

MINFO

Mineral Resources
INFORMATION

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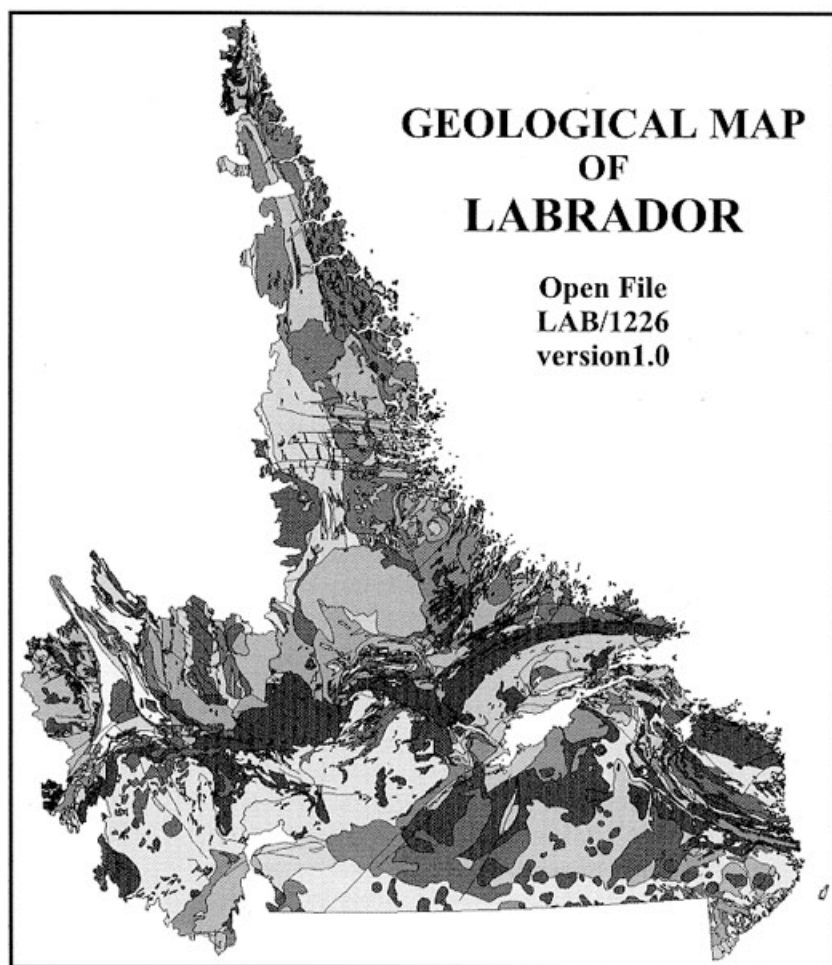
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(see inside for details)



GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

Department of
Mines and Energy

Mines Branch

MINING WEEK MAY 11-17, 1998

Mineral Exploration Update

February, 1998

Voisey's Bay Nickel Company Ltd. continues to explore the Voisey's Bay deposit area using up to six drill rigs. Targets that are being evaluated include the Reid Brook zone, the Southeast Extension zone, the Ovoid, and the Red Dog, Silver Fox and Makhavinekh grids. Values of 2.4% nickel, 0.9% copper and 0.16% cobalt over 20.6 metres were reported recently from the Reid Brook zone. In addition, a significant geophysical anomaly located about 60 kilometres north of Voisey's Bay will be drill-tested in 1998.

Donner Minerals Ltd., Northern Abitibi Mining Corp. and Teck Corporation continue to evaluate their South Voisey's Bay property located 90 kilometres south of the Voisey's Bay deposit. Results of up to 11.75% nickel, 9.70% copper and 0.43% cobalt over 1.1 metres; and 1.13% nickel, 0.78% copper and 0.20% cobalt over 15.7 metres have been reported. A detailed drill program is planned.

Major General Resources Ltd. signed a major agreement with **Rio Algom Exploration Inc.** on its 600-claim Green Bay base-metal project. Rio Algom may earn a 50% interest in the properties by making exploration expenditures of \$2 million and cash payments to Major General totalling \$285 000 over a four-year period. Rio Algom can earn an additional 10% interest with a further \$1 million exploration expenditure and \$100 000 cash payments to Major General in the fifth year. While Rio Algom has vested at 50% to 60% equity, a joint venture will be formed with both parties making pro rata expenditures. The claims are underlain by undivided felsic volcanic flow and pyroclastic sequences of the Catcher's Pond Group. The Catcher's Pond Group has been correlated with the Buchans Group, host to the high-grade Buchan's volcanogenic massive sulphide deposits. Exploration planned by Rio Algom include an airborne geophysical survey and ground follow-up, possibly with some drilling.

