

**References**

Deblonde, C., Cocking, R.B., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Parent, M., Plouffe, A., Robertson, L., Smith, I.R., and Weatherston, A., 2017. Surficial Data Model, version 2.3.0: revisions to the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8236, 1 zip file. <https://doi.org/10.4095/302717>

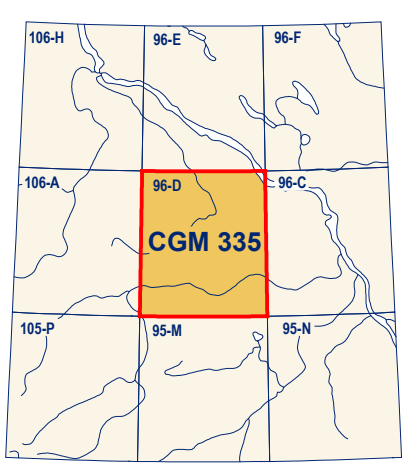
Duk-Rodkin, A. and Hughes, O.L., 2002. Surficial geology, Carcajou Canyon, Northwest Territories; Geological Survey of Canada, Map 1988A, scale 1:250 000. <https://doi.org/10.4095/213616>

**Abstract**

This new surficial geology map product represents the conversion of Map 1988A and its legend, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3) (GSC Open File 8236). All geoscience knowledge and information from Map 1988A that conformed to the current SDM were maintained during the conversion process. Some supplementary legacy descriptive information was not included in the converted map. The purpose of converting legacy map data to a common science language and a common legend is to enable and facilitate the efficient digital compilation, interpretation, management, and dissemination of geological map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geodatabase that can expand, following the type of information to appear on new surficial geology maps.

**Résumé**

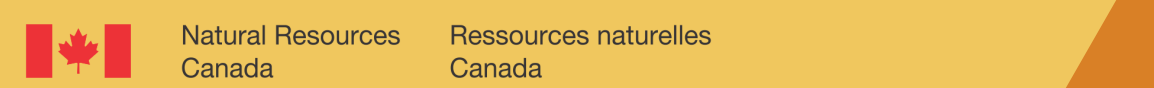
Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 1988A et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3) de la Commission géologique du Canada (Dossier public 8236). Toutes les connaissances et l'information de nature géoscientifique de la Carte 1988A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. De l'information supplémentaire de caractère descriptif présente sur la carte originale n'a pas été transférée à la nouvelle carte. Le but de la conversion de cartes publiées antérieurement suivant un langage scientifique commun et une légende commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de l'information géologique cartographique en mode numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes des formations superficielles.



