

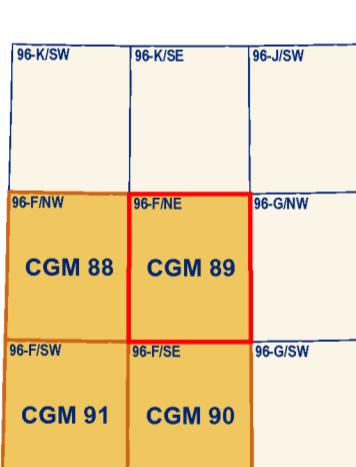
Figure 1. Northeast Mahony Lake map area (NTS 96-F/NE) showing seismic lines on record with the National Energy Board (NEB) that were used to augment the bedrock geology interpretation. Line names are derived from NEB records.

#### Abstract

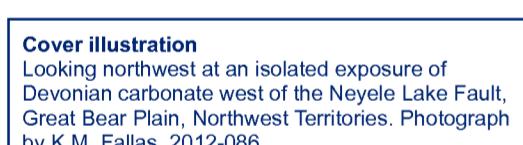
This map area, encompassing the northeast quadrant of the Mahony Lake map area (NTS 96-F), lies at the west edge of the Great Bear Plain, between the Franklin Mountains and the Great Bear Lake, Northwest Territories. The area is dominated by a low, undulating, forested plain with rare bedrock exposure. Most of the area is underlain by flat-lying Cretaceous sedimentary strata, interbedded locally by mud, silt, or fine features. Near the western edge of the map area, the Neyelle Lake Fault juxtaposes Paleozoic carbonate strata against Cretaceous siliciclastic strata, with little or no topographic relief. Evidence of this fault is found on public domain seismic reflection data collected by the National Energy Board. The Neyelle Lake Fault demarcates the easternmost structural feature at this latitude involving Paleozoic strata that developed as a result of Cordilleran deformation. Historical exploration by petroleum companies in the area targeted potential reservoirs in buried Cambrian strata.

#### Résumé

La région couverte par la présente carte, qui s'étend au quadrant nord-est de la région cartographique de Mahony Lake (NTS 96-F), se situe à la limite occidentale de la plaine du Grand Ours (Territoires du Nord-Ouest). La région est principalement occupée par une basse plaine ondulante boisée où ne percent que de rares affleurements de socle rocheux. Le socle de la région est principalement constitué de strates sédimentaires du Crétacé disposées à plat et déformées par endroits par des plis et des failles mineures. Près de la limite occidentale de la région sont juxtaposées des strates carbonatées du Paléozoïque à des strates siliciclastiques du Crétacé, avec peu ou pas de relief topographique. Des preuves de l'existence de cette faille sont prélevées dans des données sismiques reflétées de domaines publics archivées par l'Office national de l'énergie. La faille de Neyelle Lake démarre, à cette latitude, l'extrême limite orientale de l'entité structurale résultant de la compression cordillerienne qui met en contact les strates du Paléozoïque Lorraine qui marquent les réservoirs potentiels dans la région ont cible de possibles réservoirs dans les strates enfouies du Cambrien.



National Topographic System reference and index to adjoining published Geological Survey of Canada maps



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Natural Resources Canada Ressources naturelles du Canada

