

BC Province of Ministry of Energy, Mines a

MINERAL RESOURCE DIVISION
GEOLOGICAL SURVEY BRANCH
OPEN FILE 1989-3

# GEOLOGY OF THE ELDORADO MOUNTAIN AREA

NTS 920/2; 92J/15

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SCALE 1:20 000

#### I AVERED BOOKS

LEGEND

QaI UNCONSOLIDATED GLACIAL TILL AND POORLY SORTED ALLUVIUM.

### R CRETACEOUS

UKpc MEDIUM- TO THICK-BEDDED, ANDESITIC BRECCIA AND VOLCANICLASTIC SANDSTONE. LOCAL PYROXENE PORPHYRY FLOWS. THICKNESS IS UNKNOWN IN THIS AREA.

# UKpcsc INTERSEDDED MEDIUM- TO THICK-BEDDED ANDESITIC BRECCIA AND CHERT PEBBLE CONGLOMERATE. INTERSEDDED WITH MINOR SANDSTONE AND SILTSTONE BEDS THAT COMMONLY ARE MAROON TO RED WEATHERING. PLANT FOSSILS AND ORGANIC DEBRIS ARE COMMON. THICKNESS IS UNKNOWN IN THIS AREA BUT IT PROBABLY EXCEEDS 1000 METRES

uKsc MEDIUM- TO THICK-BEDDED CHERT PEBBLE CONGLOMERATE, WITH MINOR INTERBEDDED SANDSTONE AND SILTSTONE. ROUNDED CHERT, VOLCANIC AND, SEDIMENTARY CLASTS DOMINATE. FINE-GRAINED INTERVALS CONTAIN FULL-LEAF PLANT FOSSILS AND ARE LOCALLY MAROON TO RED-WEATHERING. THICKNESS IS ABOUT 1500 METRES. MAY REST UNCONFORMABLY ON THE BRIDGE RIVER COMPLEX.

## TAYLOR CREEK GROUP - ALBIAN (INDIVIDED) MEDIUM, TO THICK REPORT BERRIE CONCLONEDATE AND MEDIUM.

IKtc (UNDIVIDED) MEDIUM- TO THICK BEDDED CHERT PEBBLE CONGLOMERATE AND MEDIUM- TO THIN-BEDDED SANDSTONE AND SHALE. LOCALLY FOSSILIFEROUS WITH PELECYPODS, AND AMMONITES. THICKNESS VARIABLE BUT EXCEEDS 1200 METRES. SUBDIVIDED WHERE WELL EXPOSED.

Lizard formation (informal)

THIN- TO MEDIUM-BEDDED SANDSTONE AND SHALE. MINOR INTERBEDDED CHERT PEBBLE CONGLOMERATE. QUARTZOFELDSPATHIC SANDSTONE IS DISTINCTLY RICH IN

Dash conglomerate (informal)

CHERT PEBBLE CONGLOMERATE AND SANDSTONE. SEDIMENTS ABOVE THE UNCONFORMITY CONTAIN PEBBLE TO BOULDER CONGLOMERATE WITH CLASTS BLUESCHIST, GREENSTONE, CHERT AND SERPENTITE. THE UP DASH CONGLOMERATE CONTAINS MEDIUM. TO THICK-BEDDED CHERT PEBBLE CONGLOMERATE WITH COMMON INVERSE GRADING, NORMAL GRADING AND RAIL CONSIDERATE WITH COMMON INVERSE GRADING, NORMAL GRADING AND RAIL CONSIDERATE WITH COMMON INVERSE GRADING, NORMAL GRADING AND RAIL CONSIDERATE WITH COMMON INVERSE GRADING, NORMAL GRADING AND RAIL COMMON INVERSE GRADING.

## MIDDLE JURASSIC TO LOWER CRETACEOUS RELAY MOUNTAIN GROUP

JKrm

(UNDIVIDED) SANDSTONE, SHALE AND MINOR CONGLOMERATE WITH ABUNDANT MARINE BIVALVES (BUCHIA), AMMONITES, AND PLANT FRAGMENTS. THICKNESS IS UNKNOWN IN THIS AREA.

IKrm3

DARK GREY SHALE AND SILTSTONE WITH LESS COMMON SANDSTONE AND TUFFACEOUS SANDSTONE, MEDIUM TO THICK BEDDED, CONTAINS BELEMNITES AND INOCERAMUS FOSSILS. THICKNESS IS ABOUT 1000 TO 1500 METRES.

