----------------------|-------------|-----------------------------|----------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|----|------|-----|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2              |            | -         |                       | -           |                             |          |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |    |      |     |
| CLSS-29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.11           | 0.2        | 0.01      | 3.3                   | 0.1         | <.05                        | 6        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    | -    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.09           | 0.2        | 0.02      | 6.1                   | 0.1         | <.05                        | 6        | 0.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    |      |     |
| Charles and the second second second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.08           | 0.2        | 0.02      | 3.2                   | 0.1         | <.05                        | 7        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    | -    |     |
| RE CLSS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                | 0.1        | 0.03      | 4.2                   | <.1         | <.05                        | 3        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    |      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.2        | 0.03      | 4.6                   | 0.1         | <.05                        | 7        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    |      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.06           | 0.2        | 0.01      | 3.9                   | 0.1         | <.05                        | 8        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -        |      |    |      |     |
| and the second se | 0.14           | 0.1        | 0.02      | 2.3                   | 0.1         | <.05                        | 4        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    |      |     |
| and be added to be the state of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.18           | 0.1        | 0.03      | 4                     | 0.1         | <.05                        | 3        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    | -    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.18           | 0.1        | 0.05      | 7.3                   | 0.1         | <.05                        | 2        | 0.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    |      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.19           | 0.1        | 0.06      | 9                     | 0.1         | <.05                        | 2        | 0.6                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    | -    |     |
| CONTRACT A TAX DISTORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.15           | 0.1        | 0.03      | 9.3                   | <.1         | <.05                        | 2        | 0.6                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    |      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.16           | 0.1        | 0.03      | 8.6                   | 0.1         | 0.06                        | 3        | 0.6                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    |      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.2            | 0.1        | 0.03      | 4.4                   | <.1         |                             | 3        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -        |      |    |      |     |
| CLSS-16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.17           | 0.1        | 0.04      | 10.2                  | <.1         | <.05                        | 3        | 0.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    |      |     |
| CLSS-15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.04           | 0.1        | 0.01      | 1.5                   | 0.1         | <.05                        | 4        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    |      |     |
| and the second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.07           | 0.2        | 0.06      | 4.9                   | 0.1         | <.05                        | 3        | 0.6                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    | -  | -    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.11           | 0.2        | 0.05      | 8.7                   | 0.1         | <.05                        | 5        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      | -  |      |     |
| CLSS-12A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                | 0.1        | 0.01      | 4.1                   | 0.1         | <.05                        | 5        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      |    | -    | -   |
| CLSS-11A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 100 Col 100    | 0.1        | 0.01      | 2.4                   | <.1         | <.05                        | 3        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -        |      | -  | -    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.13           | 0.2        | 0.01      | 5                     | 0.1         | <.05                        | 5        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -        | -    | -  |      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.15           | 0.2        | 0.01      | 6.3                   | 0.1         | <.05                        | 6        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    | -  | -    | -   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.19           | 0.1        | 0.02      | 11.8                  | 0.1         | <.05                        | 3        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -        | -    |    | -    | -   |
| and the second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.11           | 0.2        | 0.01      | 4                     | 0.1         | <.05                        | 6        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    |    | -    | -   |
| RE CLSS-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                | 0.2        | 0.01      | 4.6                   | 0.1         | <.05                        | 5        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -        | -    |    |      |     |
