



ROSEBUD CREEK

YUKON TERRITORY

Scale 1:50 000/Échelle 1/50 000

Universal Transverse Mercator Projection

North American Datum 1983

© Her Majesty the Queen in Right of Canada 2005

Projection transverse universelle de Mercator

Système de référence géodésique nord-américain, 1983

© Sa Majesté la Reine du chef du Canada 2005

LEGEND

Note: Map units listed below occur within one metre of the surface. Where organic or eolian sediments < 1 m thick overlie these, a pattern is overlaid upon the map unit. Along some valleys, colluvial or alluvial sediments > 1 m thick overlie older alluvial gravels that could contain placer gold. In order to accentuate these potentially exploitable deposits, a compound map unit is presented, e.g., Cx/AtT. This means that colluvial complex sediments overlie alluvial terrace sediments thought to be late Tertiary in age. This legend is part of a larger regional study hence coloured boxes indicate units that appear on this map. In addition, not all symbols in the legend are represented on this map.

QUATERNARY HOLOCENE

> Made Land: placer mines, roads, and airstrip ORGANIC DEPOSITS: peat and organic silt formed predominantly by the

bottoms; permafrost is commonly encountered within 1 m of the surface. Thermokarst

accumulation of vegetative material in bogs, fens, and swamps situated on valley

Organic Veneer: blanket bog generally < 1 m thick

ALLUVIAL DEPOSITS: gravel to silt size sediments, well stratified, deposited by

Organic Blanket: undivided; thickness > 1 m to 5 m

Floodplain Sediments: gravel, cobble to pebble; massive to well stratified, capped by Ap sand and silt; flat lying; includes lacustrine and organic deposits in abandoned channels and backswamp areas; subject to periodic inundation and reworking by

Alluvial Fan Sediments: gravel, sand, silt, and diamicton, massive to well stratified;

Af sediments form fan-shaped landforms or complexes of coalesced fan-shape landform

at the confluence of tributary streams; may be subject to flooding accompanied by sudden stream migration and inundation; thickness up to 10 m Alluvial Sediments Complex: sediments forming floodplains, fans, and terraces that

cannot be subdivided at this map scale HOLOCENE AND PLEISTOCENE (UNDIVIDED) COLLUVIAL DEPOSITS: stony diamicton resulting from the physical and chemical breakdown of bedrock and subsequent reworking and transportation by creep, solifluction, and landsliding; colluvial deposits may contain reworked glaciofluvial and morainal sediments within the limits of pre-Reid ice-cover and reworked eolian sediments; colluvial deposits are products of formation and reworking over a

significant part of the Pleistocene and Holocene epochs; surface is commonly

Colluvial Blanket and Veneer Sediments: diamicton, stony with a sandy matrix; bedrock and exceed 1 m in thickness; veneers are < 1 m in thickness and are commonly discontinuous over bedrock

hummocky or undulating

Colluvial Apron Sediments: bouldery diamicton and bouldery sandy gravel, poorly Ca sorted; massive; sediments form a wedge-like slope-toe complex of small steep debris flow and solifluction deposits; thickness is < 1 m at the upper and lower slope limit to

up to 5 m or more in the thickest part of the apron

Landslide Sediments: silt loam to boulders, poorly sorted to unsorted; massive; clasts are subangular to angular and are locally derived; thickness varies greatly

Colluvial Complex Sediments: areas of intergrading colluvial and alluvial sediments which are too complex to subdivide at the scale of mapping; unit may include colluvial and alluvial fan, colluvial blanket, landslide sediments and colluviated drift within the limits of glaciation; the unit commonly occurs along the lower slopes of valley margins

Colluvial/Eolian Apron (muck): primary deposits of eolian fine sand and silt CEaP resedimented and interstratified with organic silt, and detritus, alluvial fan gravel and sand and variable amounts of stony colluvial diamicton; forms aprons along valley bottoms through resedimentation of eolian sediments from valley sides to valley floor commonly preserved on north-facing slopes; thickness 1 to 20 m; commonly contains segregated bodies of ice and buried ice wedges MIDDLE TO LATE PLEISTOCENE (UNDIVIDED)

ALLUVIAL DEPOSITS: gravel and sand deposited by streams that were not fed by glacial meltwater; sediments may have experienced several cycles of alluviation and erosion, but are now inactive due to burial or fluvial incision; basal gravels within these sediments commonly contain placer gold

