

# LEGEND

1:50 000

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kqm   | Grey weathering, resistant, medium- to coarse-grained, megacrystic (K-feldspar), biotite quartz monzonite                                                                                                                                                                                                                                                                                                                                                                                    |
| u     | Pelite hornefels: red-rust to brown weathering, extremely well indurated, massive, fine grained                                                                                                                                                                                                                                                                                                                                                                                              |
| u     | Carbonate hornefels: white to grey weathering, extremely well indurated, fine- to coarse crystalline; large tremolite porphyroblasts abundant in hornefelsed uOI                                                                                                                                                                                                                                                                                                                             |
| uDMps | Grey weathering, resistant, thin- to very thick-bedded, massive, chert pebble conglomerate, and medium- to coarse-grained, light- to dark-grey, chert-quartz arenite and wacke; minor brown weathering, blue-grey to black shale, siltstone, and slate                                                                                                                                                                                                                                       |
| uDMps | Brown weathering, recessive, thin bedded, laminated, blue-grey to black shale, siltstone, and slate; minor grey-brown weathering, thin- to medium-bedded, fine- to medium-grained, chert-quartz arenite and wacke                                                                                                                                                                                                                                                                            |
| muR   | Black weathering, thin- to medium-bedded, black chert; minor black weathering, black, siliceous shale                                                                                                                                                                                                                                                                                                                                                                                        |
| muDpt | Black, gun-blue or silvery white weathering, thin bedded, siliceous, black shale, chert, and slate; merges with muR to southwest by increase in proportion of chert                                                                                                                                                                                                                                                                                                                          |
| mmDI2 | Light grey weathering, resistant, thin- to thick-bedded, fine- to medium crystalline, dark grey limestone                                                                                                                                                                                                                                                                                                                                                                                    |
| mDI   | Orange weathering, recessive, thin bedded, finely crystalline, dark blue-grey limestone                                                                                                                                                                                                                                                                                                                                                                                                      |
| mmDI1 | Orange-brown weathering, thin- to medium-bedded, finely crystalline, light- to dark-grey limestone                                                                                                                                                                                                                                                                                                                                                                                           |
| ImDI1 | Light grey weathering, resistant, thin- to thick-bedded, fine- to medium crystalline, dark grey limestone, in part crinoidal                                                                                                                                                                                                                                                                                                                                                                 |
| IDI   | Dark grey weathering, recessive, thin bedded, platy, finely crystalline, black limestone; minor grey weathering, medium bedded, finely crystalline, grey limestone                                                                                                                                                                                                                                                                                                                           |
| ImDI  | Light grey weathering, thin to thick beds of fine- to coarse crystalline, light colored, dolomite evenly interbedded with dark grey weathering, fine- to coarse crystalline, dark grey dolomite                                                                                                                                                                                                                                                                                              |
| IDI   | Light grey weathering, medium bedded, fine- to medium crystalline light- to dark-grey dolomite; member in middle part of unit of dark grey weathering, medium- to thick-bedded, fine- to medium crystalline, in part crinoidal, dark grey dolomite                                                                                                                                                                                                                                           |
| uSDI  | Buff, orange, or light grey weathering dolomite and limestone (Blussou <i>et al.</i> , 1968)                                                                                                                                                                                                                                                                                                                                                                                                 |
| uDI   | Blue-grey weathering, resistant, thin- to very thick-bedded, grey, crinoidal limestone characterized by abundant crinoid stem fragments with twin axial canals; massive fine- to medium crystalline, grey limestone; minor limestone breccia                                                                                                                                                                                                                                                 |
| ImDI2 | Dark grey weathering, thin- to medium-bedded, finely crystalline, black limestone                                                                                                                                                                                                                                                                                                                                                                                                            |
| SDI   | Tan, buff or dark grey weathering, recessive, thin bedded, laminated, argillaceous, finely crystalline, black limestone; in the northeast, black weathering, finely crystalline, black, crinoidal limestone with crinoid stem fragments having twin axial canals occurs near top of unit                                                                                                                                                                                                     |
| R     | Blue-grey weathering, thin bedded, finely crystalline, porcellaneous, black or dark blue-grey limestone                                                                                                                                                                                                                                                                                                                                                                                      |
| Sp    | Orange weathering, resistant, thick bedded, dolomitic, silty, grey mudstone characterized by discontinuous wavy black lamination and locally by abundant small pyrite cubes                                                                                                                                                                                                                                                                                                                  |
| OSp   | Black, gun-blue or silvery white weathering, recessive, black slate; minor thin interbeds of finely crystalline, black limestone and black chert; merges with OS to southwest by increase in proportion of chert, and with upper part of uOI to east by increase in proportion of limestone                                                                                                                                                                                                  |
| OR    | Black weathering, thin- to medium-bedded, dark grey to black chert; rare black siliceous shale; minor tan to brown weathering, recessive dark grey shale at base                                                                                                                                                                                                                                                                                                                             |
