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GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Department of Mines and Energy

Mines Branch



Mine Reclamation

The Gullbridge Mine operated from 1967 to 1971 and produced 98,000 tons of copper concentrate. Irving Oil, the owner of the property, has been reclaiming the former mine site. (See the article inside on mine reclamation).

> Above: The mine area in 1985. Below: The same area in 2000.



GOVERNMENT GEOSCIENTIST AWARDED NATIONAL MEDAL



Sean O'Brien, geoscientist with the provincial department of Mines and Energy, has been awarded the 2000 Provincial Geologists Medal. It is the second consecutive year that a geoscientist with the Geological Survey of Newfoundland and Labrador has been honoured with the

prestigious award. Last year's winner was Bruce Ryan.

Mr. O'Brien received the award in recognition of his scientific achievements over more than 20 years of geological and mineral-deposit research in Newfoundland and Labrador.

The medal was presented to Mr. O'Brien by the Honourable Tim Hudak, Ontario Minister of Northern Development and Mines, at the 57th Annual Energy and Mines Ministers' Conference in Toronto.

The Provincial Geologists Medal recognizes outstanding work by a geoscientist in one of Canada's provincial or territorial geological surveys.

Mr. Dicks said that Mr. O'Brien was the unanimous choice from a Canada-wide field of candidates with outstanding credentials and he has every reason to be proud of his significant accomplishment.

"Mr. O'Brien is one of the pre-eminent experts on that part of the Appalachian Mountain Belt represented by rocks of southern and eastern Newfoundland", said Mr. Dicks. "His expertise is recognized in Canada, Europe and the United States and by several mineral-exploration companies who have sought his advice and knowledge on the mineralizing environments in the region. His published maps, reports and papers are of exceptional clarity and a fundamental starting point for any exploration program in eastern Newfoundland."

Sean O'Brien was born in St. John's and spent many childhood summers exploring the rocky beaches of the Southern Shore of Newfoundland. His fondness for rocks and the outdoors has evolved into a lifelong passion for geological field work. After completing his Bachelor's and Master's degrees in geoscience at Memorial University, he joined the Department of Mines and Energy in 1977. Over the past two decades, Mr. O'Brien has pursued the science and art of geological surveying along the province's south coast, the Burin Peninsula and the Avalon Peninsula. During that time, he has shown himself to be a meticulous mapper, a prodigious researcher and a proficient communicator.

Sean O'Brien has also been a strong supporter of Newfoundland's growing prospecting community and junior exploration industry. He has proven to be a most patient mentor to eager learners, and inspires a passion for mineral exploration in the novice and veteran alike. Several prospectors and geologists who have benefitted from Mr. O'Brien's tutelage have made important mineral discoveries, some resulting in joint ventures with other companies to further exploration on their mineral properties.

PROFILE OF A PROSPECTOR



Local prospectors come from varied b a c k g r o u n d s; however, 'they all have a great love of the outdoors and a sense of adventure.

This can certainly be said of Ivan Mesher who has been an outdoorsman all of his life, having spent considerable time hunting, fishing, canoeing and berry

picking. Ivan, who now lives in St. John's, was born in St. Anthony on the Great Northern Peninsula.

As an IBM computer technician over 30 years, he spent considerable time traveling all over the island and also in the Happy Valley-Goose Bay area of Labrador. In 1993, he retired from his profession which allowed him more time to spend in the country. He always had an interest in geology and prospecting and he began collecting reference books and materials on the subject from across Canada. Two years ago, he took the government-sponsored Prospectors Course in Stephenville. This interest has really taken off since then, with his prospecting activities focusing on precious metals and base metals in central and western Newfoundland.

Ivan truly loves prospecting and says that "since taking the prospectors course and studying about geology, my trips into the country are totally different". "There is so much more to see and learn about and I have a totally different view and perspective of the outdoors today".