Alluvial Fan Sediments: single fans or aprons of coalesced fans formed of gravel and

Alluvial Terrace Sediments: gravel, cobble to pebble with a sandy matrix; massive to AtP well stratified, capped by sand and silt; sediments are of flood plain origin now isolated from flooding by stream incision; thickness 1 m to 10 m

AfP sand, poorly to moderately sorted, now isolated from water and debris floods due to fluvial incision; sediments disturbed by cryoturbation; thickness up to 10 m Alluvial/Colluvial Complex Sediments: silt, sand and gravel, poorly to moderately ACxP sorted; thin to thick bedded, interstratified with colluvial diamicton; sediments underlie the floors and margins of narrow upland valleys and grade laterally up slope into colluvial blankets; sediments may represent several depositional cycles; thickness may

exceed 10 m in mid-valley locations EOLIAN DEPOSITS: well sorted medium sand to silt initially transported and deposited by wind action during glaciations and commonly resedimented through fluvial and colluvial processes; deposits of very fine sand and coarse silt < 1 m thick are distributed discontinuously throughout low lying areas

Eolian Blanket: fine sand and silt, well sorted; massive; may form crescent-shape and linear dunes and featureless or gently undulating inter-dune eolian plains; thickness 1 Eolian Veneer: thin deposits of very fine sand and coarse silt distributed

discontinuously throughout low lying areas, thickness < 1 m LATE PLEISTOCENE - McCONNELL GLACIATION GLACIOFLUVIAL DEPOSITS: gravel and sand deposited by streams flowing away from glacial ice; deposits display poor soil development with rare cryoturbation Glaciofluvial Terrace Sediments: gravel and sand, unweathered, forming one or more

MIDDLE PLEISTOCENE - REID GLACIATION GLACIOFLUVIAL DEPOSITS: gravel and sand deposited by streams flowing away from glacial ice; deposits display moderate soil development with signs of

Glaciofluvial Terrace Sediments: gravel and sand, moderately weathered, forming one or more terraces

cryoturbation; soil thickness < 0.5 m

LATE PLIOCENE TO MIDDLE PLEISTOCENE - pre-Reid GLACIATIONS (UNDIVIDED) GLACIOLACUSTRINE DEPOSITS: well stratified sand, silt, clay, deposited in lakes ponded by glacial ice

Glaciolacustrine Undivided: sand, silt, and clay; undifferentiated at this scale of

GLACIOFLUVIAL DEPOSITS: gravel and sand deposited by streams flowing away from glacial ice in meltwater channels and outwash plains; massive to well stratified. Surface soils may extend to 2 m depth with well developed clay skins on clasts, frequent signs of cryoturbation (ice wedge pseudomorph and sand wedges), and strong chemical weathering

Glaciofluvial Terrace Sediments: gravel and sand, deeply weathered; incised into flights of terraces; thickness 1 to > 5 m

OF4579 OF4580 OF4590 OF4591 OF4592 OF4593

115 N/10 115 N/9 115-0/12 115-0/11 115-0/10 115-0/9

OF4578 OF4577 OF4589 OF4588 OF4587 OF4586

115 N/7 115 N/8 115-0/5 115-0/6 115-0/7 115-0/8 OF4575 OF4576 OF4582 OF4583 OF4584 OF4585

115 N/2 115 N/1 115-0/4 115-0/3 115-0/2 115-0/1 OF4574 OF4573 OF4581 OF4349 OF4348 OF4347

115 K/15 | 115 K/16 | 115 J/13 | 115 J/14 | 115 J/15 | 115 J/16

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

OF4344 OF4345 OF4346

MORAINAL DEPOSITS (TILL): glacial diamicton, mainly till, generally consisting of a matrix ranging from sand to clay that supports clasts ranging from boulders to pebbles in size; deposited either directly from glacial ice or by gravity flow from glacial ice; surface soils may extend to 2 m depth with well developed clay skins on clasts, frequent signs of cryoturbation (ice wedge pseudomorph and sand wedges), and strong chemical weathering

