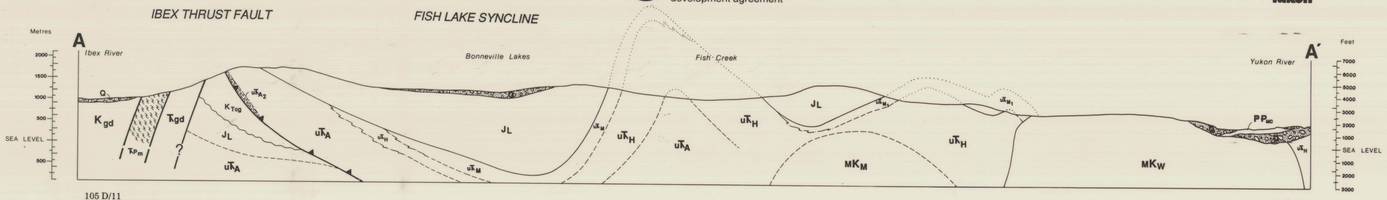
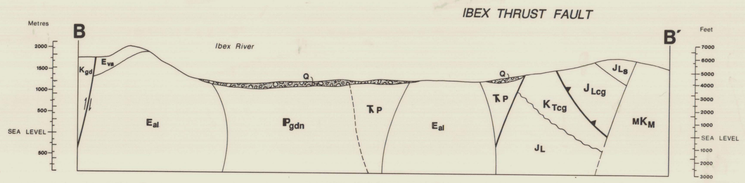
Canada

canada/yukon economic development agreement

Yukon

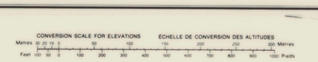


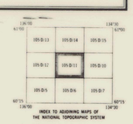




105 D/11

105 D/11

WHITEHORSE
YUKON TERRITORY
Scale 1:50 000 Échelle





## LEGEND

### QUATERNARY

- **Qf** — Unconsolidated gravel, sand and silt of fluvial or glaciofluvial origin
- **Ql** — Unconsolidated gravel, sand, silt and varved clay of lacustrine or glaciolacustrine origin
- **Qg** — Unconsolidated glacial moraine, kame, esker and drift material

### QUATERNARY(?) TO LATE TERTIARY
PLIOCENE TO PLEISTOCENE

- **PPMC** — **Miles Canyon Volcanics**: Dark red to brown weathering, columnar jointed, vesicular and amygduloidal basalt flows; pillow basalt and autoclastic breccia

### TERTIARY
OLIGOCENE

- **Ot** — Orange-brown weathering, resistant, medium-grained felsite and green, sub-volcanic, pyroxene-phyric dacite(?) (33 Ma [1])

EOCENE

- **Egr** — **Jackson Creek Granite**: Light grey weathering, coarse-grained, smokey quartz-eye, biotite granite with pale pink porphyritic potassium feldspar (55 Ma [2])
- **Eal** — **Ibex Alaskite**: Light orange weathering, medium-grained, leucocratic, alaskite and quartz-rich granite (58? Ma [3])
- **Eva** — Massive to poorly banded, fine-grained, dark weathering, glassy grey to black, locally porphyritic dacite and andesite

### CRETACEOUS
MIDDLE CRETACEOUS

- **MKM** — **Mount McIntyre Pluton**: Pale orange weathering, fine- to medium-grained pink granophyric monzonite porphyry, biotite quartz monzonite and accicular hornblende quartz monzonite (97 Ma [2])
- **MKM1** — Medium-grained, euhedral hornblende, granodiorite to quartz diorite
- **MKV** — Coarse-grained, medium grey to orange-pink, anorthositic, hornblende quartz syenite
- **MKW** — **Whitehorse Pluton**: Dark grey weathering, medium - grained, biotite-hornblende granodiorite, quartz diorite, hornblende diorite and gabbro; local weak foliation (105-116 Ma [2])
- **Kgd** — Dark grey weathering, medium- to coarse-grained hornblende and biotite-hornblende granodiorite

