CHUCHI LAKE PROJECT

1982 GEOCHEMICAL REPORT ON THE CHU I, CHU II & NATION I CLAIMS

Omineca Mining Division

#### 93N/2

Latitude 55°12', Longitude 124°42'

Owner of Claims: Alex E. Marr

Operator: Westmin Resources Limited

Edmond R. LeBlanc

November, 1982

# GEOLOGICAL BRANCH ASSESSMENT REPORT

10,971

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11}		Mo	п	11
12)		Pb	n	Ħ
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14)	NATION I GRID GEOCHEMISTRY Au		Ħ	H.
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#### ABSTRACT

The Chuchi Lake area situated within the Hogem Batholith presents a favourable environment for an alkaline suite porphyry copper-gold type deposit. Several companies have performed preliminary work in the past which resulted in several target areas being outlined. Diamond drilling done within the region has shown that significant ore mineralization is present locally. Further work is warranted in this area before its true economic potential can be assessed.

With a minimum expenditure, several quick geochemical and geophysical programs could be completed to fully evaluate this region.

#### INTRODUCTION

Chuchi Lake is part of the Nation lakes and can be found on the Manson River topographic sheet, NTS 93N/2. It is located approximately 120 km north of Fort St. James by gravel road. The area of interest is at the northwest corner of Chuchi Lake in the vicinity of Klawdetelle Creek and Little Klawli Creek.

The general topography is a gently sloping terrain surrounding the mountains to the north. The elevation ranges between 900 and 1070 m with the northern mountains approaching 1800 m.

Present access is via 22 kms of 4 wheel drive logging road from the east end of Chuchi Lake. Alternatively, the property is one hour by float plane from Fort St. James.





#### HISTORY

This area has been the site of numerous exploration activity in the past, especially in the early seventies.

#### Chuchi Claims, presently held by Westmin as Chu I & II

Held by Falconbridge Nickel Mines Limited, as a portion of a larger holding including the Col claims to the northwest. A soil geochemistry survey was conducted with analyses being done for silver, copper and molybdenum. Geophysics in the form of an I.P., resistivity and magnetometer surveys were also completed. The Col claims were the location of 24 diamond drill holes totalling 7,300 feet. For further information, consult assessment reports 3383, 3383, 2933, 2932.

#### Top, Pot Claims, presently held by Westmin as the Nation I group

 Held by Plateau Metals Ltd. Work performed on these claims included a soil geochemistry survey, magnetometer survey and geological mapping. Further information can be attained from assessment reports 3409 and 3410.

#### CLAIMS

A total of 42 units are held outright by Westmin Resources comprising the Chuchi Lake property. These can be separated into two groups called the Chu I and II and the Nation I groups.

<u>Claim</u>	Record No.	Anniversary Date	No. of Units
Chu I	4651(7)	July 9	20
Chu II	4652(7)	July 9	4
Nation I	4650(7)	July 9	$\frac{18}{42}$

These claims at present are in good standing until July 1983. Work filed in November will bring claim status up to July 1986. Chu II will be allowed to lapse in July, 1983.

#### REGIONAL GEOLOGIC SETTING

The Chuchi Lake property is situated on the southern portion of the Hogem Batholith. The Hogem Batholith occurs within a northwest trending belt of lower Mesozoic volcanic rocks called the Quesnel Trough (Roddick et al, 1967). The boundaries of the Quesnel Trough Lend to be regional fault zones, with this area having the Pinchi fault zone to the west and the Manson fault zone to the east.

The Pinchi fault zone is the primary structural feature in the area, forming the boundary between the Permian rocks (Cache Creek Group) on the southwest and the upper Triassic rocks (Takla Group) on the northeast.

The rocks of the Hogem Batholith can be separated into various compositional units, ranging from dioritic to granitic. The boundaries between the units are usually gradational, and probably represent compositional variation due to the differentiation of the main batholithic magma.

#### MINERALIZATION

As outlined by Garnett (1974).