EXPLORATION UPDATE

In Newfoundland and Labrador this year, 7907 claims have been staked; the forecast for 2000 is 10,000 claims. Expenditure levels are forecasted to continue to decline in Labrador but rise slightly on the Island.

Voisey's Bay Nickel Company Limited's 2000 exploration programs have included audiomagnetotelluric surveys and diamond drilling. Inco Limited staked 1001 claims 30 km south of Voisey's Bay, extending the company's search for nickel to other parts of the Nain Plutonic Suite.

Major General Resources Inc., at Sarah Lake, South Voisey, and Gallery Resources Limited, at Cabot Lake, have also completed diamond-drilling programs for nickel. Gallery Resources Limited staked an additional 428 claims near Cabot Lake in July, 2000.

West-central Newfoundland continues to be main area of exploration activity in insular Newfoundland. Billiton Exploration Canada Ltd., Phelps Dodge Corporation of Canada, Limited and Hudson Bay Exploration & Development Co. Ltd. and junior exploration companies Altius Resources Inc., Buchans River Ltd., Celtic Minerals Ltd., Gallery Resources Limited, Kelmet Resources Ltd., Major General Resources Inc., New Island Resources Inc., Thundermin Resources Inc. and Vinland Resources Limited have completed exploration programs for base Activities range from mapping through geochemical and geophysical surveys to diamond drilling. In addition, Richmont Mines Inc. extracted a bulk sample from the Hammerdown gold deposit. Thundermin Resources Inc. reported in late September that it expects that the bankable feasibility study on the Duck Pond base-metal deposit, which is due at year-end, will give a green light to start production in 2002. Most of these projects occur within a 65-km radius of Buchans and many are hosted by the same rocks as the famous former mine.

Billiton Exploration Canada Ltd. signed an earn-in agreement with Copper Hill Resources Inc. on the latter's Powderhorn Lake base-metal property, 40 km northeast of Buchans, in September, 2000.

Elsewhere on the Island, exploration programs have been or are being undertaken by Altius Resources Inc. for nickel at Taylors Brook on the Great Northern Peninsula; by British Canadian Mines Ltd. around the Strickland base-metal prospect in southwestern Newfoundland; by Celtic Minerals Ltd. on its copper project at Great Burnt Lake, and by Gallery Resources Ltd. at its central Newfoundland, base-metal Katie project, where a further 350 claims were staked in July, 2000. In eastern Newfoundland, Cornerstone Resources Inc. completed geophysical surveys on its Princess group of properties and a soil survey on the Red Cliff property. At the latter, 18 m of a 25-m chip sample returned 0.75% copper and 10.1 g/t silver.

In October, 2000, Rubicon Minerals Corporation announced that it will complete a 1500-2000 metre diamond-drilling program on its Lewis Lake base-metal property in north central Newfoundland, commencing in mid-October, 2000 nearby Inmet Mining Corporation will fund the fall diamond-drilling program on Altius Resources Inc's Lockport base-metal property.

The area of copper and gold exploration by **Phelps Dodge Corporation of Canada**, **Limited** on the Avalon Peninsula was expanded by 230 claims in August, 2000, and a further 76 claims were added to its Avalon Peninsula Country Pond property in October, 2000.

INDUSTRY NEWS

The Duck Pond project is a Thundermin Resources/ Queenston Mining joint venture located 20 km southeast of Millertown. The project was registered under the Environmental Assessment Act in March 2000, and the draft guidelines for the preparation of the Environmental Impact Statement have been released. Comments on these draft guidelines are invited from the public prior to November 23, 2000. A 1,500 tonne-perday underground and open-pit mining and milling complex is proposed. The project has a resource of approximately 6,218,000 tonnes grading 3.4% copper, 6.2% zinc, 1.0% lead, 6.3 g/t silver, and 0.8 g/t gold. This resource should support a mining operation with a mine life of 10 years, employing 144 minimum full-time personnel.

