

Geological, Geochemical and Geophysical Report on the Snow #1 - #4 Mineral Claims, Cariboo Mining Division, north-central British Columbia, 93J14E and 93J14W

54°57'00" N, 123°14'46" W

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Jan. 24, 2001

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT



#### Summary

The Snow #1 - #4 mineral claims lie approximately 42 kilometers southwest of Mackenzie in the Nechako Plateau in the northern Interior of British Columbia. The copper and nickel mineralization exposed on the claims is within a carbonate alteration zone along a pyroxenite and hornblendite dyke. The dyke intruded Middle to Upper Triassic Takla Group sediments. The area has been identified as a possible ultramafic dyke, but the previous company did not pursue any ground surveys in this area. One rock sample has been collected from the property and assayed. 10 chip samples have been collected and assayed. 450 meters of magnetometer surveying has been completed along the road bisecting the Snow #2 claim.

A one meter chip sample returned 0.475% Cu and 0.521% Ni for a trench dug in the road cut along the road bisecting the property.

This property may warrant further exploration to determine the extent of mineralization.

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#### 1.0 Introduction

The Snow #1 - #4 mineral claims (Snow property) cover tholeiitic copper - nickel mineralization hosted by a carbonate alteration zone along a pyroxenite and hornblendite dyke. The property is located 42 kilometers southwest of Mackenzie in north-central British Columbia.

The fieldwork was supported by a prospecting grant from the Ministry of Energy and Mines through their Prospecting Assistance Program. The fieldwork was conducted by the author and his assistant, Michael McDonald during September, 2000.

#### 1.1 Location and Access

The Snow #1 - #4 claims lie approximately 42 km southwest of Mackenzie in the Cariboo Mining Division at Latitude 54°57'00" N and Longitude 123°14'46" W. The mineral claims are located on mapsheets NTS 93J14E and 93J14W. Access to the property is by well maintained gravel road from Windy Point on Hwy 97. Windy Point is roughly 160 km north of Prince George. To travel to the Snow property one first travels along the Finlay FSR for 10 km then onto the Sabai Mainline for 4 km where the Holder Mainline branches off. The H26000RD road which bisects the Snow property leaves the Holder Mainline at the 26 km marker. The mineral showings are approximately 4 km along the H26000RD branch road.

#### 1.2 Physiography

The Snow property is located along the northern limit of the Nechako Plateau in north-central British Columbia. The area has been extensively glaciated resulting in low lying areas having a rolling and hummocky topography due to the development of drumlins and kettles.

The mineral property covers low, lying hills and swampy areas around the shores of Snowshoe Lake. The lake's elevation is approximately 900 meters with roughly 50 meters of relief in the surrounding hills. The property has not been logged and the trees on it consist of white spruce, fir and lodgepole pine with relatively little understory. The climate is typical of the northern Interior of British Columbia with long cold winters and warm summers. The snow begins to accumulate in November and melts in May during a typical fall to spring cycle.

T.N. MACKENZE SNOW PROPERTY PRINCE GEORGE KANILOOPS KANILOOPS
SNOW PROPERTY CARIBOO MINING DIVISION 93J14E,93J14W LOCATION MAP

#### 1.3 Property Status

The Snow #1 - #4 mineral property consists of four two - post mineral claims staked in the Cariboo Mining Division (Figure 2). Table I lists the claims, record numbers and new expiry dates after when the work has been applied.

	Table I	
Claim	Record Number	New Expiry Date
Snow #1	380877	Sept. 14, 2006
Snow #2	380878	Sept. 14, 2006
Snow #3	380881	Sept. 14, 2006
Snow #4	380882	Sept. 14, 2006

#### 1.4 History

The areas to the east and south of the Snow property was extensively worked by placer mining companies in the 1930's for placer gold and platinum (Minister of Mines 1933). After the federal government released a regional geochemical survey in 1986 various companies and prospectors have attempted to find the sources of the multi-element geochemical anomalies. Large mineral properties were staked and later allowed to lapse in the early 1990's.