- The Hogem batholiths major intrusive units were emplaced as an essentially barren, differentiated mass approximately 189 million years ago.
- 2. A sygnitic phase intruded the Hogem batholith approximately 175 million years ago, with genetically related chalcopyrite-bornite mineralization occurring as true disseminations in foliated sygnite and in fractures in potash-feldpathized units adjacent to sygnite intrusions.
- 3. A granitic phase intruded both these phases, possibly about 121 million years ago. Pyrite-chalcopyrite-molybdenite mineralization and hydrothermal alteration occur in fracture zones within and adjacent to this phase.

#### METHOD OF GEOCHEMICAL ANALYSIS

All geochemical analyses were performed by Chemex Labs Ltd. of North Vancouver. Sample preparation at the lab consisted of either; dry sieve through an ASTM 80 mesh screen or in the case of a coarse sample, dry sieve through an ASTM 35 mesh screen. The -35 mesh fraction is pulverized and homogenized in a ring grinder to approximately -100 mesh. The resulting -80 to -100 sample would then be analyzed for copper, molybdenum, lead, zinc and silver by perchloric-nitric acid extraction. Gold analyses where warranted, were done by atomic absorption.

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#### SOIL & SILT GEOCHEMICAL SURVEYS

#### Chu I & II

The north-south baseline used by Falconbridge was re-established for the purpose of confirming several soil anomalies produced by their geochemical survey. Nine soil lines were run to the west of the baseline with 100 m spacing between lines. Soil samples from B-horizon (where attainable) were taken at 25 m intervals along these lines.

The Little Kawli Creek which runs roughly parallel to the baseline within the boundaries of the soil grid was also surveyed in detail. A soil sample from each bank of the creek along with a stream silt sample were taken at 25 m intervals up the creek. A total of 350 soils and 51 silts were collected.

#### Nation I

The baseline previously used by Plateau Metals Ltd. was reflagged for use in the 1982 soil survey. Ten northeast-southwest soil lines were run

with 100 m spacing between lines, and 25 m sample intervals along lines. Four creeks within and in the vicinity of the grid were surveyed for silts and soils as previously mentioned. A total of 270 soils and 49 silts were collected on this claim group.

#### Soil Profiles

Four soil profiles were carried out, one on Chu II and three within the Nation I group. These profiles were located in areas shown to be anomalous by past geochemical surveys. Samples were taken of each horizon, with thicknesses and soil types being mapped in section form.

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#### RESULTS

Geochemical analysis for Ag, Cu, Mo, Pb and Zn were performed on all samples with the anomalous samples also being run for Au. Anomalous values are detailed in Appendix I.

#### Chu I & II

The grid survey produced several isolated anomalous samples but none significant enough to warrant further work. The little Kawli Creek survey did produce an approximately 500 m long zone containing numerous anomalous samples. This area corresponds to what was mapped as a contact between an unaltered monzonite-diorite and a slightly foliated plagioclase porphyritic monzonite with some prophyritic alteration. The area also contains several late stage syenite dykes.

#### Nation I

A roughly linear northeast trending anomaly has been produced by the Cu, Pb, Zn results. The westernmost stream on Nation I was highly anomalous and suggests a continuation of the trend to the northeast.

Geological mapping in the area has shown the possibility of a contact between an unaltered monzonite and a potassically altered monzonite-symmite with a similar trend.

#### Discussion

Concerning the Chu I & II grid, with exception of the narrow valley containing Little Klawli Creek, the entire area is covered with a very thick mantle of glacial till. Estimates of thickness would be between 15 and 30 m judging from the creek valley slopes. This thick layer would readily mask any primary dispersion halos related to an ore body. Therefore the majority of the geochemical values do not reflect the underlying geology but represent the thick transported glacial material. For this reason areas with outcrop exposure, especially along Little Klawli Creek, should be examined in more detail. These areas have been shown to be anomalous and should form the starting point for further geochemical, and possibly geophysical work in the future.

The Nation I grid has outlined several significant anomalies in the northeast corner of the grid. Evidence suggests that these anomalies continue to the northeast. Further work is needed in this area to trace these anomalies. Expansion of the geochemical grid along with soil profiling and geophysics would be useful in detailing the economic potential of this area.

