Quaternary Geology of the Pembina Valley area (NTS 62G1, 62G2)

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Introduction
The Manitoba Geological Survey (MGS) conducted 4 weeks of Quaternary field work in the Pilot Mound and Morden (NTS areas 62G1, 62G2) during the 2016 field season. The objectives of the project are to:
- Document the geomorphology, stratigraphy and distribution of surficial materials;
- Produce aggregate potential and depth to bedrock delineation maps; and
- Sample glacial sediments (till) to investigate compositional patterns; and
- Interpret the glacial history of the area.

Surficial Geology

The majority of sand and gravel deposits in the map area have a high shale content (e.g., eskers, spillway terraces). The majority of sand and gravel deposits in the map area have a high shale content (e.g., eskers, spillway terraces).

Till Stratigraphy

The simplified surficial geology map of southern Manitoba (1:50,000 scale) shows the distribution of till, sand, gravel, and bedrock. The map is based on field observations and aerial photographs.

Glaciolacustrine Deposits

The glaciolacustrine deposits are characterized by fine-grained sediments, including glaciomarine muds, glaciolacustrine silt, and glaciolacustrine sand. The deposits are typically found in valleys and adjacent areas.

Formation processes

The formation processes include:
- Glacial deposition
- Sediment transport
- Glacial erosion
- Glacial scouring
- Sediment reworking

Marine and glaciomarine deposits

Marine and glaciomarine deposits are found in the southern part of the map area, typically along the coast and in the valleys of large rivers. The deposits are characterized by fine-grained sediments, including glaciomarine muds and glaciomarine sands.

Colluvium

Colluvium is a type of debris flow deposit that is found in mountainous areas. The deposits are characterized by fine-grained sediments, including glaciomarine muds and glaciomarine sands.

Legend

- Till
- Sand
- Gravel
- Bedrock
- Marine and glaciomarine deposits
- Colluvium

Future Work / Releases

- Production of 1:10,000 scale surficial geology maps of the Morden (62G2) and Pilot Mound (62G2) NTS areas
- Production of an aggregate derivative map
- Open the release with analytical results and an interpretation of the Quaternary history of the region

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References


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