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In This Issue

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NOVA SCOTIA
Natural Resources

DNR's Abandoned Mine Openings Program at Goldenville

The Goldenville area in Guysborough County was the most productive gold district in Nova Scotia, with a total production of more than 200,000 Troy ounces of gold. It all started on Nelson Nickerson's farm in the summer of 1861. Once word got out of his find, the gold rush was on. It wasn't long before the area was proclaimed a Gold District and claims were being surveyed. Over the next 80 years, until closure of the mines in 1942, more than 270 mine shafts would be sunk in the Goldenville District, with mine workings approaching 300 m in depth and interconnected for more than 1 km to the east and west, and 400 m to the north and south. For every mine shaft, there were at least two prospect pits or trenches to bedrock, making Goldenville the equivalent of a piece of Swiss cheese. In 1942 the hammering of the stamp mills ceased and a community that had once been home to more than 3,000 would soon be reduced to the dozen or so families that call this community home today.

In the Spring of 1981, Northumberland Mining Company staked 3,200 acres in the Goldenville area. Prospecting took place and shafts were pumped out, in spite of the eels that clogged the pumps, having entered the mine workings via a nearby glory hole bordering a swamp. A cave-in of ground that took place in this period of activity led the Province of Nova Scotia, via the provincial Ombudsman's office, to recognize the potential liability associated with abandoned mine openings. At that time there were few who could guess that there were at least 7,000 mine openings scattered throughout the province.

This painting depicting Goldenville in the late 1800s was commissioned by Seabright Resources in the 1980s and painted by Joseph Purcell. Image courtesy of the Nova Scotia Museum of Industry.

Photograph of the New Glasgow Gold Mining Company's plant in Goldenville. Published in W. Malcolm (1929): The Goldfields of Nova Scotia; Geological Survey of Canada, Memoir 156, plate XXXI, p. 176.

Goldenville is one of hundreds of former mine sites in Nova Scotia where hazardous mine openings are located. Since 2001, DNR's Abandoned Mine Openings (AMO) Program has been working with the Department of Transportation and Infrastructure Renewal, private contractors, consultants and forestry operations to address the hazards posed by abandoned mine openings on Crown land. The AMO Program is a joint effort by DNR's Regional Services Branch and Mineral Resources Branch. Regional Geologists manage the remediation work in their respective regions. Since 2001 more than 500 of the approximately 1,900 mine openings on Crown land have been remediated.

Goldenville was not initially considered a top priority because of the sparse population and physical conditions around the mine openings. In 2008, however, the increasing use of all-terrain vehicles, riverfront development along the nearby St. Marys River and the Atlantic Canada Opportunities Agency's proclamation of Goldenville as a great place to visit led the AMO Working Group to conclude that it was time to address the mine openings at Goldenville.

In December 2009, work to remediate more than 150 abandoned mine openings at Goldenville was completed. All the documented hazardous mine openings on Crown land in the Goldenville Gold District have been filled. The alders and thorn bushes that had overtaken the land have been levelled, revealing quartz likely unseen since the 1940s, as well as artifacts from the early days. The work at Goldenville was expertly performed by George F. MacDonald and Sons Bulldozing and Trucking.

Goldenville is not the only site where work was recently completed: mine openings were also filled in the former gold districts of Montague Mines and Oldham. More than 100 mine openings exist on Crown land in both of these districts and by the end of 2009 all of the potentially hazardous mine openings on Crown land in these areas had been addressed. Despite the completion of DNR's work on the hundreds of mine openings on Crown land there remain many unguarded and unevaluated mine openings on private land in these districts. Anyone travelling in the Goldenville, Montague Mines and Oldham areas is advised to be extremely careful (see DNR Information Circular ME 42: *A Sign to Watch your Step* http://www.gov.ns.ca/natr/meb/pdf/ic42.asp).