On August 1, 2000, **Epoch Rock Inc.** held a sod-turning ceremony to officially start construction of a modern granite processing plant in Argentia. The plant will have six 40-tonne capacity Breton quarry saws, a diamondwire saw, and a 19-head polisher – all fully computerized. The company will utilize local stone and import blocks of the most highly demanded colours

from around the world. Two and three cm slabs of polished granite produced from the blocks will be exported to the United States for such dimension-stone uses as countertops and tiles.

The private sector financed approximately 90% of the \$20 million project. Government support includes a \$300,000-commitment from the Department's Dimension Stone Incentive Program. Epoch Rock expects to complete construction of the plant in the spring of 2001. The granite facility will employ 60 people in the first year of operation.

Hurley Slate Works Company Inc. has reactivated slate operations at Nut Cove, Trinity Bay. The quarry contains reserves of purple and green slate. The processing plant, which has been constructed at the quarry, has an annual capacity of 4,000 tonnes of roofing slate. Hurley Slate is exporting its products to markets around the world.

Newfoundland Slate Inc. had operated the Nut Cove quarry and a processing plant at nearby Burgoynes Cove from 1992 to 1998.

MINE RECLAMATION

The Department of Mines and Energy, Mineral Development Division, has an ongoing program of rehabilitation of abandoned mining properties in the province. This program was started approximately 15 years ago to ensure that mining properties that had reverted to the Crown were rehabilitated. Money is allocated each year to carry out work on abandoned properties throughout the province and over \$750,000 has been spent since 1985.

A database of abandoned properties has been partially developed and this information is then used to prioritize work that is to be conducted in each coming year. In some cases, remedial work is carried out until permanent corrective measures can be taken. The types of work carried out are backfilling or capping shafts, fencing of open pits or subsidence holes, and the removal and proper disposal of abandoned buildings and infrastructure.

The Department is presently working on reclaiming a number of sites. A hydro seeding test-program was started at the abandoned Baie Verte asbestos mines to determine if it is feasible to cover the tailings and waste rock piles using this method. Dr. Tom Al, of the University of New Brunswick, was contracted to report on the options for remediation at the abandoned Rambler Mines tailings. A 20-m shaft, the result of a failed mining venture in the 1940s, was backfilled at Great Gull Lake. A number of shafts and adits were identified and warning sings were erected at the abandoned Bett's Cove copper mine. These mine openings will be backfilled or fenced in the summer of 2001.

The Department works with property owners in rehabilitating mining lands before the properties can be returned to the Crown. Currently, this department is working with Gulf Operators, a subsidiary of Irving Oil, in the rehabilitation of abandoned mining properties at Gullbridge, Little Bay and Tilt Cove. The Mineral Development Division is taking a lead role to ensure that all concerned federal and provincial departments are involved and have input in the process.

Gulf Operators is in the second year of its reclamation program at these sites. The company has spent more than \$250,000 to date, capping or fencing mine openings and removing all hazards from the sites. The 'before and after' photographs on the cover of this edition of Minfo indicate the quality of work being carried out. Gulf Operators will continue with the reclamation work.

A number of active mining companies are involved in reclamation activity and are taking a proactive approach to environmental concerns. Richmont Mines' Nugget Pond division won an award in 2000 from the PDAC for environmental awareness. This company has also begun a reforestation program at Nugget Pond and at Hammerdown, the site of a test-mining project. The Iron Ore Company of Canada has begun an eight-year tailings management program that will include revegetation and construction of a tailings impoundment dyke. IOC has had a revegetation program at their Labrador West mine for over 10 years. Wabush Mines has been involved in such rehabilitation programs as hydro-seeding waste rock piles and revegetating tailings for a number of years.

The Department recognizes the importance of protecting the environment. The systematic identification, assessment and rehabilitation work carried out by the Mineral Development Division is reclaiming land for future use and development. A new Mining Act, initiated by the department and proclaimed in July of 2000, sets out clear regulations for rehabilitation and closure of mines in the province. Mining companies will have to provide financial assurance to ensure that funds are available for rehabilitation once the mine has closed.

