

- Q1s Landslide: blocks from nearby bedrock.
- QVr Alluvial, colluvium, silt, gravel, sand, silt (only shown where bedrock is extensively covered).

CRETACEOUS AND TERTIARY
UPPER CRETACEOUS AND PALEOCENE

WAPITI GROUP (uK21 - KPc)
COALSUR FORMATION
 Sandstone: light grey, fine-grained, argillaceous, commonly crossbedded, brownish weathering; siltstone, mudstone, grey, greenish grey, in fining upward cycles. Minor volcanic tuff, 25 to 30 m of light grey, fine to coarse grained, locally conglomeratic sandstone of the Entrance Member forms the base of the formation. Lower part of the Coalsur forms a ribbed relatively resistant weathering unit. - ru - marks the base of local resistant mappable units. Interbedded sandstone, siltstone, mudstone and coal of the upper part of the Coalsur may cap ridge tops in the extreme northeastern corner of the map area.

CRETACEOUS
UPPER CRETACEOUS

BRAZEAU FORMATION (uKB21 - KB22)
 UPPER PART
 Sandstone: light grey, fine-grained, argillaceous, carbonaceous, commonly crossbedded, brownish weathering; siltstone, mudstone, grey, greenish grey, carbonaceous, and coal. Relatively resistant, ribbed weathering unit; lower two thirds of unit includes Cuthbert Coal Measures.
 LOWER PART
 Sandstone: green, grey fine to very coarse-grained, argillaceous, carbonaceous, locally conglomeratic mudstone, siltstone, green, brown, grey, carbonaceous. Ribbed weathering unit. - rs - base of local resistant mappable units.

PUSKASKAU FORMATION (uKP1 - uKPn)
 Nomad Member
 Siltstone, medium grey, argillaceous, interbedded with shale; dark grey, rusty weathering. Relatively recessive weathering unit.
 Chungo Member
 Sandstone: grey, fine to medium-grained, quartz and chert rich, laminated, well cemented, brown weathering. Resistant marker unit.

DOWLING, THISTLE AND HANSON MEMBERS
 Shale and calcareous shale: dark grey to black, commonly silty, grey to rusty weathering, sideritic concretions. Recessive weathering unit.
BADHEART FORMATION
 Sandstone: grey, fine grained, quartz and chert rich, well cemented, brown weathering, (lower part). Interbedded mudstone, siltstone, sandstone and minor coal (upper part). Lower part forms a resistant weathering unit.
MUSKIKI FORMATION
 Shale: dark grey, silty, rusty weathering with thin interbeds of grey argillaceous siltstone near top. Recessive weathering unit.

CARDIUM FORMATION
 Sandstone: grey, fine-grained, quartz and chert rich, well sorted and cemented, rusty brown weathering; shale, grey, carbonaceous with argillaceous siltstone to coarse grained sandstone interbeds. Local chert pebble conglomerate. Resistant weathering marker unit.
KASKAPAU FORMATION
 Shale: dark grey to black, commonly silty, rusty weathering; with sideritic concretions and variable amounts of very thinly interbedded grey, brown weathering siltstone. Calcareous shale: dark grey, silver-grey weathering. Recessive poorly exposed unit. Commonly faulted and folded.

DUNVEGAN FORMATION
 Sandstone: grey, very fine to medium-grained, argillaceous, brown weathering, micaceous bedding planes; and mudstone, grey, brown, silty, brown weathering, commonly carbonaceous, laminated, micaceous bedding planes in fining upward cycles. Rare lenticular coal seams (<20cm thick) and sandstone, grey, medium to coarse-grained, quartzose, crossbedded, grey weathering. Relatively resistant marker unit with good topographic expression but commonly poor exposure.

UPPER AND LOWER CRETACEOUS
SHAPTESBURY FORMATION
 Shale: dark grey, grey or rusty weathering, with red-brown weathering, laminated siltstone interbeds common near top. Recessive, dark weathering unit.

LOWER CRETACEOUS
LUSCAR GROUP (Kc - Kd)
GATES FORMATION
 Sandstone: fine to coarse-grained, carbonaceous, crossbedded, tan or red-brown weathering interbedded with carbonaceous shale; grey, brown, carbonaceous siltstone; grey, cross-laminated; coal: beds commonly over 1 m thick; and sandy pebble conglomerate: clast supported, in beds up to 5 m thick. Sandstone: fine grained, well sorted, resistant, brown weathering unit. 0 to 20 m thick forms base of succession in many areas. Ribbed weathering unit.
MOOSEBAR FORMATION
 Shale: dark grey with ironstone concretions. Sandstone: grey, very fine grained, laminated, very thin to thin-bedded, brown weathering, absent in lower part of unit, more common near top. Recessive, dark weathering marker unit.
GLADSTONE FORMATION
 Sandstone: fine to coarse-grained, carbonaceous, crossbedded, orange-brown weathering and local sandy pebble conglomerate; interlayered with carbonaceous siltstone, carbonaceous shale and coal. Plant remains abundant throughout. Ribbed weathering unit.
CADOMIN FORMATION
 Conglomerate: pebble to cobble, clast supported in red-brown weathering sandy matrix, with local interbeds of sandstone and siltstone. Resistant, light grey or black lichen covered marker unit.