| uOSI  | White to grey weathering, thick- to very thick-bedded, massive, medium crystalline, grey dolomite, locally containing abundant nodules of black or grey chert                                                                                                                                                                                                                                                                                                                                |
| uEOSI | Grey to white weathering, medium- to thick-bedded, massive, fine- to medium crystalline, grey dolomite; in upper part minor thick beds of medium crystalline, black dolomite                                                                                                                                                                                                                                                                                                                 |
| uEds  | Brick red weathering, thin- to thick-bedded, maroon mudstone; orange to grey weathering, thick bedded, fine- to medium crystalline, light colored dolomite; medium bedded, medium- to coarse-grained, dolomitic, grey quartz arenite; thick bedded, finely crystalline, blue-grey limestone                                                                                                                                                                                                  |
| uEOd  | White to orange weathering, massive, fine- to medium crystalline, grey dolomite                                                                                                                                                                                                                                                                                                                                                                                                              |
| uEOI  | Rust-brown weathering, resistant, pyritic, amygdaloidal basalt; grey and rust-grey weathering, fissile, green tuff; minor dolomite                                                                                                                                                                                                                                                                                                                                                           |
| IOI   | Buff to grey weathering, recessive, thin bedded, finely crystalline, dark grey to black limestone                                                                                                                                                                                                                                                                                                                                                                                            |
| uEOI  | Blue-grey weathering, thin bedded, finely crystalline, porcellaneous, black limestone; minor grey weathering, thin bedded, finely crystalline, grey dolomite                                                                                                                                                                                                                                                                                                                                 |
| uEOI  | Grey to white weathering, thick bedded, massive, fine- to medium crystalline, grey to black dolomite; local dolomite breccia with large blocks of finely crystalline, grey dolomite in matrix of coarsely crystalline, white dolomite                                                                                                                                                                                                                                                        |
| uEOI  | White to buff weathering, laminated or thin bedded, finely crystalline, blue-grey limestone; includes in upper part northeast of Howard's Pass, thin bedded, finely crystalline, nodular, silty limestone; local thin bedded to massive, pale green, lapilli tuff                                                                                                                                                                                                                            |
| uEI   | Tan to orange brown weathering, thin bedded, finely crystalline, blue-grey limestone, locally nodular; at base is minor thin bedded, fine grained, grey quartz arenite                                                                                                                                                                                                                                                                                                                       |
| mEd   | Light grey weathering, resistant, thick bedded, massive, fine- to medium crystalline, grey dolomite                                                                                                                                                                                                                                                                                                                                                                                          |
| mEI   | Tan to brown weathering, recessive, thin bedded, finely crystalline, grey limestone                                                                                                                                                                                                                                                                                                                                                                                                          |
| IEds  | Orange weathering, thin- to thick-bedded, finely crystalline, locally sandy, cream, orange, or grey dolomite; minor medium- to thick-bedded, medium grained, white quartz arenite; minor purple weathering, thin bedded, purple siltstone                                                                                                                                                                                                                                                    |
| IEds  | upper - bright orange weathering, thin- to thick-bedded, finely crystalline light colored dolomite<br>middle - purple weathering, recessive, thin- to thick-bedded, brown to purple siltstone and dolomitic siltstone; minor thin bedded, orange weathering dolomite<br>lower - light orange to brown weathering, resistant, medium- to thick-bedded, medium grained, grey quartz arenite and interbedded brown siltstone; thin to thick interbeds of orange weathering dolomite towards top |
| IEId  | Grey to buff weathering, thin bedded, locally wavy bedded and nodular, finely crystalline blue-grey to black limestone; minor limestone conglomerate with rounded to subangular clasts of blue-grey weathering grey limestone and oolitic limestone in orange weathering, locally sandy, limestone matrix; upper 1/3 of IEId is white weathering, massive, finely crystalline, grey dolomite                                                                                                 |
| ImEp  | Tan weathering, resistant, medium bedded, variably calcareous and dolomitic, blue-grey siltstone and mudstone; parallel lamination in grey to black disrupted to discontinuous wispy lamination                                                                                                                                                                                                                                                                                              |
| IEp   | Brown to orange brown weathering, recessive, thin bedded, blue-grey slate and siltstone; minor fine grained subarkose to quartz arenite                                                                                                                                                                                                                                                                                                                                                      |
| IEcg  | Lenticular bodies of white weathering limestone conglomerate and minor blue-grey finely crystalline limestone; conglomerate clasts include fine grained blue-grey limestone, oolitic limestone, and archeocyath, matrix is orange to grey weathering, fine grained, locally sandy limestone                                                                                                                                                                                                  |
| HIeps | Dark brown to rust weathering, thin- to thick-bedded, greenish grey siltstone; very fine grained quartz arenite and/or subarkose; slate, southwest of South Nahanni River - dark brown weathering, pale green to blue-grey slate and siltstone, and minor greenish grey, very fine grained, quartz sandstone                                                                                                                                                                                 |
| HI    | Buff weathering massive dolomite                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| HIep  | Maroon, purple or green weathering, recessive slate, thin bedded or laminated in like colors; minor thin intervals of thin- to medium-bedded, fine grained, pale green, quartz arenite to subarkose and interbedded pale green to tan slate                                                                                                                                                                                                                                                  |
| HIep  | Orange, grey or tan weathering, thin- to medium-bedded, fine grained, pale green, quartz arenite to subarkose and interbedded pale green to tan slate                                                                                                                                                                                                                                                                                                                                        |
| Hsp   | Grey to brown weathering, thin- to thick-bedded, coarse grained, calcareous, grey quartz arenite and subarkose; quartz pebble conglomerate; brown to pale green slate; minor thin bedded grey or white finely crystalline limestone; sandstone contains conspicuous blue quartz, minor plagioclase and orthoclase                                                                                                                                                                            |

