

On September 16th Bob Lane and I visited Lac Minerals' Red Mtn. Project. Others on the 'tour' included the Newhawk crew from the Sulphurets project and the Pamicon crew from the Ashwood project. Lac hosts included Hans Smit, John Watkins, Garfield MacVeigh, Rick Walker, Mark Prefontaine, Adrian Bray and Rob McLeod. Charlie Greig, thesis student, was also present. He had been working with Lac and the GSC under the IPP program. We toured the new office complex built for Lac in downtown Stewart. Then we went to their core area (down the street) where we were given an update of the project and shown representative core sections through the ore zones. We then flew 20 km to the east of Stewart to the property. There we examined underground plans/sections and went underground. In addition I took an aerial tour with Hans Smit so he could point out the infrastructure possibilities - especially the road route up Bitter Creek and the proposed aerial tram route.

***History** - ice only melted on the Marc Zone since the early 1980's.

1988 - Marc zone discovered by prospecting by Bond Gold (now Lac Minerals)

1989-1991 - approx. 18,745 m of diamond drilling and geophysics outlined a resource of approx. 340,000 oz. of gold in situ in the Marc Zone.

1992 - early in year - property available for joint venture Re-interpretation of geology/structure by John Watkins yielded new targets. Lac launched a large program on their own. Drilling (4000m) was very successful outlining an in situ resource of over 1 million ounces of gold. Reserves were estimated at 2.5 million tonnes grading 12.8 g/t Au and 38.1 g/t Ag (using a 3 g/t Au cutoff).

1993 - Pre-Prospectus filed with Mine Development Assessment Branch.

- 2 new mineralized zones discovered leading Lac to expand their surface drilling program to 100,000 feet (from 50,000 feet) plus 2800 feet of underground development and 20,000 feet of underground drilling on the Marc Zone.
- Geological resource expanded to indicate the potential for the delineation of greater than 2 million ounces of gold. (Second largest/most significant project in North America?).
- expenditures expected to total approx. US \$7.0 this season (by far the largest in the Province).
- additional work on the metallurgical, engineering and environmental aspects of the project is continuing to support the initiation of a feasibility study later this year.
- talks at NWMA '93 in Dec. and also to Vancouver MEG confirmed.

***GENERAL**

-50 to 60 persons on site (property); 15 to 20 persons in core area (Stewart), plus 20 to 30 persons associated with project (eg. Vancouver Island Helicopters, Eco-Tec labs, expeditors, etc. in Stewart) equals an estimated total of 100 persons directly on the Red Mountain project in Stewart!

- 4 surface drill rigs (drilling 100,000 ft - including several long holes over 1000 feet in length) and 1 underground drill (20,000 feet on 12.5 m sections on the Marc Zone). Maximum surface hole = 3200 feet. All inclusive surface drilling costs estimated at \$100/ft (base cost = \$20/ft); underground drifting costs estimated at \$2,000/m.

- Underground development - 2800 feet. To end Sept., over 2000 feet had been completed, including 1400 feet of decline and related work and 500 feet of crosscut (1100 N and 1200 N) through the Marc Zone. The final crosscut, 1295N, has commenced. An extensive sampling program is underway, incorporating chip, channel, panel and muck samples from the crosscuts. The crosscut rounds will be processed through a crushing plant and sampling tower to evaluate the drill-indicated grades.

- Additional metallurgical, engineering, and environmental work continuing to support the initiation of a feasibility study later this year.

- Expenditures for 1993 expected to total approx. US \$7.0 million. Total exploration cost to end 1993 est. at **\$15 million**.

- Up to 16 geologists on site at one time. One of the best geological teams ever assembled on a project.

- Access by helicopter (Vancouver Island Helicopters) - 3 "205s" and 1 "500-D".

- Road building on site to connect 60 person camp with portal. Note: First attempt (upper road) was unsuccessful due to talus movement; lower road construction in progress (see photos).

***GEOLOGY/STRUCTURE**

- Host rocks include bedded mafic to intermediate volcanoclastic tuffs with minor interbedded argillite, siltstone, sandstone and conglomerate of the Lower Jurassic Unuk Formation and altered massive feldspar-hornblende granodiorite to microdioritic dykes/sills/stock. Consistent recognition of intrusive and extrusive rocks is difficult.

