Mineral Resources Division of
Manitoba Innovation, Energy and Mines

James D. Bamburak

Presentations to:
Winnipeg Rock and Mineral Club
January 14, 2010
Manitoba Mineral Society
February 3, 2010
Mineral Resources Division

• History
  – Labour pains and birth
  – Department name changes
  – Change in status from Branch to Division
  – Building locations
  – Early staff
• Present Configuration, Components and Responsibilities
  – Manitoba Geological Survey
  – Mines Branch
  – Petroleum Branch
  – Minerals Policy and Business Development
• Interesting Sidelights
• Although the Province of Manitoba entered Confederation in 1870, its Natural Resources were retained by the Federal Government for sixty years.

• The transfer of Manitoba’s Natural Resources occurred on July 15, 1930.

• In anticipation of this transfer, the Department of Mines and Natural Resources was created on May 9, 1928; and this date marks the birth of the Mines Branch, which is now known as the Mineral Resources Division.
Labour Pains and Birth

• However, the origins of the Department began much earlier in May 1916, when John Archibald Campbell was appointed Commissioner for Northern Manitoba (under the Manitoba Public Utilities Commission). In 1917, Campbell resigned to seek election to the House of Commons. He was replaced on Dec. 1, 1918 by Robert Charles Wallace, then Professor of Geology at the University of Manitoba, until 1921 when Campbell returned as Commissioner. Campbell then served as Commissioner until 1924.

• In 1927 Robert Charles Wallace, became Commissioner of Mines (under the Dept. of Agriculture). He also served as a Director of the Industrial Development Board of Manitoba (created by the Manitoba Government, Winnipeg City Council, Winnipeg Board of Trade, Winnipeg Trades & Labor Council, Winnipeg Electric Co. and Manitoba Power Co.; and chaired by the Hon. John Bracken).

John A. Campbell

Robert C. Wallace
Labour Pains and Birth

- Wallace served as Commissioner until May 9, 1928 when he became Commissioner of Mines and Natural Resources under the new Department of the same name. He continued in this position until Sept. 1, 1928 when he resigned from both the University and the Government to become President of the University of Alberta.
- Justin Sarsfield DeLury replaced Wallace as Commissioner until the transfer of Resources on July 15, 1930, when he became Provincial Geologist with the Department (a position he held until 1944 when he resigned his twin positions of Provincial Geologist and Head of the Department of Geology, University of Manitoba).
Labour Pains and Birth

• With the creation of the Department of Mines and Natural Resources on May 9, 1928, the Honourable John Bracken, Premier of the Province of Manitoba, was sworn in as the first Manitoba Minister of Mines and Natural Resources.

• However, on October 22, 1928, the Honourable D.G. McKenzie was sworn in to succeed him, as Minister of the Department.
Department Name Changes

- 1928 – Mines and Natural Resources
- 1976 – Mines, Resources and Environmental Management
- 1978 – Mines, Natural Resources and Environment
- **1979 – Energy and Mines**
- 1999 – Industry, Trade and Mines
- 2006 – Science, Technology, Energy and Mines
- 2009 – Innovation, Energy and Mines
Change in status from Branch to Division

- 1928 – 1979 Manitoba Mines Branch

With the Department name change to Energy and Mines in 1979, there was also a major change from branch to division status. This change was also marked by the former position of Director being elevated to Assistant Deputy Minister; and the former section head positions assuming director levels.

- 1979 – 2010 Manitoba Mineral Resources Division (or Minerals Division)
Building locations

1928 – 1962, Law Courts

1974 – 1984, Century Plaza

1962 – 1974, Norquay Building

1984 – 1994, Eaton Place
Building locations

• Other locations in the past – Dauphin, Cold Lake, Thompson, The Pas.
• Other current locations – Flin Flon, Waskada, Virden, Centennial Mine Site, also rock storage facilities in Lynn Lake, The Pas, Thompson, Brady Road, U. of M.

