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Natural Resources

Geology Matters 2010

Planning for the Mineral Resources Branch's 34th annual fall conference at the Westin Hotel on October 25 and 26 is well underway. Over the years the branch has held the conference in various forms, including an initial Open House format to showcase geoscience research and other departmental activities. In 1998 the conference took on the name Mining Matters and embraced a more inclusive format as the Department of Natural Resources (DNR) planned the event with several partner organizations, including the Nova Scotia Prospectors Association, the Mining Society of Nova Scotia, the provincial office of Economic Development, and Nova Scotia Business Inc. In 2008 the conference began to feature an industry investment forum as a means to showcase the many facets of the provincial mining industry.

This year DNR, the Mining Association of Nova Scotia, the Mining Society of Nova Scotia and the Nova Scotia Prospectors Association will co-host the conference under the name Geology Matters around the theme *Growing the Economy*. The conference will attract a broad audience, including representatives from various departments, Nova Scotia Business Inc., Atlantic Canada Opportunities Agency, Regional Development Authorities, Ecology Action Centre, Canadian Parks and Wilderness Society, the general public, environmental networks, Aboriginal groups, municipal planners and administrators, school board representatives, Universities, consulting groups, mining companies and many more. The goal for this conference is to build awareness of the important role that geology plays in our daily lives and the contribution of mineral development to the provincial economy and a sustainable future. As stated in the Phase II report of the Natural Resources Strategy "Modern society is totally dependant on geological resources, but their vital contribution to our basic standard of living is not well understood and therefore not appreciated."

Under the theme *Growing the Economy* Geology Matters 2010 will present the details of work initiatives on geoscience and municipal planning, geohazards and health and safety, geoheritage and economic growth, new strategies for managing Nova Scotia's resources, reclamation and much more. Displays will be presented by the Mineral Resources Branch, its co-hosts, and companies engaged in mineral exploration, development, mining and investment. The two-day program includes presentations from DNR staff and guest speakers, luncheons, and the annual Minister's Reception where delegates will have the opportunity to meet the Honourable John MacDonell, Minister of Natural Resources. The reception will also feature an awards ceremony to honour the Nova Scotia Prospector of the Year and the winner of the Terrence Coughlan Memorial award as the outstanding contributor to the development of industrial minerals in Nova Scotia.

Currently there is no effective strategy to provide geoscience information to communities engaged in land-use planning initiatives so this conference will be a perfect venue to emphasize the value of geoscience and initiate science-based consultation. Information about the conference and online registration forms can be found on the branch website (<http://www.gov.ns.ca/natr/meb/oh/index.asp>). For further information please contact the author.

Diane Webber (see advertisement on p. 6 for contact information)

Blue Beach: Another World-class Example of Nova Scotia's Geoheritage

Nova Scotia has long been known for its exceptional geological showcase, especially in relation to the province's small area. One of the important stories in the "Big Volume", as Sir Charles Lyell described Earth history, is best told at Blue Beach, Hants County, on the shore of the Bay of Fundy near Hantsport. Although less well known than its younger sibling Joggins, Blue Beach records the best example in the world of the rise of land-dwelling tetrapods (amphibians and reptiles) dating from the Early Carboniferous, about 340 million years ago. An incredibly rich record of their footprints – in fact the world's oldest record of a diverse tetrapod community – is currently being studied by a team of international scientists.

This summer Dr. Spencer Lucas (New Mexico Museum of Natural History), one of the world's leading researchers in the field of tetrapod footprints, has been working with John



Figure 1. Chris Mansky (L) and Spencer Lucas examine specimens from Blue Beach this summer.

Calder of DNR to study the extensive collection of Chris Mansky at the Blue Beach Fossil Museum. Chris and his partner Sonja Wood have long been stewards of Blue Beach and its fossils, and are working with local and international supporters to realize their dream of a new fossil centre for Blue Beach.

Geologists Phil Finck and Dan Utting of the Mineral Resources Branch are undertaking an assessment of coastal erosion at the site as a tool for planners, while John is providing advice on the potential for international recognition of the Blue Beach site, such as designation as a UNESCO-supported Global Geopark. Geoparks are considered to be sites of international importance that reflect a region's geological history. Blue Beach is yet another example of how Nova Scotia's geoheritage is truly the world's legacy.