Celtic Minerals Ltd., in joint venture with **Jilbey Exploration Ltd.,** completed a drill-hole (holes 13 and 16) pulse-EM survey at its Hungry Hill base-metal project in central Newfoundland. Hole 16 intercepted 10.84 metres of 3.06% zinc, 20.9 grams/mt silver, 0.81 grams/mt gold and geochemically anomalous copper and lead. Results of the pulse-EM survey include the

identification of a long wavelength 15-channel anomaly caused by a off-hole large conductor of good conductivity and thickness. A minimum of 1 500 metres of drilling will test this pulse-EM anomaly and the strike and downdip projections of the sulphide intersection in hole 16. Drilling resumed in February.

First Labrador Acquisitions Inc. continues to drill-test the Lake Bond base-metal property, central Newfoundland. Recent drill results include 1.0 metre of 1.95% zinc. Reserves are estimated at approximately one million tonnes grading 0.31% copper and 2.12% zinc.

Buchans River Ltd. has a 100% interest in 563 claims around the former high-grade Buchans Mine in central Newfoundland. Buchans River Ltd. is conducting an aggressive exploration program. Work includes line-cutting, basal till sampling, geophysics and drilling. Several large pyritic alteration zones have been identified containing strongly anomalous zinc, lead, copper and barite mineralization.

British Canadian Mines Ltd. is conducting reconnaissance line-cutting and ground geophysical surveys in preparation for drilling on its Springdale claims, Green Bay. British Canadian's claims cover both base and precious-metal potential.

Exploration Sulliden Inc. is completing a multi-technical program consisting of detailed mapping, induced polarization, magnetics and diamond drilling on its Red Cliff property, Baie Verte Peninsula. Previous exploration by Exploration Sulliden Inc. returned values of 17.0 grams/mt gold over 0.6 metres. Drilling resumed in February.

Noveder Inc. is completing a line-cutting and geophysical program in preparation for drilling on the Cabot property located just north of Baie Verte on the Baie Verte Peninsula. Mineralization was discovered on this property in mid-1997 by PNL Ventures Limited. The mineralized zone trends northeast - southwest, dips steeply south, and is estimated to have a strike length in excess of one kilometre and be up to 30 metres wide on surface. The mineralization is hosted by a sheared black chlorite schist.

10324 Newfoundland Limited completed a gravity survey, some trenching and a limited bulk sampling program on the Ronan barite deposit located on the Port au Port Peninsula. In the immediate area, Midatlantic

Minerals Inc. completed a drill program designed to define the limestone and dolomite deposits in the Aguathuna area.

Leeson Resources Inc. is conducting a drill program designed to further test the Fischells salt deposit located south of Flat Bay. The Fischells deposit is estimated to contain several billion tonnes of salt.

Developing Projects

Cabot Granite Fabricators Inc., a subsidiary of International Granite Corporation, has constructed a slab and polishing facility at the Jumpers Brook quarry in the Mount Peyton area. The company is presently commissioning the plant which will manufacture slabs, monument blanks and custom products.

The **Labrador Inuit Development Corporation**, which owns the anorthosite quarry at Ten Mile Bay, plans to open a new quarry on Tabor Island in 1998. The company also expects to construct a stone plant this year in Hopedale. The plant would utilize undersize material from the two quarries in the Nain area to produce specialized products.

In 1998, **Galen Gypsum Mines Limited** plans to mine the Coal Brook gypsum deposit located in the St. George's Bay area. The company would supply approximately 10 000 tonnes of crushed gypsum annually to North Star Cement in Corner Brook. The project has cleared Environmental Assessment.

Shabogamo Mining & Exploration Co. Ltd. is assessing the silica deposits in the Labrador City area for use in silicon smelting. The company is currently extracting an 11 000-tonne bulk sample, which will be shipped to SKW's smelter in Bécancour, Québec, for testing.

