

## Foreword

On behalf of the Manitoba Geological Survey (MGS), it is my privilege to present the *Report of Activities 2019*—the annual peer-reviewed volume of the geoscience project results by the MGS and its partners.

The Resource Development Division (RDD), of which the MGS is part of, underwent restructuring this year, with some significant changes to its branches. The RDD is now divided into three branches: (1) Regulatory Services, (2) Land-use and Resource Tenure, and (3) the Manitoba Geological Survey. The MGS represents a consolidation of all geological-related services that RDD provides. The MGS consists of four sections: (1) Precambrian and (2) Sedimentary Geoscience sections (Christian Böhm, Chief Geologist for both), (3) Regulatory Geoscience Support Services (Pamela Fulton-Regula, Acting Chief Geologist), and (4) Geoscience Data Management (Greg Keller, Acting Manager).

The MGS conducts a wide range of investigations, which include the examination of exposed bedrock, subsurface materials, and surficial sediments including sand, gravel and organic deposits throughout Manitoba. It also provides geoscience support for the regulatory framework and tenure systems managed by RDD, which includes assessment files review, oil field-pool code designations, land use, and community consultations. By developing an understanding of Manitoba's geology and geological processes, the MGS provides fundamental data and unbiased technical support to inform government policy and decision making, mineral exploration, and wise land use management.

The MGS started this year's field season with eight new exciting projects. This volume and accompanying preliminary maps present findings of both new and advanced projects, and includes important contributions to Manitoba's vast mineral wealth and geological endowment. This volume emphasises new information on gold (GS2019-1, GS2019-2, GS2019-4), graphite and vanadium (GS2019-3, GS2019-6), base-metal (GS2019-4), and lithium (GS2019-5) occurrences. Also included are continued contributions on regional diamond potential (GS2019-9, GS2019-10), silica sand and Mississippi-Valley Type (MVT) deposit investigations (GS2019-8), glacial history and paleo ice flow reconstructions (GS2019-9, GS2019-10), and Phanerozoic stratigraphic mapping (GS2019-7, GS2019-8).

The importance of remapping geological terranes and re-evaluating geological interpretations throughout the years is critical to staying relevant in a global market, staying current to an ever-evolving science, and maintaining and improving our economic advantage. Global demands for commodities fluctuate over time, and previously ignored, seemingly unimportant, or simply overlooked details and

site observations made decades ago suddenly become critically important and highly sought after. An example of this is the bedrock remapping in the Russell–McCallum lakes area in northwestern Manitoba (GS2019-3), where graphite was mentioned briefly 40 years ago. Natural graphite is a very important commodity for our everyday lives and technology but currently is a well-sought commodity due to its anticipated demand associated with the production of Li-ion batteries. This is a reflection of our ever-changing world and technology advances where electrification and moving toward a carbon neutral economy are currently our biggest drivers.

The MGS, while fully engaged with field projects, is also hard at work on internal initiatives to improve service delivery, project tracking, standardizing our geochemistry data releases, map creation and compilation, including a new 250k scale common map legend. The Geoscience Data Management Section are key players in the integration of Petrinex (provides services that facilitate management and exchange of essential information in the petroleum sector), ongoing maintenance of iMaQs and Map Gallery, development of maps for land tenure, and staff GIS training and support. The MGS is an active player on the Manitoba Liaison Committee on Mining and Exploration which, since its formation in June 2019, has made significant progress. The MGS is also an active participant on the Block Planning Committee, ensuring the mineral resource lens is not forgotten during land-use planning. In addition, the MGS participates and engages regularly in many collaborative geoscience projects and initiatives with industry and academia.

Over the last year, the MGS saw some staff changes. We continue to strategically build capacity with the hiring of three new staff: Ashley Santucci (GIS Technician), Paul Belanger (Laboratory Technician), and Shaun Gallagher (Assessment and Consultation Geologist). The addition of these talented individuals to our team will allow us to progress on our path of continuous improvement for better service delivery. Precambrian project geologist Simon Gagné and GIS geologist Sharon Lee have left the MGS to pursue new adventures and opportunities in Ottawa. The recent, too-early passing of fellow MGS retirees Paul Lenton (Precambrian and GIS geologist and manager) and Gerry Bengler (core lab manager) leave us with heavy hearts. They both touched everyone deeply in their lives and will never be forgotten for their friendships, talents, positive attitude and contagious smiles.

The dedicated and diligent work of MGS geologists, lab technicians, expeditors, students and GIS technicians went into the production of the *Report of Activities 2019*. Bob Davie and his team from RnD Technical carefully performed technical editing and Craig Steffano managed report production and publication layout. I would like

to thank everyone on the MGS team for their valuable contributions, dedication, passion and energy to the projects and initiatives tackled over the last year which have yielded great success.

Michelle P.B. Nicolas, P. Geo., FGC  
Acting Director, Manitoba Geological Survey