093E/13

822371

(Noreen Energy Resources Ltd.).

Report by : Great Plains Development Co. of Canada Ltd.

1978 yearend Report

Omineca Mining Division, B.C.

NTS 93E/13E+W

127° 45' W; 53° 55' N

by. G.L. Garratt + T.B. Bojczyszyn. Sept. 1978.

Dates worked June 28 - July 25, 1978.

Location : 4 claims totalling 52 contiguous units

: on the eastern margin of the Coast Range.

100 Km SSE of Smithers ; 85 Km SW of Houston.

Access : 74 Km. of all weather gravel road from Houston to NE end of Morice Lake - then 27 Km helicopter ferry to the property.

: located in alpine terrain in a glacial valley at 1500-1600 metre elevation

: Morice LK 790 metres above sea level.

: glacial till filled valley bottom leads up to talus covered slopes and steep cliffs.

: a relatively flat plateau-like ridge circles the valley.

: Vegetation is sparse and consists of a variety of alpine flowers, heather + stunted conifers

: Receives approx. 20 ft of snow annually and year-round snow pack exists on north facing slopes

: a small glacier exists on the property in a northeast facing compound cirque.

Devel : access to the property could be gained by barge from the Morice Lake road to Atna Bay and from there a road could be built up the main valley. Power would likely have to be derived locally although facilities could easily To put a road in you would have to put a bridge across the Morice river (400-500

be brought to Morice Lake. Little environmental damage would be incurred by mining or milling processes. Mine and mill wastes would have to be isolated from the Morice River drainage system, however, as this is a major salmon spawning system.

GEOLOGY

Map - geology of Whitesail Lake 93E B.C. Open File 708

Area is underlain by TELKWA FORMATION: (Lower Jurassic Hazelton Group). variegated red, maroon, grey, green tuff, breccia, and flows of basaltic to rhyolitic composition; lesser volcanic conglomerate, red mudstone, red siltstone, argillite. (176 - 206 MY.).

Intruded in the south by Early Jurassic TOPLEY INTRUSIONS: porphyritic, pink, quartz monzonite, granodiorite, quartz monzo-diorite.

Ref'n.:

Tipper, H.W 1979 Jurassic stratigraphy of the Whitesail Lake map-area, B.C.; in Current Research, Part A, GSC Paper 79-1A p. 31-32., 25-29.

Tipper et at 1976 Open File 351
1976 GSC Bulletin 270

General Geol.

Mapping by Tipper + Richards (1976) on the Smithers Mapsheet (93E) to the immediate north indicates that the property lies within the HOWSON Subareal Facie of the TELKWA formation of the Lower Jurassic HAZELTON GROUP.

Initial prospecting on the New Moon prospect indicated that thin limestone beds were intercalated with the volcanics and a marine succession was ∴ implied.

Dr. J.W.H. Monger of the GSC visited the property during the 1978 field season sampled a limstone unit north of the baseline between lines 2+50W & 3+50W. He tentatively concluded that the limestones, some of them marls, were part of an intravolcanic sedimentary sequence likely the result of fresh water deposition related to the Telkwa Formation. Waterlain tuffs are in evidence on the property, and bedded, lensial limestone or lime-mud units are exposed at several localities, indicating that shallow basins of unknown size were present at various stages in the volcanism. Lineaments, visible on landsat imagery, prolific dyke activity, coarse pyroclastic build-up and rhyolitic laccoliths combine to strongly indicate a volcanic centre environment on the New Moon prospect.

The Hazelton volcanics are truncated by the Coast Plutonic Complex to the west, along which are exposed rocks of the Paleozoic Gamsby Group.

The Topley intrusives mark the core of the NE trending Skeena Arch.

Local Geology

- Detailed mapping was only carried out on a part of the stratigraphic section near the south end of the grid with the objective of defining the geology of the overburden covered valley
- Prospecting and reconnaissance mapping including a definition of glacial features was carried out on most of the property.
- The property underlain by volcanic flows & pyroclastic rocks
- local basins defined by impure limestone and limy sedimentary units which occur interbedded with tuffs at various levels in the section
- basins believed to be small lacustrine accumulations and no fossils have been observed.