- Original (discovery) showing (Marc Zone) previously thought to strike N-S (thus 'confusing' drill cross sections due to effects of deformation) re-interpreted by John Watkins to strike NW, dipping steeply to the W, and plunging NW @ 20° to 30°.

- Brittle, ductile deformation (minimum of 3 phases) and dilation faults have resulted in S-shaped orebodies (i.e. sigmoidal) Overprint of kink folds on chevron folds.

First Set = NE trend

Second Set = NW trend

Third Set = N trend

Significant widespread 'cataclastites'/mylonites' are really ductile shears. Axial traces of folds have same trend as ore bodies i.e. orebodies are strongly structurally controlled.

- Late stage tension gashes filled with quartz, pyrrhotite and native gold.

- Heterolithic pebble breccias (hydrothermal), probably from a diatreme 'porphyry' source, are important (both pre-and post mineral).

- Mineralized zones, with en echelon N-S trends are consecutively offset slightly to the west towards the surface Rio Blanco showing.

***MINERALIZATION AND ALTERATION**

- Two previously (pre-1993) known zones: Marc and AV- both approx. 500m x 20m thick x 100m down dip. Both zones plunge at approx. 20 degrees to the northwest.

- Two newly (1993) discovered zones: JW - located below the AV zone (see photos); and 141 - located southwest of the Marc Zone. Drilling is continuing to better define the 141 zone (encountered on Sept. 10th). Gold grades and widths in new zones are consistent with those already encountered in the Marc and AV zones.

- Metallic minerals include: densely disseminated to massive 'clastic' pyrite and/or pyrite stringers and veinlets and variable amounts of associated pyrrhotite and sphalerite as well as minor chalcopyrite, galena, arsenopyrite, tetrahedrite, stibnite, various tellurides (hessite (Ag Te), altaite (PbTe), pectite (Ag Au Te), calaverite (Au Te), sylvanite (Au, Ag Te), native tellurium, hedleyite (Bi Te), plus aurostibite (AuSb), bourmonite (PbCuSb), native bismuth, and bismuthinite (BIS).

- Trace gold (in quartz and sulphides) occurs as native gold, electrum, and as tellurides.

- Ore appears to be concentrated (i.e. best grades) near and/or at the contact between intrusive and hornfelsed (± brecciated) volcanoclastic rocks.

- Hydrothermal alteration consists of strong to pervasive sericitization, moderate to strong pyritization, moderate chloritization, moderate silicification and widespread potash feldspar alteration (secondary biotite). Tourmaline occurs in the vicinity of the mineralized zones.

- Need documentation of rock data to define intrusive phases. Still a question of 'upper' Goldslide vs 'lower' Goldslide Intrusion. (Hard to distinguish between amphibole crystal tuffs and intrusion).

- Gypsum alteration (border/contact) of porphyry with associated $M_o S_2$ and cpy in porphyry at depth.

- Ore intersections (to date) up to 400 ft. down dip.

*ZONING

- Halo (pyrrhotite-sphalerite) to ore (pyrite + tellurides ± chalcopyrite ± tetrahedrite ± stibnite).

- Vertical zoning in general:

| | |
|-----------|-----------------------------------------------------|
| | chlorite-epidote |
| Tuffs | axinite/tourmaline ± brecciation (incl. pebble bx.) |
| Seds | K spar/pyrrhotite]ore |
| | pyrite (5 to 10%)] ore |
| Contact | ----- |
| | gypsum |
| Intrusive | epidote |
| | chalcopyrite/molybdenite |

- Vertical zoning in JW Zone:

Bedded sedimentary rocks
tourmaline alteration 'halo' below seds.
crystal tuffs
sediments
sediments
sediments and porphyry (interfingering).

- Silicate mineral zoning associated with mineralized, zones: > 5% kspar, < 2% Na O, suspect Ba in feldspar.

*GEOCHEMICAL SIGNATURES (METALLIC)

- Arsenic enrichment (>100 ppm) mainly arsenopyrite, widespread and best developed in the hanging wall

- Antimony enrichment (>20 ppm) mainly stibnite, restricted to ore zones

- Bismuth?

*DEPOSIT HYPOTHESES

- Skarn - possibly incl. axinite, sulphide zoning.

