

Digital Information Services Activities in 2013

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The Digital Information Services section is responsible for developing and maintaining the Mineral Resources Branch (MRB) Geographic Information System and associated databases, the NovaScan publications and maps database, for supplying digital data and services to clients and staff, and for developing and maintaining the MRB Internet website. Permanent Digital Information Services staff consists of Brian Fisher (manager), Jeff Poole (supervisor), Jeff McKinnon (geologist/GIS specialist), Angie Barras (GIS specialist/cartographer), Sonya Cowper (GIS and Map Server specialist) and Susan Saunders (web/desktop publishing technician). David Hapgood started with us in March 2013 as a maternity replacement for Cowper, who returned in September 2013. Students Laura Trudell and Megan Thibault were hired to work as GIS assistants during the summer of 2013.

Digital Geoscience Data Products

A collection of digital geology maps, databases and images of Nova Scotia (in DXF, ARC export, ArcView shapefiles, TIFF, JPEG and MrSID formats in a UTM projection using the NAD83 datum, and in PDF format) has been developed and is available for viewing or free download from the MRB website (<http://www.gov.ns.ca/natr/meb/pubs/pubs3.asp>). We are now including ArcGIS file geodatabase and KML/KMZ formats but are no longer producing the ARC export and DXF formats. A licence agreement is issued with all digital data sets. This agreement allows unrestricted use of the data with the understanding that the Nova Scotia Department of Natural Resources (DNR) remains the owner of the data and is not transferring copyright to the user.

GIS Development

Digital Information Services staff worked together with other MRB staff on numerous projects in

2013. This included providing advice and assistance as requested, along with developing databases and maps for the projects outlined below.

Valley Bedrock mapping: Section staff have been working with geologist Chris White on compiling legacy geological data and new data from a block of Meguma Group rocks that stretches from Torbrook east to the Forest Hill/Wolfville area at the northeastern end of the Annapolis Valley. This will lead to the production of 1:50 000 scale bedrock geology maps and a GIS digital product.

Halifax Bedrock Map: Section staff have been working with Chris White on a new 1:50 000 scale bedrock geology map of the Halifax area (11D/12). At the end of 2013, this map was in final cartography and editing and should be released in 2014.

Cape Breton Compilation Project: Section staff worked with Chris White and geology professor Sandra Barr of Acadia University to compile and integrate previous field work and detailed bedrock geological mapping initiatives over the last 25 years in Cape Breton Island. This is a three phase project. The first phase of work is to extract bedrock data from a number of FieldLog databases and AutoCAD drawing files and convert them into ESRI shapefile format. The second phase is to compile and digitize line work from previous mapping under the direction of White and Barr. The third phase is to combine these data and create a series of twenty-five 1:50 000 scale bedrock geology and GIS databases for Cape Breton Island. By the end of 2013, phase 1 was complete and phase 2 was well underway. We hope to complete this project in 2014.

Geoheritage Project: Section staff provided John Calder with GIS support for the location of geoheritage sites that he has been compiling over the past number of years. This also included creating promotional maps for Geology Matters and other presentations.

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Parrsboro Mapping: Section staff supported John Calder and his summer student in their detailed mapping of the Parrsboro area. We compiled old unpublished data and new field data from notebooks and GPS to add to the MRB databases for future map production and GIS digital product releases.

Abandoned Mine Openings (AMO) Database: Section staff supported Ernie Hennick with the release of a new version of the AMO database (version 5) in November of 2013. This included a new version of the interactive database available to the public (<http://gis3.natr.gov.ns.ca/amosearch/searchpage.aspx>) and a GIS product (DP ME 010, <http://www.novascotia.ca/natr/meb/download/dp010.asp>). A new version of the 1:500 000 scale AMO map will be released early in 2014.

Southwest Nova Scotia Acid Rock Drainage (ARD) Project: Section staff worked with geologist Chris White and Laura Trudell, a Dalhousie student-planner hired by the Branch over the winter of 2013, to complete a GIS database and cartography for one 1:250 000 scale overview map and twenty-five 1:50 000 scale ARD-potential maps covering Southwestern Nova Scotia.