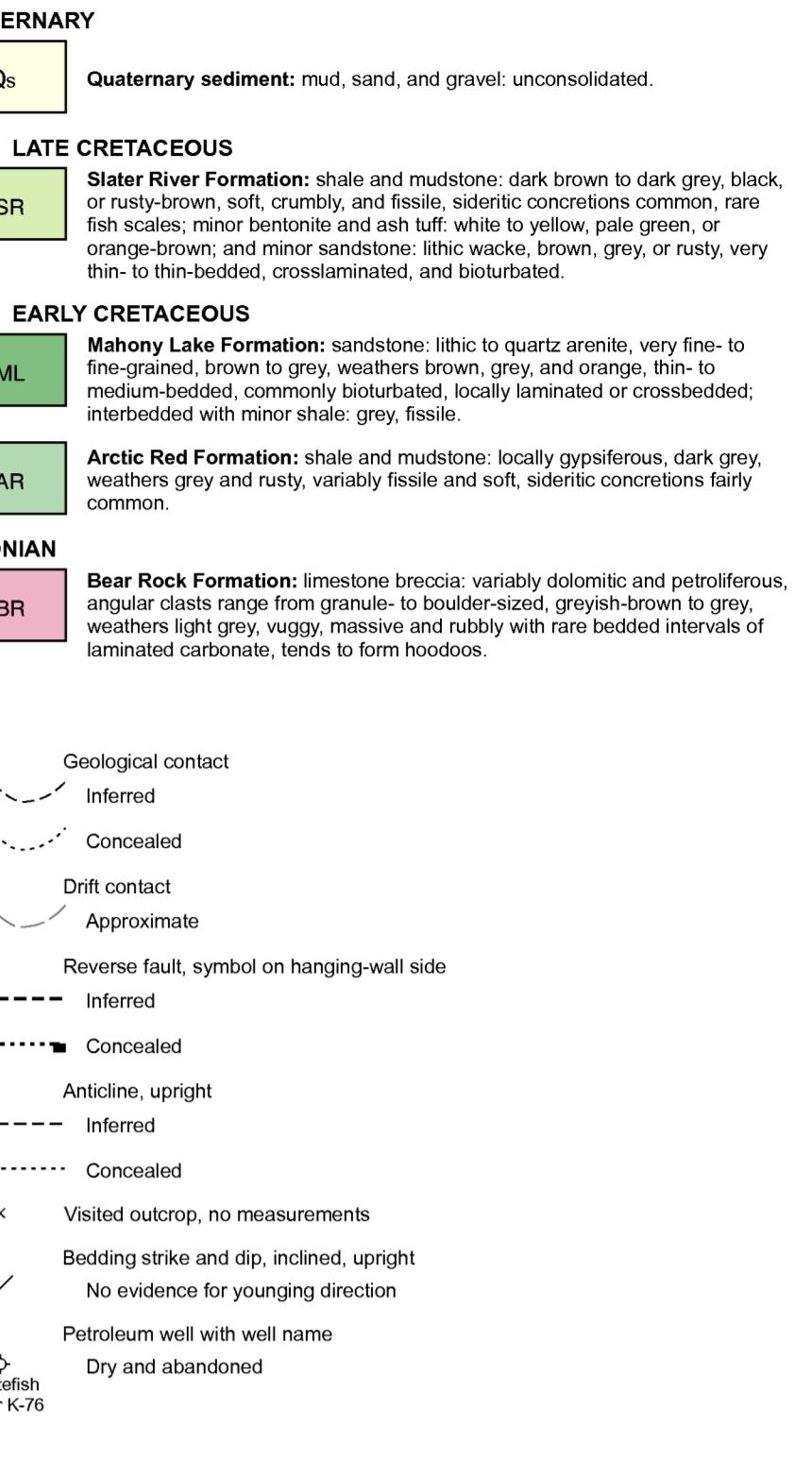