Upper Oxfordian to Valancinian

JKrm2

BROWN TO GREY SANDSTONE AND SILTSTONE. MEDIUM BEDDED BUT POORLY DEFINED. LOCALLY REPLETE WITH BUCHIA PELECYPODS (COMMONLY A COQUIN INCLUDES A 200-METRE-THICK PEBBLE CONGLOMERATE CONTAINING VOLCANIC PLUTONIC CLASTS. THICKNESS OF ENTIRE UNIT IS UNKNOWN IN THIS AREA BUT PROBABLY EXCEEDS 400 METRES.

DARK GREY SILICEOUS SHALE WITH INTERBEDDED BROWN TO GREEN SANDSTON
SILTSTONE WHICH ARE THIN-BEDDED, GRADED AND RIPPLE LAMINATED. LOCALL
CONTAINS THIN- TO MEDIUM-BEDDED, TAN CALCAREOUS SANDSTONE AND SILTS
WITH MINOR CONGLOMERATE CONTAINING INTERMEDIATE TO FELSIC VOLCANIC
CLASTS. THICKNESS IS AT LEAST 200 METRES.

### LOWER TO MIDDLE JURASSIC

HALE

DED) SANDSTONE, SILTSTONE AND MINOR CONGLOMERATE OVERLAIN BY

EOUS SHALE WITH MINOR INTERBEDDED SANDSTONE. AMMONITES AND

PODS ARE COMMON. DISCONFORMABLY OVERLIES THE TYAUGHTON GROUP.

Pliensbachian to lower Bajocian

DARK-GREY TO BLACK, CALCAREOUS SHALE WITH TAN CALCAREOUS CONCRETIONS
UP TO 2 METRES. MINOR BROWN TO GREY SANDSTONE AND WHITE TO YELLOW
VOLCANIC ASH(?) BEDS. THICKNESS IS LESS THAN 200 METRES.

Upper Hettangian to Sinemurian

CALCAREOUS BROWN SANDSTONE, SILTSTONE AND CONGLOMERATE. CONTAINS
UNCOMMON CROSS BEDDING, COMMON AMMONITES AND PELECYPODS. THICKNI
IS ABOUT 200 TO 300 METRES.

### PPER TRIASSIC

Upper upper Norian

GREEN SANDSTONE, THIN- TO MEDIUM-BEDDED, LOW-ANGLE CROSS BEDS AND FINE PEBBLE CONGLOMERATE WITH PEBBLES OF INTERMEDIATE TO FELSIC VOLCANICS. THICKNESS IS BETWEEN 0 AND 75 METRES.

Middle upper Norian

LIMESTONE CONGLOMERATE; CLASTS DERIVED FROM LIMESTONE BELOW. ANGULAR QUARTZ SANDSTONE IN MATRIX. THICKNESS IS BETWEEN 0 AND 25 METRES. GREEN CROSS-BEDDED SANDSTONE; THIN- TO MEDIUM-BEDDED. INTERBEDDED WITH VOLCANIC AND LIMESTONE-BEARING CONGLOMERATE. THICKNESS IS ABOUT 70 TO 100 METRES. CASSIANELLA BEDS; BROWN SANDSTONE AND SILTSTONE WITH RIBS OF FOSSILIFEROUS CALCAREOUS SANDSTONE. THICKNESS IS ABOUT 90 TO 120 METRES.

GREY LIMESTONE; THICK TO MEDIUM BEDDED WITH NEOMEGALODON PELCYPOUS, CORALS, AND BRYOZOA. THICKNESS IS ABOUT 25 TO 50 METRES. MONOTIS LIMESTONE; TAN TO GREYY, THIN-BEDDED LIMESTONE. THICKNESS IS BETWEEN 0 AND 15 METRES.

Middle(?) Norian

utt1

HED BEDS: CONGLOMENATE AND CONGLOMENATIC SANDSTONE, MASSIVE TO THICK
BEDDED: CLASTS ARE MAINLY INTERMEDIATE TO FELSIC VOLCANICS AND LIMESTONE
WITH MINOR PLUTONIC ROCK FRAGMENTS. THICKNESS IS GREATER THAN 200
METRES; BASE IS NOT EXPOSED.