Midatlantic Minerals proposes to start a dolomite and limestone operation at Aguathuna on the Port au Port Peninsula. The company plans to develop an open-pit quarry, set up a mobile crushing and screening plant, and construct a marine facility in 1998, and expand the marine facility in 1999. Production of various sizes of crushed stone for export is projected to be up to 150 000 tonnes in 1998, which would grow to 500 000 tonnes per year. The project has been registered under the Environmental Assessment Act and a decision is due on March 19, 1998.

United Bolero Development Corporation plans to reactivate the Buchans barite plant, which operated in the 1980s, to produce barite for offshore drilling. The two tailings ponds at Buchans contain approximately 1.5 million tonnes of recoverable material, with an average grade of about 30% barite. United Bolero plans to recover barite from Tailings Pond Number 1. The project has been registered under the Environmental Assessment Act, and a decision is due on March 6, 1998.

Department of Mines & Energy New Mining Act

The Department of Mines and Energy is currently preparing a new Mining Act. The objectives for doing this are to provide a clear working environment for the mining industry in this province, to formalize many practices which are in place, and to replace the Mines Act. It will apply to all mining sites, including some quarries operating under a lease issued under the Quarry Materials Act.

The proposed draft legislation has been developed based on a review of legislation from all provinces and consultation with industry. The intent is to provide an Act which meets the responsibilities of government, while at the same time recognizes the mining industry as a significant economic contributor to this province. The Act will not address safety issues since they are covered by other legislation.

The proposed draft Act will focus on all aspects of mining operations. The primary areas addressed are:

- **Mine Development Proposal.** For a new mine coming into production, specific information on the planned project will be required. This is very similar to that currently provided in an Environmental Impact Statement. If production has already started, the present operators will not be requested to supply a development proposal.
- **Operational Reporting.** This section addresses the requests to operators for such information as mine plans and production rates, now obtained informally.

- **Milling Licence.** With the possibility of custom milling occurring in the future, the Department of Mines and Energy believes that legislation governing this activity is desirable. The need for a milling licence will apply to other operations.
- **Progressive Rehabilitation.** There will be a requirement on operators to rehabilitate areas of the mine site which will not form part of the future operations.
- **Financial Assurance.** Many provinces require financial assurance as a component of closure plans. There are several types of security which may be used by the operator to ensure the rehabilitation program is completed.
- **Closure Plans.** Every holder of a mining or surface lease on which mining has taken place, will be required to prepare a detailed plan describing how the property will be rehabilitated when operations are terminated. The estimate cost of such work will form part of the submission.
- **Inspections.** The authority of individuals appointed by the Minister to evaluate aspects of the mining activity and to provide for the confidentiality of the information obtained, will be included in the Act.

New Geological Map of Labrador

In November, 1997, the Department of Mines and Energy released a new geological map of Labrador. Appropriately, it was released in the 25th anniversary year of the predecessor geological map of Labrador, which was produced in 1972. The new map is therefore a major publication that represents two and a half decades of progress during while the provincial and federal geological surveys have remapped large parts of Labrador. Whilst this work is by no means complete, it has resulted in important advances in our knowledge of the geology and mineral potential of this region.

The map is directed at those with an interest in the geological resources of Labrador, and it comes at a critical time given the enormous interest in the region created by the the Voisey's Bay discovery. The mineral-exploration industry in particular has already shown considerable interest in this product, and it is anticipated that it will serve as a reference document and planning resource well into the future.

The map was produced by Geological Survey geologists Richard Wardle, Charles Gower, Bruce Ryan, Ges Nunn, Donald James and Andrew Kerr with assistance in the final cartographic stages from Tony Paltanavage, Larry Nolan and Ken Byrne. The printed map measures 1.5 x 1.0 m and comprises a main central panel, which is the geology map at the 1:1 million scale (see cover illustration), and surrounding accessory panels that depict the location of major mineral deposits and other features. A digital version is also available on CD-ROM and provides MapInfo, ArcView shape file and DXF export files, in conjunction with a help file and a mineral occurrence database, for incorporation into common Geographic Information Systems.

