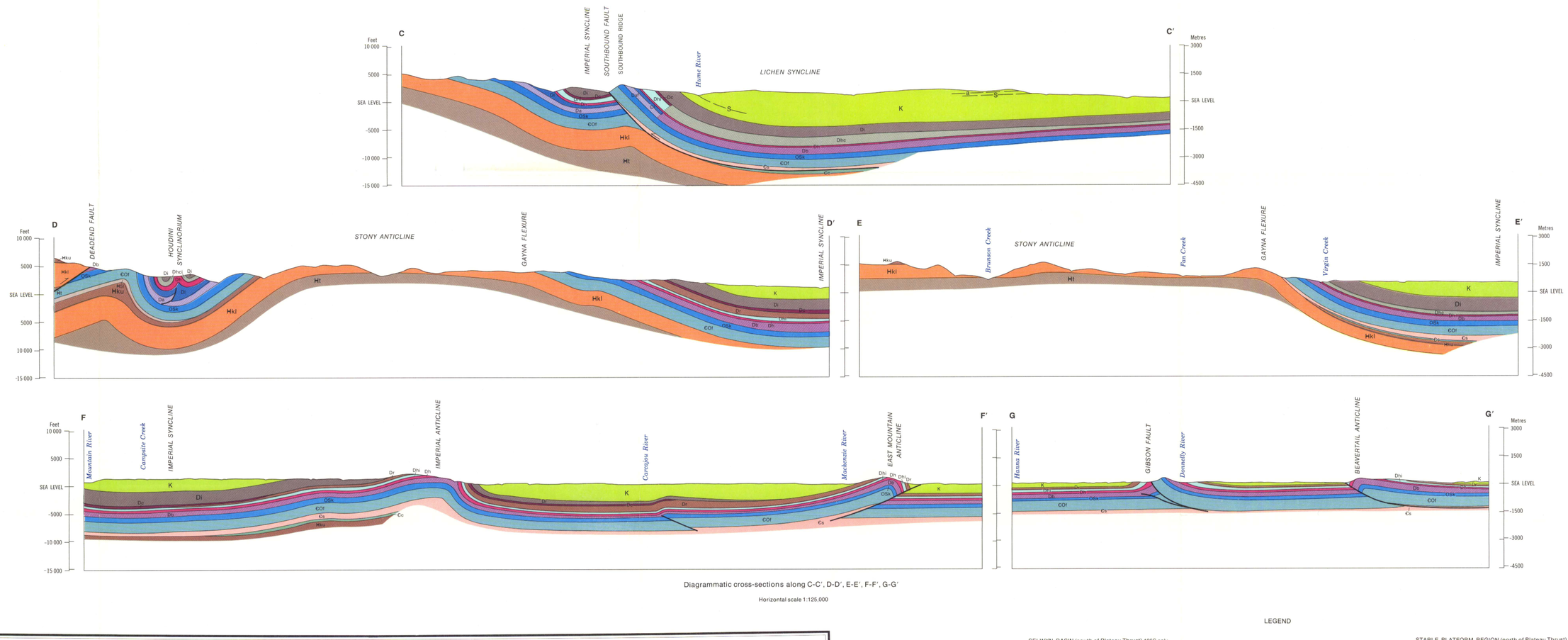
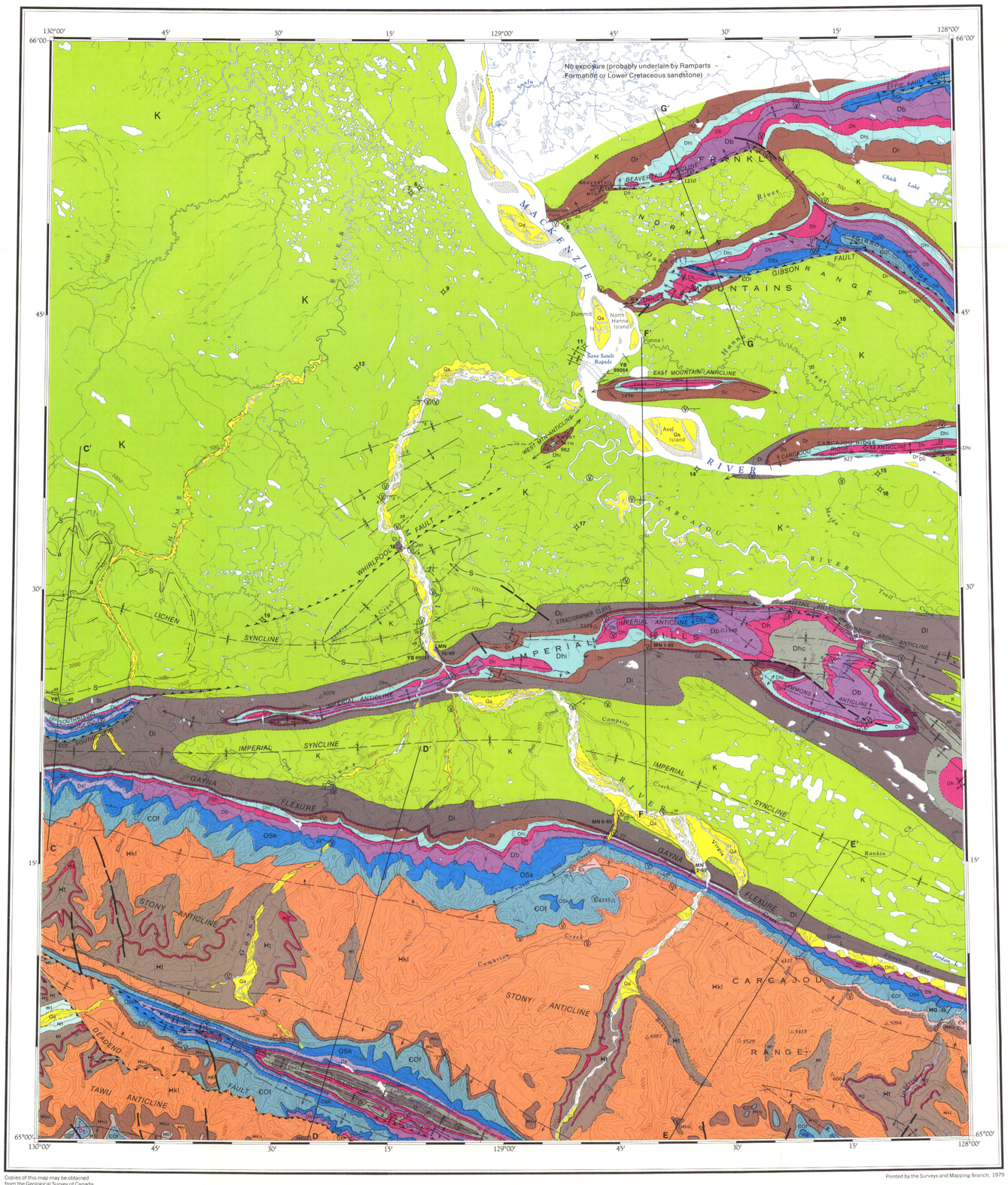
GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES



Diagrammatic cross-sections along C-C′, D-D′, E-E′, F-F′, G-G′

Horizontal scale 1:125,000



LEGEND

SELWYN BASIN (south of Plateau Thrust) 106G only

PALEOZOIC

DEVONIAN
MIDDLE DEVONIAN
- Dh — *HUME FORMATION*: limestone, fossiliferous; minor shale; marine
LOWER DEVONIAN
- Dl — *LANDRY FORMATION*: limestone, thick-bedded, resistant; marine
- Da — *ARNICA FORMATION*: dolomite, brown, striped; minor gypsum and solution-breccia; marine

LOWER AND (?) MIDDLE DEVONIAN
- D — *Devonian carbonate formations, undifferentiated*

SILURIAN (?) AND DEVONIAN (?)
UPPER SILURIAN (?) AND LOWER DEVONIAN (?)
- SD — *Unnamed map unit* SD: dolomite, partly sandy, silty, argillaceous; limestone; marine

ORDOVICIAN AND SILURIAN
UPPER ORDOVICIAN AND LOWER SILURIAN
- OSk — *MOUNT KINDLE FORMATION*: dolomite, siliceous, fossiliferous; minor chert; marine

CAMBRIAN AND ORDOVICIAN
UPPER CAMBRIAN AND LOWER ORDOVICIAN
- €Of — *FRANKLIN MOUNTAIN FORMATION*: dolomite, monotonous; secondary chert; red beds locally at base; marine

CAMBRIAN AND ORDOVICIAN
- €Ot — *Transitional unit*; dolomite and limestone; shale interbeds; marine

CAMBRIAN TO DEVONIAN
- €Dr / €Dr′ — *ROAD RIVER FORMATION*: shale, limestone, dolomite, chert; marine. €Dr′ - mappable carbonate units, largely debris flows

CAMBRIAN
LOWER CAMBRIAN
- €sk — *SEKWI FORMATION*: limestone, dolomite; minor shale and quartzite; marine
- €b — *BACKBONE RANGES FORMATION*: sandstone, quartzite, dolomite, varicoloured shale; marine and (?) nonmarine