- area also characterized by intense faulting and dyke activity assoc. with faulting.
- bedding attitudes are generally quite regular over considerable distances, with the exception of modification due to small block faults
- regional deformation is evidenced by broad warping and minor drag folds that can be observed in soft sediments adjacent to some flts.
- very little detailed mapping has been carried out.
- evidence of a subaqueous environment was documented by the presence of normally graded tuffs, limestone and pillow breccias.
- a great variety of pyroclastic material present
  - thinly bedded, sorted, fg tuffs
  - heterolithologic, moderately sorted subaqueous breccias and coarse, unsorted volcanic breccias
- it is apparent that subaerial environments were also present during volcanism and it is likely that the source of the volcanism was subaerial with both terrestrial & subaqueous deposition taking place.
- composition - Basalt to rhyolite with andesite predominant.
  - Rhyolitic intrusive bodies cross cut the section and were observed as laccoliths in the cliffs on the south facing valley wall.
  - Rhyolites are generally porphyritic and are light green in colour.
  - Dykes range from basalt to feldspar porphyry & generally strike NW and NE and dip vert.
  - Qtz monzonite intrudes SE corner - controlled by N to NW trending fault.

Alteration : silicification along shear and fault zones and epidotization along dykes
: mafic constituents are often chloritized
: feldspars often show moderate clay alteration - Kaolinite.

Glaciology : U- shaped glacial valley
: the valley itself is believed to have originated through fault displacements and was subsequently eroded to its present form by glacial and fluvial action
: glacier formed at NW end of valley and moved SE glacier joined by others originating on northerly facing slopes and a complex pattern of glacial and fluvial deposition arose.
: because the important float minz'n was traced to a source beneath the major side glacier a more detailed description of this feature is given.
: Mineralized boulders are located throughout the end and medial morraines and have been observed in the threshold zone as well.

MINERALIZATION

Two types 1) shear zone - dyke assoc.
2) float minz'n.

Type ① : minor amounts of Cp - malachite dissem. along shear zones or assoc. with qtz veins.
: usually less than 5 metres in length.
: silicification common.
: alt'n along shear zone : qtz, chl., ser, Kaolinite
: generally of limited extent + low grade.

Type (I): Float minz'n in glacial morraines in the valley floor and lower slopes is widespread.

: minz'n usually assoc. with a grey-white to grey-black siliceous material which is often bxd and healed with sulphides

: Sulphides - cp, specularite, sph, py, galena, silver (mineral?), mt + minor Au.

: Epidote common.

Sph: generally as a matrix in siliceous ~~clasts~~ fragmentals but may form thin discontinuous masses or veins

Py-Cp: in a brecciated form in a fine grained matrix of qtz, epidote + alt'd volc. frags

Float boulders mapped - some degree of sorting noted.

- Cp rich + Sph rich zones identified
- greatest conc. of boulders occurs in the terminal and medial morraine of the large side glacier on the north-facing slope of the valley.

The terminal morraine: - oriented parallel to base line

- divided into two zones

Eastern Zone - between lines 0+50W and 6+50W is made up of a mixture of minz'd boulders of varying metal ratios and association

Western Zone - shows a segregation of Cp-Py rich boulders.

The medial morraine: mapped between lines 4+50W and 7+50W show a greater segregation of minz'd boulders

Categories of mix'd boulder:

1. Cp, specularite, magnetite
2. Cp, Mt, minor sph.
3. Sph - galena.

Interpreted source: a) located under present glacier cover.
: b) mix'd boulders may also have been scoured from the valley bottom and deposited in the term. moraine. The EM survey failed to locate any anomalies and this source was discredited.