John Calder



Figure 2. Early Carboniferous tetrapod footprints from Blue Beach.

From the Mineral Inventory Files

Kells Copper

One of the most prominent features on a geology map of Nova Scotia is a rectangular yellow block that dominates the province's central mainland. This block is the St. Mary's Basin: a fault-bounded graben of Carboniferous Horton Group terrestrial sedimentary rocks. The boundary faults to the graben are splay faults of the east-west Cobequid-Chedabucto Fault Zone. Except for some potential for paleoplacer Au deposits, the St. Mary's Basin is generally considered to be of limited economic interest. Recent geological mapping has shown, however, that the graben is not only bounded by major faults, but several faults also traverse and deform the interior regions and that these appear to have been the loci for some interesting mineral deposits (see *Nova Scotia Minerals Update*, v. 21, no. 4). Perhaps the graben isn't as dull as we may think.

Within the last few years a couple of interesting deposits have surfaced in the graben in western Guysborough County. One, the Kells Cu Prospect, is located near Eight Island Lake and the other, the Cochrane Cu Prospect, is found 3 km to the east (Fig. 1). Prior to recent exploration, other than a couple of one line references to a Cu occurrence near Eight Island Lake in two mid-twentieth century Department of Mines publications, nothing has been recorded of these properties. Some follow-up sleuthing by prospector Henry Schenkels a couple of years ago turned up the 90 year old widow of a past worker at one of the sites, who directed him to a small stream on the east side of Kells Lake. The workings there were easily located, mostly because they are much more substantial than the meager notes in the Department of Mines references suggested (inset on Fig. 1).

A significant amount of exploration effort was once expended on the Kells Lake property, dating most likely to the 1930s. The work consisted of overburden removal, and sinking of a small inclined shaft or adit (now water-filled) and a couple of small test shafts or pits. Mineralized waste material shows that the ex-

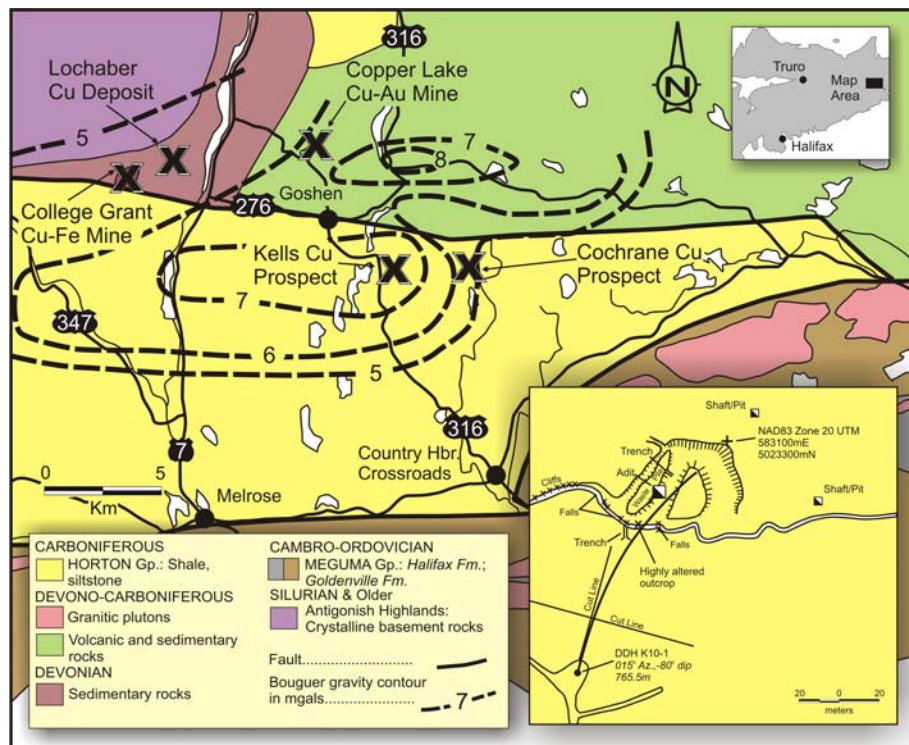


Figure 1. Geology of the eastern end of the St. Mary's Basin (after Keppie, 2000) with mineral deposits and gravity contours in mgal of federal government Bouguer survey data. Inset map is a plan of the Kells Cu prospect.

ploration was targeting chalcopyrite-bearing siderite-quartz veins very similar to those at the Copper Lake Cu-Au deposit found several kilometres to the northwest (see *Nova Scotia Minerals Update*, 1995, v. 5). What's also interesting is that in 2005, just to the east, geologist Bruce Hudgins discovered and explored a boulder field of similarly Cu-mineralized siderite/ankerite boulders north of Cochrane Lake (Cochrane Cu Prospect in Fig. 1).

