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These data accompany

Preliminary Map P.3847, *Precambrian Geology of Reeves Township, Northern Swayze area, Abitibi Greenstone Belt, Northeastern Ontario*

Preliminary Map P.3848, *Precambrian Geology of Sewell Township, Northern Swayze area, Abitibi Greenstone Belt, Northeastern Ontario*

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Miscellaneous Release—Data 393 – Revised

Geological, Geochemical and Geophysical Data Related to Reeves and Sewell Townships, Northern Swayze Area, Abitibi Greenstone Belt, Northeastern Ontario

by L.E.D. Vice and P.J. MacDonald

This publication can be downloaded from

http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD393-REV

This digital data release contains field data, field photographs, whole-rock geochemical data, geochronology information, and magnetic susceptibility data related to 1:20 000 scale mapping of Reeves and Sewell townships, along with parts of Muskego and Melrose townships, northeastern Swayze area (Project NE-19-002) collected during the summers of 2018 and 2019. This revision provides an additional 21 element analyses for 9 samples and omits unreliable Rh data from the analysis of samples collected in 2019 for this project (see note below for details). Also included is the previously published *Summary of Field Work and Other Activities* article related to the project. This release comprises 104 photographs (as .jpg files), 8 Microsoft® Excel® for Office 365 (.xlsx) workbook files and 7 documents in portable document format (.pdf). These data augment Preliminary Maps P.3847, *Precambrian Geology of Reeves Township, Northern Swayze Area, Abitibi Greenstone Belt, Northeastern Ontario*, and P.3848, *Precambrian Geology of Sewell Township, Northern Swayze Area, Abitibi Greenstone Belt, Northeastern Ontario*; the geological legends for the maps are also provided.

The authors would like to acknowledge the bedrock geology mapping conducted by Justin Bisailon and Sarah Bowie during the 2018 field season that is contained herein (i.e., stations identified with the prefix “18JB” and “18SB”, respectively).

CONTENTS

Data are organized into 6 folders, 1 of which has 1 subfolder:

1. Field Data
2. Geology and Photographs
3. Geochemistry
4. Geochronology
5. Geophysics
6. Publication

1. Field Data. This folder contains 4 Microsoft® Excel® 2013 (.xlsx) files.

MRD 393_Reeves-Sewell twps_Station field notes.xlsx consists of 2 worksheets.

These worksheets also contain the location data (“Easting” and “Northing”) for 179 stations and 290 outcrops; the Universal Transverse Mercator (UTM) co-ordinates are provided in North American Datum 1983 (NAD83), Zone 17. For explanations about rock codes, *see* the files “P3847_Legend.pdf” and “P3848_Legend.pdf” in the folder “Geology and Photographs”.

“Station_Summary” worksheet provides station locations with accompanying GPS location quality data, a summary of corresponding field rock codes (as published on Preliminary Maps P.3847 and P.3848), representative photograph(s) (as provided in the folder “Geology and Photographs”), geochemistry sample numbers (with data provided in the folder “Geochemistry”) and geochronology sampling sites (with data provided in the folder “Geochronology”).

“Outcrop_Summary” worksheet provides the outcrop stations with their accompanying rock codes and notes.

MRD 393_Reeves-Sewell twps_Lithology field notes.xlsx consists of 4 worksheets.

These worksheets, separated into different rock types, provide the lithological descriptions for all rocks mapped in the area during the summers of 2018 and 2019.

“Volcanic Flows” worksheet contains descriptive information for observations of 91 lithologies.

“Pyroclastic Volcanic Rocks” worksheet contains descriptive information for observations of 9 lithologies.

“Metasedimentary Rocks” worksheet contains descriptive information for observations of 5 lithologies.

“Intrusive Rocks” worksheet contains descriptive information for observations of 91 lithologies.

MRD 393_Reeves-Sewell twps_Structure field notes.xlsx consists of 1 worksheet.

“Structure” worksheet contains 168 structural measurements and notes from mapping during the summers of 2018 and 2019.

MRD 393_Reeves-Sewell twps_Alteration-Mineralization field notes.xlsx consists of 2 worksheets.

“Alteration” worksheet provides 13 alteration observations collected while mapping during the summers of 2018 and 2019.

“Mineralization” worksheet provides 6 mineralization observations collected while mapping during the summers of 2018 and 2019.

2. Geology and Photographs. This folder contains 2 portable document format (.pdf) files, 1 Microsoft® Excel® 2013 (.xlsx) file and 1 subfolder, “MRD 393_Reeves-Sewell twps_Field Photos”, with 104 field photographs (as .jpg files).

P.3847_Legend.pdf and *P.3848_Legend.pdf* are the general legends used as the base for Ontario Geological Survey Preliminary Map P.3847, *Precambrian Geology of Reeves Township, Northern Swayze area, Abitibi Greenstone Belt, Northeastern Ontario* (Vice and MacDonald 2021a) and P.3848, *Precambrian Geology of Sewell Township, Northern Swayze area, Abitibi Greenstone Belt, Northeastern Ontario* (Vice and MacDonald 2021b), respectively. Material in the field data and the photograph description files are cross-referenced to rock codes in this legend.

