



TERRAIN INVENTORY, KANANASKIS LAKES, ALBERTA

Deposit Name	Material	Thickness (m)	Topography	Slope (degrees)	Comments 1, 2
AF	artificial fill	0-5	parallel to underlying topography; fills in low areas; forms artificial hills	<5	highly variable - ranges from engineered fill to buried inorganic and organic refuse
I	glacial ice	may be partly covered by bouldery rubble	cirque glaciers or complexes of cirque glaciers		may be subject to sudden calving, collapse, or blockfalls
LS	landslide	broken masses of bedrock	<1, >10 undulating or hummocky	0-25	may be creeping or subject to reactivation or inundation by new landslides
O	bog and fen	peat and organic-rich mud	>1 flat	0	USCS - OL-OH; high water content and low strength restrict most land uses
Cb	colluvial blanket	diamictic; poorly sorted stony sands and silty clays	>1 parallels underlying surface	0-5	USCS - ML-CL; low erosion and slope stability; supports commercial and noncommercial forest, pasture
Cv	colluvial veneer	as above	<1 as above	0-5	as above
Cb2	colluvial blanket on s2 bedrock slopes	diamictic to very stony, poorly sorted stony sands and silts, local lenses of poorly sorted gravels	>1 as above	5-25	as above; erosion hazard increases with slope
Cv2	colluvial veneer on s2 bedrock slopes	as above	<1 as above	5-25	as above
Cb1	colluvial blanket on s1 bedrock slope	grain-supported to matrix-supported diamictic; local lenses of poorly sorted gravels and organic detritus	>1 may grade downslope into colluvial fans and aprons	15-35	USCS - GC, GM; may be subject to modification by snow and rock avalanches; steep terrain and elevation limit land use
Cv1	colluvial veneer on s1 bedrock slope	as above	<1 as above	15-35	as above
cbCa	talus	bouldery rock rubble	0-10 aprons or cones along the base of a s1 bedrock slope	25-38	subject to rockfalls from adjacent cliffs; constant material near the angle of repose
Cf	colluvial fan	diamictic, bouldery rock rubble, poorly sorted gravel	5-25 cone or fan	4-25	USCS - GW, GM; subject to invasion by flood and debris flows and snow or rock avalanches; land use commercial or noncommercial
cbC	rock glacier	bouldery rock rubble and interstitial ice or ice core	>1 lobate with longitudinal and transverse ridges on surface	>5	may be in slow downhill motion and subject to ice core collapse due to meltout of ice core
cbCb	feisenmeer	bouldery rock rubble	<2 parallels bedrock surface; patterned ground may be present	0-25	ice-beaved broken blocks or slabs of bedrock; active permafrost known to be locally associated
Ap	floodplain	sand and gravel and minor silt; clay and organic deposits	>1 plain	<1	subject to periodic flooding and lateral migration by streams
At	alluvial terrace deposit	as above	>1 terrace and scarp	<1, >10	highly permeable; usually good sources for sand and gravel
Af	alluvial fan	gravel, sand, diamictic	0->20 fan or cone	1-12	may be incised and inactive except for channels; active fans subject to flooding, lateral migration by streams, debris flow
Av	alluvial veneer	sand and gravel	0-1 parallels underlying surface	0	erosion hazard minimal
Gr	kames and eskers	sand and gravel	1->10 ridges or isolated hills	0-15	USCS - G, S; highly permeable; source areas for sand and gravel
Gh	hummocky glaciofluvial deposits	as above	1->10 complexes of rounded hills	0-15	as above
Gp	outwash plain	as above	1->10 flat or terrace and scarp	<1	as above
Lm	rolling glaciolacustrine plain	fine sand, silt, and clay	>1 flat to undulating	1-5	USCS - MH to CH soils in Prairies and easternmost Foothills; ML to CL soils in the Foothills and Front Ranges; LL 32-46%; PI 12-43%; USCS 15-43 psf; PR 10-34 blow/ft; WD 120-124 pcf; SPT 9-11 blow/ft; OPM 22%; low permeability
Lp	glaciolacustrine plain	as above	>1 flat	<1	as above
Lb	glaciolacustrine blanket	as above	>1 parallels underlying surface	1-5	as above
Lv	glaciolacustrine veneer	as above	<1 as above	1-10	as above
Lh	hummocky glaciolacustrine deposits	gravel, sand, silt	>5 complexes of rounded hills	0-15	USCS - G, S; permeability variable
Mm	rolling moraine plain	till	>1 flat to undulating	0-5	USCS - ML and CL soils; LL 30-42%; PI 15-23%; USCS 31-43 psf; PR 11-13 blow/ft; WD 128-134 pcf; OPM 12-18%; permeability low
Mb	moraine blanket	till	>1 parallels underlying surface	0-5	as above
Mv	moraine veneer	till	<1 as above	0-5	as above
Mb2	moraine blanket on s2 bedrock slope	till	>1 as above	5-25	stony and highly variable
Mv2	moraine veneer on s2 bedrock slope	till	<1 as above	5-25	as above
Mb1	moraine blanket on s1 bedrock slope	till	>1 as above	15-35	as above; subject to inundation by avalanches and rock falls
Mv1	moraine veneer on s1 bedrock slope	till	<1 as above	15-35	as above
Mh	hummocky moraine	till, minor sand, and gravel	>2 complexes of rounded hills	0-15	complex stratigraphy
Mr	ridged moraine	bouldery till	0-8 ridged lateral or end moraine	0-25	very stony and low in plasticity; high elevation and rugged topography restrict land use; may contain buried ice near glaciers
rMh	coarse bouldery glacial rubble	large blocks of bedrock with minimal matrix	1-5 piles or scattered individual blocks	—	probably originated as glacially transported and deposited rock avalanche material
R	bedrock	sandstone, shale, limestone, dolomite, quartzite, minor coal and conglomerate			