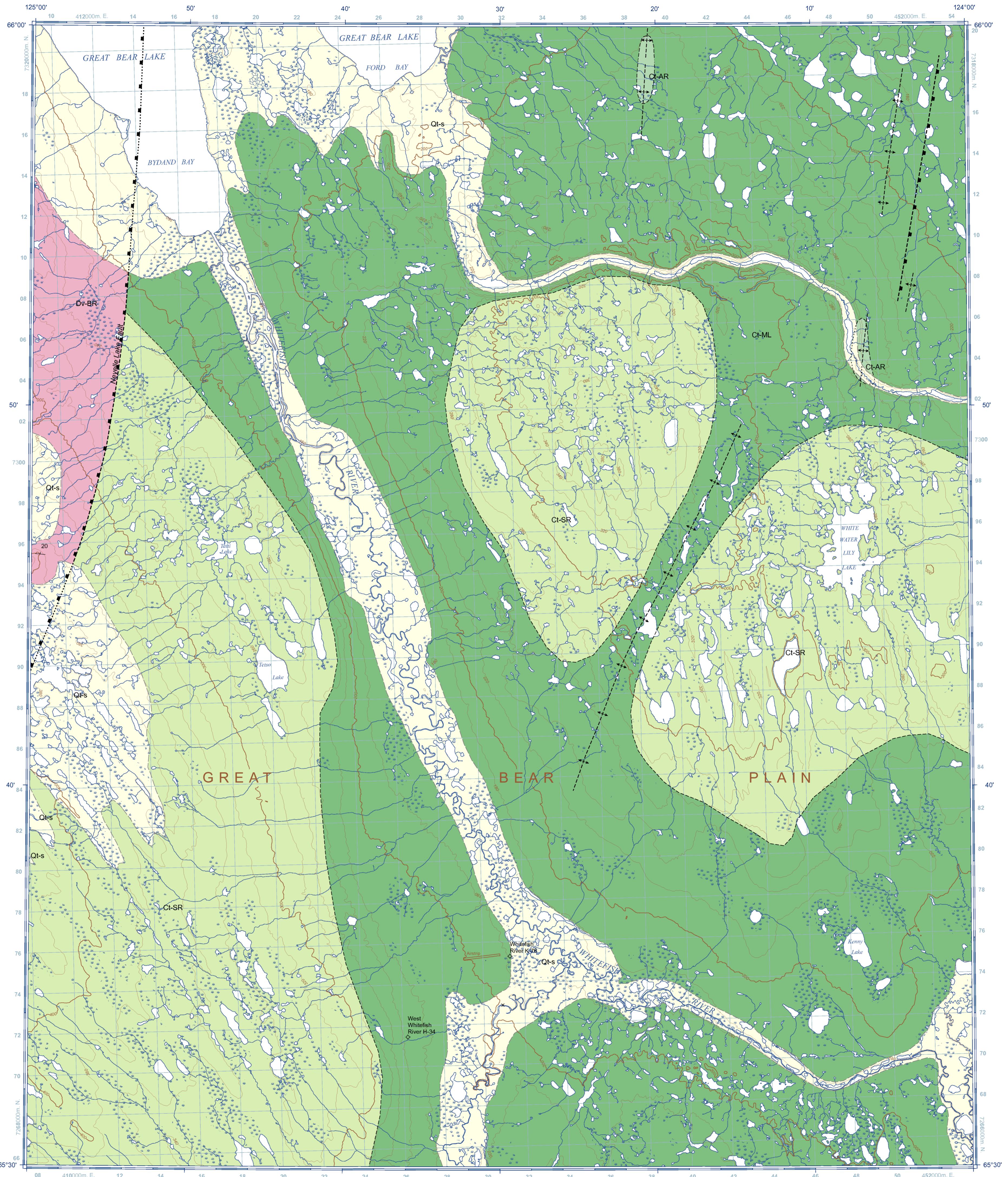
#### CANADIAN GEOSCIENCE MAP 89