All of this "smoke" prompted geologist Bob Stewart and Henry Schenkels to drill a 765 m hole deep below the Kells prospect in 2010 (DNR Assessment Report 2010-078). The hole intersected several thrust and transform faults, considerable hematite alteration, but only small amounts of Cu-bearing siderite-quartz veins, most occurring directly under the old workings.

The Fe-rich style of mineralization at both the Kells and Cochrane pros-

pects is essentially identical to that at the Copper Lake deposit, and displays an obvious iron oxide-copper-gold (IOCG) affinity. What is particularly interesting is that the limited, regional scale (5 km spacing) Bouguer gravity data that exist for this area show that the highest magnitude gravity anomaly in the St. Mary's Basin underlies the Kells Lake area (Fig. 1). High gravity, signifying underlying dense rock, correlative with the presence of widespread hematite alteration and IOCG style mineralization is considered one of the most favorable indicators for the presence of an IOCG deposit. This flags the Kells Lake region as a potential IOCG target. Clearly, there is more work to be done on this property, most notably a need for more prospecting and detailed gravity surveys. Hopefully the work will be undertaken and we will hear more of this interesting area in the future.

G. A. O'Reilly

Version 3 of the Groundwater Maps and Databases IMS Released

The purpose of the Nova Scotia Groundwater Maps and Databases Internet Map Server (IMS) is to provide the public with an interactive IMS service containing layers of spatially referenced maps, databases, grids and images of interest to hydrogeologists, particularly those interested in the hydrogeological properties associated with the identified groundwater regions. The application displays a number of different layers of data, including some previously released digital products. A number of these layers contain data that have been updated in version 3:

- Groundwater Regions of Nova Scotia (DP ME 428)
- Observation Wells Database
- Grids for Mineral Claims and Tracts (DP ME 009 and DP ME 012).
- Grids from the old and new map books used by well drillers to locate water wells
- Nova Scotia Bedrock Geology (DP ME 043)
- Nova Scotia Mineral Occurrence Database (DP ME 002)
- Nova Scotia Drillholes Database (DP ME 003)
- Nova Scotia Abandoned Mine Openings Database (DP ME 010)
- Shaded Relief Images of Nova Scotia (25 metre) (DP ME 056)
- Primary and Secondary Watershed Boundaries
- Arsenic Risk Areas
- Groundwater Resource Study Areas
- Municipal Water Supply Wells
- Test Wells
- Well Logs (DP ME 430)
- Groundwater Chemistry
- Pumping Tests.

The following layers of information are new in version 3 of the application:

- Radionuclides Potential Map (OFM ME 2009-007)
- Inactive Observation Wells.

The Nova Scotia Groundwater Maps and Databases IMS can be accessed at:

<http://gis4.natr.gov.ns.ca/website/nsgroundwater>.

