

On June 27th I toured the Endako molybdenum mine. Other participants included Don MacIntyre, Paul Wojdak, Bert Struik, Joe Whalen, Geoff Goodall and Jim Irwin (part of Nechako NATMAP). Glenn Johnson, mine engineer, very kindly toured us around. Current mine life is estimated at 10 years, at a mining grade of

0.126 MOS2 The reserves are contained within the Main zone (i.e. not including Denak West and Denak East zones), where mining is currently taking place. The deepest mineralized drill intersection is at elevation 2100 feet; mineralization is open to depth. The Endako deposit, hosted by the Endako Quartz Monzonite, forms a W-NW trending body that has a strike length of 3360 m an apparent width of 370m and a maximum depth of 370m.

Previous work has suggested strong structural controls of the deposit, including a significant domal uplift episode which is postulated to have produced an elongated structural host for ore deposition. 5 age dates from the deposit indicate an approximate age of 140 Ma. New thinking by mine staff is focused on a detailed alteration study, along with reconstruction of fault offsets on pre-mineral acidic and post-mineral basaltic dykes. There is some thought that the Jurassic porphyry alteration/mineralization (incl. pre-mineral acidic dykes) has been overprinted by an Eocene epithermal alteration/mineralization (Incl. post-mineral basaltic dykes) episode. The latter is characterized by argillic and quartz-sericite-pyrite alteration. The Jurassic episode is characterized by dilational 'veins', which resulted in repeated opening and closing, producing ribbon molybdenite veins and stockwork mineralization. NE-trending faults have caused up to 300 foot offsets in both pre-and post-mineral dykes. Endako Mines Ltd. hopes to be able to "put back" both dykes to assist in further exploration. Endako believes that the postulated Eocene event has enriched/remobilized molybdenum; however, it has become encapsulated in silica (i.e. tougher recoveries). Dave Selby, Univ. of Alberta, is conducting an alteration thesis study on the deposit. Preliminary fluid inclusion data indicates temperatures of 400°C to 460°C and 210°C for the Jurassic and Eocene events respectively. Endako further postulates that the higher bismuth and lead contents in the molybdenum are associated with the younger events.

The 1996 exploration program is budgeted at \$100,000 and will include 6 ddh. The company recognises the importance of exploration and has embarked on a more aggressive 'regional' and property-scale program, to begin in earnest in 1997. Exploration criteria include structural controls (esp. along strike to the NW), and I.P. and mag highs (esp. pyrite on both HW and FW).

[REF. CIM Special Volume 46, 1995, The Endako molybdenum mine, central British Columbia: An update, Bysouth, G.D. and Wong, G.Y., pp.697-703].

Wojdak, June '96 MR

(0.01% Mo) also occurs in the porphyry system but is peripheral to the Au-Cu zone and its recovery is no longer proposed (Yeagher). Grade at Bronson Slope is low but in the same range as Kerness and Taurus. My concerns about the project relate to sparse drilling (confidence of resource definition), engineering of this very challenging site and whether high gold and copper recovery can be achieved.

Cinola

***Harmony Gold** (103F 034) project was toured with Robin Tolbert and Brian Bower of Misty Mountain Gold Ltd. on June 19. During the winter 49 holes (10 000 m) were drilled and a second round (125 holes, 25 000 m, \$4.5 million) was just underway. This is a low sulphide epithermal hot spring gold deposit related to a major structure, the Sandspit/Specogna fault. Gold occurs in silicified clastic sediments in the hanging wall of the fault, within rhyolite (14 Ma) intruded along the fault, and in dilational quartz veins. Pervasive silica is abundant, locally quartz has replaced bladed calcite. The deposit is being re-drilled in the opposite direction to that of City Resources to determine continuity of dilational veins (030° strike, subvertical dip) which contain 5-20 g/t Au. These banded veins are well represented in the 500 metre underground drift and crosscut. One development option is to recover free gold from the veins by gravity separation and produce a sulphide concentrate to be shipped off-site (eg Premier Gold). This option would forego economic and environmentally difficult treatment of 0.5-2 g/t Au from the wallrocks. Misty Mountain hopes to drill a couple of deep holes in hope that the deposit narrows to a bonanza zone below the known deposit. There is promising geochemical and geophysical expression of epithermal gold to the south at the Canyon zone. About 12 major companies have reviewed the Harmony project.

Endako

***Endako** mine visited on June 27 with mine geologist Glenn Johnson. Tom Schroeter, Don MacIntyre (GSB), Bert Struik (GSC) and Geoff Goodall (Fox Geological) participated. Formation of the deposit is related to emplacement of final intrusive phase of the Jurassic Francois granite batholith. Doming of the earlier Endako quartz monzonite phase resulted in northwest and northeast faulting and dilation along a WNW trend similar to the late-stage Casey alkali. The main controlling structure of the hydrothermal system is the E-W South Boundary fault. Other faults and dilational fractures (moly veins) splay off it to the WNW to NW (110° to 170°) in horsetail fashion. Pre-ore dikes were emplaced along NE faults. Both NW and NE structures were reactivated during Eocene extension and intrusion of 'basalt' dikes (trachyte, Ootsa equivalent?). Adjacent these structures coarse moly is converted to fine moly encapsulated in quartz ("black quartz") with increased kaolinite, both contributing to lower metallurgical recovery. Current pit mapping aims to resolve Jurassic vs Eocene fault offset by comparing displacement of pre-ore granitic dikes and post-ore basalt dikes. Reserves are approximately 100 million tonnes at 0.126% MoS₂, sufficient for 10 years production. The geophysical signature is a magnetic high (associated magnetite) within an IP response caused by a marginal pyrite zone. An IP survey is being undertaken northwest of the mine. There is a deep exploration target on the South Boundary fault for the intrusion responsible for mineralization.

Mac

*The **Mac** Mo-Cu exploration project of Spokane Resources was examined on June 28. Geoff Goodall (Fox Geological) provided an excellent overview and assisted with transportation to the site. The Mac was discovered by Rio Algom using lake silt geochemistry in 1982. A quartz porphyritic quartz monzonite stock correlative with the Francois batholith (136 Ma) intrudes mafic volcanics assigned to the Cache Creek. Quartz "sweats" in the hornfels zone appear to be derived from the quartz-rich intrusion. A moly bearing quartz stockwork is developed in the stock and a fracture-controlled chalcopyrite-molybdenite zone is developed in the hornfels zone on the east and west margins. The south margin is truncated by a NW fault. Marginal phase of the stock is biotite granodiorite that resembles the Babine intrusions. Drilling is permissive for 50-80 million tonnes at 0.25% MoS₂ and 0.3% Cu in the hornfels, and 100 million tonnes @ 0.08%