CORE-STORAGE PROGRAM

In 1979, the Department of Mines and Energy, recognizing the technical value and possible economic potential of drill-core samples produced by mineral exploration companies in the province, began a systematic program of core collection and storage. The first years of the program were devoted to locating and salvaging core samples at abandoned mineral exploration drill projects. Initially, three core-storage libraries were constructed: the St. John's library opened in 1980, and the Goose Bay and Pasadena core libraries opened in 1982.

During the 1980s, the Department acquired three additional core libraries in central Newfoundland. A core library at Springdale was acquired from British Newfoundland Exploration Company in 1987, complete with its total drill-core collection of 48,880 m. The Buchans cotenancy of ASARCO/Abitibi Price donated a building and the Buchans collection of 420,983 m of core samples. Subsequently, the Department established its largest core library at that location. The sixth core library was established at Baie Verte in 1989, and by that time the core sample collection had grown to 675,783 m.

Core collection and donations from mining and mineral exploration companies to the core-storage program continued during the 1990s. Five of the six libraries in the system are now filled to capacity, and outdoor storage is utilized at all locations with the exception of Goose Bay. A milestone of 1,000,000 metres of core samples in storage was reached in 2000. The Department is currently investigating the possibility of acquiring a second core library in Buchans which would effectively increase core storage capacity by 400,000 m.

Use of the core storage libraries and the core collection has remained at a high level since visitation statistics were first kept in 1982. Since 1982, the client groups have made 1100 separate visits to the core libraries and have conducted 3465 man-days of work in the facilities. They have examined 317,277 m of core samples and have taken 8162 core samples for further analytical work.

Plans for 2001 include the collection of representative core samples (complete drill holes) from drilling projects in Labrador conducted during the Voisey's Bay rush, and the collection of all available core samples from the Tally Pond and adjacent areas in central Newfoundland. The core storage information

on the Department website is being upgraded and a listing of all core samples in the system complete with locational and other related data should be posted to the site in 2001.

CHANGES TO PROSPECTORS AND INDUSTRY ASSISTANCE PROGRAMS

The Department has made a number of changes to the Eligible Activities Guidelines for both the Junior Company Exploration Assistance Program (JCEAP) and the Dimension Stone Incentive Program (DSIP). The JCEAP program now supports exploration programs that have identified both a significant geophysical anomaly and where applicable a significant coincident geochemical anomaly. As well, the program supports trenching of these targets in areas where overburden thickness will permit. The services of a contract geologist is now an eligible expense.

Available funding for DSIP has increased from \$50,000 to \$100,000 per project. Plant and quarry equipment purchases directly related to the dimension-stone industry are now considered eligible expenses. The services of a contract geologist is also an eligible expense.

SURVEY GEOLOGISTS INVITED TO WORK IN GREENLAND

Doug Boyce and Ian Knight of the Geological Survey visited the Arctic Circle area of central east Greenland this past summer, at the invitation and expense of the Geological Survey of Greenland. The area is famous for its imposing cliffs that preserve folded and faulted sedimentary rocks of late Precambrian, Cambrian and Ordovician age, and a Devonian sandstone basin that hosts the oldest known amphibian fossils together with impressive fish remains.

The two provincial survey geologists each have over 20 years of experience studying and mapping Cambrian and Ordovician carbonate rocks in western Newfoundland, and were invited to join a multidisciplinary international team of experts to study similar rocks in the Greenland fjords. The goals of the project are to understand the stratigraphy and depositional setting of this part of the Cambro-Ordovician tropical shelf that once bounded the complete margin of the ancient Laurentian (North American) continent 600 to 400 million years ago and to contrast the successions there with those known in

northern Greenland and western Newfoundland. Information from any one of these successions will be useful in interpreting the geology of the others to provide useful exploration guidelines for both the mineral and petroleum industries. Knight is principally studying the rocks of the overall succession whilst Boyce collects and identifies fossils from the succession, in particular the trilobites.