1:125 000

(formation names based on correlation with units of Gabrielse *et al.*, 1973)

|       |                                               |
|-------|-----------------------------------------------|
| Kqm   |                                               |
| u     |                                               |
| uDMps | 'black clastic'                               |
| muDpt | 'siliceous shale'                             |
| mmDI2 | Nahanni                                       |
| mDI   | Funeral                                       |
| mmDI1 | Headless                                      |
| ImDI1 | Landry                                        |
| IDI   | Natia                                         |
| ImDI  | Arnica                                        |
| IDI   | Sombre                                        |
| uSDI  | Deforme                                       |
| uDI   | Grizzly Bear                                  |
| SDI   | Road River (northeast)                        |
| OSp   | Road River (southwest)                        |
| uOSI  | Whittaker                                     |
| uEOSI | Broken Skull (minor? Sunblood and Whittaker?) |
| uEOI  |                                               |
| uEOI  |                                               |
| uEOI  | Broken Skull                                  |
| uEOI  | Rabbitkettle                                  |
| uEI   | Rabbitkettle                                  |
| mEd   | Avalanche                                     |
| mEI   | Rockslide                                     |
| IEds  | Sekwi                                         |
| ImEp  |                                               |
| IEp   |                                               |
| IEcg  |                                               |
| HIeps | Backbone Ranges                               |
| HI    |                                               |
| HIep  | 'Grit Unit' (upper part)                      |
| Hsp   | 'Grit Unit' (lower part)                      |