CADWALLADER GROUP

Hurley Formation - lower Norian

utch

AND BLACK ARGILLITE. TUFFACEOUS SANDSTONE WITH INTERBEDDED
CONGLOMERATES WITH CLASTS OF LIMESTONE, MAFIC TO INTERMEDIATE VOL
ROCKS AND QUARTZ-BEARING PLUTONIC ROCKS (LIMESTONE BLOCKS AND
LIMESTONE-RICH CONGLOMERATES DENOTED AS Ls). THICKNESS IS UNKNOWN
PROBABLY SEVERAL THOUSAND METRES.

Transitional unit - upper Kamian - lower Norian to lower Norian

Pioneer Formation - upper Karnian - lower Norian and older(?)

BASALTIC VOLCANIC ROCKS; PILLOWED AND BRECCIATED, GREEN- TO PURPLE-WEATHERING BASALTIC VOLCANICS. MINOR AND ESTIC AND QUARTZ-BEARING RHYOLITIC DYKES. THICKNESS IS UNKNOWN AND BASE IS NOT EXPOSED.

### N(?) TO JURASSIC

BRIDGE RIVER COMPLEX

A STRUCTURAL COMPLEX OF CHERT, METACHERT, CLASTIC ROCKS, LIMESTONE,
GREENSTONE, BLUESCHIST-GREENSCHIST, AND SERPENTINITE. THE AFFINITY OF CLASTIC ROCKS IS NOT KNOWN; SOME MAY REPRESENT TECTONIC INCLUSIONS OF CADWALLADER GROUP, RELAY MOUNTAIN GROUP OR THE JACKASS MOUNTAIN GRALTERNATIVELY, SOME OR ALL OF THE CLASTIC ROCKS MAY BE UNIQUE TO THE BRIVER COMPLEX. DESIGNATION OF INDIVIDUAL UNITS IS IMPOSSIBLE AT THIS SCAL INSTEAD, ROCKS TYPES AT FIELD STATIONS ARE DENOTED AS FOLLOWS: CHERT AIM METACHERT (Ch), CLASTIC ROCKS (Sa), ARGILLITE (Ar), LIMESTONE (Ls), GREENSTONE BLUESCHIST AND GREENSCHIST WITH MINOR METACHERT (Bg), HARZBURGITE (Hz), SERPENTINITE (S) AND CARBONATE-ALTERED SERPENTINITE (Sc).

ME SERPENTINITE WITH TECTONIC INCLUSIONS OF VARIOUS LITHOLOGIES, MOST, IF NOT ALI

### INTRUSIVE ROCKS

EQUIGRANULAR BIOTITE QUARTZ DIORITE TO GRANODIORITE.

KTI FELSIC TO INTERMEDIATE, EQUIGRANULAR TO PORPHYRITIC STOCKS AND DYKES.

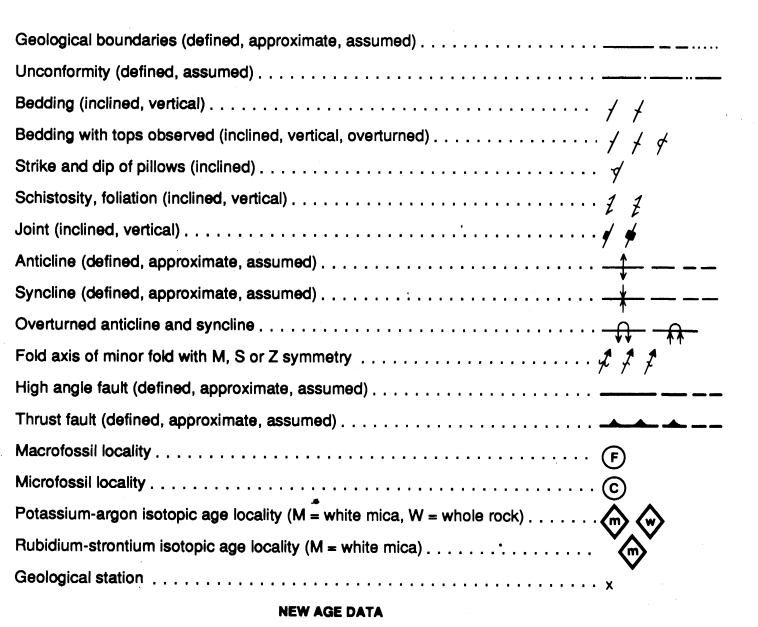
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Ministry of Energy, Mines and Resources Canada Petroleum Resources

