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**THE 1994 CORDILLERAN ROUNDUP "SNAPSHOT SESSION"**

**OVERVIEW OF THE LAC MINERALS LTD.  
RED MOUNTAIN DEPOSIT,  
STEWART, B.C.**

**ADRIAN D. BRAY  
LAC MINERALS LTD.  
P.O. BOX 337  
STEWART, B.C.  
V0T-1W0**

## **PROJECT INFORMATION**

The Red Mountain deposit, an advanced stage gold exploration project, is located approximately fifteen kilometres east of the port town of Stewart in northwestern British Columbia. Access and logistical support is presently provided by helicopter from Stewart. Future access may be gained by upgrading and extending an existing logging road along the western bank on Bitter Creek. Access for the final 3.2 kms could be provided by aerial tramway.

LAC's land position encompasses 111 claims in 1,111 units (27,716 hectares). The Wotan claim group, centered on Red Mountain, totals 320 hectares in 7 claims (128 units) and was previously held under an option agreement between LAC Minerals Ltd. (Bond Gold Canada Inc.) and Wotan Resources. This Option was subsequently bought out by LAC Minerals Ltd. in 1992.

## **EXPLORATION HISTORY**

Following limited gold exploration in the last years of the 19th century and the early part of this century, the Red Mountain areas was evaluated for molybdenum occurrences during the 1960's and 1970's. A molybdenum and native gold showing were discovered in 1965 at the south side of Red Mountain (Erin Showing, McAdam Point). Additional small molybdenum showings were located during subsequent exploration programs in the central cirque of Red Mountain. Significant gold values were obtained in 1973 from Lost Mountain, a nunatak immediately south of Red Mountain, and separated from the latter by the northern branch of Bromley Glacier.

It was not until Bond Gold Canada Inc. (which was subsequently acquired by LAC Minerals Ltd.) optioned the property from Wotan Resources in 1989 that high grade gold was discovered on surface in an area that was probably covered by glacial ice and snow in the early part of the century.

### **Past Exploration by LAC Minerals Ltd./ (Bond Gold Canada Inc.):**

**1989:** The initial program included 4,730 metres of drill testing on two targets, the Marc Zone (3,623 metres in 21 holes) and the Brad Zone (1,107 metres in 6 holes). Surface work on Red Mountain included 1:250 geological mapping of the Marc and Brad Zones, lithogeochemical sampling, talus and stream sediment sampling, and 140 metres of trenching over the Marc Zone. Regional work included thematic mapping, a 5,220 km airborne EM/VLF/MAG survey, prospecting, and a drill (1709 metres in 14 holes on 5 targets) and surface program on the Willoughby nunatak. Expenditures amounted to \$1,700,000.

**1990:** A total of 13,350 metres of diamond drilling were drilled during the second seasons' program. This included 11,278 metres on the Marc Zone (41 holes), 1,146 metres (13 holes) on Red Mountain EM targets. Red Mountain surface work included 1:2,500 geological mapping and lithogeochemical sampling, and ground geophysics. Regional work consisted of 926 metres of diamond drilling in 10 holes on EM targets, 1:10,000 mapping and prospecting, lithogeochemical and stream sediment sampling, and ground geophysical follow-up of airborne targets. Environmental and road construction studies were initiated. The 1990 budget totalled \$3,700,000.

**1991:** The third season's exploration program consisted of 2,628 metres (8 holes) of diamond drilling on the Marc Zone. Surface work continued with 1:2,500 geological mapping of Red Mountain, and more detailed 1:500 and 1:100 geological mapping of Rio Blanco and McAdams Point showings, respectively. A structural study of the Marc Zone was initiated. Additional ground geophysics was conducted over specific targets. Environmental studies continued. The Krohman and Harkley Options were mapped at 1:1,000, with 1:100 mapping of specific areas. The regional program consisted of 1:10,000 mapping, and lithogeochemical and stream sediment sampling. This work amounted to \$1,300,000.

