COMINCO LTD

EXPLORATION
NTS: 105 G/9

WESTERN CANADA
December 1995

ASSESSMENT REPORT
GEOCHEMISTRY
TAG CLAIM GROUP

Watson Lake Mining District, Y.T.

LATITUDE: 61° 41'

LONGITUDE: 130° 26'

WORK PERIOD
JUNE 23 to 28

D.G. VANDERKLEY

[Stamps and seals]
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SUMMARY

Between June 23 and 28, 1995 a geochemical survey was carried out on the Tag property (N.E. claim group) in the eastern Yukon. The soils and silts taken on this part of the property show elevated metals in some places but there are no known sources. More geochemistry and geology should be done to source these anomalous regions.

LOCATION (Figure 1)

Latitude: 61°32'
Longitude: 130°26'
NTS: 105 G/8,9

The Tag claim group is 100% owned by Cominco Ltd. The claim tenures are outlined as follows.

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Access to the property is by helicopter, 140 Km east southeast of Ross River or 10 Km east-northeast from Cominco’s KZK deposit. A three kilometre long lake suitable for a float plane lies on the southeast end of the property. The Robert Campbell Highway is 4 km north of the most northerly part of the property.

History

The area was prospected since the 1920’s but until the G.S.C. RGS Stream sediment release in 1988 no claims were staked...
in the area. This survey revealed a stream sediment sample (883511) that was anomalous in Cu (2820 ppm), Zn (1935 ppm), As (450 ppm), Mo (91 ppm), Fe (10.6%), V (470), Cd (46.8), and Sb (32.5 ppm) about 1 km down drainage. These anomalies prompted the staking of the ARM claims. North of the ARM claims Al Carlos staked the DESOTO claims, which have lapsed and were partially reclaimed ARM 9-12.

Then Cominco staked ground in 1994 following up the discovery of the ABM zone on the KZK VMS deposit.

**Geology**

The rocks underlying this part of southeastern Yukon have been assigned to 2 terranes: the Yukon-Tanana Terrane (YTT) and the Slide Mountain Terrane (SMT) (Mortensen, 1983a; Mortensen and Jilson, 1985).

The YTT consists primarily of a layered sequence of metamorphosed rocks comprising a "lower unit" of pre-Devonian quartzite, pelitic schist and minor marble, a late Devonian to mid-Mississippian "middle unit" (3F) comprising carbonaceous phyllite and schist with interbanded mafic and, locally significant, felsic metavolcanics (3G), and an "upper unit" of Pennsylvanian marbles and quartzite. Volcanism within the "middle unit" was accompanied by the intrusion of 2-3, late Devonian to Mississippian, mafic to felsic metaplutonic suites (Simpson Range suite and augen and monzonitic orthogneisses). This sequence appears to reflect stable platformal or shelf sedimentation with an intervening period of mafic to felsic arc volcanism developed within a more reduced basinal setting.

A subhorizontal to moderately north to northeast dipping, penetrative ductile deformation fabric (S2) and associated middle greenschist facies (chlorite-biotite grade) metamorphism affects all YTT rocks. This fabric reflects the first, and most significant, deformational and metamorphic event (D1) perhaps related to a continent-arc collision during late Permian to early Triassic time.

The late Devonian to Triassic SMT comprises a heterogenous package of mafic to ultramafic plutonic rocks, mafic volcanics, massive carbonate and chert. This sequence was structurally emplaced as thrust bounded klippen on YTT rocks or as thrust slices imbricat within YTT rocks during a period of crustal shortening (D2). The SMT is thought to represent a disrupted oceanic crust and volcanic arc assemblage thought to be located between the YTT and ancestral North America(?)

Late Triassic immature clastics comprising micaceous argillite, siltstone and sandstone unconformably (?) overlie the deformed and metamorphosed YTT rocks. These sediments are often closely associated with SMT volcanics and are invariably in fault contact with YTT rocks.
The SMT, Late Triassic sediments and Late Triassic to Middle Jurassic plutons are all affected by a period of thrust faulting (D2) during the Jurassic.

