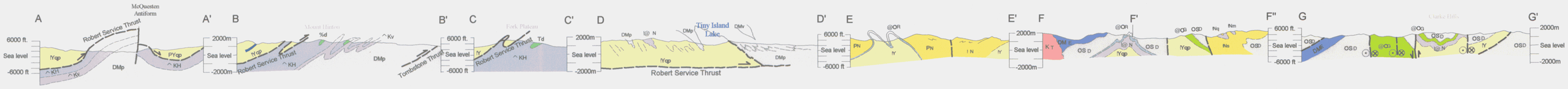
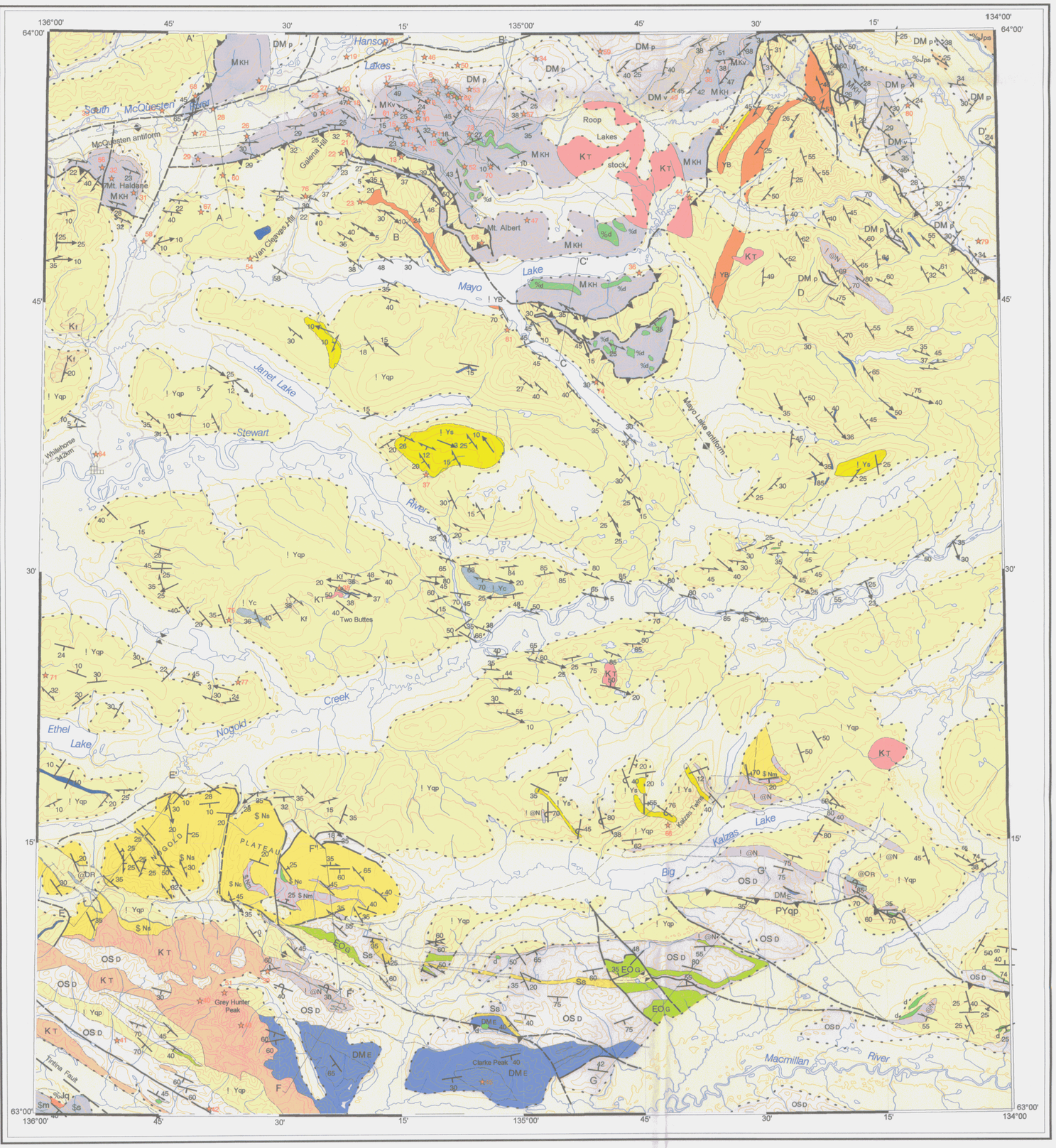