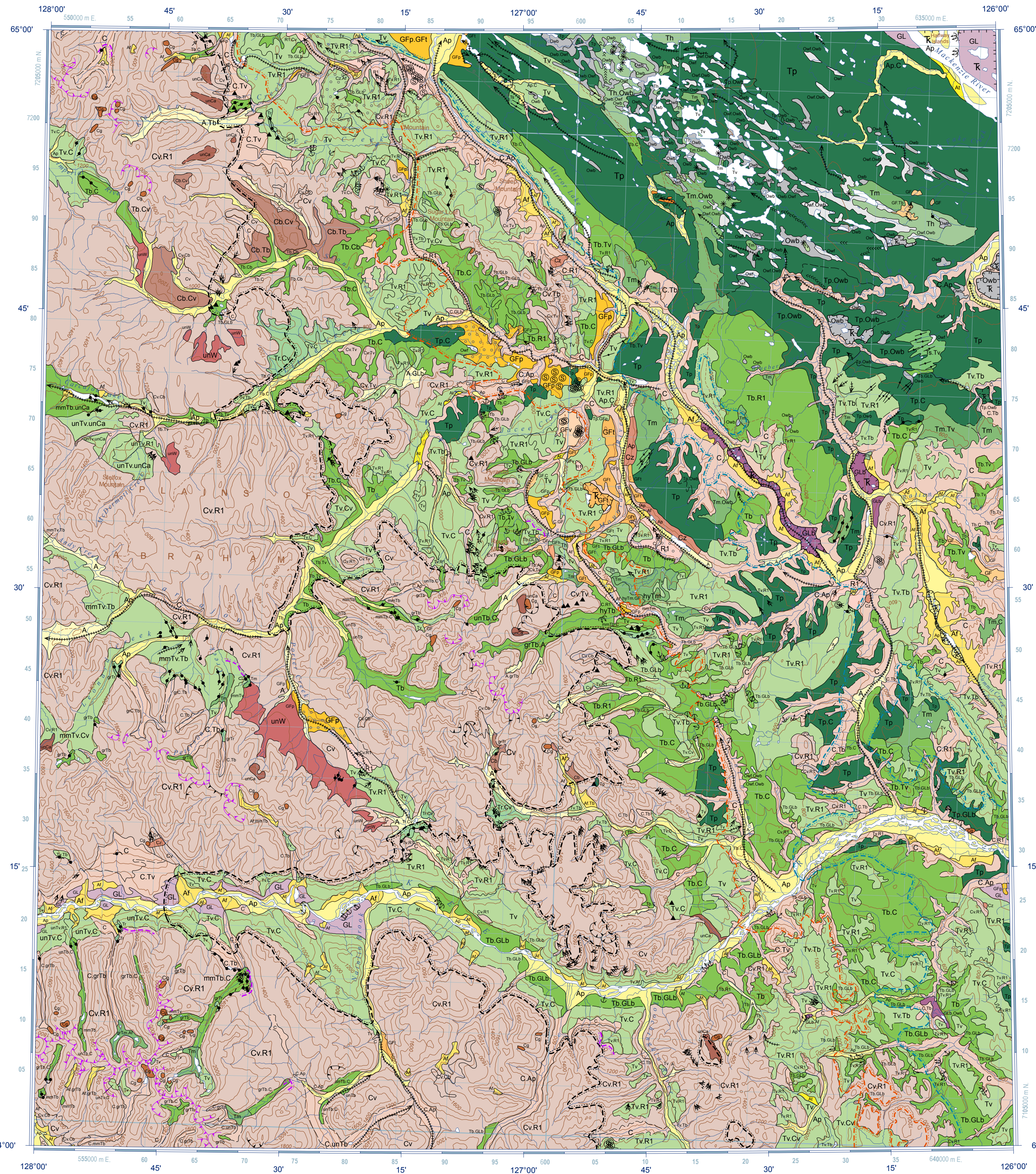
National Topographic System reference

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**CANADIAN GEOSCIENCE MAP 335**  
**SURFICIAL GEOLOGY**  
**CARCAJOU CANYON**  
 Northwest Territories  
 NTS 96-D  
 1:250 000