| CLSS-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.13           | 0.2        | 0.02      | 4.2                   | 0.1         | <.05                        | 5        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    | -  | -    | -   |
| CLSS-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.15           |            | 0.01      | 5                     |             | <.05                        | 5        | <.5                   | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |      | -  |      | -   |
| A D T HE CONTRACTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | AND AND A DOM. | 0.1        |           | and the second second | 0.1         | 100000000                   | 1.100.00 | <.5                   | Construction of the second sec |          |      | -  |      | -   |
| CLSS-3<br>CLSS-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.2            | 0.2        | 0.03      | 5.8                   | 0.1         | <.05                        | 5        | and the second second | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | -    | -  | -    |     |
| CLSS-2<br>CLSS-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.24           | 0.2        | 0.02      | 5.8                   | 0.1         | <.05<br><.05                | 4<br>5   | <.5                   | 15<br>15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | -    |    |      |     |
| CLSS-1<br>CLSS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.14           | 0.5        |           | 4.7                   | 0.4         | <.05                        | 8        | 0.7                   | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          | -    |    | -    | -   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | ppm<br>0.5 | 0.1       | ppm<br>12.8           | 0.4         |                             | ppm      | ppm                   | gm<br>15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |      |    | -    | -   |
| SAMPLES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |            | Hg        |                       |             | %                           |          | 1.00.000              | Sampl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | e<br>I   | -    |    | -    | -   |
| ELEMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.1            | 0.4<br>W   | 0.1       | Sc                    | 0.37<br>TI  | 0.026<br>S                  | Ga       | Se                    | 0.41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 83       | 0.04 | 1  | 1.74 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.6        | 0.1       | 55                    |             | 0.032                       | 13<br>6  | 31.8                  | 0.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 84       | 0.04 | 1  | 2.2  | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.4        | 0.1       | 67                    | 0.32        | 0.028                       | 6        |                       | 0.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 65       | 0.03 | 2  | 2.02 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |            |           | 68                    | 0.89        |                             | 107 B 10 | 24.4                  | 0.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 265      | 0.03 | 5  | 0.96 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 1          | 0.1       | 38                    |             | 0.06                        | 6        | 12.7                  | 0.44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |      |    | 2.26 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.5        | 0.1       | 61                    | 0.27        | 0.022                       | 12       | 32.4                  | 0.67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 155      | 0.07 | 1  | 2.45 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.3        | 0.530.516 | 48<br>81              | NT/NDATATEL | a state of the state of the | 4        | 37                    | 0.34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 99<br>85 | 0.05 | 2  | 1.21 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | 0.3        | 0.1       | 48                    | 0.88        | 0.07                        | 4        | 17.9                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |      |    | -    | -   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 1.0        | 0.1       | 37                    | 0.88        | 0.07                        | 6        | 12                    | 0.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 272      | 0.01 | 5  | 0.95 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.2            | 1.8        | 0.1       | 43                    | 3.06        | 0.113                       | 8        | 11.3                  | 0.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 917      | 0.01 | 5  | 0.72 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 2.7        | 0.1       | 39                    | 5.24        | 0.103                       | 5        | 8.7                   | 0.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 767      | 0.01 | 6  | 0.76 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.5        | 0.1       | 49                    | 3.97        | 0.108                       | 5        | 18.8                  | 0.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 556      | 0.01 | 4  | 0.76 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.2            | 0.4        | 0.1       | 47                    | 2.56        | 0.002                       | 7        | 18.2                  | 0.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 656      | 0.02 | 5  | 1.01 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1            | 0.4        | 0.1       | 39                    | 2.51        | 0.040                       | 6        | 16.1                  | 0.43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 378      | 0.01 | 5  | 0.94 | 0.0 |
| CARD AND AND AND A STATE OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.1            | 0.2        | 0.1       | 31<br>40              | 0.18        | 0.019                       | 8        | 13.4                  | 0.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 652      | 0.04 | 3  | 0.94 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | 10.9       | 10.1      | 121                   | 10 10       | 0.019                       | 3        | 13.3                  | 0.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 80       | 0.04 | <1 | 0.87 | 0.0 |