Provincial Building in The Pas

Brady Road, South Perimeter Hwy.

www.manitoba.ca/minerals
Building locations

1994 to ?, Ellice Centre

2008-08-01

2010-01-08
Building locations

- 360-1395 Ellice Avenue
  - Geological Survey
  - Mines Branch
  - Petroleum Branch
  - Minerals Policy and Business Development

- 10 Midland Street
  - Rock preparation lab
  - Core examination

www.manitoba.ca/minerals
promotes wise land management and environmentally sustainable economic development in the province based on Manitoba’s mineral and petroleum resources;

fosters and enhances business development opportunities in mineral and petroleum economic development through promotion and marketing activities;

provides authoritative documentation of the province’s mineral and petroleum endowment and development potential;

administers the delivery of mineral and petroleum industry support programs;

administers legislation governing the disposition of mineral rights, oil & gas rights, exploration, development and production of Manitoba’s mineral and petroleum resources and, the rehabilitation of mines, quarries and abandoned petroleum sites; and

administers and enforces regulations under *The Mines and Minerals Act and the Oil and Gas Act* to ensure worker and public safety and to minimize environmental impacts of industry activity

acts to ensure worker and public safety and to minimize environmental impacts of industry activity.
Assistant to the Assistant Deputy Minister: Barb McLean

Administrative Services Accounting Clerk Sharon Zest
Manitoba Geological Survey

Acknowledgement to:
Ric Syme
Director
Manitoba Geological Survey
• The Geological Survey conducts a wide range of investigations in:
  – Precambrian Shield
  – Western Canada Sedimentary Basin
  – Hudson Bay Basin.

• Investigations include examination of exposed bedrock, subsurface materials, and surficial sediments including sand, gravel and organic deposits.

• Provides data and products such as geological maps and reports, metallic and industrial mineral deposit reports and databases, mineral resource assessments, targeted geoscience research, development of exploration models, and maintenance of data inventories.

• By developing an understanding of Manitoba’s geology and geological processes, the Survey promotes mineral exploration opportunities and contributes to wise land-use management.

www.manitoba.ca/minerals
2009 projects

MGS activities
1. Flin Flon Targeted Geoscience Initiative
2. Far North Geomapping Initiative
3. Results from other projects
   - Precambrian
   - Phanerozoic
   - Digital products
4. New data releases

www.manitoba.ca/minerals
Manitoba Geological Survey activities 2009

Regional and detailed geological investigations

Geoscience information for decision-making (e.g., protected areas)

Public outreach and education

1) Flin Flon Targeted Geoscience Initiative
2) Far North Geomapping Initiative
3) Results from other projects

www.manitoba.ca/minerals

Phanerozoic mapping

Training at Tadoule Lake

Mining Week at The Forks
Flin Flon TGI-3 project:
MGS projects in the Flin Flon area

1:10 000 cross-border map:
• coherent lithostratigraphic and structural framework – 1st upgrade in more than 50 years
  ➢ recognition of the mine stratigraphy beyond the mine surroundings
  ➢ new age dates – opens up same-age but previously unexplored successions near Flin Flon.
  ➢ ability to recognize and map volcanic subsidence structures: essential for exploring for VMS deposits at Flin Flon; applicable to greenstone belts elsewhere in Manitoba and Saskatchewan

Renée-Luce Simard (geology co-ord.)
Maureen McFarlane (cartography)
Objective: produce a set of revised geological maps for the sub-Phanerozoic geology of the Flin Flon Belt and better define the various domains using new geophysical, isotopic, geochronological and geochemical data.
Flin Flon TGI-3 project: MGS Notigi and Wapisu - NE Kisseynew

- 3rd year mapping at Notigi Lake, on the northern flank of the Kisseynew Domain

- Structural model for TNB-type rocks (Archean orthogneiss with a sedimentary cover) found in the NE Kisseynew Domain

- These TNB-type rocks may host Thompson-type nickel deposits
Flin Flon TGI-3 project: MGS Southern Indian Lake mapping

- 2nd year of a 2-year project to map supracrustal rocks in the Southern Indian Lake area

Airborne magnetic surveys funded by GSC under TGI-3

Identification of Archean (Sask-craton age) crust

U/Pb detrital data suggests that age of volcanism is correlative with other VMS-hosting volcanic rocks in the THO (Flin Flon, Lynn Lake)
2. Far North
Geomapping Initiative

• New provincial initiative - $1.5 M over 3 years (2008-2010)
  - In conjunction with GSC Geomapping for Energy and Minerals (GEM) program
• 2009: Great Island region
  - key exposures of Proterozoic cover sequences
  - only known exposures of Archean greenstone belt in MB’s far north
  - several important mineral occurrences

➢ a significant upgrade of the existing geological map was made by integrating 2009 mapping with newly acquired aeromagnetic data
MGS delivered a two-week geological mapping course with the Sayisi Dene First Nation at Tadoule Lake, to:

- provide the basic skills needed to work in a mineral exploration camp
- increase community awareness of the region’s geology and mineral resources
- foster information sharing between Tadoule and MGS

- four members of the community were hired as student-trainees
- plans are for a second two-week course in 2010
3. Stand-alone projects

Snow Lake gold metallogeny

- Geological mapping east of the town of Snow Lake
- Started 2008; expanded upon the existing 1:20 000 scale mapping.

