Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

105-O/1 EDITION 1 **METRIC** **MÉTRIQUE** ÉDITION 1 105-O/1|105 P/4 EDITION 1 **METRIC** 105 P/4

METRIC/MÉTRIQUE

GEOLOGY
MacMillan Fold Belt
(parts of N.T.S. 105 O/1, 105 P/4)

Department of Indian Affairs and Northern Development
200 Range Road
Whitehorse, Yukon

OPEN FILE
June 1983
1 of 3 sheets
$5.00

Acknowledgements

Hudson Bay Exploration, Aberford Resources, Cominco, Amax and AGIP are thanked for their cooperation and support. Discussions with S. Gordey, M. Cecile, R. Bailes, P. Hubacheck, G. McArthur, B. Turner, C. Smith, D. Rhodes, F. Harris, T. Garragan, G. Bidwell, K. Taylor and R. Carne were invaluable.

Geology by Grant Abbott 1980, 1981, 1982.

LEGEND

CRETACEOUS

Kg — Resistant, blocky, grey weathering porphyritic to equigranular biotite quartz monzonite and biotite granite.

TRIASSIC

Trs — Recessive, dull brown weathering thin bedded to thinly laminated calcareous sandstone, siltstone, and shale.

PERMIAN AND (?) PENNSYLVANIAN

CPpt — Resistant, dark orange brown weathering interbedded greenish grey cherty shale and recessive green shale.

CARBONIFEROUS

Grey weathering thick bedded to massive bioclastic limestone; minor quartz arenite and shale. Occurs within unit Csp.

Cq — Dark grey weathering massive to thick bedded quartz arenite, thin to medium bedded sandstone and quartz arenite with shale interbeds. Occurs within unit Csp.

Csp — Recessive, brown, blue brown and dark blue weathering silty shale, shale and siliceous shale with some beds of sandstone and quartz arenite.

UPPER DEVONIAN

UPPER EARN GROUP

uDsp — Resistant, brown weathering, thick bedded, parallel laminated and ripple cross laminated sandstone, siltstone and shale; in southwest 105 O/1 and southwest and central 105 O/2, brown weathering shale, siltstone and minor sandstone.

(?) MIDDLE AND UPPER DEVONIAN

LOWER EARN GROUP (uDpt - emDpt)

uDpt — Talus forming, silver blue weathering, platey siliceous shale, minor chert and rare thin 2-5 cm thick beds of coarse grained limestone and platey grey weathering barite in beds less than 1 m thick.

muDpc — Resistant, grey weathering massive chert pebble conglomerate, lesser well bedded chert conglomerate with sandstone and grit interbeds and local, abundant sandstone and grit, occurs within unit muDps.

muDps — Brown weathering thinly laminated grey shale and siltstone with lesser chert quartz sandstone and grit and rare chert conglomerate.

LOWER AND MIDDLE DEVONIAN

emDpc — Blue grey weathering chert conglomerate with minor sandstone and grit. Occurs within unit emDpt.

emDpt — Black to dark blue weathering thin bedded chert, cherty argillite and siliceous shale. Light grey clastic limestone in beds 1 m thick or less near base and intermittent barite up to 30 m thick in 1 or more horizons may include Upper Devonian rocks in SW part of 105 O/12.

SILURIAN AND DEVONIAN

SDv — Orange weathering, carbonate rich mafic volcaniclastic rocks, and minor related sedimentary rocks. Local blocky, resistant dark grey weathering coarse grained mafic flows.

ORDOVICIAN, SILURIAN AND EARLY DEVONIAN

ROAD RIVER 'GROUP' (SDl, Sp, OSpt)

OSDpt

SDl — Buff to tan weathering platey, silty limestone, calcareous black shale. Locally includes lenses of massive grey limestone.

Sp — Orange to green weathering bioturbated, wispy laminated green shale and mudstone.

OSpt — Brown weathering, medium bedded chert overlain by silver to dark blue weathering, thin bedded black chert and siliceous shale.

CAMBRIAN AND LOWER ORDOVICIAN

COpl — Near Mactung and further east and northeast. Bluebrown weathering siliceous shale with minor limestone and limestone conglomerate. The shale is bounded by distinct limestone horizons; The lower is intermittent orange weathering unit of thin bedded grey limestone and limestone conglomerate. The upper is grey weathering thin bedded grey silty limestone, minor limestone and grey shale interbeds. West and Southwest of Mactung. Brown weathering, finely laminated grey and green shale with thin interbeds of grey limestone and some limestone conglomerate. Orange and grey weathering, thick bedded grey limestone occurs locally at the top.

