

Paper No. 1—14:00 p.m.

Round-Table Discussion

Panelists:

R.T. MARSHALL, President, The Coal Association of Canada, Calgary,
WALTER J. RIVA, Chairman and Chief Executive Officer, Westar Mining Ltd., Vancouver,
D.S. RANKIN, President and Chief Executive Officer, Cape Breton Development Corporation, Sydney,
N. BERKOWITZ, Professor of Mineral Engineering and Fuel Science, University of Alberta, Edmonton,
J.H. WALSH, Consultant, Ottawa,
GEORGE D. CHAPEL, Vice-President Project Development, Manalta Coal Ltd., Calgary, and
E. BERRY, Vice-President Planning, TransAlta Utilities Ltd., Calgary

GEOLOGY DIVISION/DIVISION DE LA GÉOLOGIE
14:00, CONGRESS HALL/SALLE DE CONGRÈS (Congress Centre/Centre des Congrès)

Current Exploration Developments in Central Canada

J.M. FRANKLIN AND W.D. SINCLAIR, Geological Survey of Canada, Ottawa, Session Chairmen

Paper No. 2—14:00

"Corbet-Type" Deposits, and Their Metallogenic Relationship to Other Mafic Volcanic-Hosted Ores.

J.S. FOX, Senior Geologist, Teck Explorations Limited, Toronto

Proximal, basalt-hosted Cu-Zn ores similar to those at the Corbet deposit in Quebec are found in a number of Precambrian volcanic belts in Canada and Scandinavia. These deposits are characterized by an inclination to gold enrichment, and by an association with mafic volcanics of primitive arc tholeiite affinity. The Savura and Wainivesi deposits in Fiji are examples of young (Eocene), mafic tholeiite-hosted "Corbet-type" ores formed during the initial stages of plate consumption.

"Corbet-type" deposits are metallogenically distinct from mafic volcanic-hosted deposits in immature and mature rift environments, i.e. Besshi-type and ophiolite-associated deposits respectively, and from Kuroko-type ores.

Paper No. 3—14:25

The Fostung Deposit, Espanola, Ontario.

R.M. GINN and A.W. BEECHAM, Sulpetro Mineral Limited, Toronto

The Fostung tungsten-bearing skarn was initially recognized in 1966 and since that time exploration has been carried out by several companies. The skarn zone occurs within metamorphosed rocks of the Espanola Formation and is at least 3.6 km long and 0.4 km wide. Scheelite occurs with garnet, diopside-hedenbergite, tremolite-actinolite and pyrrhotite. Varying amounts of molybdenite, chalcocopyrite, sphalerite and fluorite are also present and significant values of silver and gold occur locally.

Although the skarn zone is flanked by a Nipissing diabase sill, a poorly exposed felsic intrusion is probably the cause of the metamorphism and the likely source of the mineralization. Local cross faults favourably influence the grades of tungsten and molybdenum.

The target for continuing exploration is the higher lime content rocks of the lower Espanola Formation which is not exposed and has not been encountered by work to date.

Paper No. 4—14:50

The Strange Lake Deposit, Quebec-Labrador.

I.S. ZAJAC, R. MILLER, T. BIRKETT and S. NANTEL, Iron Ore Co. of Canada, Sept-Îles

The Strange Lake deposit, 150 miles northeast of Schefferville, is an unusual deposit of specialty metals. It is one of the world's largest deposits of zirconium and yttrium with economically significant quantities of heavy rare earths, niobium and beryllium. Fluorine, tin, tantalum and a number of other trace elements are also highly anomalous.

The deposit is within the Strange Lake Alkaline Complex, an assemblage of anorogenic, dominantly peralkaline granites of Precambrian age which underlie an area of approximately 28 km². The unusual features of the complex are the large extent of the mineralization, the late calcium enrichment and many of the accessory minerals. The minerals of main economic interest are gittinsite, an unusual variety of gadolinite, pyrochlore and an unnamed calcium-yttrium silicate. The minerals are disseminated in various types of granite but are most common in those which appear to be the latest phases of the complex.

Paper No. 5—15:15

The Cameron Lake Gold Deposit, N.W. Ontario: Pioneering in a Dormant Gold Camp.

A.D. HUNTER, Nuinsco Resources, Toronto,
L.W. CURTIS, Curtis and Associates, Toronto, and
D.R. MELLING, Ottawa-Carleton Centre for Geoscience Studies, Ottawa

The Cameron Lake gold deposit is located in the Archean Wabigoon greenstone belt about 50 miles east of the Minnesota-Ontario border.