-Massive sulphide - unlikely

- Alkalic Porphyry System - abundance of apatite, and tellurides. New chemical data shows intense kspar alteration - unlikely.
- 'Transitional' - near/at contact between intrusive (porphyry) and hornfelsed, brecciated, and deformed, volcanoclastics/sediments (i.e. possibly a failed epithermal 'system' emanating from an underlying porphyry).

*** RESERVES**

- pre 1993: Marc Zone: 1,213,000 tonnes @ 12.70 g/t Au and 40.99 g/t Ag
AV Zone: 1,315,000 tonnes @ 13.05 g.t Au and 28.64 g/t Ag
Total Estimate = 2,527,000 tonnes @ 12.8 g/t Au and 38.1 g/t Ag
for in situ resource of approx. 1,040,000 oz. Au.

- Sept. 1993: geological resource estimated at more than 2 million ounces of gold.

- Example assays:

- a) Marc Zone: 26 g/t Au over 14.5m
- b) AV Zone: similar to Marc Zone
- c) JW Zone: 12.0 g/t Au over 10.5 m
- d) up to 5 to 6 opt Au in coarse pyrite in muck pile (from underground).

- Original 'reserves' were calculated on a 3 g/t Au cutoff grade. This could potentially be lowered to the 1 to 3 g/t Au range.

***RECOVERY OF GOLD (preliminary) - 89%**

***VERY COMPLEX METALLURGY - tellurides, sulphosalts, pyrrhotite-pyrite**

***POSSIBLE (PROPOSED) TRAM LINE**

- 2 stage towers (approx. 3000 ft. apart) between end stations (see photos).

*** UNDERGROUND PLANS**

- decline and loop down in the Marc Zone (from 1860 m portal), including 5 or 6 cross cuts, through the AV Zone, at approx the 1805 m level. (i.e. approx. 1400 ft. directly below Red Mtn.).

- recent decision to continue underground work through the winter.

*** SIGNIFICANCE OF DISCOVERIES AT RED MTN. (esp. TO BC)**

- successes and large expenditures attracting international attention and possible investor interest/confidence in B.C.
- exciting new geologic/structural observations and interpretations are important for Mineral Deposit strategies/profiles for both the Industry and the Government in B.C.

- Lac Minerals Ltd. working closely with local First Nations group (Nishgas), piggybacking with the general Memorandum of Understanding between Nishgas First Nations and the Province of British Columbia.

- Strong potential for acid rock drainage.

- Complex metallurgy will require special milling techniques.
- Access logistics may be decided by ultimate size/mining methods to be utilized.
- project has been a large boost to the local community of Stewart and indeed the entire Northwest.

REFERENCES -

- a) Schroeter Monthly Reports - Aug. '90, '91, '92.
- b) Red Mountain Project "Prospectus" submitted by Lac Minerals Ltd. to B.C. Mine Development Assessment Branch, May 1993.
- c) Red Mountain in "Exploration in British Columbia (1991)" by Schroeter, Lane, and Bray (p.117-125).

PEACH LAKE/SPOUT LAKE/MIRACLE-MURPHY [MI-092P002,034, 035, 115]

On September 17th Bob Lane and I visited the field exploration office of GWR Resources/Strathcona Minerals/Regional Resources (subsidiary of Conwest) in Lac La Hache. Project geologists, Dave Bland and Randall Aulis, briefed us on their large (150 sq. km) regional project and very briefly showed us core from the Spring 1993 drilling on the magnetite-chalcopyrite skarn prospect which has outlined a reserve of approx. 544,200 tonnes grading 1.8% Cu, 49% Fe, and an estimated 0.005 opt Au.

This summers' program has concentrated on property consolidation (plus the staking of new claims) totaling over 1000 units,, interpretation of airborne data and previous geological data from assessment reports, and a planned IP survey to cover at least 4 promising areas. These include: a) Nemrude (new bornite skarn), b) Miracle alkalic porphyry Cu-Au, c) calc-alkalic porphyry target, and d) Main Skarn (reserve). Host rocks include Nicola/Takla augite porphyries and pyroclastics, limestone, and a variety of intrusive rocks ranging from alkalic to calcalkalic in composition. To date in 1993 approx. \$300,000 had been spent; a further \$150,000 is planned this Fall.

TGS COMMENT: This is the first time since the 1960's -1970's porphyry 'era' that all the significant showings in the area have been consolidated under one group. This may allow for a well thought out and funded, systematic exploration program for this region (potential for HVC-type porphyries and/or Craigmont-type skarns.