(?) HADRYNIAN AND LOWER CAMBRIAN

HCps — Dark brown and grey weathering grey shale, siltstone and minor sandstone.

HCg — 'Grit Unit'; maroon, green and brown weathering shale, minor quartz grit and sandstone.

MAP SYMBOLS

- geological contact, defined approximate, assumed
- fault; defined, approximate, (sense of movement not known)
- normal fault; defined, approximate
- reverse fault; defined, approximate (dip less than 45°)
- reverse fault; defined, approximate (dip greater than 45°)
- limit of outcrop
- limit of mapping
- bedding; inclined, vertical, horizontal, overturned.
- cleavage; inclined, vertical (includes more than one phase)
- trend of fold axis (includes more than one phase)
- syncline; defined, approximate
- anticline, defined, approximate
- overturned anticline, defined, approximate
- overturned syncline; defined, approximate
- bedded barite; metalliferous and barren

REFERENCES

ABBOTT, J.G. 1981. Structure and Stratigraphy of the MacMillan Fold Belt, Yukon Exploration and Geology 1981 D.I.A.N.D. Geology Section Pub., Whitehorse, p. 22-33.

BLUSSON, S.L. 1971. Sekwi Mountain map-area, Yukon Territory and District of Mackenzie; Geol. Surv. Can., Paper 71-22.

BLUSSON, S.L. 1974. Operation Stewart (northern Selwyn Basin): Mount Eduni (106 A), Bonnet Plume Lake (106 B), Nadaleen River (106 C), Lansing (105 N) and Niddery Lake (105 O); Geol. Surv. Can., Open File 205.

CARNE, R.C. 1979. Geological Setting and Stratiform Mineralization, Tom Claims, Yukon Territory, D.I.A.N.D. EGS 1979-4, 30 p.

CECILE, M.P. 1980. Geology of Northeast Niddery Lake Map Area, Yukon (105 O); Geol. Surv. Can., Open File 765.

DAWSON, K.M. 1977. Regional Metallogeny of the Northern Cordillera; Geol. Surv. Can., Paper 77-1A, p. 1-14.

DAWSON, K.M. and M.J. ORCHARD 1982. Regional Metallogeny of the Northern Cordillera: Biostratigraphy of Bedded Barite Occurrences in Eastern Yukon and Western District of Mackenzie. Geol. Surv. Can., Paper 82-1B (in prep).

GORDEY, S.P. 1981a. Geology of Nahanni map-area (105 I), Yukon Territory and District of Mackenzie; Geol. Surv. Can., Open File 780.

GORDEY, S.P., WOOD, D.H., and ANDERSON, R.G. 1981b. Stratigraphic framework of southeastern Selwyn Basin, Nahanni map-area, Yukon Territory and District of Mackenzie; Geol. Surv. Can., Current Reasearch, Part A, Paper 81-1A, p. 395-398.

GORDEY, S.P., J.G. ABBOTT, M.J. ORCHARD 1982. Devono-Mississippian (Earn Group) and Younger Strata in East-Central Yukon; Geol. Surv. Can., Paper 82-1B, (in press).

HARRIS, F.R. 1977. Geology of the MacMillan Tungsten Deposit, Mineral Industry Report 1976. D.I.A.N.D. EGS 1977-1, p. 20-32.

SMITH, C.L. 1978. Geological Setting of Jason and Tom deposits, MacMillan Pass area, Eastern Yukon; Summary of Presentation, Whitehorse Geoscience Forum 1978, 6 p.

WINN, R.D., Jr., R.J. BAILES, AND K.I. LUE 1981. Debris Flows, Turbidities and Lead-Zinc Sulfides Along a Devonian Submarine Fault Scarp, Jason Prospect, Yukon Territory, in Siemers, C.T., Tillman, R.W., and Williamson, C.R. eds S.E.P.M. Core Workshop No. 2, p. 396-416.