### TRIASSIC AND OLDER (?)

- **Ŧgd** — Dark grey weathering, medium- to coarse-grained hornblende granodiorite with glomeroporphyritic hornblende
- **Pgdn** — Moderately resistant, light weathering, medium-grained, weakly foliated to gneissic, leucocratic hornblende granodiorite, diorite and quartz diorite

### WHITEHORSE TROUGH

### CRETACEOUS
LOWER AND MIDDLE CRETACEOUS

- **KTcg** — **Tantalus Formation**: Massive to thick bedded, resistant, grey, black and white chert-pebble conglomerate with recessive, poorly-indurated beds of gritty chert, quartz and feldspar sandstone and interbeds of black and tawny coloured sandy shale often containing plant fragments; minor meta-anthracite coal

### JURASSIC
LOWER AND MIDDLE JURASSIC

LABERGE GROUP (HETTANGIAN TO AALENIAN)

- **JLcg** — Brown-orange weathering, resistant, massive, thick bedded, clast- and matrix supported, well-rounded granitic and volcanic cobble conglomerate; clasts of granodiorite and Lewes River Group volcanics with lesser metamorphic, quartz, limestone and sedimentary clasts, granitic clast dominant higher in section: interbedded greywacke, sandstone and argillite
- **JLs** — Pale to dark orange weathering, dark grey, massive, thick to medium bedded, coarse-grained, feldspathic and lithic greywacke with lesser arkose and quartz-rich grits; interbedded conglomerate and argillite
- **JLa** — Dark red-brown weathering, rhythmically and thin bedded, tawny to dark green and grey, silty argillite, shale, siltstone and hornfels; contains ammonoid fossils; minor interbedded massive sandstone and conglomerate

### UPPER TRIASSIC TO JURASSIC

LEWES RIVER GROUP (KARNIAN TO SINEMURIAN)

**Aksala Formation**

- **uŦM** — **Mandanna Member** (Late Norian to Sinemurian): Red, purple, green and grey, medium bedded to massive, crystal-rich greywacke and shale; minor interbedded conglomerate and red siltstone; occasional pebble-rich layers or bioturbation. Equivalent facies include: $uŦ_{M1}$ - coarse-grained, tan to brown, massive, immature, lithic-rich arenite; minor angular clast conglomerate, argillite and shale. $uŦ_{M2}$ - well bedded, red to maroon, poorly indurated siltstone with crystal-rich greywacke
- **uŦH** — **Hancock Member** (Norian): Resistant, white to light grey weathering, massive and thick bedded limestone, bioclastic limestone and marble; minor sooty black limestone and pale yellow dolostone: $uŦ_{H1}$ resistant, thin, well bedded, interlaminated white limestone and tan weathering, dark grey siltstone
- **uŦA** — **Annie Member** (Karnian to Norian): Resistant, massive to moderately well bedded, red, purple and green matrix (and clast) supported pebble conglomerate, agglomerate and debris flows; clasts of augite porphyry and subvolcanic dacite porphyry with crystal-rich wacke matrix; interbedded arenite and minor waterlain tuff; $uŦ_{A1}$ dacite-andesite feldspar (and hornblende) porphyry flows, agglomerate and breccia; minor red siltstone; $uŦ_{A2}$ - massive, grey, white to pink (often sheared or recrystallized) limestone and limestone breccia; located near the base of this member

- **Ŧp** — **Povoas Formation** (Karnian (and older?)): Resistant, massive, light to dark green weathering, dark green to black, basalt and basaltic andesite flows and breccia, commonly altered ; minor well indurated dark grey greywacke, agglomerate, tuff and associated epiclastic rocks with thin carbonate beds: $Ŧ_{Pm}$ - chlorite and chlorite-augite schists, augite-plagioclase gneiss and other variably metamorphosed equivalents of this Formation

### REFERENCES


[1] ARMSTRONG, R.L., 1989. Written communications.

[2] MORRISON, G.W., GODWIN, C.I., ARMSTRONG, R.L., 1979. Interpretation of isotopic ages and $^{87}Sr/^{86}Sr$ initial ratios for plutonic rocks in the Whitehorse map area, Yukon; Can. Jour. Earth Sci., Vol. 16, p. 1988-1997.