Gold mineralization is localized to a major discordant shear zone within mafic metavolcanics. Gold occurs within a series of shoots which rake to the northwest. A mineralized alteration envelope, averaging 100 feet true width, surrounds the ore zone. Gold values in the envelope range from trace to 0.10 oz/ton, whereas those in the Main Zone proper range from 0.15 to 0.30 oz/ton over true widths of 20 to 70 feet.

The discovery of the Cameron Lake Main Zone has breathed new life into a dormant gold camp which will be the focus of intense exploration activity over the next few years.

Paper No. 6—15:40

New Pascalis Gold Discovery.

MAGLOIRE BÉRUBÉ, Project Supervisor, and F. DUBUC, SOQUEM, Sainte-Foy, Québec

The discovery by SOQUEM of new gold orebodies on the New Pascalis property, 20 km northeast of Val d'Or, was made by geological prospecting in an area of rare outcrops.

The orebodies, which are vein-type deposits, are located in a volcanic environment, 2 km east of the Bourlamaque batholith. Most veins fill east-west, south-dipping fractures but the shape of orebodies is controlled by the host rock. In the north-south diorite dyke, most veins are closely-spaced and do not extend beyond its contacts (ladder-type structure) so that the mineralized dyke can be mined throughout its length in a north-south direction. In the agglomerate, however, most veins fill widely-spaced fractures, so that each structure will have to be mined individually in an east-west direction. To date, most drilling has been done across one north-south dyke which contains about 7,000 tons of ore per vertical meter.

Paper No. 7—16:05

A Free Carbon-Bearing Alteration Zone Associated with the Hoyle Pond Gold Occurrence, Ontario.

M.J. DOWNES and J. DERWEDUWEN, Exploration Division, Kidd Creek Mines Ltd., Toronto, and
D.J. HODGES, Department of Earth Sciences, University of Waterloo, Waterloo

An unusual type of wallrock alteration, associated with the Hoyle Pond gold-bearing quartz vein system contains very fine grained amorphous carbon disseminated within partly carbonized basalts. Some of the carbon is shown to be organic. Alteration zones identified in drill core and called grey zones vary in width from 10 to 30 m. Their near vertical attitude corresponds to an S-1 foliation and transects the steeply dipping basalts at 20 to 30 degrees. Mineralized quartz veins carrying sporadic blebs of visible gold are commonly 1 cm to 1 m wide and situated at the centre of grey zones. One such case is documented with a peak value of 0.3 per cent carbon of which 22 per cent is organic.

Paper No. 8—16:30

Gold Mineralization Associated with Archean Stratabound Sulphides in the Cheminis Deposit near Larder Lake, Ontario.

R.J. McH CLARK and R. BONNAR, Eldor Resources Limited, Ottawa

The Cheminis zone of gold mineralization is situated approximately 4 miles west of the Kerr Addison Mine along the Larder Lake Shear Zone in the southern portion of the Abitibi greenstone belt. The zone occurs at the same stratigraphic position and is very similar in appearance to the "flow ore" at the Kerr Addison Mine.

Gold mineralization is hosted by a pyritic, tuffaceous sediment which occurs within a rapidly alternating sequence of ultramafic to mafic volcanics, volcanoclastic, clastic, and occasionally carbonaceous sediments which have been pervasively carbonized. The gold is largely confined to pyrite and is concentrated in the layers of pyrite closest to a graphitic fault zone.

Genesis of the gold mineralization is primarily related to the syngenetic exhalite sulphide concentrations formed during fumarolic activity on the seafloor along the Larder Lake Shear Zone. Hydrothermal solutions leached gold from sediments and ultramafic volcanic rocks underlying the seafloor and concentrated it in the fumarolic emissions. At a later stage during alkaline volcanism, widespread hydrothermal alteration along the regional fault system resulted in regional carbonitization and minor redistribution of the gold.

Paper No. 9—16:55

The Macassa Gold Deposit.

G. WATSON, Geology Department, University of Western Ontario, London

(Abstract not available at press time)

Open Discussion—17:20-17:45

**INDUSTRIAL MINERALS DIVISION/
DIVISION DES MINÉRAUX INDUSTRIELS**

14:00, CAPITAL HALL 2B/SALLE DE LA CAPITALE 2B
(Congress Centre/Centre des congrès)