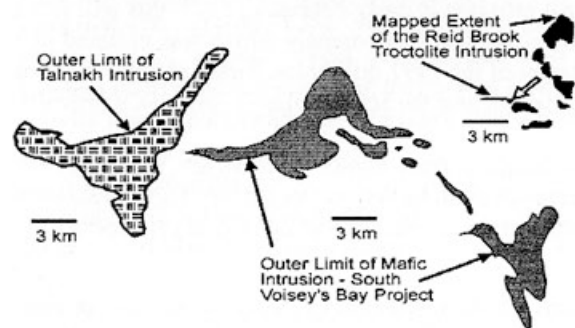
Nickel Exploration Moves Southward in Labrador

In the three years since drilling at Voisey's Bay revealed its true magnitude, close to \$180 million has been spent on mineral exploration in Labrador. Much of this effort focused on areas immediately adjacent to the Voisey's Bay deposit, and in a corridor leading north towards Okak Bay, where several junior companies found sulphide mineralization. Over the same time period, a Vancouver company called Donner Minerals acquired ground about 100 kilometres south of Voisey's Bay, on the basis of geological and geochemical data released by the Geological Survey of Newfoundland and Labrador. In late 1996, the company gained a higher profile when Teck Corporation announced a significant investment in its project. Many industry observers were quick to point out that Teck Corporation was the first major mining company to invest in the Voisey's Bay exploration project. The 1997 exploration program by Donner Minerals, Northern Abitibi Mining Corp., Teck Corporation, and several joint-venture partners produced results that have firmly put this project on the map, and it is now poised to become the largest exploration project in Labrador after Voisey's Bay.

The area of interest is located within the Churchill Structural Province, where mapping by the Geological Survey of Newfoundland and Labrador in the 1980s outlined a body of olivine-bearing gabbro, and documented the existence of rusty sulphide-bearing zones ("gossans") where it was in contact with sulphide-bearing gneisses. Early exploration work showed that these mineralized zones were widely developed, but suggested that most near-surface mineralization was subeconomic, generally containing

less than 0.6% combined Ni and Cu. However, these mineralized rocks contained only 10-20% sulphide minerals, and the rest was made up of silicates, which contain virtually no Ni and Cu. A simple calculation from such results suggests that a rock made of 100% sulphide minerals (ie., "massive sulphide") could contain up to 2.5% Ni, 1.7% Cu and 0.3% Co, values of possible economic interest. This potential, coupled with some very strong geological similarities to Voisey's Bay (see MINFO, Volume 3, No. 3; Fall 1997 issue), gave the project impetus in 1997. The predictions of the partners were confirmed late in the season when drilling intersected massive sulphides with interesting grades on a Donner Minerals/ Northern Abitibi Mining claim block.

In October, 1997, drilling intersected three thin sulphide zones (< 50 cm thick) of up to 1.9% Ni, 1.6% Cu and 0.26% Co, close to these predicted values. About two weeks later, a slightly thicker (1.1 m) zone gave extremely high-grade assays of 11.75% Ni, 9.7% Cu and 0.43% Co. These created great interest in the project from industry watchers. In December, the last hole of the season intersected a much thicker (15.7 m) sulphide zone. The assays from this were slightly lower at 1.13% Ni, 0.87% Cu and 0.2% Co, but the thickness and consistency of the zone makes this possibly the most significant result to date. Analysis of the data by geologists indicates that the ratios of Ni to Cu to Co are remarkably consistent throughout the area, suggesting that all of these, and the previously-defined



A comparison of the mapped surface extent of the Reid Brook Intrusion (host to Voisey's Bay), the target intrusion at the Donner/Teck South Voisey's Bay Project, and the Talnakh Intrusion in Russia. The Talnakh Intrusion hosts the Earth's second-largest collection of nickel deposits, after Sudbury. The Ovoid deposit is the circle at the tip of the large arrow, top right area of diagram.

subeconomic mineralization, are linked. The high Co content for a given Ni value is also an interesting feature because Co is several times more valuable than Ni, even at today's depressed prices. Perhaps the most interesting aspect of this project is the very large size of the target gabbro intrusion, which is many times larger than the Reid Brook Intrusion (see graphic), host to the

Voisey's Bay deposits. Although almost 100 diamond-drill holes have been completed, many of these were short, and many more will be needed to thoroughly test this large area.

It is still too early to make a full assessment of the potential of this area for Voisey's Bay-type nickel mineralization. The results to date are all from a fairly small area, which will no doubt receive very detailed attention in 1998. Much of the rest of the target area has been probed in only a cursory manner. Although many of the geological indicators are "right", a long chain of connected and interdependent circumstances must be satisfied to make an orebody and preserve it, and nickel deposits are some of the most elusive and difficult targets. The Department of Mines and Energy anticipates that a substantial 1998 exploration program will be mounted in this area, and looks forward to the drilling results. Other junior companies have acquired holdings in this area, geologist Andy Kerr will again be on hand in the area, and in Nain, to provide advice and assistance to explorationists, and help evaluate the results. Although low commodity prices and economic uncertainty may reduce exploration expenditures from recent record levels, the "Labrador nickel play" is a long way from being over.