Brian Fisher and Norman Lyttle

April-June 2010 Open Assessment Reports

Report Number	NTS	Licensee
AR ME 1981-043	21H/09D	Novaco Limited
AR ME 1981-044	21H/09D	Novaco Limited
AR ME 2008-059	21A/06A	Banks, A
AR ME 2008-060	21A/06A	Banks, A
AR ME 2008-061	21A/15B, C	Tripple Uranium Resources Incorporated
AR ME 2008-062	11E/02C; 11E/03D	Acadian Mining Corporation
AR ME 2008-063	21A/06A	Banks, D V
AR ME 2008-064	21A/08B	Hudgtec Consulting Limited
AR ME 2008-065	21A/10A	Hudgtec Consulting Limited
AR ME 2008-066	11E/02B, C; 11E/03A, B	Acadian Mining Corporation
AR ME 2008-067	11E/04C; 21H/01A, D	Acadian Mining Corporation
AR ME 2008-068	11E/05A, B	Acadian Mining Corporation
AR ME 2008-069	11E/04C; 11E/05B	Acadian Mining Corporation
AR ME 2008-070	11E/04A	Acadian Mining Corporation
AR ME 2008-071	11E/02C	Acadian Mining Corporation
AR ME 2008-072	11F/16D	Barrett, A M
AR ME 2008-073	11F/16D	2134889 Ontario Incorporated
AR ME 2008-074	21H/01D	Hudgins, A D
AR ME 2008-075	21H/08D	Hudgins, A D
AR ME 2008-076	11D/16D	DDV Gold Limited
AR ME 2008-077	11E/02A, B	DDV Gold Limited
AR ME 2008-078	11K/02C	Merrex Gold Incorporated
AR ME 2008-079	11F/14A, B, C	Merrex Gold Incorporated
AR ME 2008-080	21A/16D	Jensen, L R
AR ME 2008-081	21A/05C	Jensen, L R
AR ME 2008-082	11E/11D	Jensen, L R
AR ME 2008-083	21A/14A	Jensen, L R
AR ME 2008-084	21A/15D; 21H/02A	Jensen, L R
AR ME 2008-085	11E/13A, B	Jensen, L R
AR ME 2008-086	11D/10C	Acadian Mining Corporation
AR ME 2008-087	11E/04B	Mills, R S
AR ME 2008-088	11D/15C	Hilchey, A F
AR ME 2008-089	11D/15C	Hilchey, A F
AR ME 2008-090	11E/03D	Grant, S
AR ME 2008-091	11F/15A	Acadian Mining Corporation
AR ME 2008-092	11K/01C	Yava Technologies Incorporated
AR ME 2008-093	11F/11C; 11F/14A, B	Merrex Gold Incorporated
AR ME 2008-095	21A/16D	Jensen, L R
AR ME 2008-096	21A/04A, B	Avalon Ventures Limited
AR ME 2008-097	21A/16B	Barrett, A M
AR ME 2008-098	11D/13A	Hilchey, A F
AR ME 2008-099	11E/04A	Horne, E N
AR ME 2008-100	11E/01D	DDV Gold Limited
AR ME 2008-101	11E/04A, B	DDV Gold Limited
AR ME 2008-102	11F/05B	Acadian Mining Corporation
AR ME 2008-103	11E/08D	Mazerolle, G J
AR ME 2008-104	11F/04D	Acadian Mining Corporation
AR ME 2008-105	21A/07C	Hiltz, K R
AR ME 2008-106	11E/02D	Acadian Mining Corporation

Susan Saunders and Norman Lyttle

New Search Interface for the Abandoned Mine Openings Database

The Abandoned Mine Openings Database is an inventory of the surface expressions of abandoned mine workings resulting from past underground mining and advanced exploration in Nova Scotia. The Nova Scotia Department of Natural Resources (DNR) has identified more than 600 mining areas, containing approximately 7,000 shafts, adits, slopes, trenches and associated underground workings (see [Information Circular ME 42](#)), which are or were at one time open to the surface. The inventory does not include quarries, sand pits, open pit mines, naturally occurring caverns or subsidence features related to karst topography. DNR regularly updates the inventory of abandoned mine openings whenever sites are visited or whenever previously undocumented mine openings are identified.

A new search interface has been developed that allows clients to search the Abandoned Mine Openings Database online through an internet browser using a number of defined attributes, and to produce a report of the selected mine openings they are interested in. The search interface has a similar look and mode of operation to the search interfaces that already exist for online searching of DNR's NovaScan Publications and Maps Database and the Mineral Occurrence Database.

The Abandoned Mine Openings Database can be searched by the mine opening name, location, claim reference map, land owner type, commodity mined, county, mine opening type, name of vein or seam, hazard degree and by mine opening original depth. Additional information such as mine opening identification number, tract, claim, date last visited, inclination, protection and UTM NAD83 coordinates are available through the generation of individual reports. Coordinates used in the database are in Universal Transverse Mercator (UTM) Projection, Zone 20, North American Datum (NAD) 1983.

The search interface for the Abandoned Mine Openings Database can be

accessed from the Mineral Resources Branch Home Page (<http://www.gov.ns.ca/natr/meb>) by clicking on the keywords Abandoned Mines or Databases in the left hand column, or

directly from the following address: <http://www.gov.ns.ca/natr/meb/links/amolinks.asp>.