This work was an extension of the bedrock mapping completed and published by White last year. This was a unique project for the Branch. The first task for Trudell and staff was to consult with planners to determine the best way to present this information and make it useable for planners. It was then processed in our GIS systems, and the GIS products and maps were created. Final versions of the maps (OFM ME 2013-002 to -027) along with a single digital product (DP ME 484) were released in early December 2013.

Valley Aggregate Project: Section staff and students continued to provide support and enter data collected by geologist Garth Prime into the project databases. Section staff also provided Prime with the GIS tools to edit and update data on his own.

Registry of Mineral and Petroleum Titles Database/NovaROC: The GIS version of the Registry of Mineral and Petroleum Titles database was updated once in 2013. Two new versions of

the *Mineral Rights Disposition Map for the Province of Nova Scotia* (Open File Map ME 2013-001, version 1 and 2) were released along with version 25 of the Mineral Rights Database (DP ME 051). Digital Information Services staff also assisted Registry staff and contractor Pacific GeoTech with their development of an online registry system. The new online registry system, called NovaROC, was released on August 26, 2013.

ArcGIS Migration Project: Section staff continued the process of migrating the branch's corporate GIS databases to make them more readily accessible in ArcGIS, and have converted the majority of the GIS databases into ArcGIS geodatabase format. The staff continue to work with others in the branch to help them expand their use of the ArcGIS software suite.

Drillhole and Drill Core Database: Section staff continued to work on new applications that will allow for the entry of drillhole and drill core data into an SQL Server database, and applications that will allow staff and the public to query the database through the Internet. These efforts were delayed by demands of other projects in the group. These applications should be completed in 2014.

Radon Potential Map: Section staff worked with George O'Reilly to produce a radon potential map for the province. O'Reilly completed work on drafting the map and final cartography and editing were done. The final map, OFM 2013-028, was released in December 2013. It was accompanied by digital product DP ME 486 and an interactive map posted on our website (<http://gis3.natr.gov.ns.ca/Radon/index.html>).

Website Work: In the winter of 2011, Famous Folks was contracted to redesign the MRB website. The template of the website was delivered in the spring of 2011, and the next step was to update and provide new content for the website. Branch and section staff worked on this project throughout the year. The new website will be released early in 2014.

Scanning Activities

Scanning of publicly released assessment and property reports continued from 2012. The Mineral Resources Branch made a major effort to scan

nearly 2000 assessment reports in the winter and spring of 2012. Processing of a final batch of reports was completed late in 2012, and 965 documents were posted on our website in January 2013. A listing of these reports can be found at http://www.gov.ns.ca/natr/meb/download/ar_release_jan2013.asp. So far, 7,479 publicly released reports have been scanned and their PDFs made available to the public for download through NovaScan. This represents 94% of publicly available reports.

Internet Map Server Applications

The Digital Information Services section continues to maintain its three primary public Internet Map Server (IMS) interactive map applications. The Nova Scotia Geoscience Maps, Databases and Images application generated 345,432 maps (down 14% from 2012); the Nova Scotia Groundwater Maps and Databases application generated 178,561 maps (up 35% from 2012); and the Mineral Resource Land Use Atlas application generated 119,769 maps (up 38% from 2012). The GIS4 map server generated a total of 1,251,493 maps in 2013 for all DNR map services, up 8% from the 1,159,768 maps generated in 2012.

The purpose of the Nova Scotia Geoscience Maps, Databases and Images interactive map application is to provide the public with a single geographic compilation of geoscience maps, databases and images. The application displays a number of different layers from previously released digital products. Updates were made to mineral rights layers in April 2013. In December 2013, the mineral rights layers and the 12% protected lands layers were removed because they were out-of-date and there were other applications (e.g. NovaROC) which provided more up-to-date information. The Nova Scotia Geoscience Maps, Databases and Images application can be accessed at <http://gis4.natr.gov.ns.ca/website/nsgeomap>.