Texture	Genetic Class
b - bouldery	AF - artificial fill
g - gravel	I - glacial ice
s - sand	O - organic
f - silt	M - moraine
c - clay	A - alluvial

Morphologic Subdivision	Process Modifier
a - apron	W - washed
p - plain	E - eroded
r - ridged	A - avalanching
f - fan	C - channelled
h - hummocky	I - incised by
m - rolling	l - modified by ground ice

Explanation of Letter Notation
A combination of letters is used to designate each map unit or component of compound map units, e.g. Ap. The upper case letter indicates the broad genetic class. The lower case letter(s) that generally follows indicates morphology. The texture of most map units is implicit in the genetic type (see "material"); textural modifiers are utilized where closely spaced sampling and abundance of exposures permit a greater precision in description. Postdepositional modification or erosion of a unit is indicated by an upper case which follows the lower case morphological symbol and is separated from it by a square bracket, e.g. Cv [L]. Compound units are designated by more than one group of letters; these areas consist of more than one component that could not be separated at the scale of mapping. Where two or more elements are of equal abundance, they are written together e.g. MvCv. Where the components are separated by a hyphen, the first element is dominant and makes up 60% or more of the unit area; the second element makes up 20-40%; and the third makes up from 5-20% of the unit area, e.g. Mv-Cv or Mv-Ch-Cv. An equal sign is used where the first element constitutes 60% of the unit area and the second 5-20%, e.g. Mb4v. One term placed above another, e.g. Mb4v, indicates a stratigraphic succession within the unit. Three general slope categories are identified.

Slope
An s1 slope terminates at the crest with a bedrock face with a steepness of 20° or more; these slopes are subject to erosion and burial by rapid mass wasting processes, such as snow and rock avalanches and debris flows, and acceleration of fluvial erosion and creep. An s2 slope ranges from 5°-30° or more and is marked by a rounded crest covered by a residual mantle of weathered material and little or no exposed bedrock; erosion and depositional processes are restricted to fluvial erosion and creep. The s3 slope type has an inclination of less than 5° and is not depicted by a symbol.

1 USCS - Unified Soil Classification Systems; LL - liquid limit; PI - plasticity index; USCS - unconfined compressive strength; PR - penetration resistance; WD - wet density; SPT - Standard Penetration Test; OPM - optimum Proctor soil moisture

2 Test for easternmost Foothills and Prairies parts of the study area except where specifically indicated

Recommended citation:
Jackson, L.E., Jr.,
1986: Terrain Inventory, Kananaskis Lakes,
Alberta; Geological Survey of Canada,
Map 2-1984, scale 1:125 000

Geological boundary (defined, approximate, gradational, inferred).....
Drumlin or drumlinized bedrock ridge (direction of ice flow known, unknown).....
Meltwater channel.....
Direction of landslide movement.....

Geology by L.E. Jackson, Jr., 1974-1976
Geological cartography by the Geological Survey of Canada
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada
Base map at the scale of 1:250 000 published by the Geological Survey of Canada
Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9
Mean magnetic declination 1986, 1934' East decreasing 13.4' annually. Readings vary from 18°00' E in the SE corner to 20°15' E in the NW corner of the map area
Elevations in feet above mean sea level