<b>QUATERNARY</b>		<b>GAYNA RIVER GLACIATION (ca. 22 ka BP)</b>
<b>HOLOCENE</b>		<b>glC</b> Colluvial deposits, undifferentiated: diamicton; variable thickness; complex of different colluvial deposits; may exhibit gully.
<b>Owf</b> Fen deposits: fenland, consisting of woody sedge peat; 2–3 m thick.	<b>Owb</b> Bog deposits: peatland, sphagnum peat generally underlain by sedge and woody sedge peat; 2–4 m thick; may contain thermokarst depressions.	<b>grTm</b> Moraine complex: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 20 m thick; broad hummocks or low hills with 10–20 m relief; may exhibit gully.
<b>Cz</b> Colluvial deposits, undifferentiated: diamicton; variable thickness; complex consisting of two or more of Cv, Cb, Cz, and Af; may exhibit gully.	<b>Cg</b> Rock glacier.	<b>grTr</b> Ridged moraine: generally coarse till (20–50% pebble size); from 15 to greater than 50 m thick; individual to compound ridges, either straight or sinuous; 15 to 60 m high.
<b>Cv</b> Colluvial veneer: diamicton, rubble, organic-rich silt and sand; 0–2 m thick; developed as a veneer on glaciolacustrine sediments or soft bedrock.	<b>Cb</b> Colluvial blanket: diamicton and rubble; greater than 3 m thick; sheetwash blanket deposit that conforms to bedrock topography.	<b>grTb</b> Till blanket: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.
<b>C</b> Colluvial deposits, undifferentiated: diamicton; variable thickness; complex consisting of two or more of Cv, Cb, Cz, and Af; may exhibit gully.	<b>Ap</b> Alluvial floodplain sediments: coarse sand and gravel with silt and fine sand occurring as channel and overbank floodplain sediments; 3–5 m thick; may contain thermokarst depressions.	<b>hyTm</b> Moraine complex: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 20 m thick; broad hummocks or low hills with 10–20 m relief; may exhibit gully.
<b>Af</b> Alluvial fan sediments: mainly silt, sand, and minor gravel locally with discontinuous layers of peat; variable thickness; may occur as fans and aprons; within Mackenzie Mountains comprises mainly gravel, locally with lenses of mudflow deposits.	<b>At</b> Alluvial terraced sediments: sand and silt; 2–5 m thick; in places underlain by gravel.	<b>hyTb</b> Till blanket: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.
<b>A</b> Alluvial sediments, undifferentiated: sand and silt, variable thickness; may include floodplains, terraces, and fans.	<b>GLb</b> Glaciolacustrine sediments, undifferentiated: silt and clay with minor sand, in many places overlain by discontinuous veneer of organic deposits and locally overlain by sand; sediments laid down in a glacial lake.	<b>mmTm</b> Moraine complex: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 20 m thick; broad hummocks or low hills with 10–20 m relief; may exhibit gully.
<b>GL</b> Glaciolacustrine sediments, undifferentiated: silt and clay with minor sand; 3–20 m thick; forming a complex or transition with glaciolacustrine sediments, up to 3 m of sand at stratigraphic top; may contain thermokarst depressions and gully.	<b>GLF</b> Glaciofluvial sediments: sand and gravel, locally with a veneer of eolian silt or sand; deposited as proglacial or ice contact sediments by glacial meltwater.	<b>mmTr</b> Ridged moraine: generally coarse till (20–50% pebble size); from 15 to greater than 50 m thick; individual to compound ridges, either straight or sinuous; 15 to 60 m high.
<b>GFp</b> Outwash plain sediments: sand and gravel; 2–30 m thick; flat to gently sloping plain, may include fans; may exhibit channelling and gully.	<b>GFt</b> Terraced sediments: sand and gravel; 2–30 m thick; may exhibit gully.	<b>mmTv</b> Till veneer: diamicton; 0–3 m thick; occurring as flat to gently sloping moraine plain; may contain bedrock outcrops; may exhibit gully.
<b>GFh</b> Hummocky sediments: sand and gravel; 2–20 m thick; hummocks, ice-contact.	<b>GFr</b> Esker sediments: sand and gravel; 2–20 m thick; ridges.	<b>mmTb</b> Till blanket: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.
<b>GFv</b> Glaciofluvial veneer: sand and gravel; 0–3 m thick; associated with terraces.	<b>GF</b> Glaciofluvial sediments, undifferentiated: gravel and sand; 2–20 m thick; may contain outwashplains, terraces, hummocks, and ridges.	<b>unCa</b> Uncorrelated colluvial apron: rubble; 1–3 m thick; as mantle on a step or bench in a mountain slope, cryoplanation terrace deposits.
<b>Th</b> Hummocky till: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 50 m thick; individual and coalescent hummocks or low hills; locally contains hummocks of gravel; relief 10–20 m but up to 50 m; may exhibit gully.	<b>Tm</b> Moraine complex: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 20 m thick; broad hummocks or low hills with 10–20 m relief; may exhibit gully.	<b>unTv</b> Till veneer: diamicton; 0–3 m thick; occurring as flat to gently sloping moraine plain; may contain bedrock outcrops; may exhibit gully.
<b>Tr</b> Ridged moraine: generally coarse till (20–50% pebble size); from 15 to greater than 50 m thick; individual to compound ridges, either straight or sinuous; 15 to 60 m high.	<b>Ts</b> Streamlined till: diamicton; 3–20 m thick; occurring as plain with individual drumlins or extensively fluted.	<b>unTb</b> Till blanket: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.
<b>Tp</b> Till plain: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.	<b>Tv</b> Till veneer: diamicton; 0–3 m thick; occurring as flat to gently sloping moraine plain; may contain bedrock outcrops; may exhibit gully.	<b>unW</b> Weathered bedrock, regolith: bedrock rubble; 2–3 m thick; pediment, occurring on gently sloping surfaces that conforms to bedrock topography.
<b>Tb</b> Till blanket: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.		
<b>PLEISTOCENE</b>		<b>PRE-QUATERNARY</b>
<b>GLb</b> Glaciolacustrine sediments, undifferentiated: silt and clay with minor sand, in many places overlain by discontinuous veneer of organic deposits and locally overlain by sand; sediments laid down in a glacial lake.	<b>GL</b> Glaciolacustrine sediments, undifferentiated: silt and clay with minor sand; 3–20 m thick; forming a complex or transition with glaciolacustrine sediments, up to 3 m of sand at stratigraphic top; may contain thermokarst depressions and gully.	<b>R1</b> Bedrock, sedimentary: primarily prominent ridges, escarpments, and hills, associated with dolomite of the Bear Rock Formation and Mount Kindle Formation, and limestone of Hume Formation; may exhibit channelling.
<b>GLF</b> Glaciofluvial sediments: sand and gravel, locally with a veneer of eolian silt or sand; deposited as proglacial or ice contact sediments by glacial meltwater.	<b>GFp</b> Outwash plain sediments: sand and gravel; 2–30 m thick; flat to gently sloping plain, may include fans; may exhibit channelling and gully.	<b>Complex units:</b> two map-unit designators are used in cases where the surficial cover forms a complex area and the map units are too small to be mapped individually, yet constitute a significant areal extent of the total polygon (e.g. Tb, Tv designates an area of till blanket with numerous small deposits of till veneer). In such instances a dot (·) is used to separate the map-unit designator.
<b>GFt</b> Terraced sediments: sand and gravel; 2–30 m thick; may exhibit gully.	<b>GFh</b> Hummocky sediments: sand and gravel; 2–20 m thick; hummocks, ice-contact.	<b>Thermokarst depression, large area</b>
<b>GFr</b> Esker sediments: sand and gravel; 2–20 m thick; ridges.	<b>GFv</b> Glaciofluvial veneer: sand and gravel; 0–3 m thick; associated with terraces.	<b>Extensive gullied or channelled terrain</b>
<b>GF</b> Glaciofluvial sediments, undifferentiated: gravel and sand; 2–20 m thick; may contain outwashplains, terraces, hummocks, and ridges.	<b>Th</b> Hummocky till: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 50 m thick; individual and coalescent hummocks or low hills; locally contains hummocks of gravel; relief 10–20 m but up to 50 m; may exhibit gully.	<b>Sinkhole, karst, small</b>
<b>Tm</b> Moraine complex: generally coarse till (20–50% pebble size) in plains, typically bouldery till in mountains; less than 20 m thick; broad hummocks or low hills with 10–20 m relief; may exhibit gully.	<b>Tr</b> Ridged moraine: generally coarse till (20–50% pebble size); from 15 to greater than 50 m thick; individual to compound ridges, either straight or sinuous; 15 to 60 m high.	<b>Geological contact:</b>
<b>Ts</b> Streamlined till: diamicton; 3–20 m thick; occurring as plain with individual drumlins or extensively fluted.	<b>Tp</b> Till plain: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.	<b>Defined</b>
<b>Tv</b> Till veneer: diamicton; 0–3 m thick; occurring as flat to gently sloping moraine plain; may contain bedrock outcrops; may exhibit gully.	<b>Tb</b> Till blanket: diamicton; 3–20 m thick; occurring as flat to moderately sloping moraine plain, locally controlled by bedrock; may exhibit thermokarst, channelling and gully.	<b>Approximate</b>
		<b>Retrospective thaw flow (may include other forms of mass wasting), orientation known</b>
		<b>Cryoplanation terrace, orientation known</b>
		<b>Minor glacial meltwater channel, paleocurrent direction known</b>
		<b>Major moraine ridge</b>
		<b>Esker, direction known</b>
		<b>Drumlinoid, length not mapped to scale</b>
		<b>Cirque headwall:</b>
		<b>Mountain River glaciation</b>
		<b>Gayna River glaciation</b>
		<b>Limit of glaciation, approximate (short dashes are on the up-glacier side):</b>
		<b>All-time limit of Laurentide Ice Sheet</b>
		<b>Katherine Creek Phase</b>
		<b>Kelly Lake Phase</b>
		<b>Gayna River and Mountain River glaciations</b>
		<b>Glacial erratic observation, Shield derived glacial erratic</b>
		<b>Kame field</b>