**Geochemistry** (figure 2)

In total for 1995, 995 soil and silt samples were taken and analyzed. All of the samples were shipped to Cominco’s Exploration Laboratory in Vancouver, B.C. for analysis. The soil and silt samples were dried and sieved to -80 mesh, then 0.5 grams of the -80 fraction was digested in reverse aqua regia. The silts and soils were analyzed by ICP, for 27 elements, 10g AA for Au and loose pressed pellet XRF for Ba.

The soil sampling was done at 100 metre spacing on claim lines and lines halfway between claim lines resulting in lines about 500 metres apart. This was done to try and get a cross section of possible background and anomalous samples in different rock types in a grid type fashion. The elements used for identifying anomalies in the surrounding felsic volcanics (which hosts the KZK VMS deposit) are Pb, Zn, Mo, Ag, and Ba (by XRF). The 90th percentile for Pb-24ppm (upto 327), Zn-185ppm (upto 1906ppm), Mo-7ppm (upto 103ppm), Ag-0.9ppm (upto 9.6ppm) and Ba-2400ppm (upto 7988ppm) help identify multi-element anomalous areas in the claim group.

Soil development in this area is dependent on the topography. In the valley bottoms, poorly developed, black/dark brown A horizon is 5 to 60+ cm thick. Due to swampy permafrost conditions only sporadic B horizons are developed. The glacial cover is a till veneer less than 1 metre with some patchy colluvium covered areas. The soil sampled here would be a mix of A/B horizon. On the moderate slopes more complex soils are present. The colluvial material has developed alpine A-B-C soil horizon profiles with some talus on the steeper slopes. The upper plateau areas are covered with residual soil/talus with patchy till. The soil sampled on the hillsides and plateaus would be a B/C mixture.

**Conclusions and Recommendations**

The soil/silt geochemistry has identified many multi-element (Pb/Zn/Ag/Mo/Ba) anomalies. The use of the 90th percentile for anomalous threshold does eliminate some of the anomalies, but more detailed work is needed to source the remaining anomalies. Further detailed soil geochemistry, prospecting and geological mapping are recommended.
References


Submitted by:
D.G. Vanderkley
Geochemical Technician II

Approved for Release by:
D.W. Moore
Manager, Exploration - Western Canada

DGV/

Distribution: Mining Recorder (2); Western District
# APPENDIX "A"

## STATEMENT OF EXPENDITURES

**GEOCHEMISTRY**
- 995 Samples x $18/Sample = $17,910

**HELICOPTER**
- 9.1 Hours x $720/Hour = $6,552

**SHIPPING**
- 17 Boxes x $100/Box = $1,700

**DOMICILE**
- 28 Man-days x $100/Man-day = $2,800

**SUPPLIES**
- $1,500

**SALARIES**
- Temps. 24 Man-days x $150/Man-day = $3,600
- D. Vanderkley 4 Days x $200/Day = $800

**REPORT WRITING/DRAFTING**
- $1,700

**TOTAL**
- $36,562
APPENDIX `B'

AFFIDAVIT

I, D.G. Vanderkley of the City of Burnaby, British Columbia, make Oath and say:

1. That I am employed as a Geochemical Technician by Cominco Ltd. and as such, have personal knowledge of the facts to which I hereinafter depose.

2. That annexed hereto and marked Exhibit `A' to this my Affidavit is a true copy of expenditures incurred on a soil and rock geochemical survey conducted on the TAG Mineral Claims June 23 to 28, 1995.

3. That said expenditures were incurred June 23 to 28, 1995 for the purpose of mineral exploration on the noted claims.

D.G. Vanderkley
Geochemical Technician II

December, 1995
APPENDIX `C'

STATEMENT OF QUALIFICATIONS

I, D.G. Vanderkley of the City of Burnaby, British Columbia, do hereby certify:

1. That I am a graduate of the Northern Alberta Institute of Technology 1990 with a Diploma from the Mineral Engineering Technology

2. That I am employed by Cominco Ltd. as an geochemical technician.

3. That I have been actively involved in mineral exploration for the past six years.

[Signature]

D.G. Vanderkley
Geochemical Technician II

December, 1995
APPENDIX 'D'

SOIL AND SILT GEOCHEMISTRY