Open File 2010-45
Saskatchewan Ministry of the Economy
Saskatchewan Geological Survey

Open File OF2011-3
Manitoba Innovation, Energy and Mines
Manitoba Geological Survey

Targeted Geoscience Initiative (TGI) II

WILLISTON BASIN ARCHITECTURE AND HYDROCARBON POTENTIAL

Total Dissolved Solids (TDS) – Newcastle Aquifer

Sheet 52 of 55

by
D. Palombi and B.J. Rostron

This contour map was produced using water analyses from 42 wells retrieved from public and private data sources. A rigorous quality control procedure was implemented in order to best represent the natural salinity distribution. Control points were gridded using a kriging interpolation algorithm in Golden Software Inc.'s Surfer Version 8.0. The resultant grid was contoured and projected using Generic Mapping Tools (GMT) with manual modifications when necessary. A variable contour interval was chosen to illustrate significant changes in water chemistry across the isoconcentration lines. Areas in which anomalies may be present may not be accurately portrayed and are likely the result of data control, interpolation, and mapping algorithms.

Although the Saskatchewan Ministry of the Economy has exercised all reasonable care in the compilation, interpretation, and production of this map, it is not possible to ensure total accuracy, and all persons who rely on the information contained herein do so at their own risk. The Saskatchewan Ministry of the Economy and the Government of Saskatchewan do not accept liability for any errors, omissions or inaccuracies that may be included in, or derived from, this product.

This map may be referenced as:
Palombi, D. and Rostron, B.J. (2013): Total Dissolved Solids (TDS) – Newcastle Aquifer, Williston Basin Architecture and Hydrocarbon Potential, Targeted Geoscience Initiative II; Saskatchewan Ministry of the Economy, Saskatchewan Geological Survey, Open File 2010-45/Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, Open File OF2011-3, sheet 52 of 55, 1:3 000 000-scale map.

This entire series may be referenced as:
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This Open File is available for free download at www.WillistonTGI.com.

Legend

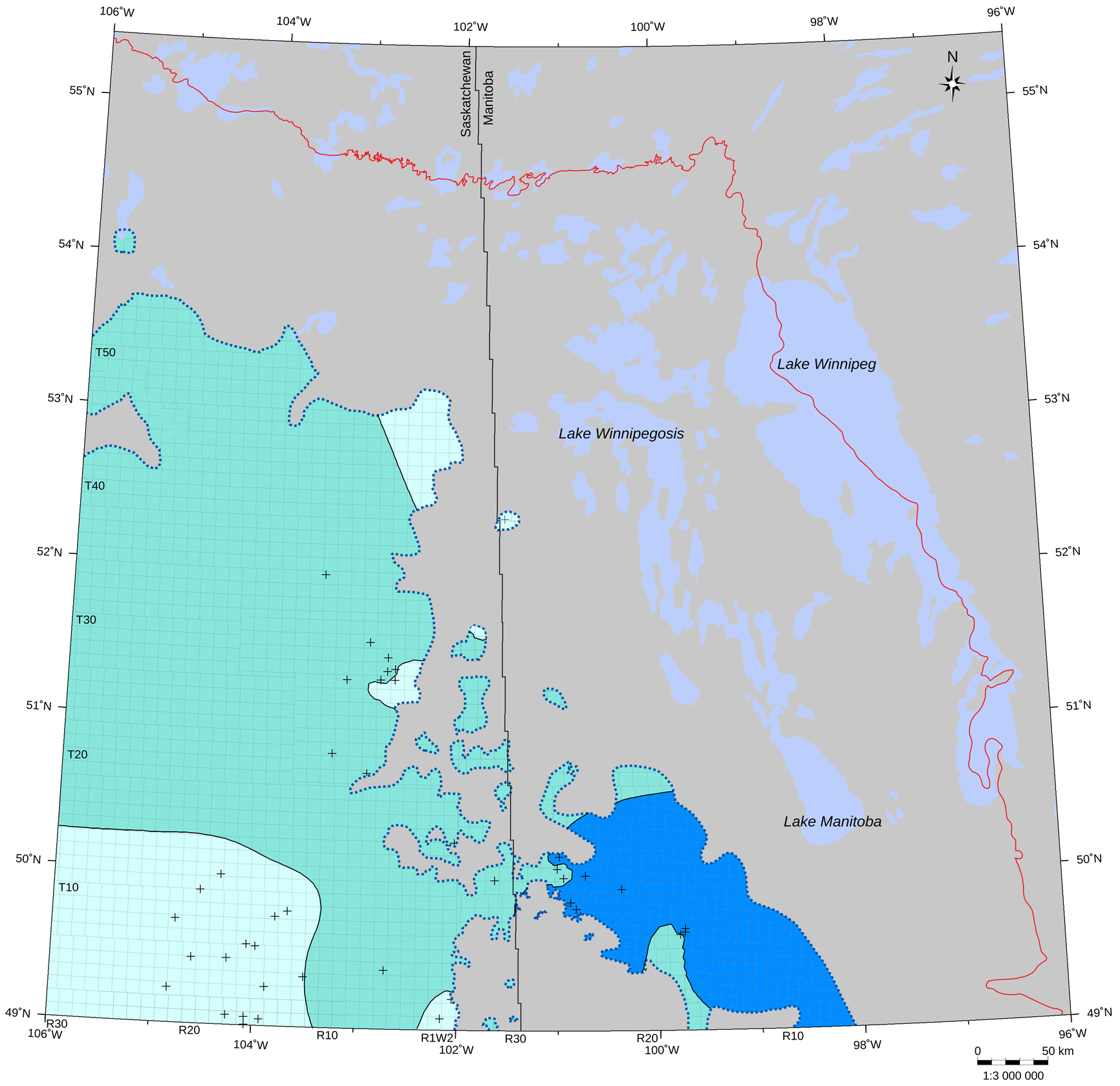
TDS (g/L)

0 10 25 50 100 200 300 400

- Isoconcentration line
- Edge of Phanerozoic cover
- Newcastle-Viking zero edge
- Aquifer eroded
- Control point
- Lake

Transverse Mercator Projection
Central Meridian 101° W

Hydrostratigraphy

RAVENSCRAG
Bearpaw
JUDITH RIVER
Colorado-Lea Park
NEWCASTLE
Joli Fou
MANNVILLE
Masefield-Waskada
JURASSIC
Watrous
POPLAR
RATCLIFFE
MIDALE
FROBISHER
ALIDA
TILSTON
SOURIS VALLEY
BAKKEN
Three Forks
BIRDBEAR
Seward
DUPEROW
Souris River
MANITOBA
Prairie Evaporite
WINNIPEGOSIS
Ashern
ORDO-SILURIAN
Stony Mountain
RED RIVER
Winnipeg
CAMBRO-ORDOVICIAN
Precambrian

aquifer aquitard aquiclude