

MAP 21-1987
SURFICIAL GEOLOGY

**WEST AISHIHIK RIVER
YUKON TERRITORY**

Scale 1:100 000 - Échelle 1/100 000

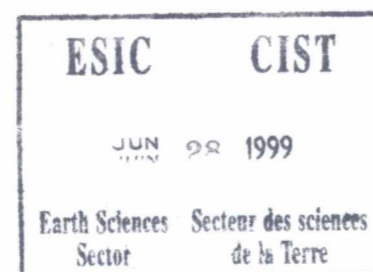


Base map assembled by the Geological Survey of Canada from maps published at 1:50 000 scale by the Surveys and Mapping Branch, in 1984

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1988, 28°58' East, decreasing 15.5' annually. Readings vary from 28°41' E in the SW corner to 29°15' E in the NE corner of the map

Elevations in feet above mean sea level



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MAP UNIT*	NAME	MATERIAL	TYPICAL THICKNESS (m)	LANDFORM	GENERAL COMMENTS
ORGANIC DEPOSITS	FO	Fen; locally includes marsh, swamp, and shallow water classes of Tanocak (1980)	0.4-1.5	Flat to gently sloping except for low hummocks and ridges	Occurrence of permafrost, in general more prevalent with increasing elevation; in some areas mapped as FO, organic accumulation is less than 0.1 m and hence does not meet the thickness criterion for organic deposits and hence should be considered as an organic soil horizon
	Ap, Aps	Alluvial plain, thermokarst alluvial plain	5-10	Flat to gently irregular, floodplains of larger streams commonly have distinct meander scrolls and oxbow lakes; thermokarst alluvial plains have irregular thermokarst ponds and depressions 2 to 3 m below the alluvial plain surface	Flooding common to infrequent; permafrost absent beneath active channels of permanent streams but common elsewhere; permafrost occurs throughout thermokarst alluvial plains except beneath ponds and wet depressions; with segregated ground ice to 50% by volume
ALLUVIAL DEPOSITS	Ap _t	Alluvial plain and alluvial terrace, undivided	5-10	Flat to gently irregular	Flooding common to infrequent on floodplain, rare on bordering terrace; permafrost common
	Al	Alluvial fan or fan apron	2-20	Gently to steeply sloping fans occur where high gradient tributary streams meet lower gradient trunk streams; fan aprons are formed by coalescence of small fans associated with intermittent streams and vills	Streams on fans are subject to sudden and damaging changes in course (avulsions); fans comprising mainly gravel and coarse sand may be free of permafrost, or if perennially frozen, are thaw-stable; fans comprising many silt are typically perennially frozen; the silt may be ice-rich and unstable when thawed
	Ax	Alluvial complex, combinations of Ap, Apt, and Al	2-20	Various	See Ap, Apt, Al, as applicable
GLACIOFLUVIAL DEPOSITS	Lp, Lpk	Glaciofluvial plain	2-20	Silt, clay; locally may be covered by 1 m or more of organic silt, peat	Permafrost present throughout except beneath thermokarst ponds; 15 to 50% segregated ice by volume; highly unstable when thawed
	Lb, Lbg	Glaciofluvial blanket, gullied glaciofluvial blanket	2-5	As for Lp	Permafrost to moderately sloping, commonly blanketing lower slopes of valleys and wedging out upslope
	Lv	Glaciofluvial veneer	0-2	As for Lp	This layer conforming to surface of subjacent unit (commonly Mb)
GLACIOFLUVIAL DEPOSITS	Gp, Gpc, Gpd	Glaciofluvial plain, channelled glaciofluvial plain (McConnell age, Reid age)	5-30	Gravel, sand, typically with 15 to 30 cm thick veneer of silt on deposits of McConnell age with up to 50 cm on deposits of Reid age	Flat to very gently sloping, commonly with shallow anastomosing channels G-c
	Gt, Gtr	Glaciofluvial terrace (McConnell age, Reid age)	2-20	Gravel, sand	As for Gp, but in terrace position adjacent to a major stream
	Gd, Gdr	Hummocky or ridged glaciofluvial deposits	5-30	Gravel, sand	Hummocky (including hummock or ridge) (including eskers and esker complex)
	Gl, Gld	Glaciofluvial delta, glaciofluvial fan	2-30	Gravel, sand	Glaciofluvial deltas have typical delta form with flat top and steep outer slope; glaciofluvial fans have characteristic fan form, with moderate slope