- Goal – constrain gold exploration models by understanding structural setting
- Gold mineralization is:
  - spatially associated with the McLeod Road Thrust
  - commonly situated along or adjacent to lithological contacts
• A geological report and 1:50,000 scale geological map of the north-central part of the Flin Flon Belt is in preparation and planned for release in 2010.

- Integrate previous mapping with associated geochemical data.

www.manitoba.ca/minerals
Thompson Nickel Belt: west-central Paint Lake

- 2\textsuperscript{nd} year of a 2-year project to improve understanding of the Archean basement to the TNB

> **Archean** metasedimentary sequence is similar to the Ni-hosting Paleoproterozoic Ospwagan Group, adding complexity to Ni exploration in this part of the TNB

MGS mapping 2008-9

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Shallow Unconventional Shale Gas Project

- 4-year project to summarize the shallow shale gas prospects for Manitoba, characterize the gas, define the area of gas occurrence, and identify intervals with prospective formations with the greatest potential to contain gas

- **Study components** in 2009:
  1. Petrography and organic geochemistry of Cretaceous successions
  2. Water and gas chemistry of the Cretaceous shale aquifers and gas reservoirs of the Pembina Hills area
  3. MMI orientation survey to assess the potential to define geochemical signatures associated with a shallow gas vent site near Manitou
  4. Re-evaluation of Cretaceous stratigraphic nomenclature

[Map of Shale gas occurrences in Manitoba]
Far North

Hudson and Foxe basins

- Modern synthesis of the geoscience and hydrocarbon systems of the Hudson Bay and Foxe basins - part of the GSC’s GEM-Energy program

- **Existing data** are being re-evaluated using modern methods

- **New data** to be acquired in areas with current knowledge gaps
  - Aims to encourage industry to consider this region for future hydrocarbon exploration

[Link](www.manitoba.ca/minerals)
MGS is a major contributor to local, national and international three-dimensional (3-D) modeling projects.

- A 3-D geological model of the Phanerozoic succession in southern Manitoba, south of 55°N and west of 95°W is in progress.

Contribute to:
- Phanerozoic stratigraphy;
- hydrocarbon, groundwater and industrial-mineral resource development;
- buried valley aquifer delineation;
- geological education.
4. Digital projects and compilation

1:250 000 compilation
- **seamless** 1:250 000 scale digital geological base (version 1) map for Manitoba is complete
- integrated into the GIS Map Gallery and is now available on the web

Mineral deposits database
- **Phase 1**: available on the Web in GIS Map Gallery site since November 2008
- **Phase 2**: incorporation of recently released non-confidential work in assessment files
  - **Far north** – more than 200 new records have been entered
  - updates released November 2009 in the GIS Map Gallery

Tim Corkery  Dome Lindal  Len Chackowsky
Anders Carlson
Tim Corkery  Tom Heine  Peter Leskiw  Glen Conley
Dave Prouse (not present)
- 142 airborne magnetic surveys from cancelled assessment files now available through the GIS Map Gallery
  - All non-confidential surveys filed in digital formats have now been added – converted by MGS to industry standard Geosoft database and grid format
  - Include both total field and vertical gradient or calculated first derivative data
- Free downloads from the GIS Map Gallery
5. MGS data releases since December 2008


- **TGI II Williston Basin Project**: 39 stratigraphic maps (structure and isopach) of the Mesozoic; by M.P.B. Nicolas and J. Coolican

- **Williston Basin TGI II hydrocarbon assessment compilation**: by M.P.B. Nicolas and J. Coolican

- **Williston Basin 3D Geological Model** (web release only)

MGS data releases since December 2008

- **OF2009-1 to OF2009-12**: Airborne geophysical survey of the Great Island and Seal River area, Manitoba; by R. Fortin, M. Coyle, J.M. Carson and F. Kiss

- **OF2009-13**: Till geochemical and indicator mineral reconnaissance of southeastern Manitoba (west half of NTS 52E AND 52L and all of 62H and 62I): final results (digital web release only); by L.H. Thorleifson, G.L.D. Matile, G.R. Keller, and S.A. Hauck

- **Data Repository Item**: DRI2009001 (digital web release only) Operation Superior: multimedia geophysical survey results northeast of the Knee Lake greenstone belt, northern Superior Province, Manitoba (NTS 53M, 53N) by M.A.F. Fedikow, E. Nielsen, G.G. Conley and P.G. Lenton