NEWS FROM THE CHAMBER

Atlantic Innovation Fund (AIF) Consultation Roundtable

The Chamber participated in an industry consultation session with ACOA and industry representatives from Atlantic Canada in Halifax in early September. The objective was to provide input to ACOA in support of the new AIF.

The AIF is the key element of the new Atlantic Investment Partnership Initiative. The \$300-million fund is targeted for strategic investments to drive technology development and research capacity in Atlantic Canada. In addition to clusters emerging in the new economy sectors, these investments will also contribute to the existing resource sectors. Upon completion of the consultation sessions, information will be made available to all stakeholders.

Mines Ministers' Conference

The Chamber sent a small delegation to the annual Mines Ministers' Conference held in Toronto in mid-September. Industry representatives from the Mining Association of Canada and the Prospectors and Developers Association of Canada (PDAC) made several key presentations to the provincial ministers and the Minister of Natural Resources Canada, the Honourable Ralph Goodale. The briefs covered key drivers of sustainable mining across Canada and around the world.

The Chamber provided input to the content of both briefs. The PDAC's presentation specifically requested support for their Focused Flow-Through Share initiative which was designed to attract investors to the exploration sector. Finance Minister Paul Martin has announced an investment tax credit for investors in flow-through shares effective October 17, 2000.

Dimension Stone Infrastructure Support Program (DSISP)

The Chamber has received funding from ACOA to support infrastructure development of the province's dimension-stone industry. The \$1.0 million fund will be used to provide road access to open new commercially viable quarry sites and is a strategic intervention to develop the stone industry to sustainable levels of maturity.

Dimension Stone

In addition to the new Dimension Stone Infrastructure Support Program the Chamber continues efforts to develop a strategic plan for developing the provincial stone industry. A key element of the plan is equity funding in this capital intensive industry.

The Chamber will take a delegation to StonExpo 2000 in mid-November to market some of the existing stone products and provide exposure to the wide variety of dimension stone potentially available throughout Newfoundland and Labrador.

MATTY MITCHELL PROSPECTORS RESOURCE ROOM UPDATE

The Matty Mitchell Prospector Resource Room (MMPRR) has completed a number of new initiatives in 2000. Prospector's posters, property maps and related information packages were prepared for display and distribution to the exploration community at the PDAC Mining Millenium Meeting in Toronto; these were very well received. At this meeting, the MMPRR worked in close collaboration with the Norm Peters Prospectors Resource Room, the Geological Survey of Newfoundland and Labrador, and the Newfoundland and Labrador Chamber of Mineral Resources to help profile Newfoundland and Labrador's tremendous mineral potential. The MMPRR, in cooperation with the Norm Peters Room and the Geological Survey, also organized a major public awareness session on prospecting in Clarenville, followed by similar efforts in Western Newfoundland, Bonavista, Labrador City and Wabush. All events were well attended, and were successful in getting much-needed information and resources into the hands of local prospectors.

The MMPRR also produced property maps and posters for prospectors' displays at the November, 2000 CIM meeting, and are heavily involved in preparation of the Newfoundland and Labrador Mineral Exploration exhibit at the CIM/ Department of Mines and Energy Review of Activities. This first-time exhibit, primarily targeting the general public will encompass many facets of prospecting and mineral exploration in the province. It will contain general information on prospecting, mineral properties, the geology of Newfoundland and Labrador, the province's mines, exploration tools, rock and mineral specimens, and much more.

The rock collection now includes samples from the Cripple Creek Gold mines in Arizona, the Broken Hill Lead-Zinc massive sulphide deposit in Australia, and the Sullivan Mine sedex deposit in B.C. MMPRR jave also received samples from MVT deposits in Nunavut and Washington State, mesothermal gold from Ontario, as well as diamondiferious dykes and PGE-bearing rocks.