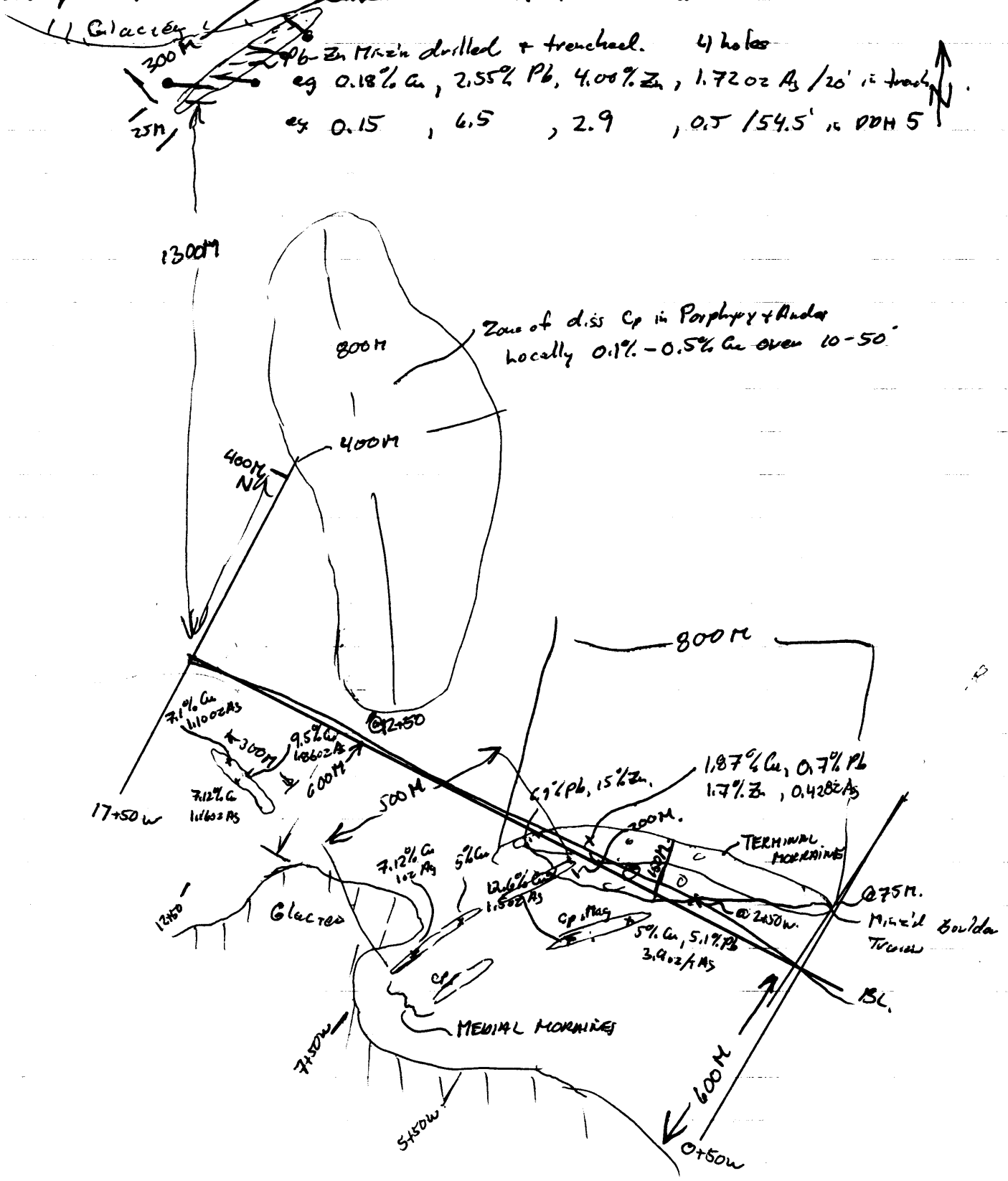
Economic grades derived from boulders.