Till Blanket: diamicton, stony, silty-sand matrix; massive; conforms to underlying topography, thickness > 1 m; extensively colluviated on slopes

sediments commonly contain placer gold

Till Veneer: diamicton, stony, silty-sand matrix; massive; discontinuous and may contain extensive areas of thin (< 1 m) colluvium ALLUVIAL DEPOSITS: Gravel and sand deposited by streams that were not fed by glacial meltwater; sediments may have experienced several cycles of alluviation and erosion, but are now inactive due to burial or fluvial incision; basal gravels within these

Alluvial Terrace Sediments: sandy pebble and cobble gravel deposited by streams

AtPR having a fluvial source but graded to the margins of pre-Reid glaciers or glacial UNDIFFERENTIATED DRIFT: diamicton, gravel, sand, silt and clay deposited from glacial ice, glacial streams, and glacially damned lakes; extensive weathering, poor

> exposure and permafrost make differentiation into component glacial sediments difficult; thicknesses commonly exceed 10 m and mask underlying bedrock topography; commonly colluviated and intergraded with colluvium; surface soils may extend to 2 m depth with well developed clay skins on clasts, frequent signs of cryoturbation (ice wedge pseudomorph and sand wedges), and strong chemical

Drift: flat to gently sloping

Drift Modified by Landsliding: drift translated along failure plains into irregular steps and sub parallel scarps

Fluvially Incised Drift: formerly extensive areas of drift incised by closely spaced stream

Basalt: columnar alkaline olivine basalt and flow breccia; erosional remnants of VT formerly valley filling flows underlying terraces along lower Rosebud Creek; thickness PLIOCENE AND LATE MIOCENE ALLUVIAL DEPOSITS: preglacial gravel and sand; highly dissected and deeply

Pediment and Bajada Sediments: inclined fluvial surfaces which are found at a PT midslope position in unglaciated drainage systems; usually thinner than 5 m; formed as a result of limited agradation of stream gravel and significant colluviation; composed of thin, poorly sorted gravel that contains both locally derived subangular

High Level Terrace Sediments (includes White Channel Gravel and equivalent sediments): weathered pebble to cobble gravel > 1 m thick; surface soils may extend to 2 m depth with well developed clay skins on clasts, frequent signs of cryoturbation (ice wedge pseudomorph and sand wedges), and strong chemical weathering; within the Yukon River valley, terraces above the 500 m contour may be remnant features from the southward-flowing paleo-Yukon River drainage system

PALEOZOIC AND MESOZOIC Bedrock: schist, gneiss, ultramafics, granodiorite, monzonite, marble, and basalt; R includes areas of thin colluvial cover, blockfields, and sorted stone polygons in alpine

SYMBOLS

Geologic contact; defined, approximate, inferred Open system pingo, collapsed open system pingo Thermokarst collapse activity Landslide movement direction in bedrock and colluvium Scarps created by widespread landslide movement in drift Terrace scarp (ticks on sloped side) . Degraded Cirque: active during pre-Reid Glaciations Degraded Arête: active during pre-Reid Glaciations Meltwater channel: flow direction, unknown flow direction Large meltwater channel . All time (pre-Reid) glacial limit; defined, inferred Cryoplanation terrace Landform Streamlined by glacial ice Vertebrate fossil locality Lineaments (fault, fracture, joint system) defined by linear drainage courses, aligned gaps in ridges, or aligned breaks in bedrock slopes Abandoned valley: paleoflow defined Abandoned valley: paleoflow undefined Paleoflow, suspected buried valley

Geology by L.E. Jackson, Jr. (1999 - 2002)

Co-ordinated through the auspices of the Ancient Pacific Margin NATMAP

Digital cartography K. Shimamura, Terrain Sciences Division

would be welcomed by the Geological Survey of Canada Digital base map from data compiled by Geomatics Canada, modified by

Any revisions or additional geological information known to the user

Parm Dhesi, Earth Sciences Sector Information Division (ESS Info)

Magnetic declination 2005, 25°40' E, decreasing 19.1' annually

Elevations in feet above mean sea level Contour interval 100 feet

OPEN FILE DOSSIER PUBLIC that have not gone through the GSC formal publication process. Les dossiers publics sor GEOLOGICAL SURVEY OF CANADA des produits qui n'ant pas été sournis au

Recommended citation: Jackson, L.E., Jr. 2005: Surficial Geology, ROSEBUD CREEK, Yukon Territory; Geological Survey of Canada, Open File 4585, scale 1:50 000.