Nova Scotia Department of Energy and Mines
Geoscience and Mines Branch - Geological Survey Division

Open File Map ME 2019-004

Strontium in Groundwater from Bedrock Aquifers in Nova Scotia

G. W. Kennedy

Scale 1:500 000

25 0 25 50 km

Halifax, Nova Scotia
2019

NOVA SCOTIA

Gulf of St. Lawrence

Prince Edward Island

New Brunswick

Northumberland Strait

Bay of Fundy

Atlantic Ocean

Aspy Bay

St. Anns Bay

Bras d'Or Lake

St. Georges Bay

Chedabucto Bay

Tor Bay

Minas Basin

Wolfville

St. Margarets Bay

Halifax Harbour

Mahone Bay

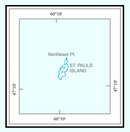
St. Marys Bay

Lake Rossignol

Lobster Bay

Yarmouth

Sable Island



Map Notes

This map is one in a series of maps showing the distribution of selected water chemistry parameters at a scale of 1:500 000.

The source of the groundwater chemistry data is the Nova Scotia Groundwater Chemistry Database (NSGCDB). The NSGCDB was compiled from various federal, provincial and municipal groundwater chemistry data sources, including well water quality monitoring data from government buildings, and Nova Scotia Environment groundwater chemistry data from registered public drinking water supplies, pumping tests, municipal groundwater systems and provincial observation wells. The data presented on this map do not include known contaminated sites and likely represent naturally occurring conditions.

Sedimentary, Carbonate/Evaporite, Volcanic, Plutonic and Metamorphic Groundwater Regions

The boundaries of the various bedrock groundwater regions were based on the dominant lithology, which was interpreted from Fisher and Poole (2006) by Hopper *et al.* (2002), and modified by G. W. Kennedy for the Groundwater Regions Map of Nova Scotia. For example, the boundaries of the Carbonate/Evaporite Groundwater Region generally correspond to the boundaries of the Windsor Group, although the Windsor Group also includes other rock types, such as sedimentary bedrock units.

GIS databases, cartography and reproduction by Gavin Kennedy and Angie Barras of the Nova Scotia Department of Energy and Mines, Geoscience and Mines Branch - Geological Survey Division, 2019. The GIS databases and map were developed using ArcGIS® 10.5.

Universal Transverse Mercator Projection (UTM), Zone 20, Central Meridian 63°00' West. North American Datum (NAD) 1983 Canadian Spatial Reference System (CSRS) 98.

Base and digital data derived from the Nova Scotia Topographic Database (NSTDB). Copyright Her Majesty the Queen in Right of the Province of Nova Scotia. The NSTDB is available from the Department of Service Nova Scotia and Internal Services, Nova Scotia Geomatics Centre (NSGC), Amherst, Nova Scotia.

Disclaimer

The information on this map may have come from a variety of government and nongovernment sources. The Nova Scotia Department of Energy and Mines does not assume any liability for errors that may occur. This map is intended for use at the published scale of 1:500 000.

Selected References

Fisher, B.E. and Poole J.C. 2006. DP ME 43, version 2, digital version of Nova Scotia Department of Natural Resources Map ME 2000-1, geological map of the Province of Nova Scotia, Scale 1:500 000, compiled by J.D. Keppie, 2000; Nova Scotia Department of Natural Resources, Digital Product ME 043, version 2; http://www.novascotia.ca/natr/meb/download/dp043.asp

Health Canada 2019. Guidelines for Canadian Drinking Water Quality: Guideline Technical Document - Strontium; available online at https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-strontium.html

Hopper, D.B., Bonner, F.J., Fisher, B.E., and Murphy, A.N. 2002. DP ME 37, version 2, 2002, digital version of Nova Scotia Department of Natural Resources Open File Map ME 2000-004, Mineral Resource Land Use (MRLU) Maps of Nova Scotia, scale 1:50 000; Nova Scotia Department of Natural Resources, Digital Product ME 047, version 2; http://www.novascotia.ca/natr/meb/download/dp047.asp

Keddie, A. 2006. Groundwater Quality in Nova Scotia; B. Sc. thesis, Department of Earth Sciences, Dalhousie University, Halifax, Nova Scotia, March 2006.

Kennedy, G.W., Drage, J. and Fisher, B.E. 2008. DP ME 428, version 1, digital version of Nova Scotia Department of Natural Resources Open File Map ME 2008-3, groundwater regions map of Nova Scotia, Scale 1:500 000; Nova Scotia Department of Natural Resources, Digital Product ME 428, version 1; http://www.novascotia.ca/natr/meb/download/dp428.asp

Nova Scotia Department of Natural Resources 2019. Nova Scotia groundwater chemistry database; available online as part of https://fletcher.novascotia.ca/DNRViewer/?viewer=Groundwater

Acknowledgments

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Recommended Citation

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Legend

Water Chemistry - Strontium (µg/L)

- < 875 µg/L
- 875 - 3500 µg/L
- 3500 - 7000 µg/L
- > 7000 µg/L

Groundwater Regions

- Sedimentary
- Carbonate/Evaporite
- Volcanic
- Plutonic
- Metamorphic

Primary watershed boundary

Groundwater region boundary

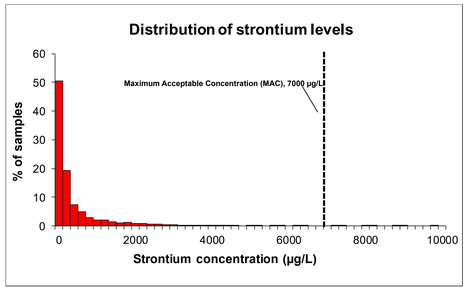
Roads (primary, secondary)

Rivers/streams

Coastline

Boundary (county, inter-provincial)

Lakes



Parameter	Value	Unit
Number of Samples:	1589	-
Proportion of samples ≤5 µg/L:	0.38	%
Median Concentration:	200	µg/L
95th Percentile Concentration:	2620	µg/L
Maximum Concentration:	29 000	µg/L
Maximum Acceptable Concentration (MAC):	7000	µg/L
Proportion Exceeding MAC:	1	%

Strontium analyses with a laboratory detection limit ≤5 µg/L were used in the map