1992: Relogging and structural re-interpretation identifies the AV zone, potentially the fault off-set of the Marc Zone. A total of 3998.40 metres of diamond drilling on the Marc and AV zones (13 holes) were completed during the fourth season. Surface work included ground geophysics, 1:2,500 mapping, litho-geochemical and extensive whole rock sampling. Environmental studies continued and engineering access studies were initiated. This programs' budget totalled \$1,300,000.

## **GEOLOGY**

**Regional:** The Red Mountain Project is located at the western margin of the "Stewart Complex", a Lower Jurassic volcano-plutonic arc system, which forms part of the Intermontaine Tectonic Belt of the Canadian Cordillera.

**Local:** A portion of the Red Mountain Wotan claim group, located east of the Bromley Glacier, is underlain by intermediate pyroclastic rocks consisting of ash-dust tuffs, coarse ash tuffs, lapilli tuffs, possible flows, finely banded argillites and tuffaceous sediments and limestones. The volcano-sedimentary sequence is intruded by hypabyssal, hornblende-plagioclase porphyritic intrusions, which occupies the cirque as well as the western and eastern slopes of Red Mountain. A Lower Jurassic date of 200 Ma has been determined on a hornblende sample by argon-argon methods. Additionally, a hornblende-feldspar-quartz porphyry cross-cuts all units. A wide contact zone occurs between the volcano-sedimentary package and the intrusions. The contact zone is strongly brecciated and contains argillite and/or pyroclastic rock fragments within an intrusive matrix. Quartz stockwork is locally developed within the border phase of the Goldslide Intrusion. An extensive zone of pyritization and sericitization surrounds the Goldslide Intrusion and is responsible for the gossany appearance of Red Mountain. A granodioritic to quartz monzonitic intrusion (Erin Stock) is exposed at the southern tip of Red Mountain and appears to continue south under Bromley Glacier onto the Lost Mountain nunatak. A Lower Tertiary date of 45 +/- 2 Ma has been determined from a biotite sample by argon-argon methods. A sequence of fine to coarse-grained clastic sediments and fossiliferous limestones are exposed west of the Bromley Glacier.

**Alteration and Ore Forming Minerals:** At least twelve surface gold showings (Marc Zone, Rio Blanco, MCEX, GY, Cambria, Brad, Rapido, Meg, Silver Shear, Singh, Dickesind and MacAdam Point) have been identified at Red Mountain. Subsurface gold zones include the AV Zone, and the newly identified JW and 141 Zones. To date, the majority of the work on Red Mountain has concentrated on the Marc and AV zones.

The Marc, AV and JW zones occur as sigmoidally-shaped ore lenses associated with the brecciated contact zone of the Goldslide and related satellite intrusions. These lenses trend northwest, plunge shallowly at 15-20 degrees to the northwest and dip at approximately 45 degrees to the southwest. The Marc Zone is 235 metres long, up to 150 metres high and 3 to 30 metres in thickness in cross-section. At least four major structures (Gaping, Goldslide, Mud and Rick faults) affect the zones. Alteration consists of weak to intense sericitization, K-feldspathization, tourmalinization and propylitization. A chromium-vanadium mica is spatially associated with the JW zone. Mineralization consists of densely disseminated to massive (>60%) pyrite and/or pyrite stringers and veins, haloed by variable amounts of pyrrhotite and sphalerite, as well as minor chalcopyrite, arsenopyrite, galena, and tetrahedrite. High grade gold values are usually associated with the semi-massive, coarse-grained pyrite aggregates, but may also occur with the stockwork pyrite stringers and veins. Gold occurs mainly as native gold, electrum and as tellurides. Visible gold is rare. Small quartz veinlets carrying up to 5% weakly argentiferous galena and light yellow honey-coloured sphalerite cross-cut Marc, AV and JW zone mineralization.