LEGEND - LÉGENDE

ROAD, HARD SURFACE, ALL WEATHER	ROUTE, SURFACE DURCIE, TOUTES SAISONS
ROAD, LOOSE SURFACE	ROUTE, SURFACE DE GRAVIER
CART TRACK, WINTER ROAD	CHEMIN DE CHARROI, ROUTE D'HIVER
TRAIL, CUT LINE, PORTAGE	SENTIER, PERCÉE OU PORTAGE
BUILT-UP AREA	AGGLOMÉRATION
RAILWAY, SIDING, STATION, STOP	CHEMIN DE FER, VOIE D'ÉVITEMENT, STATION, ARRÊT
BRIDGE	PONT
SEAPLANE BASE; SEAPLANE ANCHORAGE	BASE D'HYDRAVIONS; ANCRAGE D'HYDRAVIONS
HOUSE; BARN	MAISON; GRANGE
CHURCH; SCHOOL; POST OFFICE	ÉGLISE; ÉCOLE; BUREAU DE POSTE
TOWER; FIRE; COMMUNICATION	TOUR; FEU; COMMUNICATION
WELL; OIL, GAS; TANK; WATER	PUITS; PÉTROLE, GAZ; RÉSERVOIR; EAU
POWER TRANSMISSION LINE	LIGNE DE TRANSPORT D'ÉNERGIE
MINE; GRAVEL PIT	MINE; CARRIÈRE DE GRAVIER
CUTTING; EMBANKMENT	DÉBLAI; REMBLAI
INTERNATIONAL, PROVINCIAL BOUNDARY WITH MONUMENT	FRONTIÈRE INTERNATIONALE, LIMITE PROVINCIALE AVEC BORNE
PROVINCIAL BOUNDARY, UNSURVEYED	FRONTIÈRE PROVINCIALE, NON ARPENTÉE
COUNTY, DISTRICT BOUNDARY	LIMITE DE COMTÉ OU DE DISTRICT
TOWNSHIP, PARISH BOUNDARY	LIMITE DE CANTON, DE PAROISSE
MUNICIPALITY BOUNDARY	LIMITE DE MUNICIPALITÉ
RESERVE, SANCTUARY, PARK, ETC. BOUNDARY	LIMITE DE RÉSERVE, SANCTUAIRES, PARCS, ETC.
OUTLINED LANDMARK AREA, BOUNDARY APPROXIMATE, ETC.	LIMITE DE SURFACE REPÈRE, LIMITE APPROXIMATIVE, ETC.
D.L.S. TOWNSHIP CORNER, SURVEYED; UNSURVEYED	COIN DE CANTON (A.T.C.), ARPENTÉ; NON ARPENTÉ
D.L.S. SECTION CORNERS	COINS DE SECTION (A.T.C.)
HORIZONTAL CONTROL POINT	POINT DE CONTRÔLE PLANIMÉTRIQUE
BENCH MARK WITH ELEVATION	REPÈRE DE NIVELLEMENT AVEC COTE
SPOT ELEVATION, PRECISE	POINT COTÉ PRÉCIS
STREAM OR SHORELINE, INDEFINITE	COURS D'EAU OU RIVE, IMPRÉCIS
LAKE, INTERMITTENT LAKES	LAC; LACS INTERMITTENT
FLOODED LAND	TERRAIN INONDÉ
DRY RIVER BED WITH CHANNELS	LIT DE RIVIÈRE ASSÉCHÉ AVEC CHENAUX
MARSH; SWAMP (WOODED); STRING BOG	MARAIS; BOISÉ MARÉCAGEUX; FONDRIÈRE À FILAMENTS
RAPIDS; FALLS; RAPIDS	RAPIDES; CHUTES; RAPIDES
FORESHORE FLATS; SAND IN WATER; ROCKS	ESTRANS; SABLE SOUS L'EAU; ROCHES
TUNDRA; LAKES IN TUNDRA; POLYGONS	TOUNDRA; LACS EN TOUNDRA; POLYGONES DE TOUNDRA
PALSA BOG; RAISED BEACHES	FONDRIÈRE DE PALSE; PLAGES SURÉLEVÉES
ICEFIELD (GLACIER); MORAINE	CHAMP DE GLACE (GLACIER); MORAINE
DAM; WHARF	BARRAGE; QUAI
PINGO	PINGO
DITCH	FOSSÉ
CONTOURS	COURBES DE NIVEAU
APPROXIMATE CONTOURS	COURBES DE NIVEAU APPROXIMATIVES
DEPRESSION CONTOUR	COURBE DE CUVETTE
CLIFF	FALAISE
SPOT ELEVATION, APPROXIMATE LAND; WATER	POINT COTÉ APPROXIMATIF SUR TERRE; SUR L'EAU
ESKER	ESKER
SAND; SAND DUNES	SABLE; DUNES DE SABLE
HISTORIC SITE	LIEU HISTORIQUE
WOODED AREA; FOREST CLEARED AREA	SURFACE BOISÉE; FORÊT, ESPACE DÉNUDÉ; CLAIRIÈRE