105 E/12 W Lakes Twin

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MAGNETIC DECLINATION 31°52' EAST Annual change (decreasing) 3.2'

Transverse Mercator Projection

....BM 157→ Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

DÉCLINAISON MAGNÉTIQUE AU CENTRE DE LA FEUILLE EN 1963: 31°52' EST Variation annuelle (décroissante) 3.2'

Lake intermittent; indefinite

Certains noms inscrits sur cette carte ne sont pas encore officiels. La Direction des levés et de la cartographie saurait gré au public de lui signaler corrections et additions.

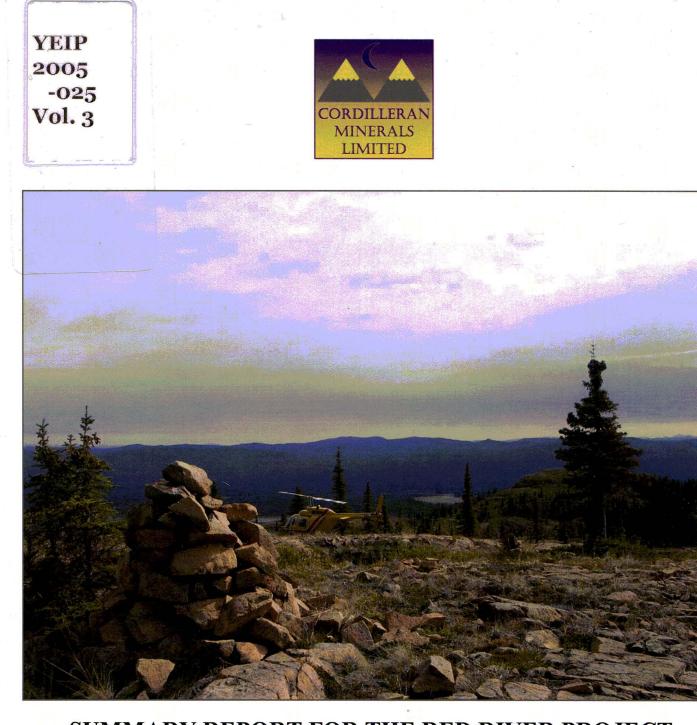
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# SUMMARY REPORT FOR THE RED RIVER PROJECT, YUKON TERRITORY

<u>YUKON GEOLOGICAL SURVEY - PROSPECTING PROGRAM</u> <u>YMIP 05-025</u>

2005

By Mark Lindsay Cordilleran Minerals Ltd

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Figure 1

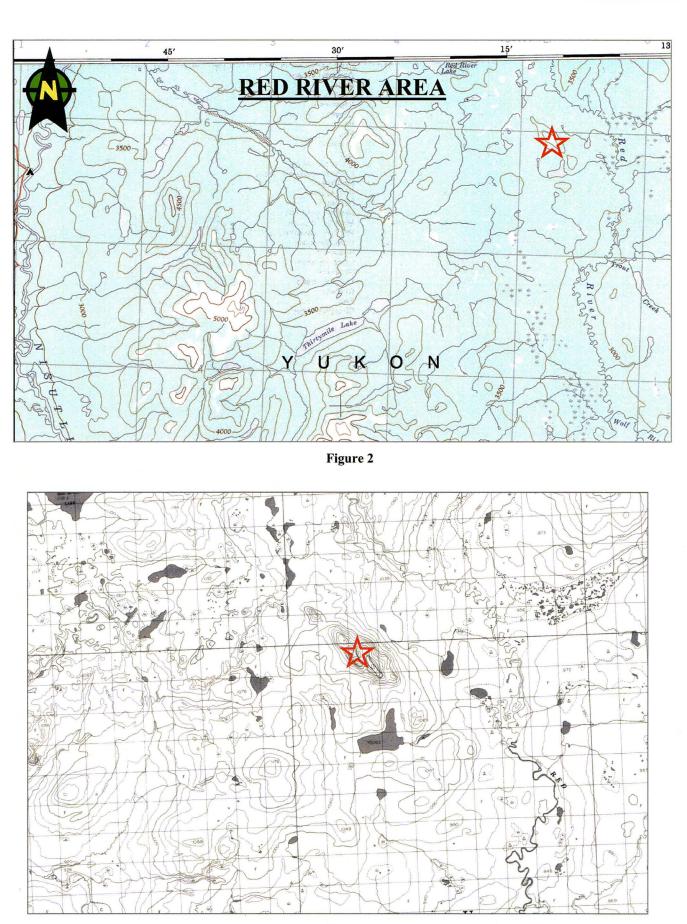


Figure 3

## **SUMMARY**

In the summer of 2005 a reconnaissance prospecting trip was taken to examine ultramafic rocks near the Red River on Map 105C 16.

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The rocks observed in the area of interest consisted of monotonous weathered outcrops of peridotite and its altered equivalent. The ultramafic is well exposed and extensive in the specific target area. No mineralization was observed within outcrops.

No samples were taken within the target area due to the obvious visual lack of mineralization and the uninteresting nature of the ultramafic rock.