Ezekiel Explorations Ltd completed a airborne magnetometer and electromagnetic survey over the mineral claims and they defined two belts which could possibly host ultramafic intrusions (de Carle, 1987).

The Snow property showings were discovered by the author and his assistant while prospecting along the recently constructed logging road bisecting the property in September, 2000.

#### 2.0 Geology

The regional and local geology of the area around the Snow property is largely obscured by extensive glacial drift deposits from previous ice ages. Only along the recently constructed logging roads or along the river and stream canyons does one see rock outcrops.

#### 2.1 Regional Geology

The Snow property ultramafic intrusion is hosted by hornfelsed Middle and Upper



Triassic Takla Group sediments. These sediments are the base of the Quesnel Terrane and they comprise a package of "slate, argillite, phyllite, fine-grained and minor coarse grained greywacke and lesser amounts of tuff, tuffaceous siltite and argillite, limestone and limy greywacke" (Struik, 1994).

These sediments are stratigraphicly overlain by the Takla Group mafic volcanics. Feeding these volcanics are ultramafic dykes which are thought to trend northwesterly in two belts through the Snow property and immediately to the north.

The Quesnel Terrane has been thrust onto the Slide Mountain Terrane which consists of Carboniferous and Permian mafic volcanics and metamorphosed sediments. Distinction between this package of rocks and metamorphosed Quesnel Terrane is problematic. The region is cut by prominent northwesterly and lesser northeasterly faults which relate to crustal extension of the Wolverine metamorphic core complex in the Carp Lake area 20 km south of the Snow property.

#### 2.2 Property Geology

Most of the outcrops which have been examined on the Snow property are located along and around the logging road which bisects the property. This area is dominated by a pyroxenite and hornblendite intrusion which has hornfels the host rocks (Figure 3). The hornfels consists of pale purple biotite hornfelsing of possible sedimentary Takla Group. The ultramafic intrusion is well exposed in road cuts as a complex intrusion consists of phases of gray-green pyroxenite, dark green, rusty weathering hornblendite and hornblendite with phenocrysts of pyroxene.

The exposed northwestern margin of the ultramafic intrusion is intensely ankerite carbonate altered. In this area, small shear faults with quartz slickenslides cut the unit. 4.0 meters of mineralized ankerite carbonate altered ultramafic? are exposed in a road cut. The mineralization consists of chalcopyrite and possible nickeliferous pyrrhotite in a gangue of ankerite carbonate. Highly mineralized pieces have a black rind on the outside with malachite. Fresh, unweathered carbonate has a greenish tint to the cream coloured rock which is also locally mottled pale blue.

An outcrop located approximately 400 meters north of the Cu - Ni showing consists of variably altered diorite?. Fresh diorite has acicular hornblende crystals up to 10 mm long in a matrix of feldspar. Hydrothermal altered diorite consists of sericite altered hornblende with up to 5% pyrrhotite.

#### 3.0 Geochemistry

The chip samples from hand dug trench 1 in the road cut are highly anomalous in Ni, Cu, Co and Cr. The results are tabulated below in Table II; the samples go from north to south.

		Table II			
Sample Number	Interval (m)	Cu (ppm)	Ni (ppm)	Co (ppm)	Cr (ppm)
M605026	0.0 - 1.0	4750	5210	188	481
M605027	1.0 - 2.0	2150	2200	113	805
M605028	2.0 - 3.0	1890	1230	78	734
M605029	3.0 - 4.0	745	745	47	498

The anomalous samples consist of ankerite carbonate altered ultramafic rock with black rind coatings with malachite and possible nickeliferous pyrrhotite. Chip samples from area 2 returned only background values in copper and nickel.