	Gx, Gxp	Glaciofluvial complex, combinations of Gp, Gt, Gd, G (McConnell age, Reid age)	2-30	Gravel, sand	Various; includes areas that would be classed as Gp or Gt except for presence of kettles
	Md	Drumlinoid or fluted till plain	2-50	Glacial till consisting of pebbles, cobbles, and boulders in a clayey silt to silty sand matrix, typically with a veneer of silt up to 15 to 50 cm thick, up to 2 m silt and/or organic deposits common between drumlins or in troughs of flutings	Till plain with individual drumlins and/or distinct glacial fluting
GLACIAL DEPOSITS	Mvd	Drumlinoid moraine veneer	0-2	Glacial till consisting of pebbles, cobbles, and boulders in a clayey silt to silty sand matrix, may have veneer of silt up to 50 cm thick	Till veneer over bedrock, with drumlinoid or crag-and-tail topography
	Mb, Mbc, Mb-g, Mb-gx, Mb-gp, Mb-gtr	Moraine blanket, channelled moraine blanket, gullied moraine blanket (McConnell age, Reid age)	2-10	As for Md except that veneer of silt may be lacking	Gently to moderately sloping, conforming broadly to topography of subjacent bedrock
	Mcb	Moraine-colluvial blanket	2-10	Till and colluvium	As for Mb
	Mv, Mvc	Moraine veneer, channelled moraine veneer	0-2	As for Md; bedrock common in channels in Mvc	Gently to highly irregular, conforming to irregularities of the subjacent bedrock surface; locally has subparallel ice marginal channels which typically are incised to or into bedrock (Mv-c)
	Mc, Cv	Moraine-colluvial veneer	0-2	Till and colluvium	As for Mb
	Mh, Mr, Mh-g, Mr-g	Hummocky moraine, ridged moraine (McConnell age, Reid age)	2-50	Glacial till consisting of pebbles, cobbles, and boulders in a silty sand matrix	Hummocks and ridges with slopes to 30° and relief to 20 m (exceptionally 40 m) superposed on flat to moderately sloping surfaces. Locally, ridges included in Mc are lines of large mullfloods formed during early retreat stage of McConnell Glaciation by slope failures where lateral moraines formed embankments on steep slopes
	Ml, Mlg	Moraine complex, combinations of Mh, Mr, Mh-g, Mr-g (McConnell age, Reid age)	2-50	As for Mh, up to 2 m silt and/or organic deposits common in depressions	No data on distribution of permafrost or prevalence of ground ice; probably similar to Mb, Md
	Mm	Rolling moraine (McConnell age, Reid age)	5-50	As for Md, up to 2 m silt and/or organic deposits common in depressions	Broad hummocks 10-30 m high and 100 to 300 m across; slopes to 12°
	Cb	Colluvial blanket	2-5	Any of the deposits described above, plus bedrock detritus, modified and/or intermixed as a result of downslope movement of material; texture ranges from coarse blocky bedrock detritus of mountain tops to clayey or silty diamict of some lower slopes; locally includes talus and/or mullflood deposits; on many slopes there is a desinitive transition from material that has been transported by gravity (C) to material that has been transported by water. Extensive slopes have therefore been designated as CwH or AF/C.	Gently to moderately sloping, conforming broadly to the topography of subjacent deposits and periglacial features, including small solifluction lobes, sorted polygons, and festooner are conspicuous and widespread above treeline (1280 to 1370 m, 4200 to 4500 ft.)
	C, Mb	Colluvial-moraine blanket	2-5	As for Cb	Permafrost sporadic; widespread on northerly to easterly slopes and on high plateaus and mountain surfaces; other properties variable, depending on constituent materials
Cv	Colluvial veneer	0-2	As for Cb	Gently to highly irregular, conforming to topography of subjacent material (usually bedrock)	
C, Mv	Colluvial-moraine veneer	0-2	As for Cv	As for Cb; engineering properties and limitations determined in large part by the character of subjacent material (usually bedrock)	
Cz	Rockslides	10-50	Blocky bedrock detritus	Hummocky	
R, R-c	Bedrock, channelled bedrock	Various	Rock; see text Figure 2 for distribution of major rock types	Various	