DISCUSSION

- Problem of exploration is logistics
- Deposit probably underlies glacier
- Access to glacier is severely restricted by a great number of large crevasses and ground geophysical surveys cannot be carried out.
- logistics of drilling would entail high cost, helicopter supported program
- it is not even certain that a drilling program could successfully be completed.

Map #4 Regional Prospecting 1:5000

Geol. Map 1:2500 - Silver Standard Mines Ltd.



Samples in Nick Carters Office - Good-looking stuff

#1 Sub-rounded - subangular Fe oxide stained boulder
30-40% re-crystallized? Cp interstitial to galena-chl? rich patches
Host - chlc rhyolite.

#2 Weak/Mod banded cherty exhalate with "dusty sph" and coarser Cp bands.

#3 Sub-rounded angular boulder, showing poorly developed banding of (Py) Sph-Cp. Bands disrupted + broken.

WORK HISTORY

1967-68 Phelps Dodge Corp.
Geology + chip samples 9 trenches 692'

1969 Silver Standard
Geologist Charles Kowall
Prospecting + staking claims

1971 Aggressive Mining Ltd. 1"=400' geology mapped.
Crone IEM - two freq. survey (6 lines totalling 5000', 50' interval, coil separation 200').

1972 Aggressive Mining
Mag, EM, Geochem - 101 samples, 150' trenching, drilling 1,025' on JOW 4
Claims JOW-1-20

1977 Charles Kowall
Prospecting, staking of
Misty Day 12 Units
Copper Cliff 12 "
New Moon 20 "

1978 Great Plains Dev. Co. of Canada + Aquitaine Co of Can.
Joint Venture.
Prospecting 1:5000
Mapping 1:2000
EM MaxMin III 17 Km.
Fluxgate Mag 16 Km.
Securing of line - topo survey 1:2000.
Staking of 8 Units - Half Moon.

NORTH ZONE

Exploration by Phelps Dodge + Aggressive centred on fault controlled vein mining on the plateau area at the north end of the property. Vein system carries qtz networks with mined vein and patches that averaged 0.15% Cu, 1.75% Pb, 5.5% Zn + 0.59 oz/t Ag over 35' defined by four DDH intersects
The zone dips 65° E + Feld. Porph dyke parallels system
Mining trenched + indicates strike of 1000'
ODrilling over length of 600'.

Great Plains: AEM
Geol. Mapping
Ground EM to explore overburden covered valley
Thoroughly prospected
New Moon prospect occurs at juncture of major lineaments

Geochem. surveys
Soils poorly developed.
One area of sandy soil cover on a glacial terrace was chosen for survey
Area surveyed - south of B.L 11+50W → 15+50W.
32 samples analysed for Pb, Zn, Cu, Ag, Au
Only 3 samples show anomalous values

Geochem Cont'd

Cu	50-60 PPM.	Max. 158	4 points + 70
Zn.	120-150 PPM	2 points + 200	Max 305
Pb	12-30 PPM	1 point 46	
Au	all < 10 PPB		
Ag	0.1-0.2	6 points @ 0.6 PPM.	

Geophysical Surveys

Grid was established on valley bottom. and lines run to highest accessible points on slopes.
BL at 300° + 18 lines were put at 100M spacing
16 Km of line
Stations @ 25M

Mag Survey - MF-1 Fluxgate Mag.
- Control stations established

A long, linear mag. anomaly across length of grid. and interpreted as major fault zone assoc. with magnetite bearing dyke.
Anomaly oriented at 325° 1300M x 100M 2-3000γ anomaly
Dioritic intrusives are locally exposed in the vicinity of the anomaly and are known to carry MT.

EM Survey

HEM using Apex Parametrics MaxMin III
In addition to main grid, two lines surveyed on plateau area in an effort to delineate known fault controlled mineralization
No conductors located.

Photos appended to report
- a lot of snow still existed in this rugged terrain on July 23, 1978

CRITICAL APPRAISAL OF WORK TO DATE
by C.F. Kowall Feb. 26/82.