Yukon Government

Canada

Canada/Yukon Economic Development Agreement

GEOLOGICAL SURVEY OF CANADA COMMISSION GEOLOGIQUE DU CANADA



LEGEND

NEOGENE

Q — Glacial drift and moraine, river deposits (unconsolidated)

UNITS NORTHEAST OF TINTINA FAULT

CRETACEOUS (Tombstone Intrusions)

Kf — biotite felsite[1]

Kr — feldspar-, quartz-phyric, rhyolite and aplite dykes,[2] locally clay and carbonate altered; on Galena Hill and Mt. Haldane; not depicted here

KT — hornblende ± biotite granite, quartz monzonite and granodiorite[3]

TRIASSIC (Tombstone thrust sheet)

%d — amphibole-chlorite (rarely augite) metadiorite and metagabbro, foliation-concordant

TRIASSIC and/or OLDER (Robert Service thrust sheet)

d — amphibole-chlorite metadiorite and altered peridiorite

TRIASSIC AND JURASSIC

JONES LAKE FORMATION

%Jps — brown, grey, green-weathering slate, sandy slate, dark grey limestone, calcareous sandstone, phyllite

EARLY CARBONIFEROUS

MKH — Keno Hill Quartzite (Tombstone thrust sheet): foliated, lineated dark grey quartzite; lesser phyllitic quartzite, chloritic and carbonaceous phyllite; minor calcareous quartzite (recrystallized limestone bed near Keystone Creek)

MKv — Metavolcanic member[4] : quartz-, ±feldspar-phyric chloritic phyllite with mm-scale quartz augen; thin limestone horizons

MIDDLE TO LATE DEVONIAN

EARN GROUP

(Tombstone thrust sheet)

DMv — Felsic volcanic member[5] : foliated quartz-sericite chlorite-phyllite and phyllite with mm-scale quartz augen; carbonaceous phyllite

DMp — carbonaceous phyllite, siliceous carbonaceous metasiltstone, rare calcareous greywacke, metaconglomerate

(Robert Service thrust sheet)

DME — grey-blue weathering, jet black siliceous siltstone, grit- to pebble-sized conglomerate, brown shale[6] siltstone and chert

MIDDLE PALEOZOIC

Nogold unit (provisional)

!Nm — buff, maroon and minor green argillite with quartz sandstone adn siltstone interbeds; green chert horizon near base. Rare light grey weathering. dark grey limestone beds.[7]

PNc — thick-bedded green grit containing quartz and feldspar chips in chloritic matrix; 10-20 m thick

PNs — yellow and grey weathering sandstone and grit

ORDOVICIAN to MIDDLE SILURIAN

STEEL FORMATION

Ss — green cherty siltstone, argillite; locally calcareous

DUO LAKE FORMATION (includes minor STEEL FORMATION)

OSD — black, brown argillite with lesser black and grey chert, dark siltstone; thin- and wavy beds, load casts abundant in lower part; medium bedded upward with rare beds and lenses of grey limestone.[8] Top is white-weathering thin-bedded black chert with grey argillite

EARLY ORDOVICIAN or OLDER

RABBITKETTLE FORMATION

@OR — Light grey weathering, dark grey limestone, grit and siltstone with limy cement; locally cross-bedded and wavy laminated

GULL LAKE FORMATION

@OG — brown siltstone (olive- and brown-weathering siltsone with wispy black laminae is diagnostic); cherty black argillite; lesser black shale. At or above the base are grey dolostone[9] and dolostone breccia or pebble conglomerate; minor medium bedded light grey quartzite

UPPER PROTEROZOIC to LOWER CAMBRIAN

HYLAND GROUP

!@N — Narchilla Formation: maroon, grey and khaki argillite, siltstone; local sandstone interbeds

Yusezyu Formation: medium grey weathering, dark grey limestone lenses; (includes Van Cleaves Hill occurrence, which may be younger)

! Yc — foliated chloritic metasiltstone with hornblende phenocrysts

!Yqp — compositionally layered mediumtocoarse-grained micaceous quartzose rock; muscovite-chlorite gritty phyllite; green and grey impure quartzite and metaconglomerate; rare calcsilicate