## EXPLANATION

e.g. ImDI - mnemonic signifying age and main lithology  
ImDI - lower Middle Devonian limestone  
but,  
ImDI - Lower and Middle Devonian limestone

Limit of outcrop.....  
Geological boundary (defined, approximate, assumed or extrapolated).....  
Bedding (horizontal, inclined, vertical, overturned).....  
Slaty cleavage (inclined, vertical).....  
Intersection of slaty cleavage and bedding (inclined, horizontal).....  
Axis of small scale fold (inclined, horizontal).....  
Fault, steeply dipping (defined, approximate, assumed or extrapolated).....  
Anticline (defined, approximate, extrapolated beneath overburden).....  
Syncline (defined, approximate, extrapolated beneath overburden).....  
Monocline (defined, approximate, extrapolated beneath overburden).....  
Anticline, syncline (overturned).....  
Fossil locality (not all localities shown).....  
Mineral occurrence.....

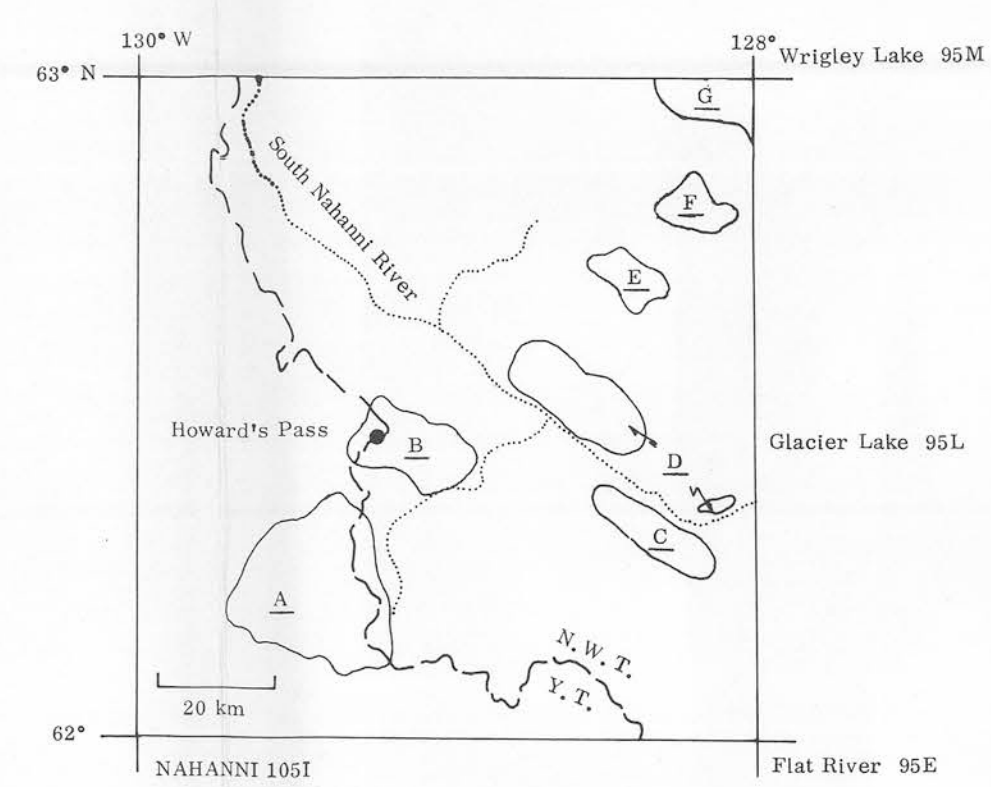
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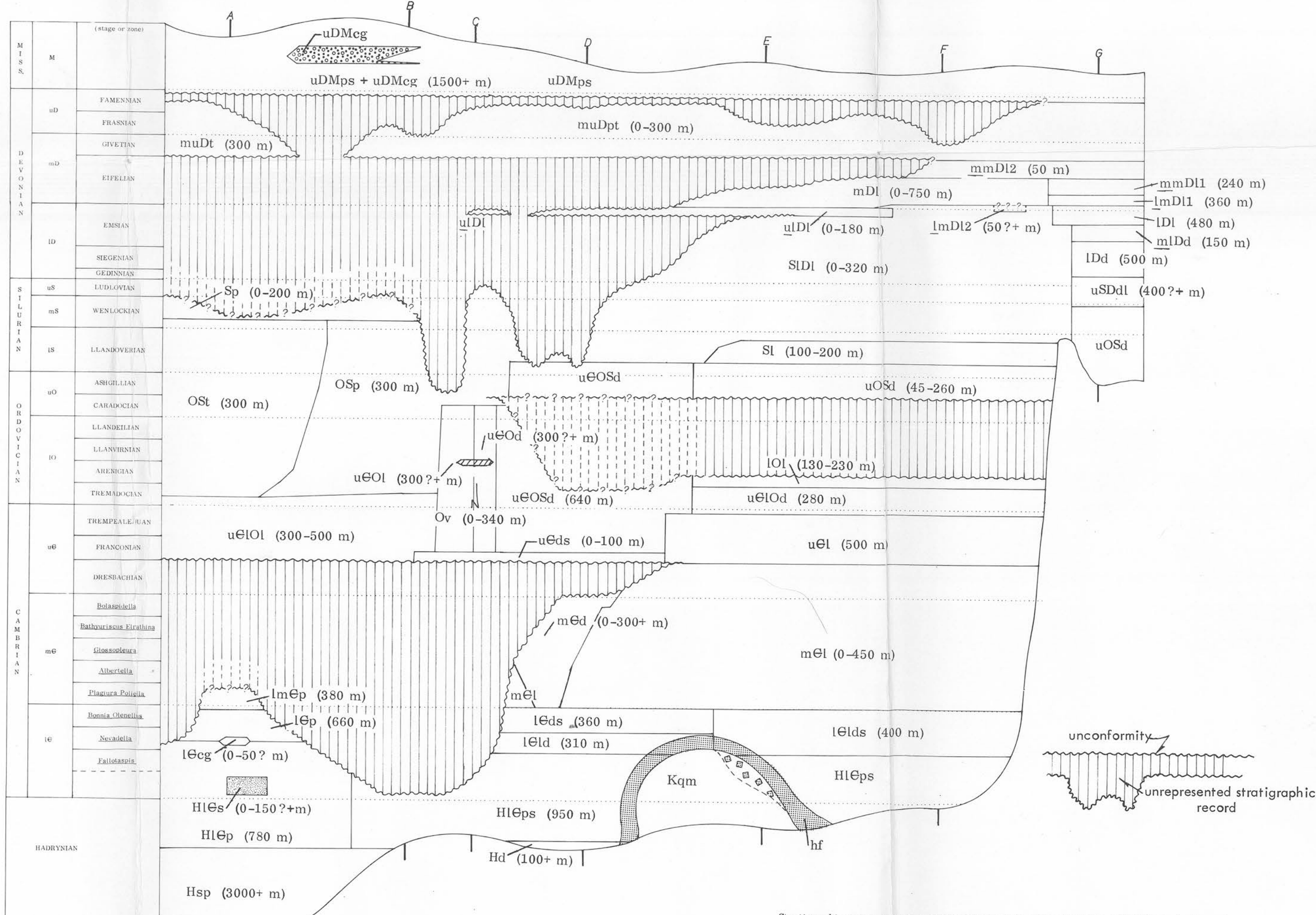
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## STRATIGRAPHIC RELATIONS

