

This is a common map legend for the surficial geology of northern Alberta. Coloured legend blocks indicate map units that appear on this map. Not all map symbols shown in the legend necessarily appear on this map.

UNIT	UNIT NAME	DESCRIPTION AND GENESIS
QUATERNARY HOLOCENE		
А	ANTHROPOGENIC MATERIALS: Culturally made or modified geological materials such that their physical properties (e.g., structure, cohesion, compaction) have been drastically altered.	
0		Undifferentiated peat (woody to fibrous muck) occurring in undifferentiated derlain by fine-grained, poorly drained glaciolacustrine deposits; includes marshes,
ОВ		peatland with a fluctuating water table and commonly a raised surface; peatland sphagnum mosses, heath shrubs and short, stunted trees.
OF		peatland with water table at surface and slow internal drainage; peatland surface is with grasses and reeds near local pools, and is sparsely treed.
С	movement; commonly o	S: Materials that have reached their present position as a result of direct, gravity-induced occurs as slope and slump deposits confined to valley slopes and floors; includes l, glaciolacustrine, glaciofluvial and eolian sediments, generally poorly sorted.
F	Includes well-sorted stra	Sediments transported and deposited by streams and rivers; synonymous with alluvial. atified sand, gravel, silt, clay and organic sediments occurring in channel and overbank itself loodplains, terraces, fans and deltas).
L		TS: Sediments deposited in and adjacent to recent and modern lakes; offshore sand, inic deposits; littoral (nearshore) beaches and bars; sand, silt and minor gravel.
Е		find-deposited sediments; well-sorted, medium to fine-grained sand and minor silt ive to locally cross bedded or ripple laminated; includes both active and vegetated

GLACIOLACUSTRINE DEPOSITS: Primarily fine-grained, distal sediments deposited in or along the margins of glacial lakes, including sediments released by the melting of floating ice. Includes laminated (rhythmically bedded) to massive fine sand, silt and clay, and may contain ice-rafted stones. Littoral and nearshore sediments: Massive to stratified, well-sorted silty sand, pebbly sand and minor gravel; occurs as beaches, bars, spits and deltaic foresets deposited during regression and lowering of glacial

GLACIOFLUVIAL DEPOSITS: Sediments deposited by glacial meltwater streams as subaerial or subaqueous

outwash. Includes sand and gravel, often stratified, minor silt, and may show evidence of ice melting (slumped

structures). Features include meltwater channels, kettle holes, terraces and minor ice-contact sediments.

Ice-contact sediments: Sediments deposited by glacial meltwater streams in direct contact with glacial ice, either in front of (kame terraces) or within (eskers, crevasse ridges) glacial ice. Includes massive to stratified, poor to moderately sorted, coarse sediments (predominantly pebble gravel and coarse sand, locally till) and may show evidence of ice melting (slumped structures). MORAINE: Nonsorted diamicton (till) deposited directly by glacial ice consisting of a mixture of clay, silt, sand and minor pebbles, cobbles and boulders. Locally, this unit may contain blocks of bedrock, pre-existing stratified sediment and till, and lenses of glaciolacustrine and/or glaciofluvial sediment.

sediment in response to melting (ablation) of buried stagnant ice at the ice margin; sediment is mainly diamicton, but locally includes stratified sediments of glaciolacustrine or glaciofluvial origin. Characterized by low to high-Ice-thrust moraine: Terrain resulting from glacio-tectonic transport of originally subglacial material deposited by the glacier more or less intact; deposits may include syngenetic till, as well as masses of pre-existing till,

Stagnant ice moraine: Material resulting from the collapse and lateral movement of englacial and supraglacial

stratified drift and/or bedrock. Characterized by high to moderate relief and features include hill-hole pairs and Fluted moraine: Glacially streamlined terrain; varies from alternating furrows and ridges to nearly equidimensional smoothed hills; all landforms parallel the local ice flow direction; includes flutes, drumlins and drumlinoids.

2000 44,403/600

430000m.E

PREGLACIAL FLUVIAL DEPOSITS: Sediments transported and deposited by streams and rivers prior to glaciation. Includes sand and gravel deposits occurring in paleovalleys (i.e., preglacial floodplains, terraces, fans and deltas); ranging from late Tertiary to middle Wisconsin.

PRE-QUATERNARY

UNCONSOLIDATED FLUVIAL GRAVELS: Predominately well-sorted, quartzite and chert gravel and cobbles; Cordilleran source, Paleogene (Tertiary) to early Quaternary.

BEDROCK: Undifferentiated; may include clastic sedimentary rock, shale, coal, carbonate and crystalline (Shield), kimberlite and/or coal.