Call For Proposals

Baie Verte Asbestos Property.

The Government of Newfoundland and Labrador, through the Minister of the Department of Mines and Energy has invited proposals for the mineral or industrial development of all or part of the property. The deadline for receipt of proposals was March 6, 1998. The proposals will be assessed and the province will work with the successful proponent to assist with the acquisition of the necessary infrastructure and facilities to carry forward its project.

Dimension-Stone Study.

On January 24, 1998, the Dimension Stone Strategy Steering Committee, composed of representatives of several federal and provincial government departments, invited proposals to analyze the Newfoundland and Labrador dimension-stone industry, and recommend a strategy for industry development. Resource Development Associates of St. John's was recently awarded the contract, and the final report is expected to be completed in May, 1998.

Active Year for Prospectors and Junior Exploration Companies

The Department of Mines and Energy's Prospectors Assistance Program successfully continued through fiscal 1997-98. The program provided part of the risk capital involved in 39 prospecting projects, and financially supported Prospector Training by providing professional instruction and other resources to 25 students who attended the two-week prospecting course. The selection of students for the 1998 Prospectors Training Course will soon be completed and the two-week course, which is a joint effort of the Department of Mines and Energy and the Bay St. George campus of College of The North Atlantic, will begin on May 28.

A total of \$76 000 was made available for prospectors grants in 1997/98 and the average project contribution was approximately \$2 000. The Department has sought to increase the prospectors grants budget to \$95 000 for 1998/99 and already many applications have been received. Thirty-eight year-end prospecting reports have been filed with the Department. Two prospectors made significant gold-copper discoveries (Albert Stone - near Marystown and Ken Stead - near Clode Sound); and several prospectors found or acquired promising gold properties. Some of these prospects have been the subject of negotiation for option agreements and are being promoted within the junior exploration sector.

Newfoundland's junior mining sector was very active during the past year. There are currently six Newfoundland-based, publicly-traded mineral exploration companies.

Altius Minerals Corp. (ALS.ASE) was listed in 1997 and will acquire and explore the mineral properties of Altius Resources Inc. if approval is granted by a shareholders vote in early March, 1998.

Buchans River Ltd. (BUV.ASE) aggressively explored its large Buchans-area holdings in 1997 and concentrated on the Buchans East property. Large-loop TDEM, I.P. and Gravimetric surveys outlined a series of diamond-drill targets and initial-phase drilling has outlined several large alteration zones considered typical of wall-rock alteration associated with Buchans-type massive sulphide deposits. The company considers this highly encouraging and plans further diamond drilling in 1998. Buchans River has acquired an additional 279 claims adjacent to the former mine site and is now actively exploring the Buchans West/Clementine Trend area.

Newfoundland Goldbar Resources Inc. (NFGB.CDN unlisted) worked its claims in the Red Indian Lake area

of central Newfoundland but was most active with airborne geophysics and prospecting on its large mineral licences in the Robinson's River area. The company also acquired Labrador properties in the vicinity of the South Voisey's Bay Ni-Cu prospect.

New Island Resources Inc. (NIS.ASE) drilled 500 metres in four diamond-drill holes on its Kennecott option property southeast of Grand Lake. The company also did airborne Mag and EM and follow-up ground geophysics on its Fischells Brook/Robinson's River claims.

Vulcan Minerals Inc. (VUL.ASE) conducted a 1 000 metre drill program on its Carbonar base-metal property and encountered significant zinc mineralization. Exploration will continue on this property in 1998. Vulcan's west-Newfoundland onshore hydrocarbon property is in good standing and was the subject of detailed geoscientific analyses in preparation for further exploration. The company recently acquired 1 000 000 acres (404 700 hectares) of petroleum rights in three offshore parcels in west coast Newfoundland. The company also conducted 350 line kilometres of airborne Mag/EM on its Goose South titanium property in Labrador.