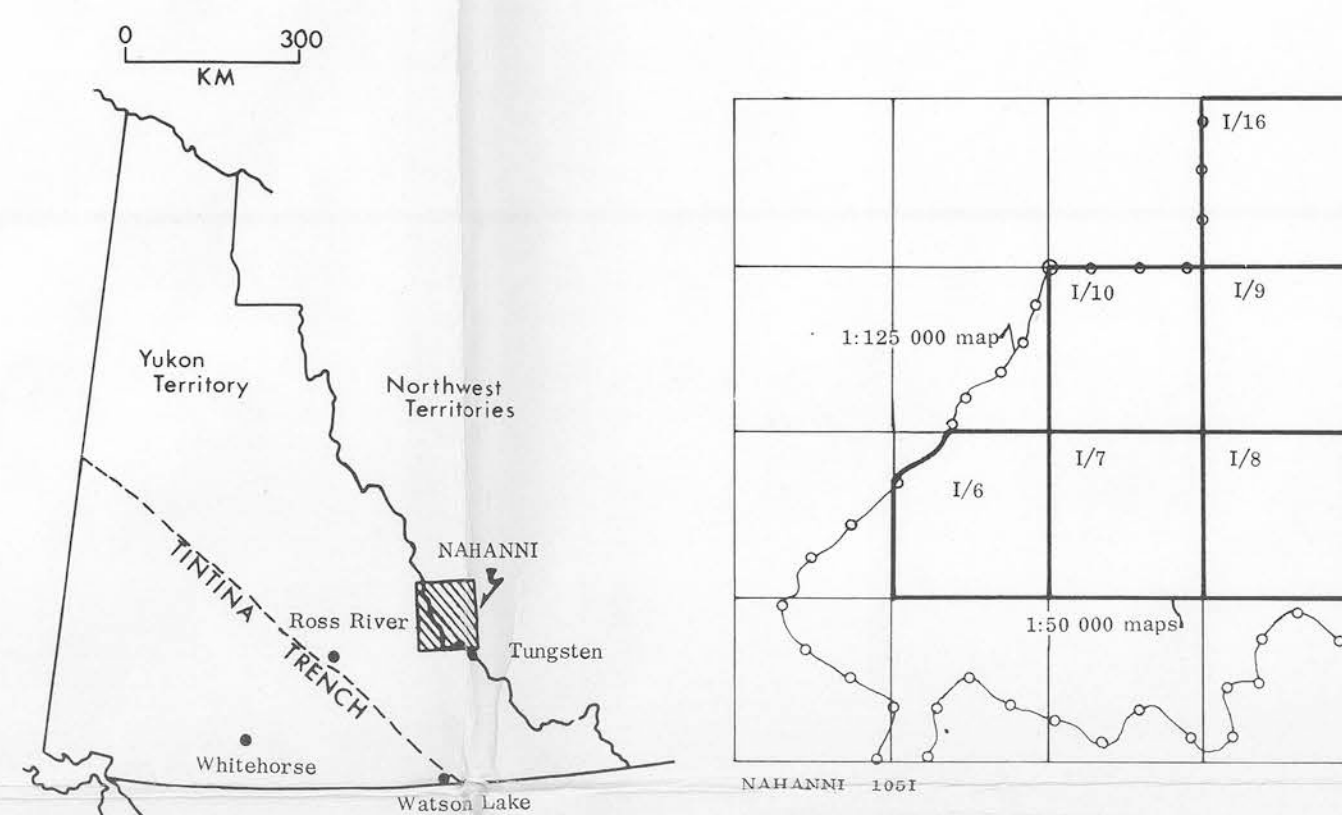


Location of composite sections on which stratigraphic cross-section is based



Stratigraphic cross-section through Nahanni map-area showing relationships of units and representative thicknesses. Units correspond to legend for 1:50 000 scale maps.

## LOCATION



## TYPES OF MINERAL OCCURRENCES

- A) Scheelite in skarn at contact of Cambro-Ordovician limestone (uEOI) and Cretaceous quartz monzonite (Kqm)
- 1) LENOED
- 2) RHODES
- 3) RUDY
- B) Stratiform sphalerite-galenite in Ordovician-Silurian shale (OSp)
- 4) XY (Howard's Pass)
- 5) PAS
- 6) GRAND
- 7) CUNEAU
- 8) WINKIE
- C) Massive pyrite-sphalerite in Silurian shale (OSp) with spatially associated barite and fluorite
- 9) VULCAN
- D) Stratiform barite (sphalerite and galena) in Devonian siliceous shale (muDpt)
- 10) COMINCO
- 11) GIMS
- E) Red sphalerite as vug fillings near base of upper Lower Devonian crinoidal limestone (uEOI)
- 12) BIG RED

O.F. 689

Geology by S. P. Gordey 1977, 1978, 1979 (with contributions from previous work by S. L. Blussou, J. A. Roddick, and L. H. Green, 1967)