Nova Scotia Department of Natural Resources
Mineral Resources Branch

Open File Map ME 2011-022

Iron in Groundwater from Bedrock Aquifers in Nova Scotia

G. W. Kennedy and D. Finlayson-Bourque

Scale 1:500 000

25 0 25 50 km

Halifax, Nova Scotia
2011

NOVA SCOTIA

Gulf of St. Lawrence

Prince Edward Island

New Brunswick

Northumberland Strait

Bay of Fundy

Atlantic Ocean

St. Marys Bay

Minas Basin

Lobster Bay

Mahone Bay

Lake Rossignol

St. Georges Bay

Bras d'Or Lake

Aspy Bay

St. Anns Bay

Chedabucto Bay

Tor Bay

Halifax Harbour

St. Margarets Bay

Sable Island

Amherst
Truro
New Glasgow
Antigonish
Sydney
Port Hawkesbury
Kentville
Windsor
Bridgewater
Yarmouth
Dartmouth
Halifax

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 Keppie (2000) for 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, Danielle Finlayson-Bourque, Brian Fisher and Angie Ehler of the Nova Scotia Department of Natural Resources, Mineral Resources Branch, 2010. The GIS databases and map were developed using ArcGIS® 9.3.

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 Service Nova Scotia and Municipal Relations (SNSMR), Land Information Services Division (LIS), 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 Natural Resources 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

Health Canada 2010: Guidelines for Canadian Drinking Water Quality, Summary Table; available online at http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2010-sum_guide-res_recom/index-eng.php.

Hopper, D. B., Bonner, F. J., Fisher, B. E. and Murphy, A. N. (compilers) 2002: Mineral resource land-use (MRLU) maps; Nova Scotia Department of Natural Resources, Minerals and Energy Branch, Open File Map ME 2000-004 (series of 98 maps), scale 1:50 000; available online as DP ME 47, version 2, 2002, at http://www.gov.ns.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.

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Keppie, J. D. (compiler) 2000: Geological map of the Province of Nova Scotia; Nova Scotia Department of Natural Resources, Minerals and Energy Branch, Map ME 2000-001, scale 1:500 000; available online as DP ME 43, version 2, 2006, at http://www.gov.ns.ca/natr/meb/download/dp043.asp.

Nova Scotia Department of Natural Resources 2010: Nova Scotia groundwater chemistry database; available online as part of http://gis4.natr.gov.ns.ca/website/nsgroundwater.

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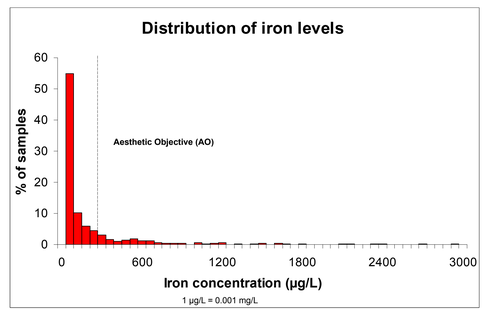
Legend

Water Chemistry - Iron (µg/L)
- < 150 µg/L
- 150 - 300 µg/L
- 300 - 600 µg/L
- > 600 µg/L

Groundwater Regions
- Sedimentary
- Carbonate/Evaporite
- Volcanic
- Plutonic
- Metamorphic
- Primary watershed boundary
- Groundwater region boundary

- Roads (primary, secondary)
- Rivers/streams
- Coastline
- County boundary
- Lakes



Parameter	Value	Unit
Number of Samples:	1068	-
Maximum Concentration:	182 000	µg/L
Median Concentration:	50	µg/L
Mean Concentration:	896.5	µg/L
Typical Detection Limit:	50	µg/L
Proportion Below Typical Detection Limit:	42.4	%
Aesthetic Objective (AO):	300	µg/L
Proportion Exceeding AO:	21.0	%

Results below detection limit were assigned a level of 1/2 of the detection limit