In 1997, *First Labrador Acquisitions Inc.* (ASE), undertook an aggressive exploration effort on its Lake Bond (Reid Lot 50) property within the Buchans/Roberts Arm Group. A 2 422-metre drill program tested a gravity anomaly and encountered significant sections of VSM type alteration and stockwork sulphide mineralization. The company began a second-phase drill program in early February, 1998; this will test a down-the-hole EM anomaly which was outlined in a survey of the 1997 drill holes. First Labrador also has properties near the South Voisey's Bay Ni-Cu prospect.

Although current equity markets are volatile, 1998 seems likely to be very active for Newfoundland-based exploration companies and individual prospectors.

New Director of Mineral Development

Effective February 18, 1998, Mr. Ferd Morrissey is the new Director of Mineral Development, Mines Branch of the Department of Mines and Energy. Mr. Morrissey is responsible for the overall operation of the Mineral Development Division including the planning, development and implementation of legislation governing various aspects of mining operators. He also oversees the Department's programs which provide financial or technical assistance to the mineral industry.

Upcoming Events

Prospectors and Developers Association of Canada 1998 Annual International Convention & Trade Show.

March 8-11, 1998
Toronto, Ontario

The annual meeting of the PDAC is unique in the world in its ability to bring together the full range of players in global exploration and development. For more information, please contact:

Rita Plaskett
Tel: (416) 362-1969
Fax: (416) 362-0101

Investing in the Americas '98

March 16-19, 1998
Miami, Florida

The Seventh Annual Investing in the Americas promises to be the best place to evaluate your investment strategy in the Western hemisphere for the coming months. For more information please contact:

Tel: (305) 669-1963
Fax: (305) 669-7350
Toll Free (800) 282-7489

Annual General Meeting of CIM and CIM Tradex

May 3-7, 1998
Montreal, Québec

1998 is the 100th anniversary of the founding of the CIM and a host of centennial activities is planned to mark the anniversary. CIM '98 is going to be the year's biggest industry event of everyone with a business or professional interest in the various fields of activity should plan to attend. For more information, please contact:

Chantal Murphy
Tel: (514) 939-2710 (ext. 304)
Fax: (514) 939-2714

34th Forum on the Geology of Industrial Minerals.

May 3-7, 1998
Oklahoma, USA

The forum on the Geology of Industrial Minerals is an annual event hosted by state or provincial geological survey, or their equivalent. This year's theme is "Industrial Minerals of the Southern Midcontinent".

For further information, please contact:

Kenneth S. Johnson
Tel: (405) 325-3031
Fax: (405) 325-7069

GAC/MAC Annual Meeting.

May 18-20, 1998
Québec City, Québec

This is the premier geoscientific meeting in Canada with a strong international representation. For further information please contact:

Michel Rocheleau
Tel: (418) 656-7340
Fax: (418) 656-7339

Happy Valley-Goose Bay Mining Conference and Trade Exhibit.

June 14-18, 1998
Happy Valley-Goose Bay, Labrador

For more information contact:

Roxanne Wells
Tel: (709) 896-8855
Fax: (709) 896-0585

Baie Verte and Area Chamber of Commerce Mining Conference.

June 19-21, 1998
Baie Verte, Newfoundland

This is an annual review of developments in the local exploration and mining scene. For more information, please contact:

Kevin Thistle
Tel: (709) 532-4646
Fax: (709) 532-8310

North Atlantic Minerals Symposium.

Sponsored by the Geological Survey of Ireland and the Geological Survey of Newfoundland and Labrador. This meeting will be held in Dublin, Ireland, September, 1999. It will entail a symposium and Field Trips on metallic and industrial minerals in the regions surrounding the North Atlantic.

National GAC/MAC Annual Meeting.

The Geological Association of Canada and the Mineralogical Association of Canada will hold a joint annual meeting in St. John's, Newfoundland, May 27-30, 2001. This will be the premier Geoscience meeting held in Canada in 2001.

RICH MINERAL RESOURCES

and A WEALTH OF OPPORTUNITIES...

- ✓ Produces over a dozen mineral commodities
- ✓ Produces 55% of Canada's iron ore
- ✓ Access to tide-water and deep-water ports
- ✓ Comprehensive geoscientific database
- ✓ Skilled workforce and well-developed infrastructure and service industry
- ✓ Developing dimension stone industry
- ✓ Active geological survey group
- ✓ Newfoundland and Labrador boasts geological diversity and potential for further world-class discoveries



Charles J. Furey

CHARLES J. FUREY
Minister



GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

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