*The most commonly occurring units are shown above; for others, refer to Explanation of Map Unit Designations; coloured legend blocks indicate primary map units that appear on this map

SIMPLE MAP UNITS		EXPLANATION OF MAP UNIT DESIGNATIONS			
A simple map unit designation consists of a generic symbol (upper case letter) followed by one or more morphologic descriptors (lower case letters). The range of material texture to be expected within a map unit is indicated under "MATERIAL". Where the texture of the material is known more specifically, it is indicated by one or more texture prefixes (lower case letters).		TEXTURAL MODIFIERS	GENERIC CATEGORIES	MORPHOLOGICAL MODIFIERS	EXCEPTIONAL MODIFIERS
		f - soil s - silt cl - clay g - gravel	o - Organic deposits a - Alluvial deposits c - Colluvial deposits s - sand l - Glaciofluvial deposits m - Marine deposits	h - blanket (generally 2m thick) e - esker f - fan h - hummocky l - thermokarst m - rolling r - ridge s - slope v - veneer (generally 2m thick) w - complex combinations of modified x - delta	c - channelled g - gullied u - used in the form Gp-c, Mb-g
MIXED UNITS Two types of mixed units are used: a. Combinations of the form "GhMh" indicate that two distinct types of deposit are distinguishable within the boundaries of the unit, but cannot be differentiated because of map scale. The first named deposit type occupies more than 50% of the delineated area, the second named less than 50%, but more than 10%. Deposit types that constitute less than 10% of the delineated area are ignored. b. Combinations of the form "Mh, Cv, Mh, C, L, v" etc., indicate that two or more distinct generic classes of deposit are known to occur or suspected to occur within a delineated area; the respective classes of deposit lack distinctive landforms that would permit differentiation by alpha interpretation, and differentiation on the ground has not been undertaken. The order in which the respective classes are listed indicates the likely relative prevalence by area of each class within the delineated area.					

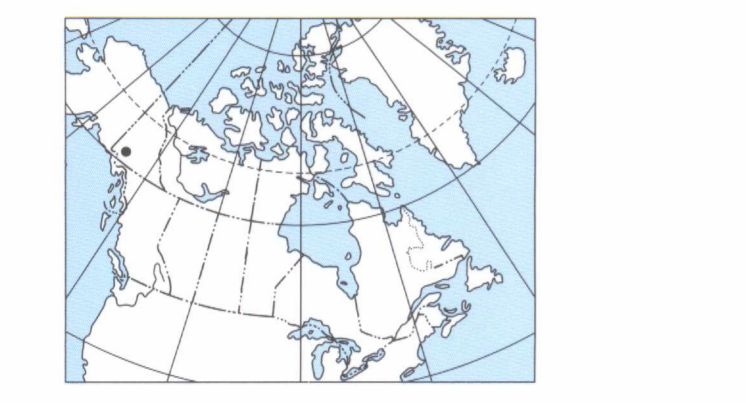
GEOLOGICAL AGE OF DEPOSITS
Glacial and glaciofluvial deposits of Reid age are distinguished by a superscript "R" as in Mh^Ro^R. Map unit designators for glacial, glaciofluvial, and glaciofluvial deposits of McConnell age lack the superscript. Colluvial, alluvial, and organic deposits have not been differentiated on the basis of age.

Geological boundary (defined, approximate)	Symbol
Reid Glaciation
Unconformity
McConnell Glaciation
Explanation terrace
Cirque
Moraine ridge

Symbol	Description
.....	Drumlin, drumlinoid ridge, glacial fluting
.....	Direction of ice movement inferred from form
.....	Direction of ice movement unknown
.....	Esker
.....	Meander channel
.....	Glacial lake shoreline
.....	Rock glacier
.....	Pingo, open-system, closed-system
.....	Ground observation (fenatics found, not found)

Recommended citation:
Hughes, O.L.
1989. Surficial geology, West Aishihik River, Yukon Territory; Geological Survey of Canada, Map 21-1987, scale 1:100 000

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