## **INTRODUCTION**

The area of interest regarding this report is known as the Red River Project.

On August 16, 2005 a one day visit was conducted to the Red River area. The trip was conducted to prospect for mineralization associated with the highly magnetic ultramafic rocks in the area. Prospecting was conducted by Cordilleran Minerals Limited staff. No rock or soil samples were collected from the area due to the obvious lack of mineralization observed during the course of examining the area.

The Red River Area was selected as a magmatic Ni-Cu exploration target because of its location along the ancient North American Continental Margin. The target is thought to have been part of an extensional environment that formed when Yukon Tanana Terrane was rifted away from North America during the Paleozoic Era.

#### LOCATION AND ACCESS

The Red River Area is located in south-central Yukon (fig.1). The target is 43 kilometers east of the Canol Road as it nears the south end of Quiet Lake on NTS mapsheet 105C 16 (fig. 2).

The target area is within the Watson Lake Mining District.

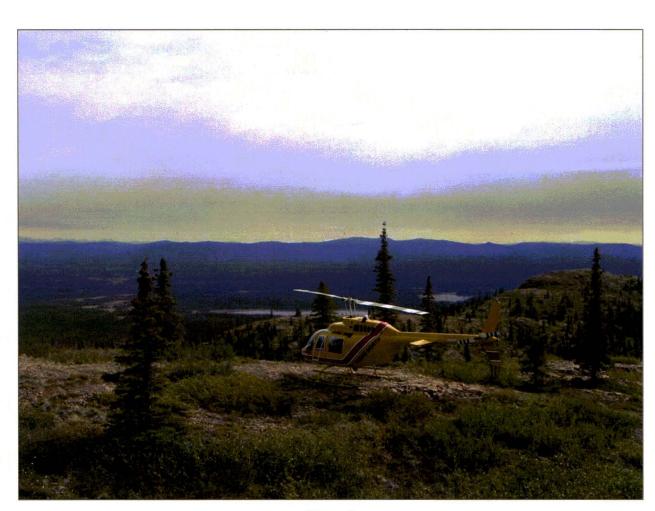
#### **PHYSIOGRAPHY, VEGETATION AND CLIMATE**

The Red River area is located in a heavily forested area along isolated hills that protrude from the flat Red River Valley. The highest point in the area is 1260 m. Drainage in the area is very good owing to the fact that the area is in the center of the Red River drainage. Numerous wetlands are located in the lower valley.

Vegetation in the area is relatively sparse on the uplands of the target area, but is quite dense in the valley bottom (fig.4). Moss, lichen and grasses cover all of the target area. Willow, buckbrush and Black Spruce are also found spread-out through the area.

The climate of the area is typical of the interior continental region at this latitude.

Winters are long with short hours of daylight and average daily temperatures of -20 Celsius. Summers are pleasant and warm with long days (20 hours of daylight on June 21), although it can be quite rainy at times. The average summer temperature is 19 Celsius with highs ranging into the low 30's (Celsius).



#### Figure 4

#### HISTORY AND PREVIOUS WORK

The exploration history of the Red River area is almost non-existent. The only known visits to the area were conducted by GSC geologist R. Mulligan in the 1960's when 1:250,000 scale data for the Teslin Map area (105C) was first being collected.