I don't believe this is the final chapter in the Goldenville story. Writing this article gave me an opportunity to learn about the long-lost hamlet of "Sparkling Rocks" and relate some of that history. This is an area where hundreds of miners seeking their fortune would bed down in cave-like outcroppings a couple of kilometres to the northwest of Goldenville. Who today knows about the 197 ounce nugget from the Black Prince Lead on the southern side of the main workings of the famous Palmerston Belt? There are more than 150 leads (zones of quartz veins) in this district, and less than 20% have been tapped to a depth of more than 30 m. The hazards posed by abandoned mine openings on Crown land in the Goldenville gold district have been addressed, but I don't believe we've seen the last phase of mineral exploration in this, the most productive gold mining district in Nova Scotia.

Ernie Hennick

Mineral Resources Branch Receives Award of Excellence in GIS from ESRI Canada

On October 28, 2009, ESRI Canada presented an Award of Excellence to the Mineral Resources Branch of the Nova Scotia Department of Natural Resources for developing extensive Geographic Information System (GIS) resources to promote sustainable use of natural resources. The award was presented at the 2009 ESRI Regional User Conference in Halifax. "The Mineral Resources Branch is a model of success in using GIS for effectively managing natural resources," said James Wickson, Vice President of Sales and Professional Services, ESRI Canada. "It has developed numerous groundbreaking GIS applications, data and policies, which serve as leading examples for other organizations."

The Mineral Resources Branch (MRB) is responsible for implementing policies and programs dealing with the exploration, development, management and efficient use of mineral resources in the Province of Nova Scotia. The branch promotes scientific understanding of the geology of Nova Scotia for use by government, industry and the public, and provides a mineral rights tenure system that establishes legal rights to minerals for exploration and development. The branch also promotes the concepts of environmental responsibility and sustainable development, stewardship of the mineral resource sector and integrated resource planning. Its vision is to share geographic information on the province's natural resources with government departments and the public in order to foster a better understanding of the province's geology and better environmental decisions and policies.

The MRB has been using ESRI GIS technology exclusively as its GIS platform since 1994. It currently uses ESRI ArcGIS®, which enables users to build a complete GIS and collect, manage and share geographic information on servers, desktops, mobile devices and over the Web. Four members of the branch GIS group use ArcGIS® to develop, manage and maintain a corporate GIS containing over 450 geological datasets, including an inventory of mineral occurrences in the province. The group also helps maintain Nova Scotia's online public geoscience database containing records of more than 15,000 maps and publications. Committed to the use of emerging technologies to improve its services, the branch was an early adopter of Internet Map Server (IMS) technology and has implemented the ESRI ArcIMS® solution to deliver dynamic maps and GIS data and services over the Web.

The branch uses GIS to provide public access to mineral rights disposition information and is moving toward expanding GIS functionality in administering the province's mineral rights tenure system. In 1997, the branch began providing public access to its GIS data and was one of the first government organizations to allow free use of its geographic information for both non-commercial and commercial purposes. Since then, it has received more than 300,000 download requests for its GIS products from users such as prospectors, developers, planners and researchers worldwide.

The branch is currently developing a Geological Resource Atlas: a series of new maps that combines mineral staking and geological resource information including mining activity, mineral deposits, aggregate and building stone resources, and oil and gas resources in the province. The atlas is expected to help improve land-use planning and preserve areas in the province with high potential for geological resources.

For more information about ArcGIS® technology, visit the ESRI Canada web site: www.esricanada.com/products/arcgis.

Brian Fisher, with information from the ESRI Canada press release, 28 October 2009

Most of the members of the Mineral Resources Branch GIS team were able to attend the award ceremony. From L to R: (front) Susan Saunders, Angie Ehler, Brian Fisher (with award), Norman Lyttle, and Alex Miller, President of ESRI Canada; (back) Jeff McKinnon and John MacNeil. Jeff Poole, who produces the branch's Internet Map Server (IMS) applications, was unable to attend.

Mining Matters 2009 Highlights Sustainability and Corporate Social Responsibility

On November 16 and 17, the Department of Natural Resources (DNR), in partnership with the Mining Association of Nova Scotia (MANS), the Mining Society of Nova Scotia and the Prospectors Association of Nova Scotia, hosted the 33rd annual Mining Matters conference. The first day of the conference featured presentations on corporate social responsibility, sustainability of natural resources, DNR's Natural Resources Strategy, reclamation practices, new technologies for reducing carbon footprint, integrating mineral values in land-use decisions, and consultation with Aboriginal communities. Presentations also included an overview of mining and mineral exploration in Nova Scotia for 2009, rare-earth element discoveries in central Nova Scotia and opportunities for prosperity in the mining industry.