#### 4.0 Geophysical Survey

A magnetometer survey was conducted along the logging road H26000RD which crosses the Snow #2 claim. The survey used a Scintrex MP-2 proton precession magnetometer and readings were collected every 25 meters along the road (Figure 4). The total field magnetic data were corrected for diurnal variations by having the operator return to the base station after the end of the survey. Then the difference in the two readings of the base station was weighted with respect to time and subtracted or added to the raw data. The values presented in the diagram are absolute values. The magnetic readings across the pyroxenite / hornblendite dyke are highly variable. A difference of 500 gammas was noted when the operator past an outcrop of magnetic hornblendite to that of buried ultramafic intrusive. Other areas of ultramafic intrusive which do not have disseminated magnetite have subtle variations in the total field magnetic values.

#### 5.0 Conclusions

Tholeiitic copper - nickel mineralization has been discovered on the Snow property related to a hornblendite and pyroxenite dyke. The ultramafic dyke has hornfels the host sedimentary rocks and the possibly more primitive portions of the dyke have been hydrothermaly altered to ankerite carbonate.

### 6.0 Recommendations

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The Snow property should possibly be prospected along the strike of the ultramafic intrusion to determine the extent of copper and nickel mineralization.

. 7 7.0 References

- de Carle, B. J. 1987. Report on Combined Helicopter Borne Electromagnetic, Magnetic and VLF - EM Survey, G-North and Plasway Properties, Cariboo Mining Division, McLeod River Area, British Columbia; Assessement Report 16269, 31p.
- Minister of Mines, 1933. Annual Report of the Minister of Mines 1933, pages A100 A104.
- Struik, L.C. 1994. Geology of the McLeod Lake map area (93J), British Columbia; Geological Survey of Canada, Open File 2439, 18p.

## 8.0 Cost Statement

Wages	4.5 days by D	en Sept. 16 and Sept. 24, 2000 Bridge (Geologist) @ \$250.00/day McDonald (Prospector) @ \$100.00/day	\$1125.00 250.00
	2.5 days by 10	, meronald (110spector) (2 \$100.00/day	250.00
Food and Acc	ommodation	7 mandays @ \$45.00/manday	315.00
Vehicle		(4x4 pickup) 5 days at \$100.00/day	500.00
Assays		11 chip samples @ 24.45/sample	268.95
Magnetomete	r rental		172.75
Supplies			300.00
Report			400.00
		Total	\$3331.70

- 9.0 Statement of Qualifications
- I, David Bridge, hereby certify that:
- 1. I am an independent geologist residing at 613 2016 Fullerton Ave., North Vancouver, BC, V7P 3E6
- 2. I am a graduate of the University of British Columbia with a Bachelor degree in geological engineering in 1990 and a Masters in 1994.
- 3. I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia.
- 4. I have practiced my profession since 1994 as a geologist for junior and major mineral exploration companies.
- 5. This fieldwork was done by me during the month of September, 2000

January 24, 2001 North Vancouver

David Bridge, MASc, P.Geo



10.0 Appendix : Assay Certificates

ALS)		Analy 212 Britis	tical Chemis Brooksbani sh Columbia	ry Services Ltd. Ists * Geochemists * Registered Assayers nk Ave., North Vancouver nia, Canada V7J 2C1 984-0221 FAX: 604-984-0218						Proje Comr	ments: /	VANCOU ACLEOD	iver, Bo	DGE	NALY	(SIS			invoice N P.O. Nur Account	√o. :I nber :	2-OCT- 003048 (FU
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# ALS Chemex

Analytical Chemists \* Geochemists \* Registered Assayers 212 Brocksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: BRIDGE, DAVID

613 - 2016 FULLERTON AVE. NORTH VANCOUVER, BC V7P 3E6 \*\*

Project : MCLEOD Comments: ATTN: DAVID BRIDGE Page Number :1-A Total Pages :1 Certificate Date: 20-NOV-2000 Invoice No. :10033726 P.O. Number : Account :KFU

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