- **Mineral Deposits Database**: by G.G. Conley, T.H. Heine, D.E. Prouse, P. Leskiw et al. (web release)
Cartography
Bonnie Lenton, Mark Timcoe, Ed Truman (retired), Maureen McFarlane

G.I.S. Specialist
Mark Pacey
Manitoba Mines Branch

Ernie Armitt
Director
Manitoba Mines Branch
• Administers legislation governing:
  – the disposition of mineral rights (permits, claims and leases) under *The Mines and Minerals Act* (C.C.S.M. c. M162), and regulations thereunder.
  – exploration, development, and production of the province's non-fuel mineral resources and
  – the rehabilitation of mines and quarries.
To determine the ownership of mineral rights within a parcel of land in Manitoba, as contained in the land title, please contact:

Lands Branch
123 Main Street
P.O. Box 20000       ph. (204) 476-7060
Neepawa, MB  R0J 1H0  fax (204) 476-7539

Three essential items should be requested:
– Surface holder (may be necessary to check with local Land Titles office)
– Sand and gravel holder
– Minerals holder
Private Holder Rights

• The surface rights may be private or Crown. If private, the holder must be contacted before attempting any access onto the property.

• The sand and gravel rights may also be private or Crown. Subject to the above, if the sand and gravel rights are private, the holder must be contacted before examination of the occurrence.

• The mineral rights, exclusive of sand and gravel (above), may also be private. Any examination of the ground must be done with the permission of the mineral rights holder and with the sand and gravel and surface rights holders, if any.
Crown Rights

- If the surface rights are Crown, access onto the property may be possible, but care must be taken to ensure that these rights have not been assigned to other individuals or that temporary conditional uses are not in place.

- If, the sand and gravel rights are Crown, access onto the property may be possible, subject to the above. However, removal of sand and gravel will require application to the Mining Recording Office in Winnipeg.

- If the mineral rights, exclusive of sand and gravel, are Crown, anything beyond a cursory examination of the ground must be done after application to the Mining Recording Office in Winnipeg. A work permit from the local Natural Resources Office will also be required.
http://www.gov.mb.ca/stem/mrd/mines/acts

- **M162 - Act**
  - M162 - *The Mines and Minerals Act*

- **M162 - Regulations**
  - MR 64/92 - [Mineral Disposition and Mineral Lease Regulation, 1992](#) (with amendments)
  - MR 165/92 - [Prospectors Assistance Program Regulation;](#) Amendment - Regulation 3/2001
  - MR 65/92 - [Quarry Minerals Regulation 1992](#)
  - MR 67/99 - [Mine Closure Regulation](#)

- General Closure Plan Guidelines, available in [html](#) or [PDF format](#)
  - Mine Closure Guidelines, Financial Assurance available in [html](#) or [PDF format](#)

- MR 63/92 - [Drilling Regulation, 1992](#)

**Other Related Acts and Regulations**

- M190 - *The Mining and Metallurgy Compensation Act*
- M165 - *The Mining Claim Tax Act*
- M195 - *The Mining Tax Act*
- P80 - *The Planning Act*

**P80 - Regulations**

- MR184/94 - [Provincial Land Use Policies Regulation Policy #9 - Mineral Resources](#)
- W210 - [Workplace Safety and Health Act](#)

**W210 - Regulations**

- MR 228/94 - [Operation of Mines Regulation](#)
Mining Claims

http://www.gov.mb.ca/stem/mrd/geo/gis/minesmaps.html

Minerals

- www.manitoba.ca/minerals

Manitoba
G.I.S. Support:
Yong Zhang
Mike Fedak

Acting Mining Recorder:
Gerald Teichrib
Bernice Derksen (resigned), Janet Forbes, Jim Payne, Susan Baker, Jennifer Chartrand
Distribution of Crown Mineral Rights

• Crown mineral rights are distributed by the Mining Recording Office under the Mines Branch of Manitoba Innovation, Energy and Mines.


• Application for Crown quarry mineral rights, in writing, should be delivered or faxed with prescribed legal description, map or plan, and payment to:
  Mining Recording Office
  Mines Branch
  Unit 360-1395 Ellice Avenue   ph. (204) 945-6526
  Winnipeg, MB   R3G 3P2   fax (204) 948-2578
Mineral Dispositions within Quarry Minerals Regulation 65/92

- Casual quarry permit
- Quarry exploration permit
- Quarry lease

Note: if necessary, application for a surface lease may also be required in addition to the above
Mining Recorder (Quarrying): Lynda Bennett (retired)
Terry Zanewich, Sharon Carr, Susan Baker
Mines Branch

Doina Priscu
Chief Mining Engineer

Janet Forbes
Business Lead - Integrated Mining Registry

www.manitoba.ca/minerals
Rehabilitation Technician: Mary Kliever
Land Use Administrator: Barb Miskimmin
Admin. Assistant: Denise Jonasson
Mgr. Rehabilitation & Inspection: Brian Bailey
Manitoba Petroleum Branch

Keith Lowden
Director
Manitoba Petroleum Branch
The branch administers *The Oil and Gas Act* and related regulations governing the exploration, development, production, transportation and storage of crude oil and natural gas. It is also responsible for *The Oil and Gas Production Tax Act*.