The purpose of the Nova Scotia Groundwater Maps and Databases application is to provide a publicly accessible interactive IMS service for hydrogeological information. The application

contains layers of spatially referenced maps, databases, grids and images. These data are of particular use to people interested in the hydrogeological properties associated with the province's identified groundwater regions. The Nova Scotia Groundwater Maps and Databases application can be accessed at <http://gis4.natr.gov.ns.ca/website/nsgroundwater>.

The main purpose of the Mineral Resource Land-Use Atlas (MRLU) interactive map application is to provide the public with a single geographic compilation of mineral resource and related land-use information at a reasonably detailed scale of 1:50 000. A key objective is to create a useful reference for practitioners working in land-use and environmental planning, geotechnical firms and groups involved in community economic development. The MRLU displays the location and distribution of mineral and energy resources and related activities as well as aspects of environmental geology that relate to land-use and environmental planning. Special land-use designations on Crown and some privately owned land are shown to indicate how Nova Scotia's land base varies regarding the ability of mineral-resource interests to access land and hold secure tenure. The MRLU can be accessed at <http://gis4.natr.gov.ns.ca/website/mrlu83>.

Sonya Cowper began migrating IMS technology to ArcGIS Server 10. In addition to migrating our existing services, she is developing new services for Server 10, and also developing Adobe Flex applications that will help staff and clients use the services effectively. To advance MRB's technology, she has started to design and develop web mapping applications with ArcGIS Server 10.2 (slated to replace our current version 10 implementation) and Geocortex software.

A new project, called GIS Link, was initiated late in 2013 and spearheaded by DNR and GeoNova to further our efforts at creating a Corporate Geomatics Infrastructure (CGI) for government. Jeff Poole from our section has been working with staff from the Corporate Information and Technology Office (CITO), GeoNova, DNR Crown Lands, DNR Forestry, the Department of Environment and others over the past three years to

help determine the requirements for a CGI. This work will continue and be expanded in 2014 with efforts by Brain Fisher, Jeff Poole and Sonya Cowper from our section.

NovaScan

NovaScan is the geoscience publications and maps database on Nova Scotia and its offshore regions. As of December 31, 2013, the database contained 16,838 records, consisting of 8,214 mineral exploration assessment and property reports, 3,928 publications, 1,303 open file reports, 2052 published and open file maps and illustrations, 858 theses, 258 contribution series, 199 digital products, and 26 outside publications.

Each month, a list of new publicly released assessment and property reports is generated from NovaScan and posted on the MRB website at http://novascotia.ca/natr/meb/download/ar_new.asp. The original paper copies of these released reports are filed in the DNR Halifax Library and the Core Library in Stellarton monthly, and PDF versions of these released reports are posted to the MRB website monthly. Quarterly lists of open assessment and property reports are produced and published in the Nova Scotia Minerals Update newsletter. One hundred and sixty-eight assessment reports were released in 2013.

In order to provide better service to our staff and clients, the branch maintains a public search application that allows the public to query records in the NovaScan database using Internet Explorer or Firefox. NovaScan can be searched by title, author/organization, subject, area, map sheet (NTS), map type, licence type, licence number, document type, document number, year and scale. NovaScan is updated monthly as new geoscience maps, publications, open files, theses, mineral exploration assessment reports and property reports become available. The search interface can be accessed at http://www.gov.ns.ca/natr/meb/pubs/pi_nvscn.asp. In 2013, 112 documents were added to the database, including 31 assessment reports, 27 open file maps, 2 contribution series, 5 digital products, 2 theses, 15 reports, 10 open file reports, 18 open file illustrations and 2 information circulars.

Digital Products and Open File Maps Released in 2013

The following new digital products, open file maps and updated versions of digital products were released in 2013. A complete list of all digital products can be found at <http://www.gov.ns.ca/natr/meb/pubs/pubs3.asp>. All digital products can be downloaded for free from the URL listed with the product.

Digital Products

DP ME 010, Version 5, 2013. Nova Scotia Abandoned Mine Openings Database, compiled by E. W. Hennick and J. C. Poole, 2013. Available in SHP, ESRI File Geodatabase, KML\KMZ formats. Available as a free download from the Mineral Resources Branch website: <http://novascotia.ca/natr/meb/download/dp010.asp>.