Over 300 prospectors visits to the MMPRR were recorded during the summer of 2000. In addition, several property visits were carried out by the MMPRR, at the request of local prospectors.

UPCOMING EVENTS

Cordilleran Roundup 2001

January 23 - 26, 2001

Vancouver, British Columbia

The British Columbia and Yukon Chamber of Mines are once again hosting the largest mining exploration conference and trade show on the West Coast. This year's theme is "Vancouver: Gateway to Discoveries". For more information:

Tel:

(604) 681-5328

Fax:

(604) 681-2363

E-mail: <u>chamber@chamberofmines.bc.ca</u>
Web site: <u>www.chamberofmines.bc.ca</u>

Prospectors and Developers Association of Canada 2001

March 11-14, 2001 Toronto, Ontario

The trade show at the PDAC annual convention is the prime international exhibition for companies offering goods and services to the exploration side of the mining industry. For more information contact:

Helen Sklarz

Tel: (416) 362-1969, ext. 223

Fax: (416) 362-0101 Web site: www.pdac.ca

Minespace 2001 - Convention and Trade Show

April 29 to May 2, 2001

Québec City, Québec

103rd Annual General Meeting of the Canadian Institute of Mining, Metallurgy and Petroleum in collaboration

with The Canadian Space Agency and in association with Association Professionnelle des Géologues et des Géophysiciens du Québec. For more information contact:

Serge Major

Tel: 1-800-667-1246 Fax: (514) 939-2714 Web site: www.cim.org

Industrial Minerals 2001

May 23, 2001 to May 25, 2001 Victoria, British Columbia

The 37th Forum on the Geology of Industrial Minerals. The Conference will cover: Industrial Mineral Deposits of Western North America; World-class Industrial Minerals Discoveries; Evaluation of Industrial Mineral Deposits; Natural Stone; Synthetic and Energy-Intensive Minerals; Value-added Industrial Minerals; Diamonds in Canada. For more information contact:

Susan Dunlop CEOR, University of Victoria

Tel: (250) 472-4347 Fax: (250) 472-4100 E-mail: sdunlop@uvic.ca

Geological Association of Canada - Mineralogical Association of Canada 2001 Joint Annual Meeting

May 27-30, 2001

St. John's, Newfoundland

GAC and MAC will launch the new millennium by holding their 2001 Joint Annual Meeting in St. John's, Newfoundland. For more information please access the web site www.geosurv.gov.nf.ca/stjohns2001 or contact:

Doreen Peavy

Tel: (709) 729-2301 Fax: (709) 729-3493

E-mail: dmp@zeppo.geosurv.gov.nf.ca

North Atlantic Mineral Symposium 2001

May 27-30, 2001

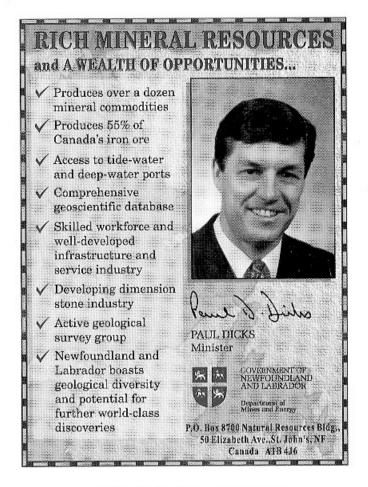
St. John's, Newfoundland

Special symposium held in conjunction with the GAC/MAC 2001. For further information contact:

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Quarry Rights(709) 729-4044	Information(709) 729-3159	
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Core Storage, Pasadena(709) 686-2054	Regional Geology(709) 729-2769	
Director, Mineral Development (709) 729-3197	Geochemistry, Geophysics	
Engineering Analysis (709) 729-3197	& Terrain Sciences(709) 729-4014	
Mining Project Analysis(709) 729-3197	Geoscience Data Centre(709) 729-6693	
Mineral Industry Assistance(709) 729-2358	Industry Services(709) 729-6193	
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