The branch administers the Manitoba Drilling Incentive Program, maintains a comprehensive public database of technical well and reservoir information and also prepares reports on the province’s petroleum geology and hydrocarbon potential to encourage and assist in the exploration and development of Manitoba’s oil and gas resources.
Oil Fields


Minerals Policy and Business Development

Chris Beaumont-Smith
Acting Manager
Minerals Policy and Business Development
Manitoba Policy and Business Development Section

• Responsible for monitoring industry and commodity information used in formulating:
  – Manitoba’s minerals policies,
  – promoting mining and exploration investment opportunities, and
  – administering the Mineral Exploration Assistance Program (MEAP) (Linda Rogoski)
    and the Manitoba Prospectors Assistance Program (MPAP) (Donna Dault).

www.manitoba.ca/minerals
Interesting Sidelights
AT DUSK

-on the shore of an unnamed Precambrian lake-

Deep pools and cool; and sun
Fast lowering behind the tall pines’ shade.
Rustle of nesting birds; and somnolent hush,
Bespurred by cooling protest ’gainst the noon-day’s warmth
On creviced basalt: and the sweep
Of night-hawk, insect-bent.
Cool granites, ramparts of antiquity,
Aged as the stars themselves,
And worn, eroded by the unkind
Missioners of time.
And, on the pools and little puddled bays,
Sanctuary seeking in the warmer rocks,
Are water-lilies, starred rays of sun
Stolen from noon-day’s height, until
Another morn shall burst new buds.
Then, cooling morn along those narrow arms
Where lake and earth are wed,
And there begets the stream,
The swamp’s cool-trailing vapor
Tells that night has come.

F. D. Shepherd
May 1, 1937
In nineteen eighty-nine, if you visit any mine,
You'll see great changes that have come to stay --
Miners dropping from the sky, landing down beside the "dry"
To park their little gyros for the day.

When you walk up to the shaft you'll swear they've all gone daft,
For each in turn will jump right into space;
But then you do not know of the gravitator, so
You swallow hard and step into your place.

If you walk along a drift and you watch a miner lift
A gadget that is called an "ion gun",
Hold it close up to his eye, press the trigger and let fly,
You may be just inclined to turn and run.

But it's really safe and sound; he's just shooting off a round,
And the ore is blasted out as fine as flour;
Yet it quickly settles there; no pollution of the air,
For the little "ion gun" has wondrous power.

The mucker's work is play, for it's done the vacuum way,
And the floury ore is sucked right to the mill.
No shovelling aches and pains, no compensation strains,
And consequently accidents are NIL.

Ah, yes! my mining friend, if this inventive trend
Should carry on another fifty years,
They'll mine the hidden ore from the stock promoter's door;
But we'll be dead, so why should we have fears.

W.B. Paton,
Inspector of Mines.
Rock Hounding in the Assiniboine River

Kiche Manitou Campground, Spruce Woods Provincial Park 2008-07-08
Rock Hounding in the Assiniboine River
Rock Hounding in the Assiniboine River

Spruce Woods

Sand dunes

Assiniboine Delta

Spruce Woods

Quaternary Legend

- Lateral Sand
- Clay
- Late Wisconsinan
  - Northwest Province Till
  - Glacial Florid Sand and Gravel

Precambrian Shield

0 100 200 300 400

Masl
Opening of Analytical Laboratory of the Mineral Resources Division on Logan Avenue by Hon. Garry Filmon. The lab was formerly on the tenth floor of the Norquay Building.
Wallace Building, U. of M.

Wallace Building, entrance

Robert Charles Wallace

Wallace Building, Fort Garry Campus, University of Manitoba (22)
Built in 1986, with a fourth floor addition in 2005

www.manitoba.ca/minerals
Earth Day Visit of MRD Offices

- Thursday, April 22\textsuperscript{nd}, 2010
- Tour of Ellice Place facilities
- Tour of Midland Rock and Storage facilities
Christmas 1946

Christmas Party for Department Staff
Basement of the Law Courts Building
December 17, 1946