A luncheon on November 16 featured guest speaker Dennis Jones, Director of the Prospectors and Developers Association of Canada (PDAC) and Chair of its Corporate Social Responsibility Committee. Mr. Jones's talk outlined the PDAC's e3 Plus initiative. Mr. Jones discussed the PDAC's creation of this framework of internet-based guidelines for responsible exploration. Immediately following Mr. Jones's presentation, Silvorefox Minerals Corp., a local junior exploration company, initiated their registration as an e3 Plus member. The afternoon talks were followed by a panel discussion among representatives from government, NGOs, the Aboriginal community and industry. Dialogue included discussion of the essential elements of sustainable mineral development, community engagement, ensuring a balance between environmental integrity and economic prosperity, and cooperation among industry, society and governments.

The Minister's annual Reception and Awards Ceremony ended the first day of the conference. The Honourable John MacDonell hosted his first Mining Matters event and delivered a firm message that the new NDP government "understands the importance of the mining industry to our economy and way of life, especially rural parts of the province" and that his government "wants to see new mineral development in Nova Scotia." Minister MacDonell assisted in the presentation of the Terrance Coughlan Memorial Award to Dave Carter for his contribution to the development of industrial minerals in Nova Scotia, and the Prospector of the Year award to Henry Schenkels.

The second day of Mining Matters 2009 was devoted to Nova Scotia-based companies doing business either in Nova Scotia or globally. The opening presentation was delivered by MANS president Peter Oram, who emphasized the need for the Nova Scotia mining industry to see itself as integrated with the social, economic and environmental needs of the province. Several company presentations during the day highlighted mineral exploration both locally and abroad, as well as community engagement and capacity building initiatives. Guest speaker Mark Ferguson of the Metals Economics Group provided an overview of global exploration trends in the current cycle.

The Industry Day luncheon was co-hosted by guest speakers Josh DeCoste, Lafarge Canada, and Wade Lewis, Ducks Unlimited. Mr. DeCoste and Mr. Lewis spoke about their partnership and community engagement for their latest wetland restoration project, the Brookfield Wetlands and Nature Trail. One local company made contact with Mr. Lewis in pursuit of a possible partnership immediately following the luncheon.

Following the afternoon presentations in the Atlantic Ballroom the conference concluded with an Industry Reception in the Commonwealth Ballroom, where delegates from across the country met to discuss upcoming projects and investment opportunities. Mining Matters 2009 succeeded in bringing many stakeholders together to discuss recent initiatives and current issues, and share strategies to move forward in a collaborative effort for the benefit of the mining industry.

Diane Webber

The Westin Hotel in Halifax was the venue for Mining Matters 2009, November 16 and 17. This photograph shows the poster and commercial exhibit area in the hotel's Commonwealth Ballroom. Photo by Howard Donohoe.

From the Mineral Inventory Files

Cumberland County's Historic (but Little-known) Grindstone Industry

The shoreline of Chignecto Bay may now be most famous as home to the recently designated UNESCO World Heritage site at the Joggins Fossil Cliffs. There was a time, however, when this area was home to an economically important grindstone quarrying industry. The largest of these operations were those of the Atlantic Grindstone Company at Lower Cove (Fig. 1). This company, created by Amos Seaman of nearby Minudie, operated from 1831 to the early 1900s and was an industrial mainstay of northern Cumberland County.

