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Miscellaneous Release—Data 283 – Revision 2

Ambient Groundwater Geochemical and Isotopic Data for Southern Ontario, 2007–2019

by S.M. Hamilton

This publication can be downloaded from

http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD283-REV2

This digital data release comprises a revision of data collected in the Ambient Groundwater Geochemistry Project (PU-07-25), and is an update to the data released in 2015 as Miscellaneous Release—Data 283 – Revised. The new release contains data for the 2287 samples published in the 2015 release, comprising samples collected between 2007 and 2014, and an additional 3944 samples from sampling conducted between 2015 and 2019. The 72% increase in samples all come from add-on projects of various kinds within the same study area footprint as the 2015 data. The add-on studies include, among other things, 3 aquifer screening-tool studies carried out in eastern Ontario in co-operation with several municipalities and the South Nation Conservation Authority. These studies, combined with a similar earlier study in 2013, result in an extremely high sample density in a strip of eastern Ontario that borders the Ottawa River, from west Ottawa to Hawkesbury, Ontario. Several other studies in 2015 and 2019 also result in an increased sample density on the Niagara Peninsula and along the north shore of Lake Erie to Leamington.

The project provides a comprehensive analytical characterization of the inorganic and isotopic chemistry of groundwater across all of southern Ontario, resulting in coverage of an area of approximately 96 000 km². Parameters tested include dissolved gases, major ions, trace elements, isotopes of water, and field measurements of alkalinity, temperature, pH, redox potential and electrical conductivity.

Contents

Included in the MRD are the following:

1. **MRD283-REV2_support_document.pdf**: provides project background, an explanation of the data and quality control methods, and an appendix containing 85 quality control plots for analytical parameters, most of which show a precision and accuracy chart.

2. **MRD283-REV2_data.xlsx**: A single Microsoft® Excel® for Office 365 spreadsheet containing analytical data and station data, including descriptive fields for the wells (e.g., well depth, type, deepest formation penetrated).
3. **GW_geochemical_maps**, a folder containing:
 - A total of 120 spatial plots for **bedrock wells**, including 99 that show analytical or station parameters plotted over simplified bedrock geology of Armstrong and Dodge (2007); and 21 plots that show modelled parameters.
 - A total of 113 spatial plots for **overburden wells**, including 92 that show analytical or station parameters plotted over simplified Quaternary geology of Ontario Geological Survey (2010); and 21 plots that show modelled parameters.

Table 1 in the support document links to all the images in this folder; therefore, if copying this MRD to a computer, it is imperative that the folder structure and file folder naming convention be maintained. All files are safe to open.

References

- Armstrong, D.K. and Dodge, J.E.P. 2007. Paleozoic geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 219.
- Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.