#### PROPERTY GEOLOGY & MINERALIZATION

#### Chu I & II

The only outcrop exposed on these claims was encountered along the Little Klawli Creek. This area is entirely underlain by the Hogem batholith and its differentiated units. The rocks mapped range from fresh unaltered Hogem granodiorite to moderately altered plagioclase porphyritic monzonite. The alteration is of the prophylitic variety with hornblende and biotite going to chlorite. A slight foliation is also evident in some outcrops. Several late stage syenite dykes have been mapped as crosscutting the altered unit. Two zones of brecciation have been mapped in close vicinity to these syenite dykes. The plagioclase porphyritic unit contains abundant fine disseminated magnetite and rare chalcopyrite.

### Nation I

Outcrop is sparse but tends to increase to the north. The units in this area grade from a fresh unaltered monzonite-monzosyenite and a potassically altered monzosyenite-syenite, with the latter unit being a possible hybrid version of the former. The potassic alteration is weak to moderate with a foliation being developed locally. Magnetite is a common accessory mineral with trace chalcopyrite and bornite being encountered locally.

#### SUMMARY & RECOMMENDATIONS

Soil and silt geochemistry over the Chu I, II and Nation I claims has reconfirmed the presence of several significant Cu, Mo anomalies. These anomalous areas coincide with favourable geologic environments such as intrusive contacts and brecciated zones within altered intrusive rocks. The possibility of an alkaline suite porphyry copper-gold deposit is suggested.

A 1983 program should involve expansion of the soil geochemistry grid and further stream silt sampling in the favourable areas. A sensitive proton-magnetometer survey is suggested to aid in delineating the intrusive contacts. Detailed mapping should be done on the expanded grid with reconnaissance mapping being done on the surrounding area.

### GEOCHEMICAL DATA

Anomalous, background and threshold values were determined with the aid of cumulative frequency distribution curves.

	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
Background	0.1	75	2.0	3.0	50
Threshold	0.25	175	4.0	6.0	80
Anomalous	<u>&gt;</u> 0.4	>200	<u>&gt;</u> 5.0	<u>&gt;</u> 8.0	>100



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SOIL PROFILE SP-02 NATION I							
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Values in ppm unless otherwise noted.

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SOIL PROFILE SP-04 NATION I						
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Scale 1110						
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L- 1003	RIVORN	E LABIT	1	93 N/2	26	

#### CHU I & II ITEMIZED COST STATEMENT

Transportation Costs Van Rental June 26-July 9, Vancouver to Fort St. James, 629.00 \$31.00/day x 14 days + 1300 km @ \$0.15/km Camp Move (helicopter, July 1, 492.00 1 hr. x \$450/hr. + fuel) Food & Accommodations, June 26-July 2 560.00 28 man days x \$20/day Wages, June 26-July 2 Dave Birney (soil sampler) 7 days x \$51.00/day 357.00 Jim Eenkooren " " 7 days x \$56.00/day 392.00 Alex Marr (geol. assistant) 7 days x \$85.00/day 595.00 Ed LeBlanc (geologist), 7 days x \$90.00/day 630.00 Assay Charges 401 samples - analysed for Ag, Cu, Mo, Pb, Zn @ \$5.30/sample 2,125.30 Report & Map Preparation 450.00 5 days @ \$90.00/day

\$6,230.30

### NATION I ITEMIZED COST STATEMENT

Transportation Costs	
Camp Move (helicopter, July 1, 1 hr. x \$450/hr. + fuel)	492.00
Demob (float plane; Chuchi Lake to Fort St. James	
July 8, 220 miles x \$2.05/mile)	451.00
Food & Accommodations, June 26-July 2	
28 man days x \$20.00/day	560.00
Wages, June 26-July 2	
Dave Birney (soil sampler) 7 days x \$51.00/day	357.00
Jim Eenkooren " 7 days x \$56.00/day	392.00
Alex Marr (geol. assistant) 7 days x \$85.00/day	595.00
Ed LeBlanc (geologist) 7 days x \$90.00/day	630.00
Assaying Charges	
319 samples - analysed for Ag, Cu, Mo, Pb, Zn	
@ \$5.30/sample	1,690.70
153 samples - analysed for Au @ \$4.54/sample	694.62
Report & Map Preparation	
4 days @ \$90.00/day	450.00
	\$6,312.32

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### STATEMENT OF QUALIFICATIONS

I, EDMOND R. LeBLANC, employed by Westmin Resources Limited of Vancouver, B. C. and residential address 3069 East Broadway, Vancouver, B. C. hereby certify that:

- 1) I am a Geologist.
- I am a graduate of St. Francis Xavier University, Antigonish, Nova Scotia (B.Sc. Geol. 1981).
- 3) From 1977-1983 I have been engaged in full or partime mineral exploration within Canada.
- I personally participated in the fieldwork and have assessed and interpreted all the data resulting in this report.