A combination of factors allowed this industry to thrive. First was the availability of excellent stone. Sandstone abounds in Nova Scotia, but not all sandstones are created equal. To produce suitable grindstone, a sandstone has to (1) have grains of the right size and angularity to properly grind tough steel and (2) be neither too hard nor too soft. If too hard, the stone will simply 'polish' itself and no longer grind. If too soft, the sand grains will pluck out too easily causing the stone to wear rapidly. Several beds in the Carboniferous Boss Point Formation at Lower Cove had what it took to produce the highest quality grindstones (Fig. 1). A second important factor was the location of the Lower Cove deposits on tidewater. As is still the case today, transportation costs are a vital component of the cost of an industrial mineral commodity. The ability to quickly access sea transport lanes is a strong advantage for any industrial mineral producer over landlocked competitors. The last, and probably most important, factor was the presence of a shrewd entrepreneur to recognize the opportunity and take the risks necessary to pull it all together. Amos Seaman was just such a man.

The early Acadians produced grindstones from the beach at Lower Cove and from several other sites on Chignecto Bay prior to the 1800s, but this production was mostly for domestic use. It is also known that the British army used grindstones from Lower Cove to sharpen their weapons in the war of 1812. It was not until Amos Seaman entered the picture in the 1830s, however, that the industry really blossomed. Within a couple of years the operation employed more than 100 men and boasted several quarries and buildings that covered over 100 acres (Fig. 1).

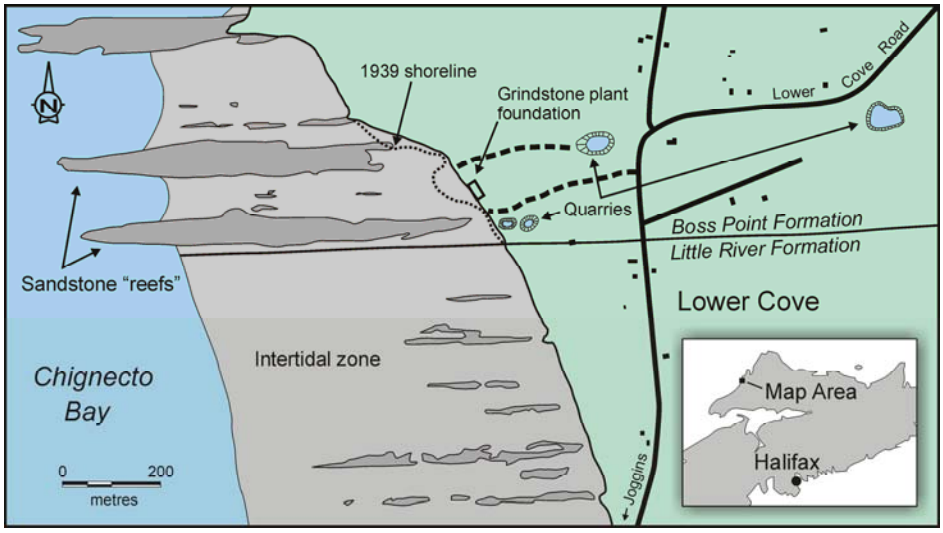

Figure 1. *Geology of the Lower Cove area, Cumberland County, showing the location of workings of the Atlantic Grindstone Company.*

Much of the stone was produced from sandstone 'reefs' in the intertidal zone, where large slabs of rock were loosened by gunpowder then attached to rafts and floated to shore at high tide to be 'formed' in the plant. This type of production was seasonal and tide-dependant, so there were also four onshore quarries dug along the inland strike extension of particular sandstone 'reefs' (blue grit) that featured the most favourable rock (Fig. 1). The workforce became very skilled and one man could cut 15-20 stones a day, some up to 2.5 m in diameter. The stones were widely considered to be the best in North America and production quickly went from 10,300 stones in 1831 to 30,671 in 1834. The operation made Seaman and his family wealthy. Amos Seaman, originally from New Brunswick, was dedicated to the Cumberland County area he grew up in. Seaman frequently directed some of his wealth toward local projects that benefitted the area.

Not much remains of the grindstone operation today; in fact, rising sea level has already taken away part of the worksite. The old foundation to the plant can still be found, as can a couple of the original buildings which are now local residences. The quarries are now water-filled and hazardous. The intertidal zone still shows footings for the wharf as well as an abundance of grindstones in various states of production (Fig. 2), including the remnants of broken or flawed stones from the operation. The site is still a pleasant place to visit and a little imagination can conjure the sights and sounds of what was once an important industry.