Native gold as observed in polished thin sections ranges in size from 10 to 500 microns and occurs as threads, interstitial pockets and partial networks within the pyrite as well as moulded on the periphery of pyrite fragments with the gangue and altered wall rock. Hessite ( $\text{Ag}_2\text{Te}$ ), altaite ( $\text{PbTe}$ ), petzite

( $\text{Ag}_3\text{AuTe}_2$ ), calaverite ( $\text{AuTe}_2$ ), sylvanite ( $\text{AuAgTe}_4$ ), native tellurium, aurostibite ( $\text{AuSb}$ ), bournontite ( $\text{PbCuSb}_3$ ), hedleyite(?) ( $\text{Bi}_7\text{Te}_3$ ), native bismuth and bismuthinite ( $\text{Bi}_2\text{S}_3$ ) contain significant amounts of the gold and are closely associated with native gold and electrum.

### **1993 EXPLORATION PROGRAM**

A geological resource, announced in February of 1993, of 2.5 million tonnes grading 12.8 grams of gold per tonne and 28.6 grams silver per tonne set the stage for an aggressive underground and surface program by LAC Minerals Ltd. in 1993.

The interpretation of the Marc Zone was evaluated by 10,164 metres of diamond drilling in 103 holes (89 underground, 14 surface) and by three 100 metre spaced cross-cuts through the ore. A variety of detailed sampling methods (chip-channel, panel, face and interpenetrating sampling tower) were employed to evaluate grade continuity. A total of 787 metres of underground development was completed during the program.

The interpretation and continuity of the AV Zone was surface drill-tested on 50 metre spacings. The surface drill program on the AV Zone totalled 12,880 metres in 25 holes. Underground drill-testing of the AV Zone late in the season added an additional 625 metres in 4 holes. Surface drilling of 11,302 metres in 27 holes targeted the JW Zone (4,437 m, 7 holes), the 141 Zone (2164 m, 8 holes) and the Cambria (1826 m, 5 holes) and GY (2,875 m, 7 holes) showings. Underground holes on the 141 Zone totalled 529 metres in 2 holes. Four additional geological targets were drill tested by 4 holes totalling 1095 metres. Seven drill holes totalling 689 metres tested the proposed upper tram terminal site.

Surface work on Red Mountain included 1:2500, 1:1000 and 1:100 scale mapping, lithogeochemical sampling, and IP and ice-penetrating radar surveys. Additional work included government permitting, base-line environmental surveys, access engineering (road and aerial tram), geotechnical studies (including 86 metres in 3 holes) and metallurgy. The regional geological setting of the Red Mountain deposit was evaluated by 1:50,000 scale mapping, a program jointly funded by LAC Minerals Ltd. and the Geological Survey of Canada. The main Wotan claim block and surrounding claims were legally surveyed.

## **ADDITIONAL DATA (News Releases, Published Articles)**

BCMEMPRA Assessment Reports #22598, 22417, 20200, 20971, and 20133

Bond Gold Canada Inc. Press Release, September 29, 1989

Dow Jones News Service, February 2, 1991

Financial Times of Canada, March 27, 1993, 11 p., "LAC Minerals is on the Rise Again"

LAC Minerals Ltd. Press Releases: October 29, 1993 and February 16, 1993

LAC Minerals Ltd., "A Reserve Growth Story", Midland Walwyn, March 8 1993, 4 p.

Metals Week Focus, October 1993

Schroeter, T., Lane, B., Bray, A.D. (1992), "Geological Setting and Mineralization of the Red Mountain Mesothermal Gold Deposit", in Exploration in British Columbia, Geological Survey Branch, BCMEMPRA Publication, p. 117-125

The Northern Miner: February 18, 1991 and August 16, 1993

Vogt, A.H., Bray, A.D., and Bull, K. (1992), "Geologic Setting and Mineralization of the LAC Minerals Ltd. Red Mountain Deposit (Abstract)", British Columbia and Yukon Chamber of Mines, 1992 Cordilleran Round-Up Poster Session

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Watkins, J.W., Bray, A.D., (1993), "Geology of the Red Mountain Project", in Annual Mining Review, British Columbia and Yukon Chamber of Mines, volume 3, 1993