DP ME 051, Version 25 (April 29, 2013). Nova Scotia Mineral Rights Database, compiled by B. E. Fisher, 2013. Available in E00, SHP and DXF/DBF formats. Available as a free download from the Mineral Resources Branch website: <http://www.gov.ns.ca/natr/meb/download/dp051.asp>.

DP ME 055, Version 2, 2006. Enhanced Digital Elevation Model, Nova Scotia, Canada, compiled by Mineral Resources Branch, Nova Scotia Department of Natural Resources, 2013. Available in SHP, ESRI File Geodatabase, KML\KMZ formats. Available as a free download from the Mineral Resources Branch website: <http://novascotia.ca/natr/meb/download/dp055.asp>.

DP ME 483, Version 1, 2013. Relative Seawater Intrusion Vulnerability in Nova Scotia, compiled by G. W. Kennedy and J. S. McKinnon, 2013. Available in SHP, ESRI File Geodatabase, KML\KMZ formats. Available as a free download from the Mineral Resources Branch website: <http://novascotia.ca/natr/meb/download/dp483.asp>.

DP ME 484, Version 1, 2013. Digital Bedrock Acid Rock Drainage Potential Data for the Southwestern Area of Nova Scotia, by L. L. Trudell and C. E. White, 2013. Available in SHP,

ESRI File Geodatabase, KML\KMZ formats. Available as a free download from the Mineral Resources Branch website: <http://novascotia.ca/natr/meb/download/dp484.asp>.

DP ME 486, Version 1, 2013. Digital Data Showing the Potential for Radon in Indoor Air in Nova Scotia, by G. A. O'Reilly, T. A. Goodwin, J. S. McKinnon and B. E. Fisher, 2013. Available in SHP, ESRI File Geodatabase, KML\KMZ formats. Available as a free download from the Mineral Resources Branch website: <http://novascotia.ca/natr/meb/download/dp486.asp>.

Open File Maps

Open File Map ME 2013-001: Mineral Rights Disposition Map for the Province of Nova Scotia, Version 1 (February 28, 2013) and Version 2 (April 29, 2013), Scale 1:500 000, compiled by B. E. Fisher and A. S. Wenning, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://www.gov.ns.ca/natr/meb/download/mg/ofm/htm/ofm_2013-001.asp.

Acid Rock Drainage (ARD) Potential Maps of the Southwestern Area of Nova Scotia. This series of 26 maps consists of an overview map of the whole map area at a scale of 1:250 000 (OFM ME 2013-002) and 25 maps at a scale of 1:50 000 (OFM ME 2013-003 to -027).

Open File Map ME 2013-002: Overview Map Showing Locations of Bedrock Acid Rock Drainage Potential Maps for the Southwestern Area of Nova Scotia, Scale 1:250 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-002.asp.

Open File Map ME 2013-003: Bedrock Acid Rock Drainage Potential Map of the Digby Area, NTS Sheet 21A/12, Annapolis and Digby Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-003.asp.

Open File Map ME 2013-004: Bedrock Acid Rock Drainage Potential Map of the Milford Area, NTS Sheet 21A/11, Annapolis County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-004.asp.

Open File Map ME 2013-005: Bedrock Acid Rock Drainage Potential Map of the New Germany Area, NTS Sheet 21A/10, Annapolis, Kings, Lunenburg and Queens Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-005.asp.

Open File Map ME 2013-006: Bedrock Acid Rock Drainage Potential Map of the Chester Area, NTS Sheet 21A/09, Halifax and Lunenburg Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-006.asp.

Open File Map ME 2013-007: Bedrock Acid Rock Drainage Potential Map of the Church Point Area, NTS Sheet 21B/08, Digby County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-007.asp.

Open File Map ME 2013-008: Bedrock Acid Rock Drainage Potential Map of the Weymouth Area, NTS Sheet 21A/05, Annapolis and Digby Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-008.asp.

Open File Map ME 2013-009: Bedrock Acid Rock Drainage Potential Map of the Kejimikujik Lake Area, NTS Sheet 21A/06, Annapolis, Digby and Queens Counties, Nova Scotia, Scale

1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-009.asp.