Respectfully submitted

Edmond R. LeBlanc

- GARNET, J.A., 1974: Geology and Copper-Molybdenum Mineralization in the southern Hogem Batholith, North-Central British Columbia, CIM Bulletin, Vol. 67, No. 749, pp. 101-106.
- RODDICK, J.A., WHEELER, J.O., GABRIELSE, H., and SOOTHER, J.G. 1967: Age and Nature of the Canadian part of the Circum-Pacific Orogenic Belt, Tectonophysics, Vol. 4, pp. 319-337.



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![](_page_30_Picture_2.jpeg)

![](_page_30_Picture_3.jpeg)

WESTMIN RESOURCES LTD. CHUCHI LAKE PROJECT CHU I and 2 STREAM SILT & SOIL GEOCHEMISTRY <u>Ag</u>,Cu,Mo,Pb,Zn

50 25 0 150 metres 50 100 Scale 1: 2,500

NTS No. 93 N/2

Figure 9

![](_page_31_Figure_0.jpeg)

![](_page_31_Picture_1.jpeg)

![](_page_31_Picture_2.jpeg)

N.T.S. No. 93 N/2 Figure

Drafted By Drawn By Revised R. Ivany E. LeBlanc

![](_page_32_Figure_0.jpeg)

![](_page_33_Figure_0.jpeg)

![](_page_34_Figure_0.jpeg)

![](_page_35_Figure_0.jpeg)

![](_page_35_Picture_1.jpeg)

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![](_page_36_Picture_1.jpeg)

93 N/2

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Dec. 1982

![](_page_37_Figure_0.jpeg)

![](_page_37_Picture_1.jpeg)

Scale 1:2,500

Date

![](_page_38_Figure_0.jpeg)

![](_page_38_Picture_1.jpeg)

## LEGEND

1610 -,0.1,14,4,3,43

Sample Number and Result Au(ppb),Ag,Cu,Mo,Pb,Zn(ppm)

- Creek

(\_\_\_\_\_\_

N.S.

No Sample

Contour Interval Mo 5-6 ppm 7-8 ppm ≥ 9 ppm

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N.T.S. No.

93 N/2

Figure 17

GEOLOGICAL BRANCH ASSESSMENT REPORT

WESTMIN RESOURCES LTD. CHUCHI LAKE PROJECT NATION I GRID GEOCHEMISTRY Mo 50 25 0 50 100 150 metres Scale 1:2,500

> Drafted By Drawn By Revised R. Ivany E. LeBlanc

![](_page_39_Picture_0.jpeg)

![](_page_39_Picture_1.jpeg)

![](_page_40_Figure_0.jpeg)

	LEGEND
1610 -,04,14,4,3,43	Sample Number and Result Au(ppb),Ag,Cu,Mo,Pb,Zn(ppm) Creek
( <u></u> ) N.S.	Swamp No Sample
	<u>Contour Interval</u> Zn
	<ul> <li>IOO<sup>-</sup>I49 ppm</li> <li>I5O<sup>-</sup>I99 ppm</li> <li>≥ 200 ppm</li> </ul>
GEOLOGI ASSESSM	CAL BRANCH

	WESTN	IIN RES	SOURCES	LTD.					
CHUCHI LAKE PROJECT									
	NATION T GRID GEOCHEMISTRY Zn								
50 25 0 50 IOO I50 metres									
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Date Dec. 1982	Drafted By R. Ivany	Drawn By E. LeBlanc	Revised	N.T.S. No. 93 N/2	Figure 19				

![](_page_41_Figure_0.jpeg)

![](_page_41_Picture_1.jpeg)

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![](_page_44_Figure_0.jpeg)

![](_page_44_Picture_1.jpeg)