### PROPERTY AND CLAIM STATUS

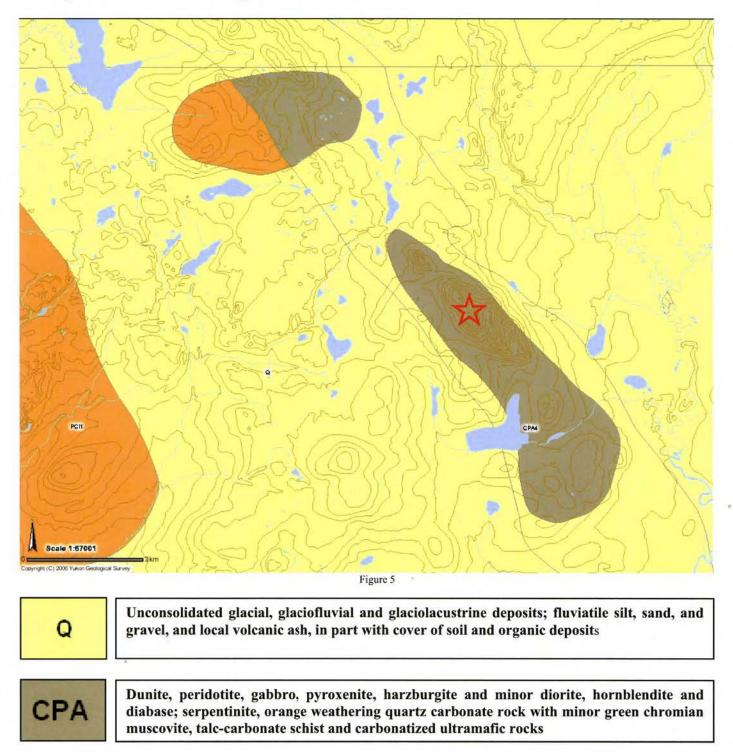
No mineral claims exist in the area.

#### **2005 WORK COMPLETED**

Cordilleran Minerals Limited conducted preliminary prospecting work over the Red River Area in August 2005. Employees Mark Lindsay, Richard Baker and along with Trans North Helicopters provided support for the venture. The prospecting visit was carried out on August 16<sup>th</sup> 2005.

## **REGIONAL GEOLOGY**

The Red River area is located within the St. Cyr Clippe. This regional unit was part of a package of rocks that was rifted off the ancient continental margin of North America in the Devonian period and reattached during the Cretaceous.



Calcareous sandstone, shale, quartz-eye grit, quartzite, micaceous quartzite and minor grey limestone generally overlain by phyllite, quartzite, and dolomitic marble; muscovite-chlorite schist, biotite schist, meta-sandstone and minor calc-silicate.

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## **STRUCTURE**

The structure of the Red River ultramafic rocks appears to be massive. An old fault may cut through the middle of the target area. The ultramafics may be part of an ophiolitic related belt of rocks that extends from the eastern edge of the Laberge (105E) Mapsheet and trends in a southeast manner down through the Dunite Mt and Tower Peak areas on the Quiet Lake (105F) Mapsheet.

The ultramafics are mapped as being in a thrust fault related contact with older rocks to the east.

## **ALTERATION**

The rocks of the target area have a dull orange color from surface weathering (see figure 6).

Alteration observed in the area is associated with different stages of sepentinization of the ultramafic rocks.

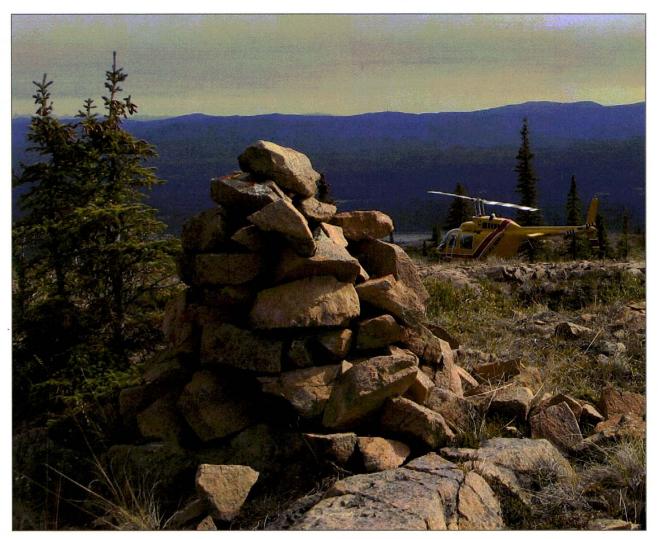


Figure 6

## **ECONOMIC GEOLOGY**

No sulphide mineralization was found in the target area.

No mineralization of economic interest was observed in any rocks examined in the target area.

## **ROCK ANALYSIS**

No rock samples were collected from the area.

## SOIL ANALYSIS

No soil samples were collected in the area.

## **CONCLUSIONS AND RECOMMENDATIONS**

The Red River target area appears to host a very mundane ultramafic rock body of suspected ophiolitic origin.

A one day visit to the area in August 2005 did not find any mineralization that was of economic interest.

No further work is recommended on the Red River target area.