! Ys — medium to thick bedded sandstone with dark mudstone and sandstone interbeds, massive grit containing rip-ups, load casts and small cross-laminae. Local pink calcareous sandstone

! YB — Black phyllite member: brown weathering, black graphitic slate to carbonaceous phyllite with thin beds of fine-grained, dark grey quartz sandstone

UNITS SOUTHWEST OF TINTINA FAULT

JURASSIC or TRIASSIC

TJq — quartz feldspar porphyry

PALEOZOIC

!m — white marble

!s — quartz muscovite schist

SYMBOLS

Geological contact (defined, approximate, assumed)

Bedding (tops unknown, known, vertical, overturned) — 27, 62, 81

Foliation (inclined, vertical) — 35

Lineation (mineral streaking) — 10

Antiform or anticline (trace of axial plane; upright, overturned)

Synform or syncline (trace of axial plane; upright, overturned)

Fault, displacement unknown (exposed, inferred)

Thrust fault (approximate, assumed, overturned)

Mineral occurrence (Yukon Minfile number) — 67

Roads

MINERAL OCCURRENCES

1. UNITED KENO HILL (Ag, Pb, Zn veins; Holdings not shown; incl Keno and Galena hills)
2. FAITH (Ag, Pb- vein)
3. DUNCAN (Ag, Pb- vein)
4. GOLD QUEEN (Ag, Pb- vein)
5. SILVER BASIN (Pb, Ag, Au- vein)
6. NABOB (Ag, Pb- vein)
7. MONUMENT (Ag, Pb- vein)
8. COMSTOCK (Ag, Pb- vein)
9. APEX (Ag, Pb, Zn- vein)
10. VANGUARD (Ag, Pb- vein)
11. HOMESTAKE (Ag, Pb- vein)
12. CHRISTINE (Ag, Pb-vein)
13. MO (Pb, Ag-vein)
14. MAYBURN (Ag, Pb, Zn- vein)
15. HOGAN (Ag, Pb- vein)
16. RUNER (Ag, Pb- vein)
17. WERNECKE (Ag, Pb, Zn-vein)
18. FORMO (Ag, Pb, Zn-vein)
19. NOMAD
20. PADDY (Ag, Pb, Zn-vein)
21. EAGLE (Ag, Pb, Zn- vein)
22. FISHER (Pb, Zn, Ag- vein)
23. PARENT
24. CREAM and JEAN (Pb, Zn, Ag- vein)
25. NORD (Ag, Pb- vein)
26. GERLITZKI (Ag, Pb, Zn- vein)
27. TITAN (Ag, Pb- vein)
28. SHANGHAI (Ag, Pb, Zn- vein)
29. WAYNE (Ag, Pb, Zn, Au, W- vein)
30. ARGENT
31. STREBCHUK (Sn, Ag, Pb, W- vein)
32. MT. HALDANE (Ag, Pb, Zn- vein)
33. LAYSIER (Ag, Pb- vein)
34. COBALT (Ag, Pb-vein)
35. PATTERSON
36. ETTA
37. GORDON (Sb, Ag- vein)
38. TWO BUTTES (W, Mo- Ppy)
39. SIDESLIP (Cu- Skn)
40. GREAT HORN (W, Cu, Zn- Skn)
41. RAM
42. HOT SPRING (Ag, Pb- vein)
43. LOST WERNECKE COPPER
44. ROOP (W- Skn)
45. ABLE
46. MOON (Ag, Pb- vein)
47. MT. ALBERT (Ag, Pb- vein)
48. McKIM (Ag, Pb- vein)
49. VACA
50. NERO (Ag, Pb- vein)
51. FRIESEN (Cu, W- Skn)
52. MT. HINTON (Au, Ag- vein)
53. AVENUE (Ag, Pb- vein)
54. CHANCE (Sb- vein)
55. YONO (Ag, Pb- vein)
56. SUNDOWN (Ag, Pb- vein)
57. GUSTAVUS (Ag, Pb- vein)
58. HALFWAY
59. RANKIN
60. NEWRY
61. CHRISTAL (Ag, Pb, Zn- vein)
62. SEGSWORTH (Ag, Pb, Zn- vein)
63. IRONCLAD (Ag, Pb, Zn- vein)
64. WALLINGHAM
65. NADAR
66. KALZAS (W, Sn- vein)
67. CORKERY
68. WEASEL
69. GAMBLER (Ag, Pb- vein)
70. HAVRENAK (Au, Ag- vein)
71. DRILL (W- vein)
72. BELEY (Zn- vein)
73. BEMA (Au, Ag- vein)
74. BIRGIT
75. WHITEMAN
76. GOLDROCK
77. T-BIRD
78. FEED
79. TINY ISLAND (Ba- Form)
80. GORDEY (Ba- Form)
81. STEVEN