[3] DOHERTY, R.A. and HART, C.J.R., 1988. Preliminary Geology of Fenwick Creek (105D/3) and Alligator Lake (105D/6) map areas; Indian and Northern Affairs Canada:Yukon Region, Open File 1988-2.


### COMPILATION SOURCES


COCKFIELD, W.E. and BELL, A.H., 1944. Whitehorse District, Yukon; Geol. Surv. Can., Paper p. 44-14.

MORRISON, G.W., GODWIN, C.I. and ARMSTRONG, R.L., 1979. Interpretation of isotopic ages and $^{87}Sr/^{86}Sr$ initial ratios for plutonic rocks in the Whitehorse map area, Yukon; Can. Jour. Earth Sci., Vol. 16, p. 1988-1997.

MORRISON, G.W., 1981. Setting and Origin of Skarn Deposits in the Whitehorse Copper Belt, Yukon.; Unpublished Ph.D. thesis, University of Western Ontario, London, Ont.

WATSON, P.H., 1984. The Whitehorse Copper Belt - A Compilation; Exploration and Geological Services Division, Yukon. Indian and Northern Affairs Canada, Open File 1:25 000 scale map with marginal notes.

WHEELER, J.O., 1961. Whitehorse Map-area, Yukon Territory; Geol. Surv. Can. Memoir 312 (includes Map 1093).


## SYMBOLS

- Limit of outcrop
- Geological boundaries (definite, approximate, assumed, extrapolated beneath overburden)
- Facies change
- Bedding (inclined, vertical, overturned, tops unknown)
- Dyke (inclined, vertical)
- Schistosity or cleavage (inclined, vertical)
- Syncline (defined, approximate, assumed)
- Anticline, syncline (overturned)
- Fault (defined, approximate, assumed, extrapolated beneath overburden; circle on downthrown side)
- Thrust fault (defined, approximate, assumed; teeth on upper plate)
- Cross section line
- Mineral occurrence (number refers to Yukon Exploration series) ●207

## MINERAL OCCURENCES 105 D/11

| YEX Number | NAME | Commodity |
|---|---|---|
| 49 | LITTLE CHIEF | Cu,Fe,Au,Ag |
| 67 | GROUSE | Cu,Fe,Au,Ag,Bi |
| 71 | HARNIAK | Cu,Au,Ag |
| 80 | FISH LAKE | COAL |
| 81 | LUSCAR | COAL |
| 190 | RABBIT FOOT | Cu |
| 192 | PUEBLO | Cu,Fe,Ag |
| 193 | RESEVOIR LAKE | Mo,W |
| 194 | SCHEELITE | W |
| 195 | COPPER KING | Cu,Mo,Au,Ag |
| 196 | CARLISLE | Cu,Mo,Ag |
| 197 | SPRING CREEK | Cu |
| 198 | EMPRESS OF INDIA | Cu |
| 199 | RETRIBUTION | Cu |
| 200 | BEST CHANCE | Cu,Fe |
| 201 | GRAFTER | Cu,Fe |
| 202 | ARCTIC CHIEF | Cu,Fe,Au,Ag |
| 203 | SUBURBAN | Cu,Fe |
| 204 | VERONA | Cu,Fe |
| 205 | POLAR | Cu |
| 206 | BIG CHIEF | Cu,Fe,Au,Ag |
| 207 | MIDDLE CHIEF | Cu,Fe,Au,Ag |
| 209 | VALERIE | Cu,Fe,Au,Ag |
| 210 | NORTH STAR | Cu,Fe,Au,Ag |
| 211 | PASS LAKE | Cu |
| 212 | COPPER CLIFF | Cu |
| 225 | WAR EAGLE | Cu,Mo,Ag |
| 226 | ANACONDA | Cu |
| 274 | GULCH | Cu,Fe |
| 275 | QUINALTA | Cu |


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


# GEOLOGICAL MAP OF WHITEHORSE MAP AREA (105D/ 11)


Geology by C.J.R. Hart, K.S. Pelletier, J. Hunt and M. Fingland


to accompany

**OPEN FILE REPORT 1989-2**

Geology of Whitehorse (105D/11) map area; C.J.R. Hart and K.S. Pelletier, of Aurum Geological Consultants, Inc.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