G. A. O'Reilly

Figure 2. *Grindstone remnant on the beach at Lower Cove (~1.2 m diameter).*

34th AGS Colloquium in Wolfville

The Atlantic Geoscience Society (AGS) will hold its 34th Colloquium on February 5 and 6 at the Old Orchard Inn in Wolfville. This year's meeting will include sessions on metallic ore deposits in Atlantic Canada, geohazards, Bay of Fundy studies and geochronology.

The Geological Services Division (GSD) of DNR will have a significant presence at this year's colloquium. Chris White will present the results of research that radically changes our ideas about the origin of the Liscomb Complex and calls into question mineral exploration models based on this unit. Trevor McHattie will speak on REE mineralization and alkali-metasomatism in the Byers Brook Formation, northeasten Cobequid Mountains. Division staff will contribute at least three talks to the session on geohazards in Atlantic Canada. Terry Goodwin and Kelsey O'Brien (St.F.X.U.) will present their work on radon in soils in the Halifax Regional Municipality. Phil Finck will speak on coastal change in the Lunenburg area, focusing on erosion of bedrock-dominated shorelines. Dan Utting will provide an overview of geohazard mapping using LiDAR. Dan's fellow researchers on this project are Garth DeMont, Teaka Broughm (Dalhousie U.) and Tim Webster (Canadian Institute of Geomatics).

Gavin Kennedy, Danielle Finlayson-Bourque and Kevin Garroway (Nova Scotia Environment) have completed an estimate of regional groundwater budgets in Nova Scotia using a desktop GIS. Gavin will present a talk on the results of this work and highlight areas of the province that are potentially at risk for over-use of groundwater. The Joggins Fossil Cliffs received world heritage status in July 2008. John Calder will review what this has meant to the community of Joggins and have a look ahead at what this may mean for future geoscience research along the famous Fossil Cliffs. This event is a great opportunity for GSD staff to meet potential clients and build partnerships for earth science research.