SYMBOL LEGEND

BASEMAP LEGEND

Gravel road - all season

Paved highway

Unimproved road

UTM, Zone 11 Grid

Contour, intervals 10 metres

Truck-trail

Permafrost; relict and/or active	
Thermokarst depression	Tk
Landslide and active layer failure scar (small)	Q
Landslide and active layer failure scar (large)	/~\~\~\~\
Eolian forms; dune ridges	\sim
Beach or strandline	
Wave-cut bench	
Escarpment	
Meltwater channel (minor)	
Meltwater channel (minor, flow indicated)	\leftarrow
Meltwater channel (major)	*
Meltwater channel (major, flow indicated)	← ▼▼
Crevasse filling	•••••
Ice-contact slope	
Kettle	⊛
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UNIT NOTATION

Example: sandy GLACIOLACUSTRINE plain

Textural characteristics may be applied to the terrain classification as a prefix based on field observations or by inference from distinctive genesis and/or morphology. When two modifiers are given, the second letter is the dominant texture, with the first letter indicating the secondary texture; i.e., sc for sandy clay.

p = pebble g = gravel s = sand

\$ = silt c = clay a = sand-silt-clay

GENETIC & GEOMORPHIC MODIFIERS

c crevasse fill ice-contact ridges, ice-squeeze deposits and linear forms deposited by meltwater in stagnant ice d doughnut rings circular hummocks with a central depression, plateau mounds and brain-like pattern ridges,

and ridges low to moderate relief planar surface eroded by glacial meltwater, often capped by a boulder lag deposit and/or thin deposit of sand and gravel

gently sloping fan-shaped mass of detrital debris

slopes dissected by modern ravines created by intermittent runoff assemblage of approximately equidimensional hills and hollows; moderate to high relief (commonly

depression, including kettles, pitted morphology, thermokarst depressions, karst sinkholes

sinuous curves, loops and oxbows produced as meltwater and modern streams shift their channels deposit greater than 2 m thick; commonly masks geomorphic pattern of underlying deposits; flat to

gently rolling topography (commonly less than 2 m relief) one or more parallel or subparallel, convex, linear morphological elements with a length-to-width ratio greater than 2; low to high relief

landslide blocks, slope failure debris

terrace bench cut by either meltwater or wave action; antiplanation terrace, kame terrace low-relief rolling terrain; swell and swale topography

thin mantle of unconsolidated material too thin to mask the minor irregularities of the surface of the underlying material; it ranges in thickness from 10 cm to 1 metre and may be discontinuous

low-relief transverse moraine ridges, usually formed from basal ice shearing channelled or dissected by glacial meltwater flow; dissected terrain by Holocene fluvial activity

lake delta; ice-contact delta

Where two or more classes of terrain are interspersed in a mosaic or repeating pattern on a scale too small to warrant meaningful differentiation, the proportion of each component in the combination is given in a two or three position designation set off by slashes denoting arbitrary percentage limits. For example,

'Mp/LGv' means the area is underlain by approximately 60% morainal plain and up to 40%

'Mv/LGv/FGp' means at least 60% of the area is underlain by morainal veneer, with up to 40% glaciolacustrine veneer and less than 15% glaciofluvial plain.

'LGp//M' means more than 60% of the area is underlain by a glaciolacustrine plain, with less than 15% moraine. Stratigraphic Sequence

Where materials of different origins or textures are known to be superimposed or can be confidently

inferred, the sequence is indicated in conventional order using vertical separators, such as:

'sLGv | Mp' Thin sandy glaciolacustrine sediment deposited on morainal plain

Transitional Association

Locally, two or more terrain units are juxtaposed by reason of related origin, temporal sequence or ambiguous geomorphic distinction. In the last case, both components may be present. Such situations are identified by a compound designation marked by a hyphen. Examples: 'FGz-LGz' indicating ice-contact delta indistinguishable from glaciolacustrine delta, or 'FGlk-MSh' indicating ice-contact kame and kettle topography that blends with hummocky stagnant ice moraine.

Morphologic Overprint

Where a sequence of geomorphic processes has produced a multi-aspect or compound terrain fabric, the geomorphic modifier suffixes are appended in the inferred order of superposition. 'Mpry' means a plain of till has been moulded into ridge forms and finally dissected by modern streams. 'FGphr' means a glaciofluvial plain has been discontinuously covered by ice-contact hummocks and ridges.

Acknowledgements

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Recommended reference format

Paulen, R.C. and Plouffe, A. (2008): Surficial geology of the Slavey Creek area (NTS 84N/SW); Energy Resources Conservation Board, ERCB/AGS Map 419 and Geological Survey of Canada, Open File 5832, scale 1:100 000.