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#### SYMBOL



## MACROFOSSILS (F)

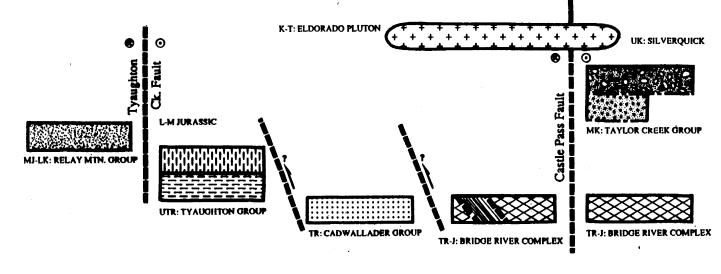
Lizard formation

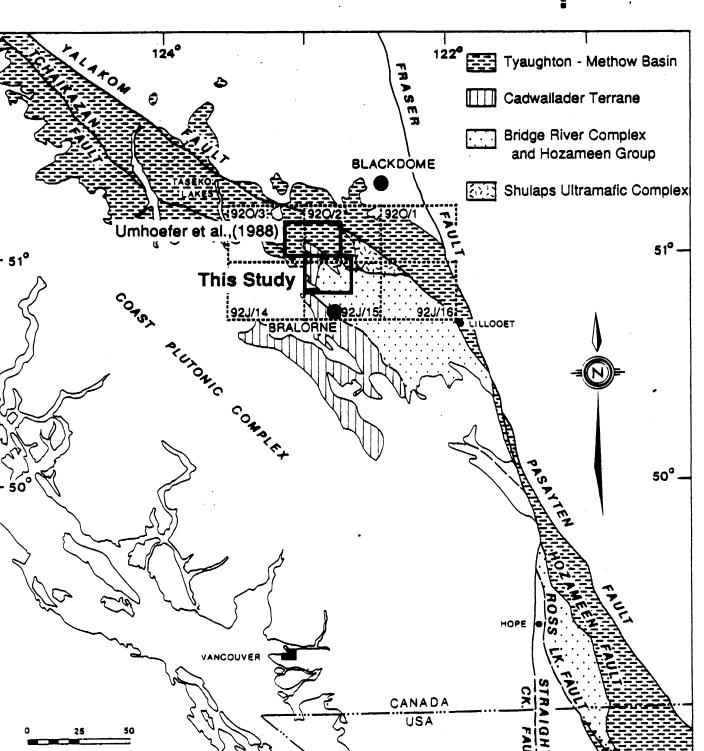
1) (GSC loc. C-143126) ?Marshallites sp. indet.; ?Desmoceras (Pseudohligella) sp. indet. juven.; Inoceramus cf. I. concentricus (Parkinson); Inoceramus ex. gr. angelicus Woods; Lima (s. lato) sp. indet.; Indeterminate pelecypods, gastropods and sponge. "Almost certainly some part of the Albian stage of the international standard. However, a Cenomanian age of this rich but poorly preserved fauna cannot be ruled out without further collecting" (J.A. Jeletzky, personal communication, October 1988).

# RADIOMETRIC (m) (w) 1) 195 +/- 6 Ma; 222 +/- 8 Ma; 250 +/- 9 Ma, K-Ar whole rock (R.L. Armstrong, University of British Columbia, March 1988).

2) 244 +/- 7 Ma, K-Ar white mica (R.L. Armstrong, November 1988).3) 217 +/- 5 Ma, Rb-Sr white mica (R.L. Armstrong, November 1988).

#### TECTONOSTRATIGRAPHIC LEGEND

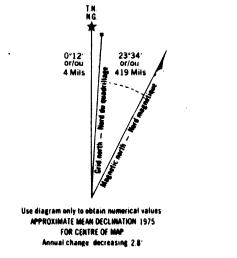




REFERENCE

Umhoefer, P.J., Garver, J.I., Glover, J.K. and Schiarizza, P. (1988): Geology of the Relay Mountain Area (920/2, 920/3), B.C. Ministry of Energy, Mines and Petroleum Resources,

Open File 1988-16, 1:20 000.



NOTE: The base map is constructed from 1:20 000 scale B.C. Ministry of Forests Interim Planimetric Base Maps which show only physiography. Topographic contours (C.I. = 100 feet) enlarged from 1:50 000 scale federal topographic maps are superimposed on this base map and are therefore only approximate.