Rob Naylor

October-December 2009 Open Assessment Reports

Report Number	NTS	Licensee
AR ME 2007-137	11E/05C	Allen, L J
AR ME 2007-138	11F/16C	Thomson, A C
AR ME 2007-139	11F/04D	Grant, S
AR ME 2007-140	11D/13C, D	Acadian Mining Corporation
AR ME 2007-141	11D/12D	Marchant, R L
AR ME 2007-142	11E/03B	Grant, S
AR ME 2007-143	11E/02D	Acadian Mining Corporation
AR ME 2007-144	11E/02D	Acadian Mining Corporation
AR ME 2007-145	11E/02D	Acadian Mining Corporation
AR ME 2007-146	11E/03B	Scozinc Limited
AR ME 2007-147	11E/03B	Grant, S
AR ME 2007-148	11D/15A	Acadian Mining Corporation
AR ME 2007-149	11D/15A	Acadian Mining Corporation
AR ME 2007-150	11D/13C	Findley, C
AR ME 2007-151	11F/09C	Barrett, A M; Richman, J
AR ME 2007-152	11E/01A	Bezanson, P T
AR ME 2007-153	21A/07C	Crouse, A R
AR ME 2007-154	21A/07C	Hiltz, K R
AR ME 2007-155	11E/04B	Acadian Mining Corporation
AR ME 2007-156	11F/15C	Merrex Gold Incorporated
AR ME 2007-157	11K/02B	Merrex Gold Incorporated
AR ME 2007-158	11K/02B	Merrex Gold Incorporated
AR ME 2007-159	21A/16D	Barrett, A M
AR ME 2007-160	21A/04A	Avalon Ventures Limited
AR ME 2007-161	11D/15C	DDV Gold Limited
AR ME 2007-162	11D/12D	Conrad Brothers Limited
AR ME 2007-163	11F/15C	Isenor, G P
AR ME 2007-164	11F/15C	Isenor, G P
AR ME 2007-165	11K/02B	Isenor, G P
AR ME 2007-166	21A/06A	Banks, A
AR ME 2007-167	11E/01A	Bezanson, P T
AR ME 2007-168	11D/13C	Anthony, R C
AR ME 2007-169	11F/10C 11F/15B	Richman, J
AR ME 2007-170	11E/02B	Acadian Mining Corporation
AR ME 2007-171	11D/14D	Acadian Mining Corporation
AR ME 2007-172	11D/15C	Acadian Mining Corporation
AR ME 2007-173	21A/02D	Hiltz, K R
AR ME 2007-174	21A/02D	Hiltz, K R
AR ME 2007-175	21A/01C 21A/08B	Hiltz, K R
AR ME 2007-176	11D/15D	Acadian Mining Corporation
AR ME 2007-177	11E/02A, D	Acadian Mining Corporation
AR ME 2007-178	11D/15C	Acadian Mining Corporation
AR ME 2007-179	11E/02D	6179053 Canada Incorporated
AR ME 2007-180	11E/04B, C	United Reef Limited
AR ME 2007-181	11F/14C, D	Glencoe Resources Incorporated
AR ME 2007-182	11D/15A	Acadian Mining Corporation
AR ME 2007-183	11D/16D	Allen, L J; Meguma Resource Enterprises Incorporated; Elk Exploration Limited
AR ME 2007-184	21A/16A, B 21A/16C, D	McPherson, B
AR ME 2007-185	11E/02A	Acadian Mining Corporation
AR ME 2007-186	11E/02D	Shadbolt, D
AR ME 2007-187	21A/07C	Hiltz, K R
AR ME 2007-188	21A/06A	Wightman, J F
AR ME 2007-189	11E/02D	Acadian Mining Corporation
AR ME 2007-190	11F/04D	Acadian Mining Corporation
AR ME 2007-191	11F/15D 11K/12A	Unama'ki Resource Exploration and Investment
AR ME 2007-192	11F/04D	Acadian Mining Corporation
AR ME 2007-193	11D/14D	Hilchey, A F
AR ME 2007-194	11E/03A	Hilchey, A F
AR ME 2007-195	11E/03A	Hilchey, A F
AR ME 2007-196	11E/03A	Hilchey, A F
AR ME 2007-197	11D/13B	Acadian Mining Corporation
AR ME 2007-198	11K/10A	Acadian Mining Corporation
AR ME 2007-199	11K/07D 11K/10A	Acadian Mining Corporation
AR ME 2007-200	11D/13C	Elk Exploration Limited

Susan Saunders and Norman Lyttle

Orex Exploration to Resume Drilling at Goldboro

Orex Exploration will resume drilling in January at its Goldboro gold project in Guysborough County. In November 2009, Orex signed an agreement with Osisko Mining Corporation whereby Osisko would have the option to acquire up to a 60% interest in the Goldboro property and surrounding claims. As part of this agreement, Osisko has to incur exploration and development expenditures of at least $1,500,000 on or before September 25, 2010. Osisko is a mining developer headquartered in Montreal and 100% owner of the Canadian Malartic project in Quebec, which contains 6.28 million ounces of proven and probable gold reserves. Osisko has a market capitalization of over $2 billion and over $400 million of cash in the bank. Orex management believes that the agreement with Osisko will accelerate the exploration phase at Goldboro and lead to earlier production from the project.

In December 2009, Orex announced that Osisko had budgeted $2,800,000 to complete Orex's phase 2 drilling campaign, which began in 2008. Osisko will drill 8750 m (35 holes) along the remaining 1.7 km segment of the Boston-Richardson deformation zone from West Goldbrook to Dolliver Mountain on the Goldboro property (Fig. 1). In addition, Osisko will complete 3500 m of in-fill drilling to confirm gold grades in areas where historic sampling was incomplete. This $2.8 million budget also includes funds for a regional compilation, as well as a Goldboro reconnaissance program in the summer of 2010.

