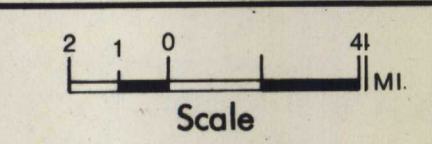


SMITHERS BC. 93L



G.S.C.

SMITHERS MAP LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

- QUATERNARY**
PLEISTOCENE AND RECENT
Qal Alluvium, silt, gravel
- TERTIARY**
UPPER TERTIARY
Jp JOPLAR BUTTE VOLCANICS: olivine basalt
- ENDAO GROUP**
OLIGOCENE(?) AND LOWER MIOCENE
LAC LACK CREEK VOLCANICS: coarsely bedded glassy basaltic breccia, fine vesicular basalt, water-lain sediments interbedded near base
- Eocene AND(?) OLIGOCENE**
Eo BOCK CREEK VOLCANICS: massive, vesicular, or amygdaloidal aphanitic andesite, dacite flows and breccias; minor basalt and sediments
- CRETACEOUS AND TERTIARY**
DOTS LAKE GROUP
Eg GOOSLY LAKE VOLCANICS: trachytic flows and sills
En Newnan volcanics: dacitic to rhyolitic breccias and flows
- MAESTRICHIAN TO EOCENE**
UKE UPRIGHT VOLCANICS: undivided, rhyolite and dacite flows, tuffs, and breccias; minor andesite; related felsite and porphyry intrusions
- MAESTRICHIAN TO(?) EOCENE**
UKEt UPRIGHT VOLCANICS: biotite-hornblende andesite and andesitic dacite flows and fragmental rocks
- SUSTUT GROUP(?)**
PE shales, acid tuff, minor greywacke, coal, conglomerate
- WESTPHALIAN AND/OR OLDER**
UW greywacke, conglomerate, shale

INTRUSIVE ROCKS

- TERTIARY**
EOCENE
Eg GOOSLY LAKE INTRUSIONS: syenonemite and porphyritic gabbro
Eb BABINE INTRUSIONS: biotite-feldspar porphyritic granodiorite or quartz diorite
En NANIKIA INTRUSIONS: quartz monzonite, felsite, in part porphyritic
- EOCENE AND OLDER**
Ecp COAST PLUTONIC COMPLEX: quartz-diorite
- LATE CRETACEOUS**
LK BULKLEY INTRUSIONS: porphyritic granodiorite and quartz monzonite
- LATE CRETACEOUS AND EOCENE**
KEg undivided: quartz diorite, quartz monzonite and granodiorite, in part porphyritic, many small felsite plutons
- JURASSIC**
EARLY JURASSIC
EJt TOPLEY INTRUSIONS (undivided): quartz monzonite, quartz diorite, granodiorite, monzonite
EJtr TOPLEY INTRUSIONS (rhyolite phase): fine-grained pink to cream-coloured rhyolite or felsite

SYMBOLS

- Geological boundary (approximate) - - - - -
 Drift boundary
 Bedding (horizontal, inclined, vertical, overturned) + / x x
 Faults and fault lineaments (approximate) - - - - -
 Thrust fault
 Anticline
 Syncline

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- CRETACEOUS**
SEENA GROUP
ALBIAN AND/OR YOUNGER
IKa IKv IRON BORN FORMATION: vari-coloured porphyritic tuff, breccia, and flows
IKw mainly coarse breccias of andesitic to dacitic composition
- MIDDLE ALBIAN (mainly or entirely)**
IKR IKv RED ROSE FORMATION: black to dark grey shale, chert pebble conglomerate; minor siliceous greywacke
IKc siliceous greywacke, black to dark grey shale; minor conglomerate and coal
- HAUTERIVIAN(?) TO ALBIAN(?)**
IKRv Rocky Ridge volcanics: dark green to rusty brown augite porphyry flows and breccias, rusty red tuff, and breccia, hornblende andesite, aphanitic basic flows
- HAUTERIVIAN TO(?) ALBIAN**
IKKs Kitson Creek sediments: coarse to fine polystratified conglomerate, greywacke, dark grey shale, coal; minor rusty red tuff related to Rocky Ridge volcanics
- JURASSIC**
BOWSER LAKE GROUP
UPPER OXFORDIAN TO (?) KIMMERIDGIAN
UJr Metavolcanics: grey to green basaltic to andesitic tuff, breccia and flows
- UPPER OXFORDIAN**
UJs Front Creek Assemblage: greywacke, conglomerate, siltstone, calcareous lime greywacke or siltstone
- UPPER BAJOCIAN TO LOWER OXFORDIAN**
UJbA ASHMAN FORMATION: dark grey to black shale, quartzose sandstone, greywacke, and chert pebble conglomerate
- HAZELTON GROUP**
LOWER BAJOCIAN TO LOWER CALLOVIAN
UJb SMITHERS FORMATION: grey-brown greenish-grey to drab grey greywacke, tuffaceous sandstone, siltstone, shale, tuff breccia, grit, glauconitic sandstone; minor conglomerate

SOURCES OF INFORMATION

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- LOWER PLEISTOCENE TO MIDDLE TOARCIAN(?)**
IJN NIKIETKA FORMATION: dark grey shale, andesitic to rhyolitic tuff; minor greywacke
- MIDDLE TOARCIAN(?)**
IJR NIKIETKA FORMATION
RED TUFF MEMBER: red to brick red, fine-grained, tuff and fine breccia.
- SINEMURIAN AND(?) LOWER PLEISTOCENE**
IKT TELUKAN FORMATION: variegated red, maroon, grey green breccia, tuff, and flows of basaltic to rhyolitic composition
- HETTANIAN AND/OR SINEMURIAN**
IJSs Sterrett Island sediments: fossiliferous grey to dark grey banded shale
- TRIASSIC**
TAKLA GROUP
KARBANIAN AND/OR NORDJAN
URT dark green augite porphyry flows, breccia and tuff, dark grey shale; minor conglomerate
- PERMIAN**
P limestone
PERMIAN AND/OR OLDER
P shale, quartzite, limestone; related metamorphic rocks

ABSTRACT

The Smithers map-area is underlain mainly by the Lower and Middle Jurassic essentially volcanic Hazelton Group, by the Middle and Upper Jurassic mainly sedimentary Bowser Lake Group, by the volcanic and sedimentary Lower Cretaceous Seena Group, and by the Tertiary volcanic Endao and Dots Lake Groups. The Early Jurassic Topley intrusions cut the lower part of the Hazelton Group and a variety of intermediate to acidic plutons of Late Cretaceous to Eocene age intrude most older units throughout the area. Structurally the area is dominated by a multitude of steep normal faults. Few contacts between map-units are unroofed and these are mainly intrusive or contacts between younger map-units. Folding is common only in the few sedimentary units and is spatially and genetically related to the Eocene thrust faults.

Pal (Till 44)
some names have 2 designations for same unit 7-8 = IKr
Rock code on cards will not correspond to actual underlying bedrock geology as published.

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