Norman Lyttle



Regional Geologist Don Weir works to remediate a mine opening at Lake Charlotte.

Mary Wolfe Retires After 25 Years with DNR

Mary Wolfe has joined the burgeoning ranks of baby-boom retirees after 25 years of service with the former Department of Mines and Energy and then the Department of Natural Resources. In many ways, Mary and other staff members from the early days at the Keith's Brewery Building in Halifax have grown together as public servants. As a result, we who are left behind will really miss Mary's smile and steady nature that always made coming to work just a bit more pleasant.

For several years Mary has played a very important role in organizing the department's participation in national and international conferences. Mary also was responsible for the logistics that ensured a well-run Mining Matters conference each year. In addition to her work, Mary always had the scoop on current events in the bluegrass world. Her friends at DNR will miss that information, but we hope that retirement will allow her to become a bigger part of the musical scene in her own right.

We in the Mineral Resources Branch miss seeing Mary around the office, we miss her pleasant nature and her kind words for others. Mary's comments at her retirement constituted the best such speech ever given, and you just can't replace that kind of skill and wit. But as much as we miss her, we wish her all the best for her retirement.

Mike MacDonald



Mary Wolfe

Parrsboro to Host Nova Scotia Gem and Mineral Show 2010

Take a drive along the beautiful Fundy Coast to Parrsboro, home of the Fundy Geological Museum, for the weekend of August 20, 21 and 22 where the 45th annual Nova Scotia Gem and Mineral Show and Sale will take place. The show will be held at the Lions Recreation Centre on Western Avenue. There will be more than 30 exhibits, numerous field trips and interpretive walks, plus demonstrations of gem cutting, jewelry making, gold panning and much more. Geologists and mineral collectors from the Department of Natural Resources, Atlantic Geoscience Society, Nova Scotia Prospectors Association and N.S. Gem and Mineral Society will be present to identify your mineral treasures and discuss the geology and mineral potential that Nova Scotia has to offer. The Royal Ontario Museum will be exhibiting their traveling display of superlative Canadian minerals. Admission to the show is \$3 per person (children under 12 free). Show hours are 10 am – 7 pm Friday and Saturday, 10 am – 5 pm on Sunday. For more information call the Fundy Geological Museum at 902-254-3814 or visit <http://museum.gov.ns.ca/fgm>.

Diane Webber

Geology Matters 2010 Conference

October 25th and 26th, Westin Hotel, Halifax, Nova Scotia



Growing The Economy

Highlights

- Exhibits, Presentations, Workshops
- Geological Resources and the Economy
- Geoscience and Municipal Planning
- Nova Scotia's Energy Future
- Geohazards: Protecting Health and Safety
- Geoheritage and Economic Growth
- New Strategies for Managing Nova Scotia's Resources

For more information contact:
Diane Webber
tel: 902 424-3053
email: webberde@gov.ns.ca

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

August 20-22, 2010

Nova Scotia Gem and Mineral Show, Lions Recreation Centre, Western Ave., Parrsboro NS. For more information please see the article on this page and visit the web site: <http://museum.gov.ns.ca/fgm>.

October 25 and 26, 2010

Geology Matters 2010, the Westin Nova Scotian Hotel, Halifax, NS. For more information please see the article on p. 1 and watch for new details on the Mineral Resources Branch web site: <http://www.gov.ns.ca/natr/meb/oh/index.asp>.

October 28-30, 2010

60th Atlantic Universities Geological Conference (AUGC), hosted by Acadia University at the Old Orchard Inn near Wolfville, NS. For more information contact Leah Chiste or Graeme Hovey at augc2010@acadiau.ca.

November 4-6, 2010

Mineral Resources Review 2010, Delta Hotel and Conference Centre, St. John's, NL. For more information please visit the web site: <http://www.nr.gov.nl.ca/nr/mrreview10/index.htm>

November 7-10, 2010

Exploration, Mining and Petroleum New Brunswick 2010 conference, Delta Hotel, Fredericton, NB. For more information please contact Carol McNeill-Dobbelsteyn, phone 506-453-2206, e-mail carol.mcneill-dobbelsteyn@gnb.ca or visit the web