In August 2009, Orex published a revised Mineral Resource Estimate on Goldboro, which covers the ramp area (Fig. 1) and the eastern section of Goldboro over a 1.5 km strike length. At a cut-off grade of 1.5 g gold/t, Orex reported 2 711 000 t grading 4.56 g gold/t, totalling 397,200 oz. of gold in the measured and indicated resources categories, with an additional 3 438 000 t grading 3.67 g gold/t, totalling 405,926 oz. of gold in the inferred resource category.

Mark Billings, President and CEO, Orex Exploration Inc.

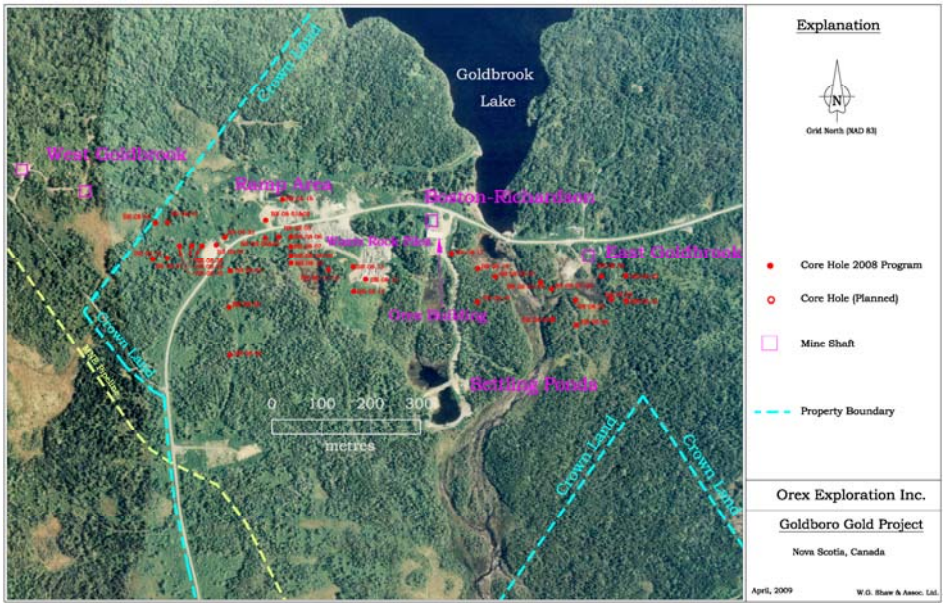

***Figure 1**. Aerial photo of the Goldboro gold project, Guysborough County.*

International Mercury Conference Coming to Halifax in 2011

From July 24-29, 2011, Halifax will welcome guests from around the world for the 10th International Conference on Mercury as a Global Pollutant (ICMGP). The ICMGP began in Sweden in 1990, and has become the principal international forum for advances in the understanding of environmental mercury pollution. This conference series provides a dynamic environment for scientific dialogue and exchange of ideas among the research community, government legislators, experts from industry, and non-governmental organizations to enhance public health protection and policy development.

Mercury is of significant human and environmental health concern because of its toxicity and ability to accumulate in fish and wildlife. Levels of mercury in the environment have risen since the onset of industrialization, and studies have shown that even remote locations such as the Canadian Arctic have been adversely affected by the long-range atmospheric transport of mercury. Many countries now restrict mercury use in various products and processes, and have passed regulations to limit emissions from sources such as coal-fired power plants, metal mines and landfills. Global efforts to reduce risks associated with mercury took a major step forward in 2009, when environment ministers from more than 140 countries unanimously decided to develop an international treaty to combat mercury pollution.

The conference will be held at the World Trade and Convention Centre and should attract approximately 800-1000 participants, based on attendance at past conferences. The theme of the meeting is *Air, Land, Sea and Me* and will integrate current knowledge on the cycling, effects and remediation of mercury in the environment. Participation in the 10th ICMGP will provide Nova Scotians with a unique opportunity to interact with national and international delegates, and to share their own advances in mercury research and pollution control. For more information, including sponsorship opportunities, please visit www.mercury2011.org or contact the organizers at hosts@mercury2011.org.

Michael Parsons (Geological Survey of Canada - Atlantic) and Terry Goodwin

Bladder and Kidney Cancer Rates in Nova Scotia: Is There a Link to Arsenic in Drinking Water?