PROTEROZOIC

HADRYNIAN (?)
- Hs — *SHEEPBED FORMATION*: shale, dark grey to black; marine
- Hk — *KEELE FORMATION*: limestone, dolomite, quartzite, shale, conglomerate; marine
- Hr — RAPITAN GROUP *(Mainly or entirely upper division)*: shale, siltstone, sandstone, pebbly grit; marine

HELIKIAN (?)
- Hld — *LITTLE DAL FORMATION*: dolomite and limestone, polygenic, partly sandy, silty, argillaceous; minor shale; marine
- H5u — *Unnamed map unit* H5 *(Upper division)*: shale, dolomite, quartzite; thick gypsum; marine

Geological boundary (defined, approximate, assumed)
Bedding (horizontal, inclined, vertical, overturned)
Photogeological strike and dip (0°-15°, 15°-45°, 45°-90°). (horizontal, vertical)
Fault, sense of displacement unknown (defined, approximate or assumed)
Fault, thrust or reverse (defined, approximate or assumed; teeth indicate upthrust side)
Folds, more or less symmetrical
Anticline, trace of axial plane (approximate; arrow indicates plunge)
Syncline, trace of axial plane (approximate; arrow indicates plunge)
Folds, strongly asymmetrical (short arrow on steeper limb); Anticline (approximate; arrow indicates plunge)
Monoclinal bend, anticlinal, trace of hinge plane (approximate; arrow on steeper limb)
Monoclinal bend, synclinal, trace of hinge plane (approximate; arrow on steeper limb)
Overturned fold (anticline, syncline)
Ground observation (mapping station)
Exploratory well
Stratigraphic section; locus of measurement (numbers refer to internal cataloguing system) studied by: W.S. MacKenzie, MN; R.W. Macqueen, MQ; J.L. Usher, U; C.J. Yorath, YB — YB 69081 (A – A′)
Line of section
Landslide, rock avalanche

Geological compilation by J.D. Aitken and D.G. Cook, 1974, based on ground and airborne observations and study of aerial photographs (1969, 1970) by J.D. Aitken, H.R. Balkwill, D.G. Cook, W.S. MacKenzie, R.W. Macqueen, J.L. Usher and C.J. Yorath, and on published and unpublished sources

To accompany G.S.C. Memoir 388 by J.D. Aitken, D.G. Cook and C.J.Yorath

EXPLORATORY WELLS
(MAP 1453A)

Atlantic et al. *Beavertail G-26*	5	*Amoco* et al. *A-1 Carcajou K-68*	13
Arco Clarke et al. *Hume River D-53*	6	*TPPL* et al. *Carcajou J-27*	14
Triad BP Arco CC Hume River O-62	7	*McD Can GCO Maida Creek F-57*	15
Atlantic et al. *Shoals C-31*	8	*McD Can GCO Maida Creek G-56*	16
Arco Clarke et al. *Mountain River H-47*	9	*Triad BP Arco CC Carcajou L-24*	17
Mesa Murphy CGOA Hanna River J-05	10	*Imperial Whirlpool No. 1*	18
Imperial Sans Sault No. 1	11	*Mobil Hume River L-09*	19
Candel et al. *SOBC Mountain River A-23*	12		

STABLE PLATFORM REGION (north of Plateau Thrust) 106G and 106H

CENOZOIC

QUATERNARY
- Qa — *Alluvium, largely gravel and sand*

MESOZOIC

CRETACEOUS
LOWER AND UPPER CRETACEOUS
- K — *Undifferentiated: a lower, marine sequence of shale, siltstone and minor sandstone (Arctic Red Formation) is overlain by, and partly equivalent to, an upper, nonmarine and (?) marine sequence of sandstone and shale (Trevor Formation in part). Stratigraphic markers:* S - *local base of sandstone-bearing sequence.* a - *(b, c, etc.) base of any prominent sandstone unit*

PALEOZOIC

DEVONIAN
UPPER DEVONIAN
- Di — *IMPERIAL FORMATION*: shale, sandstone; marine
- Dc — *CANOL FORMATION*: shale, black, siliceous, bituminous; marine

MIDDLE DEVONIAN
- Dr — *RAMPARTS FORMATION*: limestone; marine
- Dhi — *HARE INDIAN FORMATION*: shale, greenish-grey, black at base; minor siltstone and limestone; marine

MIDDLE AND UPPER DEVONIAN
- Dhc / Dhci — *HARE INDIAN AND CANOL FORMATIONS*: undifferentiated. Dhci: includes basal Imperial shale

- Dh — *HUME FORMATION*: limestone, fossiliferous; minor shale; marine

LOWER DEVONIAN
- Dl — *LANDRY FORMATION*: limestone, thick-bedded, resistant; marine
- Da / Da′ — *ARNICA FORMATION*: dolomite, brown, striped; minor gypsum and solution-breccia; marine. Da′: includes thin unit SD at base