##### GEOLGY

#### MAHONY LAKE (NORTHEAST)

Northwest Territories

1:100 000



#### NOTES

The authors have updated and revised map unit terminology from the Operation Norman map (Aitken and Cook, 1976). In general, Silurian and Devonian usage follows that of Morrow (1991) and Cretaceous to Paleocene formation names are those of Dixon (1999).

For detailed information on surficial deposits, here shown as 'Quaternary sediment', see Chatwin et al. (1975).

The newly named Neyelle Lake Fault is shown as a reverse fault on this map based on the interpretation from seismic-reflection data that this fault originated as a steep normal fault that was later inverted during Cordilleran compression, as shown schematically in Figure 2.

#### ACKNOWLEDGMENTS

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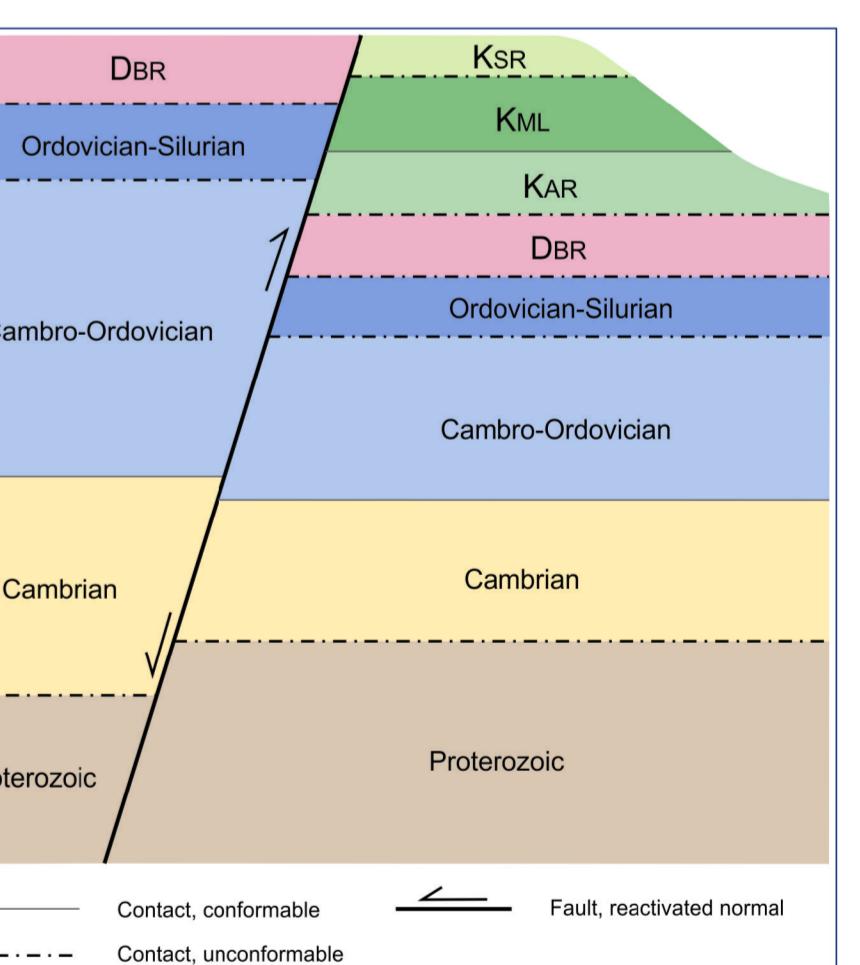


Figure 2. Schematic stratigraphic relationship diagram for northeast Mahony Lake map area (NTS 96-F/NE). Subsurface units are constrained by well and seismic data. The location and orientation of the Neyelle Lake Fault is interpreted to be determined by reactivation of an older extensional fault system that controls thickness and distribution of map units.

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Canadian Geoscience Maps

Canada

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#### CANADIAN GEOSCIENCE MAP 89

#### GEOLGY

#### MAHONY LAKE (NORTHEAST)

Northwest Territories

1:100 000

2 0 2 4 6 8 km

Initiative of the Geological Survey of Canada, conducted under the auspices of the Mackenzie Delta and Corridor Project as part of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) Program.

Logistical support provided by the Polar Continental Shelf Program as part of its mandate to promote scientific research in the Canadian North; PCSP 02509 and 03411

Map projection Universal Transverse Mercator, zone 10, North America Datum 1983

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications.

Elevations in metres above mean sea level

Some geographic names on this map are not official.

Mean magnetic declination 2013: 23°15'E, decreasing 33' annually. Readings vary from 23°27'E in the NW corner to 23°03'E in the SE corner of the map.

The Geological Survey of Canada welcomes corrections or additional information from users.

The data may include additional features not portrayed on this map.

See documentation accompanying the data. Additional references are included in the map information document.

This publication is available for free download through GEOSCAN (<http://geoscan.ess.nrcan.gc.ca>).

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