MINNES GROUP (Kc)
GORMAN CREEK FORMATION
 Interlayered sandstone, siltstone, mudstone, carbonaceous shale or coal in repetitive fining upward cycles generally 1 to 5 m thick. Sandstone: fine to coarse-grained, carbonaceous, ripple cross-laminated or crossbedded, commonly rich in dark chert, locally conglomeratic, orange or brown weathering. Siltstone: grey, carbonaceous, orange or grey weathering. Shale: silty, carbonaceous, grey weathering commonly grading to coal. An orange-brown weathering succession with few marker units, commonly complexly folded with minor faults.

JURASSIC AND CRETACEOUS
UPPER JURASSIC AND LOWER CRETACEOUS

NIKANASSIN FORMATION
 Sandstone: light grey, very fine grained, orange brown weathering, in thin to very thick beds, interbedded with minor dark grey shale, silty shale and argillaceous sandstone (lower part). Interlayered sandstone, siltstone, mudstone, carbonaceous coal of upper part is lithologically equivalent to Gorman Creek Formation. Lower part is resistant weathering; upper part is a ribbed, generally orange weathering unit.

JURASSIC
FERNIE FORMATION
 Shale: dark grey, locally rusty weathering, ironstone concretions; and minor quartz sandstone (lower part) and grey, silty, brown weathering shale interbedded with lesser siltstone and silty sandstone. Recessive weathering unit.

- Outcrop examined (no attitude on bedding; approximate orientation of bedding in shallowly dipping crossbedded sandstones)
- Geological boundary (defined, approximate, assumed, projected under cover)
- Bedding, top known (inclined, vertical, overturned)
- Detachment surface for landslide and slumped blocks (approximate, assumed)
- Fault, thrust or reverse, teeth on upthrust side (defined, approximate, assumed, projected under cover)
- Anticline, trace of axial plane, arrow indicates direction of plunge (upright; approximate, assumed, projected under cover)
- Syncline, trace of axial plane, arrow indicates direction of plunge (upright; approximate, assumed, projected under cover)
- Monocline, arrow indicates dip direction of steeper limb (approximate)
- Fold axis, trend and plunge

Diagrammatic profiles of sets of minor folds (5 to 30 m wavelength) viewed to the northwest. Dotted axial trace indicates observed extent of structures

Well (gas, abandoned)

- EXPLORATORY WELLS**
1. Dome Grande Cache 11-21-59-8W6
 2. Aquilane Copton 15-23-59-9W6
 3. Winter A, 1 Caw Creek 12-23-59-10W6
 4. Mohi Gulf Shell Copton 14-23-60-8W6
 5. Seafort Prairie Creek 11-23-60-8W6
 6. TP et al Copton 3-10-60-10W6

Geological interpretation by M.E. McMechan, 1989, based on ground and air observations by M.E. McMechan (1981 - 1983, 1985, 1987), G.S.C. Map 1041A for Copton Creek map area (Irish, 1954) and Alberta Research Council of the Smoky River Coal Mine area (Langenberg and Wrightson, 1986 - Geological Map Grande Cache area, Alberta).



GLOSSARY GLOSSAIRE

Abundant	Abundant
Assumed	Supposé
City limits	Limites de ville
Coastline	Côte
Ditch	Fossé
Dune	Dune
Drainage	Drainage
Drainage pattern	Mode de drainage
Drainage point	Point de drainage
Drainage system	Système de drainage
Drainage unit	Unité de drainage
Drainage network	Réseau de drainage
Drainage basin	Bassin versant
Drainage divide	Divot de drainage
Drainage divide line	Ligne de divot de drainage
Drainage divide point	Point de divot de drainage
Drainage divide ridge	Ridgeline de divot de drainage
Drainage divide valley	Vallée de divot de drainage
Drainage divide wall	Mur de divot de drainage
Drainage divide zone	Zone de divot de drainage
Drainage divide area	Zone de divot de drainage
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COPTON CREEK
 IMPROVEMENT DISTRICT 16
 ALBERTA
 WEST OF SIXTH MERIDIAN - OUEST DU SIXIÈME MÉRIDIEN
 Scale 1:50,000 Échelle

CONVERSION SCALE FOR ELEVATIONS
 METERS TO FEET
 FEET TO METERS

ÉCHELLE DE CONVERSION DES ÉLEVATIONS
 MÈTRES EN PIEDS
 PIEDS EN MÈTRES

TABLEAU D'ASSEMBLAGE DU SYSTÈME NATIONAL DE RÉFÉRENCE CARTOGRAPHIQUE

18 00	18 30	19 00
83 L/2	83 L/3	83 L/4
83 L/3	83 L/3	83 L/3
83 L/3	83 L/3	83 L/3
83 L/3	83 L/3	83 L/3

INDEX TO ADDING MAPS OF THE NATIONAL TOPOGRAPHIC SYSTEM

COPTON CREEK 83 L/3 EDITION 2

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