Summary: Detailed geol. mapping conducted over about 3% of total claim group
: Much of area not fav. for sampling
: Do not know how this prospect fits in to regional picture - recon required.

OPTION PROPOSAL.

Letter Feb. 10, 1982
Nick Carter → Dr. W. Mercer. District Geol. for Mattagami Lk. in Edmonton.

Proposed option:
1) Down Payment $35,000 (ie 20000 option + $15000 for work done)
2) escalating yearly option payments to include a premium over & above Great Western obligation to original vendor.
3) retained 20% Net Proceeds Interest

Assessment work filed Oct 1981 + all claims in good standing until Oct. 1983 + August 1984 (Full Moon).

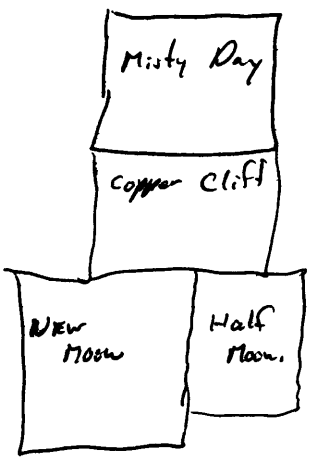
(63)

Great Westerns Option agreement with Charles Kowall of Whale Town, Cortes Island, B.C.

Option to purchase above claims for $1,012,500 which shall be paid as follows:

a) $10,000 on signing a formal agreement (this was paid)
b) 10,000 on or before Feb. 11, 1982
c) " " " 1983
d) 17,500 " " " " 1984
e) 30,000 " " " " 1985
f) 50,000 " " " " 1986
g) 150,000 " 1987
h) 150,000 1989
i 185,000 1988
j 200,000 1990
k 200000 1991

Western Geophysical Aero Data Ltd.
Report Oct. 29, 1981
for Great Western Petroleum Corp.
Date of work Sept. 23, 1981.



Sabre A. May
Sabre AEM

Flew 105 Km of Airborne mag. + VLF EM across the New Moon claim group
The New Moon Claim group owned + operated by G.W.P.

Claim Name	No Units	Date Recorded
New Moon	20	Oct. 21/77
Copper Cliff	12	"
Misty Bay	12	"
Half ~~Full~~ Moon	8	Aug 12/77

Flight grid. 26 lines NE – SW
Average terrain clearence 300 M.

Proton precession mag. + two VLF EM receiver in bird 50' below helicopter. (Seattle), (ANNAPOLIS).
Jim Creek, Washington (18.6 Khz), (Annapolis, Maryland 21.4 Khz)
Measuring total mag. field and total horizontal VLF EM field of two transmission frequencies.
The claim group covered encompases a large portion of two snow and glacier covered mountains and a major valley dividing them. The valley serves as the main drainage channel in the area and is fed by numerous streams + creeks. Cu, Pb, Zn, Au + Ag mizin has been detected in this valley in float + traced to the foot of the northern glacier.
Only very weak VLF-EM responses were detected.

Mag 57200 γ to 58,300 γ
A large mag. high outlined by the 58000 γ contour occurs in southern portion of claim area – closly follows southern mountain ridge Reflects large geol. formation

North of the main drainage valley, across the glacier on the Copper Cliff + Misty claims, three anomalous may trends labelled "A", "B", "C"
All relatively weak and appear to reflect narrow vein-like zones trending S to SE.

No obvious expl. work done in areas of trend "B" + "C"
- under snow + ice fields

Trend A - up slope across from area of obs mineralization.
- strongest response L 18
Trend B -
Trend C - strongest response north of lines 9 + 10

The VLF-EM responses observed are very weak ie 10% above background and within noise levels expected on a survey in steep mountainous terrain. ie all unreliable.

Summary - three may trends due to relatively narrow vein-like systems
- trend A occurs closest to Known mineralization
- also obtained some (3) isolated may anomalies.
- it is likely that the VLF-EM technique cannot penetrate the glacial ice pack
- ground survey suggested but logistical problems are significant