Open File Map ME 2013-010: Bedrock Acid Rock Drainage Potential Map of the Bridgewater Area, NTS Sheet 21A/07, Lunenburg and Queens Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-010.asp.

Open File Map ME 2013-011: Bedrock Acid Rock Drainage Potential Map of the Lunenburg Area, NTS Sheet 21A/08, Lunenburg County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-011.asp.

Open File Map ME 2013-012: Bedrock Acid Rock Drainage Potential Map of the Meteghan Area, NTS Sheet 21B/01, Digby and Yarmouth Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-012.asp.

Open File Map ME 2013-013: Bedrock Acid Rock Drainage Potential Map of the Wentworth Lake Area, NTS Sheet 21A/04, Digby, Shelburne and Yarmouth Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-013.asp.

Open File Map ME 2013-014: Bedrock Acid Rock Drainage Potential Map of the Lake Rossignol Area, NTS Sheet 21A/03, Digby, Queens, Shelburne and Yarmouth Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF

download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-014.asp.

Open File Map ME 2013-015: Bedrock Acid Rock Drainage Potential Map of the Liverpool Area, NTS Sheet 21A/02, Lunenburg and Queens Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-015.asp.

Open File Map ME 2013-016: Bedrock Acid Rock Drainage Potential Map of the LaHave Islands Area, NTS Sheet 21A/01, Lunenburg County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-016.asp.

Open File Map ME 2013-017: Bedrock Acid Rock Drainage Potential Map of the Yarmouth Area, NTS Sheet 20O/16, Yarmouth County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-017.asp.

Open File Map ME 2013-018: Bedrock Acid Rock Drainage Potential Map of the Tusket Area, NTS Sheet 20P/13, Shelburne and Yarmouth Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-018.asp.

Open File Map ME 2013-019: Bedrock Acid Rock Drainage Potential Map of the Shelburne Area, NTS Sheet 20P/14, Queens and Shelburne Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-019.asp.

Open File Map ME 2013-020: Bedrock Acid Rock Drainage Potential Map of the Port Mouton Area, NTS Sheet 20P/15, Queens and Shelburne Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-020.asp.

Open File Map ME 2013-021: Bedrock Acid Rock Drainage Potential Map of the Comeaus Hill Area, NTS Sheet 200/09, Yarmouth County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-021.asp.

Open File Map ME 2013-022: Bedrock Acid Rock Drainage Potential Map of the Pubnico Area, NTS Sheet 20P/12, Shelburne and Yarmouth Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-022.asp.

Open File Map ME 2013-023: Bedrock Acid Rock Drainage Potential Map of the Lockeport Area, NTS Sheet 20P/11, Shelburne County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-023.asp.

Open File Map ME 2013-024: Bedrock Acid Rock Drainage Potential Map of the Port Mouton Area, NTS Sheet 20P/10, Shelburne County, Nova Scotia, Scale 1:50 000, by L. L.

Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-024.asp.

Open File Map ME 2013-025: Bedrock Acid Rock Drainage Potential Map of the Cape Sable Island Area, NTS Sheet 200/08, Yarmouth County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-025.asp.

Open File Map ME 2013-026: Bedrock Acid Rock Drainage Potential Map of the Cape Sable Island Area, NTS Sheet 20P/05, Shelburne and Yarmouth Counties, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-026.asp.

Open File Map ME 2013-027: Bedrock Acid Rock Drainage Potential Map of the Baccaro Area, NTS Sheet 20P/06, Shelburne County, Nova Scotia, Scale 1:50 000, by L. L. Trudell and C. E. White, 2013. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-027.asp.

Open File Map ME 2013-028: Map Showing the Potential for Radon in Indoor Air in Nova Scotia, Scale 1:750 000, by G. A. O'Reilly, T. A. Goodwin, J. S. McKinnon and B. E. Fisher, 2013. Paper copy \$5.00. Available as a free PDF download from the Mineral Resources Branch website: http://novascotia.ca/natr/meb/download/mg/ofm/htm/ofm_2013-028.asp.