Nova Scotia has the dubious distinction of having the highest mortality rate for all cancers combined of any province in Canada and is second to Prince Edward Island in having the highest incidence rate. Every single day in Nova Scotia, seventeen men and seventeen women are diagnosed with some form of cancer. Specifically, the incidence of cancer of the urinary tract (i.e., bladder and kidney) for men and women in Nova Scotia is higher than anywhere else in the country, and nearly twice as high as that reported in Ontario. Why is this happening to the residents of Nova Scotia? A new project on Tap Water Sampling and Analysis, being carried out by The Atlantic PATH (Partnership for Tomorrow's Health), is researching this very question with a five-year study. This is the largest cancer research study of its kind in Nova Scotia.

The project began in 2008 and is currently in the process of registering approximately 5,000 volunteer residents (aged 35 to 69) of the province, who will have their arsenic body burden determined through the analysis of their toenails, saliva, blood and urine. Participants' drinking water will also be tested for its arsenic concentration (as well as other elements) because exposure to arsenic through the ingestion of drinking water has been linked to adverse health effects, including increased incidences of bladder and kidney cancers. Approximately 50% of the residents of Nova Scotia obtain their household drinking water from dug or drilled wells.

Nova Scotia also has another dubious distinction. It has high concentrations of naturally occurring arsenic in soil, bedrock and groundwater (as well as other sample media). The Nova Scotia Department of Natural Resources (DNR), as custodian of geoscientific data for the province, has a wealth of geological information specific to arsenic and other elements. One of the tools to be used in the cancer study is DNR's continually expanding Geographic Information System (GIS) geoscience databases, which contain all of the province's geoscience knowledge that is currently in a digital format. The department is assisting the cancer study by providing digital geological, geochemical and topographic datasets, as well as by imparting decades of knowledge and observations gained from field-based mapping and sampling programs throughout the province. As the cancer study progresses, DNR geologists will serve as a geological resource and assist with geology-based queries and interpretations.

Funding for this (national) study is provided by the Canadian Partnership Against Cancer and the Canadian Cancer Society Research Institute. If you are interested in becoming a Community Champion volunteer or finding out more information about this study, visit www.atlanticpath.ca or call toll free 1-877-285-7284 (or 494-7284 in the Halifax area). For specific information on arsenic in Nova Scotia's drinking water, visit the Nova Scotia Environment website at http://www.gov.ns.ca/nse/water/arsenic.asp.

Terry A. Goodwin, Brian Fisher and Dr. Louise Parker[1]

[1]Principal Investigator, The Atlantic PATH
Canadian Cancer Society (NS Division)
Chair in Population Cancer Research
Dalhousie University
Halifax, Nova Scotia

Special Note

E-mail Notification
If you would like to be added to our mailing list to receive an e-mail notice when new maps and publications are released, or when a new issue of the *Nova Scotia Minerals Update* is released, please send your e-mail address to minerals@gov.ns.ca.

Dates to Remember

February 5 and 6, 2010
Atlantic Geoscience Society Colloquium 2010, The Old Orchard Inn, Wolfville, NS. For more information please visit the web site: http://ees.acadiau.ca/ags/colloquium.html.

March 7-10, 2010
Prospectors and Developers Association of Canada, International Convention, Trade Show & Investors Exchange, Metro Toronto Convention Centre, Toronto, ON. For more information visit the web site: http://www.pdac.ca/pdac/conv/index.html.

April 13, 2010
Annual General Meeting of the Mining Association of Nova Scotia, Halifax, NS. For more information visit the MANS web site: http://www.tmans.ca.

May 10-14, 2010
GeoCanada 2010, sponsored by the Geological Association of Canada, Mineralogical Association of Canada, Canadian Society of Petroleum Geologists, Canadian Society of Exploration Geophysicists, Canadian Well Logging Society, Canadian Chapter of the International Association of Hydrogeologists, Canadian Federation of Earth Sciences and the Canadian Council of Professional Geoscientists, BMO Centre, Stampede Park, Calgary, AB. For more information please visit the web site: http://www.geocanada2010.ca/.