MRD 393_Reeves-Sewell twps_Photo Descriptions.xlsx consists of 1 worksheet, which provides the station identification and location, the rock codes (as provided in “P.3847 and P.3848_Legend.pdf”), a brief photo description and identifies the scale used and orientation of the photo. Photo file names for the .jpg files are based on station number, e.g., 18JB210-4 is photograph number 4 at station JB210 in 2018 and 19LV001-3 is photograph number 3 at station LV001 in 2019. Station location information is provided in UTM co-ordinates, Zone 17, NAD83.

3. Geochemistry. This folder contains 1 Microsoft® Excel® 2013 (.xlsx) file and 3 portable document format (.pdf) files.

MRD393-REV_Reeves-Sewell twps_Geochemistry.xlsx consists of 2 worksheets.

Both worksheets also contain sample identification, “Rock Type” for each sample collected and the station and station location data (“Easting”, “Northing”, and “Township”); UTM co-ordinates are provided in NAD83, Zone 17.

“Geochemistry” worksheet contains 125 whole-rock geochemical analyses acquired from samples collected as part of this study during the summers of 2018 and 2019. The geochemical analyses were performed at the Geoscience Laboratories (Geo Labs), Ontario Geological Survey, Sudbury. The methods used, lower detection limit for each method, and reported units for each method are included for each element (and oxide) listed. The methods are described in more detail in the accompanying files “2018 Geo Labs Brochure.pdf” and “2019 Geo Labs Brochure.pdf”.

Please note that the abbreviation “du” (for “data unreliable”) is used in the spreadsheet where data from the original MRD release have been removed after examination of the instrumental quality control data obtained during sample analysis indicated an elevated background for Rh. This background may have significantly affected the measured concentrations, which now are considered unreliable and not to be used.

“‡ Additional Analyses” worksheet contains 21 additional element analyses for 9 samples acquired from samples collected as part of this study during the summer of 2018. The geochemical analyses were performed at the Geoscience Laboratories (Geo Labs), Ontario Geological Survey, Sudbury. The method used, lower detection limit and reported units for the method are included for each element listed. The method is described in more detail in the accompanying file “2020 Geo Labs Brochure.pdf”. Note, the detection limit for these analyses may differ from those in the “Geochemistry” worksheet for the same method.

2018 Geo Labs Brochure.pdf describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories in 2018.

2019 Geo Labs Brochure.pdf describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories in 2019.

2020 Geo Labs Brochure.pdf describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories in 2020.

4. Geochronology. This folder contains 1 Microsoft® Excel® 2013 (.xlsx) file.

MRD 393_Reeves and Sewell twps_Geochronology.xlsx provides information about geochronological samples presented on maps P.3847 and P.3848. Sample location data provided as UTM co-ordinates in NAD83, Zone 17.

5. Geophysics. This folder contains 1 Microsoft® Excel® 2013 (.xlsx) file.

MRD 393_Reeves-Sewell twps_Magnetic Susceptibility.xlsx contains 1 worksheet.

“MagSus_Data” worksheet provides magnetic susceptibility data from the study area collected during the summers of 2018 and 2019.

Measurements were collected using Exploranium® KT-10 magnetic susceptibility meters. Magnetic susceptibility is defined as the degree to which a substance can be magnetized and, in this case, is expressed as the ratio of the intensity of magnetization (k) to the ratio of the Earth’s magnetic field to

magnetic field induced by the susceptibility meter. The readings (k) are expressed as 10^{-3} times the SI unit for susceptibility and are dimensionless. The minimum value that can be recorded by the meter is 0.001×10^{-3} SI units; the largest value is 999×10^{-3} SI units. Sample location information is given in UTM co-ordinates, NAD83, Zone 17.

6. Publication. This folder contains 1 portable document format (.pdf) file that is a publication associated with this project.

MRD 393_Reeves-Sewell twps_SoFW2019-08 Vice MacDonald.pdf: An article (Vice and MacDonald 2019), published in the Ontario Geological Survey *Summary of Field Work and Other Activities, 2019* volume, outlining the activities and results of field work in Reeves and Sewell townships (Project NE-19-002) during the summer of 2019.

References and Related Publications

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- 2021a. Precambrian geology of Reeves Township, northern Swayze area, Abitibi greenstone belt, northeastern Ontario; Ontario Geological Survey, Preliminary Map P.3847, scale 1:20 000.
- 2021b. Precambrian geology of Sewell Township, northern Swayze area, Abitibi greenstone belt, northeastern Ontario; Ontario Geological Survey, Preliminary Map P.3848, scale 1:20 000.