GLOSSARY-GLOSSAIRE

POSITION APPROXIMATE .... POSITION APPROXIMATIVE

Military users, refer to this map as: / Référence de cette carte pour usage militaire: SERIES A 701 SÉRIE; MAP 105 P/4 CARTE; EDITION 1 MCE ÉDITION

PHOTOGRAPHY PHOTOGRAPHIE

COMPILATION		RESTITUTION
41	A-24981 7/78	45
187	A-24763 8/77	191
67	A-24516 7/76	63
34	A-24516 7/76	37

REVISION REVISION

ONE THOUSAND METRE UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 9 QUADRILLAGE DE MILLE MÈTRES TRANSVERSE UNIVERSELLE DE MERCATOR

The 1983 MAGNETIC BEARING is 33°48' (601 mils) EAST of GRID NORTH. ANNUAL CHANGE DECREASING 8.4'. GRID NORTH is 0°40' (12 mils) WEST of TRUE NORTH for centre of map.

Le RELÈVEMENT MAGNÉTIQUE en 1983 est à 33°48' (601 mils) à l'EST du NORD DU QUADRILLAGE. VARIATION ANNUELLE DÉCROISSANTE 8.4'. NORD DU QUADRILLAGE est à 0°40' (12 mils) à l'OUEST du NORD GÉOGRAPHIQUE au centre de la carte.

105-O/8	105 P/5	105 P/6
105-O/1	105 P/4	105 P/3
105 J/16	105-I/13	105-I/14

CONVERSION SCALE FOR ELEVATIONS / ÉCHELLE DE CONVERSION DES ALTITUDES

CHRISTIE PASS
NORTHWEST TERRITORIES - YUKON TERRITORIES

YUKON TERRITORY-NORTHWEST TERRITORIES

Scale 1:50 000 Échelle

ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
CONTOUR INTERVAL .... 20 METRES
NORTH AMERICAN DATUM 1927
TRANSVERSE MERCATOR PROJECTION

ALTITUDES EN MÈTRES
ÉQUIDISTANCE DES COURBES .... 20 MÈTRES
SYSTÈME DE RÉFÉRENCE GÉODÉSIQUE NORD-AMÉRICAIN 1927
PROJECTION TRANSVERSE DE MERCATOR

PRODUCED BY THE SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA. PUBLISHED IN 1982.
COPIES MAY BE OBTAINED FROM THE CANADA MAP OFFICE, DEPARTMENT OF ENERGY, MINES AND RESOURCES, OTTAWA, OR YOUR NEAREST MAP DEALER.

ÉTABLIE PAR LA DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, OTTAWA. PUBLIÉE EN 1982.
CES CARTES SONT EN VENTE AU BUREAU DES CARTES DU CANADA, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, OTTAWA, OU CHEZ LE VENDEUR LE PLUS PRÈS.

© 1982, HER MAJESTY THE QUEEN IN RIGHT OF CANADA, DEPARTMENT OF ENERGY, MINES AND RESOURCES.
© 1982, SA MAJESTÉ LA REINE DU CHEF DU CANADA, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES.

INFORMATION CONCERNING LOCATION AND PRECISE ELEVATION OF BENCH MARKS CAN BE OBTAINED BY WRITING TO THE GEODETIC SURVEY, SURVEYS AND MAPPING BRANCH, OTTAWA.

ON PEUT OBTENIR DES RENSEIGNEMENTS SUR LE LIEU ET L'ALTITUDE EXACTE DES REPÈRES DE NIVELLEMENT EN ÉCRIVANT AUX LEVÉS GÉODÉSIQUES, DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, OTTAWA.

CHRISTIE PASS
105 P/4
EDITION 1 ÉDITION

Canada