LEGEND

Note: In areas where the surficial cover forms a complex pattern, the area is colour-coded according to the dominant unit and labeled in descending order of cover (e.g. O-Tv). Where buried aggregate deposits (sand and gravel - commonly associated with Gt or Gd surficial units) are known, or suspected, areas are colour-coded to the overlying unit and labeled in the following manner: Lvg/Gd.

QUATERNARY SURFICIAL DEPOSITS POST LAST GLACIATION

ANTHROPOGENIC DEPOSITS: culturally-made or modified geological materials such that their original physical properties (e.g. structure, colour, composition) have been drastically altered; >1 m thick.

ORGANIC DEPOSITS: peat and muck; 1 to 3 m thick on average; formed by the accumulation of plant material in various stages of decomposition; generally occurs as flat, wet terrain (swamps and bogs) over poorly drained substrates.

Bog peat: sphagnum or forest peat formed in an anoxic environment; wet terrain; may be treed or treeless.

Fen peat: peat derived from wetlands and partially decayed shrubs in a eutrophic environment; forms relatively open peatlands with a mineral-rich water table that persists seasonally near the surface; generally covered with low shrubs and an occasional sparse layer of trees.

Undifferentiated bog and fen deposits: bog and fen deposits undifferentiated at this map scale.

ALLUVIAL DEPOSITS: sorted gravel, sand, minor silt, and organic detritus deposited by streams; commonly stratified.

Floodplain deposits: sorted gravel, sand, silt, and organic detritus >1 m thick; forming active floodplains close to river level with meander channels and scours marks.

Alluvial fan deposits: poorly sorted gravel, sand, and organic detritus >1 m thick.

POSTGLACIAL OR LATE WISCONSINIAN PROGLACIAL AND GLACIAL ENVIRONMENTS

GLACIALACUSTRIINE DEPOSITS: fine sand, silt, and clay, with minor debris-flow diamict, deposited in glacier-dammed lakes in valleys and along the margin of the retreating Laurentide Ice Sheet; usually overlain by organic deposits in lowlands.

Glaciolacustrine blanket: >1 m thick.

Glaciolacustrine veneer: thin and discontinuous; <1 m thick.

GLACIOFLUVAIAL DEPOSITS: well to poorly stratified sand and gravel; minor diamict; deposited behind as, or in front of the ice margin by glacial meltwater; represents a potential aggregate source.

Proglacial outwash: cross-stratified gravel and sand deposited in front of the ice margin; 1 to 10 m thick; underlies TV on this map.

Ice-contact stratified drift: poorly sorted sand and gravel with minor diamict; deposited in contact with the retreating glacier; 1 to >20 m thick, forming hummocky topography relating to melting of underlying ice.

TILL: diamict deposited directly by the Laurentide Ice Sheet; sandy to clayey matrix with stratified clasts of various lithologies, including many Canadian Shield, carbonate, and sandstone erratics; clast content is typically low (<10%).

Till blanket: >1 m thick, continuous till cover forming undulating topography that locally obscures underlying units.

Hummocky till: >1 m thick; hummocky till surface.

Ridged till deposits: >1 m thick, moraines or crevasse fillings forming a ridged topography.

Till veneer: <1 m thick, discontinuous till cover, underlaying bedrock topography is discernible.

PRE-QUATERNARY BEDROCK

Sedimentary bedrock: Ordovician Fort St. John Group shales (including the Shaftesbury Formation) and Dunvegan Formation sandstone exposed in highlands and along meltwater channel and canyon walls.

Geological boundary (defined) ..............................................................
Meltwater channel small (direction unknown) ................................
Major moraine ...........................................................................
Paleothalwegs .................................................................
Iceberg scours .........................................................................
Floating or drumlin ridges parallel to ice flow (direction unknown) ...........................................................................
Till clast fabric ..........................................................................
Gravel pit ..............................................................................
Field observation site (with, without sample) .................................
DESCRIPTIVE NOTES

The Moody Creek (24 MDS) surficial geology map was produced as part of a collaborative research project by the Geological Survey of Canada (Natural Resources Canada) and the Alberta Geological Survey (Alberta Energy and Utilities Board). This collaboration project also extends into the northeast Alberta Columbia (SH 44) and Yukon (SH 40) regions.

The map area lies within the northwestern section of the Alberta Proterozoic Province. It is characterized by a complex system of Palaeozoic and Mesozoic faults, with the formation of the Moatana Group (Early Jurassic) and the interbedded Cretaceous Sandstone Group (Eocene). The map area is underlain by Precambrian and Proterozoic rocks, with the formation of the Windermere Group (Late Precambrian) and the interbedded Cambrian (?). The map area is also underlain by Proterozoic rocks, with the formation of the Moatana Group (Early Jurassic) and the interbedded Cretaceous Sandstone Group (Eocene).

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