LOWER DEVONIAN
- Db — *BEAR ROCK FORMATION*: dolomite, bituminous; gypsum; solution-breccia; marine

SILURIAN (?) AND DEVONIAN (?)
UPPER SILURIAN (?) AND LOWER DEVONIAN (?)
- SD — *Unnamed map unit* SD: dolomite, partly sandy, silty, argillaceous, partly orange-weathering; limestone; marine

ORDOVICIAN AND SILURIAN
UPPER ORDOVICIAN AND LOWER SILURIAN
- OSk — *MOUNT KINDLE FORMATION*: dolomite, siliceous, fossiliferous; minor chert; marine

CAMBRIAN AND ORDOVICIAN
UPPER CAMBRIAN AND LOWER ORDOVICIAN
- €Of / €Ofb — *FRANKLIN MOUNTAIN FORMATION*: dolomite, polygenic, partly silty, argillaceous, commonly sandy near base; very minor chert; marine. €Ofb - basal red beds

CAMBRIAN AND ORDOVICIAN
- €Ot — *Transitional unit*: dolomite and limestone; shale interbeds; marine

CAMBRIAN
UPPER CAMBRIAN
- €s — *SALINE RIVER FORMATION*: red beds; shale, siltstone, sandstone; salt, gypsum, anhydrite, dolomite; marine

LOWER AND MIDDLE CAMBRIAN
- €c — *MOUNT CAP FORMATION*: shale, thin-bedded limestone, glauconitic sandstone, siltstone; marine

PROTEROZOIC

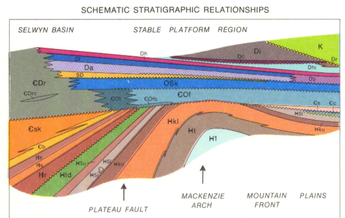
HELIKIAN (?)
- Hg — *Basic intrusions: dykes and sills of gabbro, greenish-black, medium-grained*
- Hld — *LITTLE DAL FORMATION*: dolomite and limestone, polygenic, partly sandy, silty, argillaceous; minor shale; marine

- H5u / H5l / H5r — *Unnamed map unit* H5
  - H5u *(Upper division)*: shale, dolomite, quartzite; thick gypsum; marine
  - H5l *(Lower division)*: limestone, commonly nodular; shale, dark grey, red; dolomite, polygenic; siltstone, quartzite; marine
  - H5r: *reefs of stromatolitic limestone and dolomite in lower division*

KATHERINE GROUP
- Hku / Hkl — Hku *(Upper division)*: quartzite, dolomite, shale; marine and (?) nonmarine; Hkl *(Lower division)*: mainly quartzite; minor shale and dolomite; marine and (?) nonmarine

- Ht — *TSEZOTENE FORMATION*: shale, sandstone, dolomite; marine and (?) nonmarine; gabbro sills
- H1 — *Unnamed map unit* H1: dolomite, minor chert; marine

SCHEMATIC STRATIGRAPHIC RELATIONSHIPS



Unconformity

Geological cartography by G.S. Whitman, Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at the same scale published by the Surveys and Mapping Branch in 1959 and 1960

Copies of the topographical edition of this map may be obtained from the Canada Map Office, 615 Booth Street, Ottawa, Ontario K1A 0E9

Magnetic declination 1977 varies from 37°16.2′ easterly at centre of west edge to 37° 39′ easterly at centre of east edge. Mean annual change 4.9′ westerly

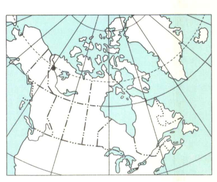
Elevations in feet above mean sea level

New approved topographic names relevant to the geology have been added to the base by the Institute of Sedimentary and Petroleum Geology

MAP 1453A
SANS SAULT RAPIDS
DISTRICT OF MACKENZIE

Printed by the Surveys and Mapping Branch, 1979

Copies of this map may be obtained from the Geological Survey of Canada:
601 Booth Street, Ottawa, Ontario K1A 0E8
3303 - 33rd Street N.W., Calgary, Alberta T2L 2A7



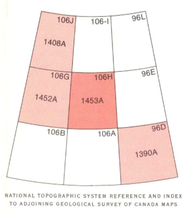
INDEX MAP

MAP 1453A
GEOLOGY
SANS SAULT RAPIDS
DISTRICT OF MACKENZIE

Scale 1:250,000

Kilometres 6 0 6 12 18 Kilometres
Miles 4 0 4 8 Miles

Transverse Mercator Projection



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