Numbered with Yukon Minfile reference numbers

FOOTNOTES

Ages determined from radiogenic isotopes(1-5), macrofossils (6) and conodonts (7-9)

1. Roaring Fork felsite: U-Pb zircon 91.7 ±0.5 Ma (Appendix 4); South side of Minto Creek, K-Ar whole rock: 85.3 ±2.1 Ma GSC #87-164, Hunt and Roddick, 1987
2. Mount Haldane porphyry: K-Ar on biotite separate: 89.0 ±2.6 GSC #80-74, Stevens et al., 1982
3. Roop Lakes stock: U-Pb on 2 titanites; 92.8 ±0.5 Ma (p.284; Appendix 4) Two Buttes stock: U-Pb on 2 titanites; 92.8 ±0.3 Ma (90-RAS-25 Appendix 4) McArthur batholith: U-Pb on 3 monazites; 94.0 ±0.3 Ma (RAS-91-57b; Appendix 4)
4. Porphyritic felsic metavolcanic rock in Patterson Range (within Keno Hill quartzite unit): U-Pb zircon; 377.9 ±2.9 Ma (91-DM-78; Appendix 4)
5. Quartz-augen phyllite (2 samples) from unit DMv near Tiny Island Lake: U-Pb zircon: 373.3 ±5.4 Ma and 380.9 ±1.3 Ma (GGA-91-137, -157; Appendix 4)
6. Spiriferid brachipod suggestive of Eleutherokomma reidfordi Crickmay, 1950 of mid-Frasnian (early Late Devonian) age (C-203017; Appendix 3); 3 km west southwest of Clarke Peak.
7. Echinoderm ossicle and Nowakia? sp. of latest Lochovian to mid-Famennian (Early to Late Devonian) age (GSC #C-203008; Appendix 3); recovered from 11.5 km northeast of Grey Hunter Peak.
8. Conodonts of Llandoverian/Wenlockian (Early-Middle Silurian) age (GSC# C-202240; Appendix 3); recovered from limestone 15 km west-northwest of Clarke Peak.
9. Primitive conodont of Late Cambrian/Early Ordovician age (GSC# C-202221; Appendix 3); recovered from dolostone 7 km south of the outlet of Big Kalzas Lake.

RECOMMENDED CITATION

ROOTS, C.F., 1997. Bedrock geology of Mayo map area, central Yukon (105M). Exploration and Geological Services Division, Indian and Northern Affairs Canada, Geoscience Map 1997-1, 1:50,000-scale..

This map accompanies ROOTS, C.F., 1997. Geology of the Mayo Map area, Yukon Territory, (105M). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs, Canada, Bulletin 7.

Digital cartography and drafting by Will van Randen, Yukon Geology Program.

Any revisions or additional geological information known to the user would be welcomed by the Yukon Geology Program Office.

Copies of this map, the accompanying report and Yukon Minfile may be purchased from the Geoscience Information and Sales, Exploration and Geological Services Division Indian and Northern Affairs Canada, Room 102-300 Main St., Whitehorse, Yukon Y1A 2B5, Ph. 867-667-3264 Fax. 867-667-3267.

Topographic base produced by *Surveys and Mapping Branch, Department of Energy, Mines and Resources, 1969*

Magnetic Declination 1996 varies from 31°26' easterly at the centre of the west edge to 32°14' easterly at the centre or the east edge
Mean annual change 4.2" westerly

MAYO
YUKON TERRITORY
SCALE 1:250,000

0 5 10 15 20 25

Contour interval 500 feet
Elevations in feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

Larsen Creek 116A	Nash Creek 106D	Nadaileen River 106C
McQuesten 115P	THIS MAP	Lansing 105N
Carmacks 115I	Glenlyon 105L	Tay River 105K

Indian and Northern Affairs Canada
Exploration and Geological Services Division
Yukon Region

Geoscience Map 1997-1

Bedrock geology of Mayo map area central Yukon (NTS 105 M)

by
C.F. Roots
Geological Survey of Canada