Recommended citation  
 Geological Survey of Canada, 2017. Surficial geology, Carcajou Canyon, Northwest Territories, NTS 96-D; Geological Survey of Canada, Canadian Geoscience Map 335 (preliminary, Surficial Data Model v. 2.3 conversion of Map 1988A), scale 1:250 000. <https://doi.org/10.4095/306167>

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Geological Survey of Canada  
 Canadian Geoscience Maps



Author: Geological Survey of Canada  
 Geology by A. Duk-Rodkin, 1989, 1990  
 Geology conforms to Surficial Data Model v. 2.3  
 Data conversion by D.E. Kerr, 2016, 2017  
 Geology has been spatially adjusted to fit the updated base.  
 Geomatics by J. Kingsley  
 Cartography by E. Everett

**SURFICIAL GEOLOGY**  
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Initiative of the Geological Survey of Canada, conducted under the auspices of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) Program.  
 Map projection Universal Transverse Mercator, zone 9 North American Datum 1983  
 Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.  
 Elevations in metres above mean sea level  
 Mean magnetic declination 2017, 20°53'E, decreasing 26.2' annually. Readings vary from 21°04'E in the NW corner to 20°39'E in the SE corner of the map.

This map is not to be used for navigational purposes.  
 The Geological Survey of Canada welcomes corrections or additional information from users.  
 Data may include additional observations not portrayed on this map. See map info document accompanying the downloaded data for more information about this publication.  
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This publication has been scientifically reviewed, but it has not undergone a formal edit.