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MARGINAL NOTES

LOCATION
The center of the map-area lies 116 km northeast of Red Lake. The area was mapped during the 1977 and 1978 field seasons. Access to the area is by float or air equipped aircraft from Red Lake...

MINERAL EXPLORATION

The earliest recorded mineral exploration in the map-area was during the period 1925-1926 for gold mineralization and has been described by Harding (1936). This culminated in the production of 19 835 ounces gold, and 453 ounces silver by the Argoy Mine of Argoy Mines Limited in the period July 1936 to February 1938...

In the central and western portions of Birch Lake, north to Mink Lake and west to Shabumen Lake, the following are some of the exploration programs listed in the assessment work sheet at Red Lake...

Falconbridge Nickel Mines Limited optioned a claim group from K. Kozur and filed an airborne magnetic and electromagnetic survey on the group in 1969. Suburban Contact Mines Limited, in 1970, diamond-drilled three holes totalling 457 m (1489 feet) and filed a ground magnetic survey followed in 1971-1972 by ground magnetic and electromagnetic surveys...

In 1969-1970 Bracombe Can-Res Resources Limited examined polyde-nium mineralization associated with a body of quartz monzonite centered on Mink Lake. A geological map is on file, Canex Aerial Exploration Limited has on file an airborne electromagnetic survey and three diamond-drill holes totalling 788 m (2586 feet) on the peninsula separating Sprague Lake from the main part of Birch Lake...

Hudson Bay Oil and Gas Mining Limited has on file, for an area centered on the west end of Superstition Lake, a horizontal loop electromagnetic survey, magnetic survey, soil geochemistry and airborne magnetic, electromagnetic and gamma ray spectrometer surveys...

Grand Bay Explorations Limited owns a group of patented claims west and south of Casummit Lake. Geological mapping in a gold exploration program was carried out in 1976.

Max Exploration Incorporated conducted an airborne electromagnetic survey and ground follow-up in 1973 and 1974 over most of the area north of Birch Lake.

M. Kosynuk held several groups of claims centered upon Richardson Lake and the eastern part of Casummit Lake. A portion of this was optioned in 1962 to Cochenour Williams Gold Mines Limited who drilled 10 diamond-drill holes with a total footage of 647 m on the property east of Casummit Lake in 1976...

Dickinson Mines Limited diamond-drilled 11 holes (327 m) in 1960 and 1962 on a claim group at Richardson Lake. Following an electromagnetic survey Dome Exploration (Canada) Limited did diamond-drilling (691 m) on anomalies north of Birch Lake in the Johnson Lake area...

A gold prospect east of Kiegal Bay of Birch Lake has been filed by G.J. Stoops, K. Kozur and Canam Mining Corporation at various times and an unknown number of diamond-drill holes were drilled (380 m) in about 1966.

GENERAL GEOLOGY

All bedrock in the map-area is Early Precambrian in age, part of the Birch-Uchi Lakes metamorphic-metasedimentary belt within the Uchi Subprovince (Ayres et al. 1971). Previous mapping of parts of the area (Furse 1933, Harding 1936, Howwood 1937) was at a reconnaissance scale. The present mapping is at a detailed scale (1:50 000) and is based on the work of the author (Thurston 1975, 1976) into this area. The major results of this approach are:

- 1. The intermediate and felsic metavolcanics centered on Shabumen Lake are correlated with Cycle II in the Confederation Lake area (Thurston 1976).
2. The mafic to felsic metavolcanics centered on Seagrave Lake are correlated with Confederation Lake Cycle I.
3. The metasediments centered on Birch Lake are younger than Confederation Lake Cycle II.
The major lithologic units of the area are, from west to east:

STRUCTURAL GEOLOGY

In the eastern part of the area, the rocks strike in an easterly direction. The units in the area have been subdivided into a steeply dipping suite with dips in the 40 to 90° range and a shallowly dipping suite with dips in the range 15 to 45°.

When the steeply dipping suite a major syncline occurred centered upon the area north of Birch Lake, succeeded well to the south in the Seagrave Lake area by a syncline centered upon the central part of Seagrave Lake and an anticline which extends from McNaughton Township to the area north of Bertha Lake (Austin 1977).

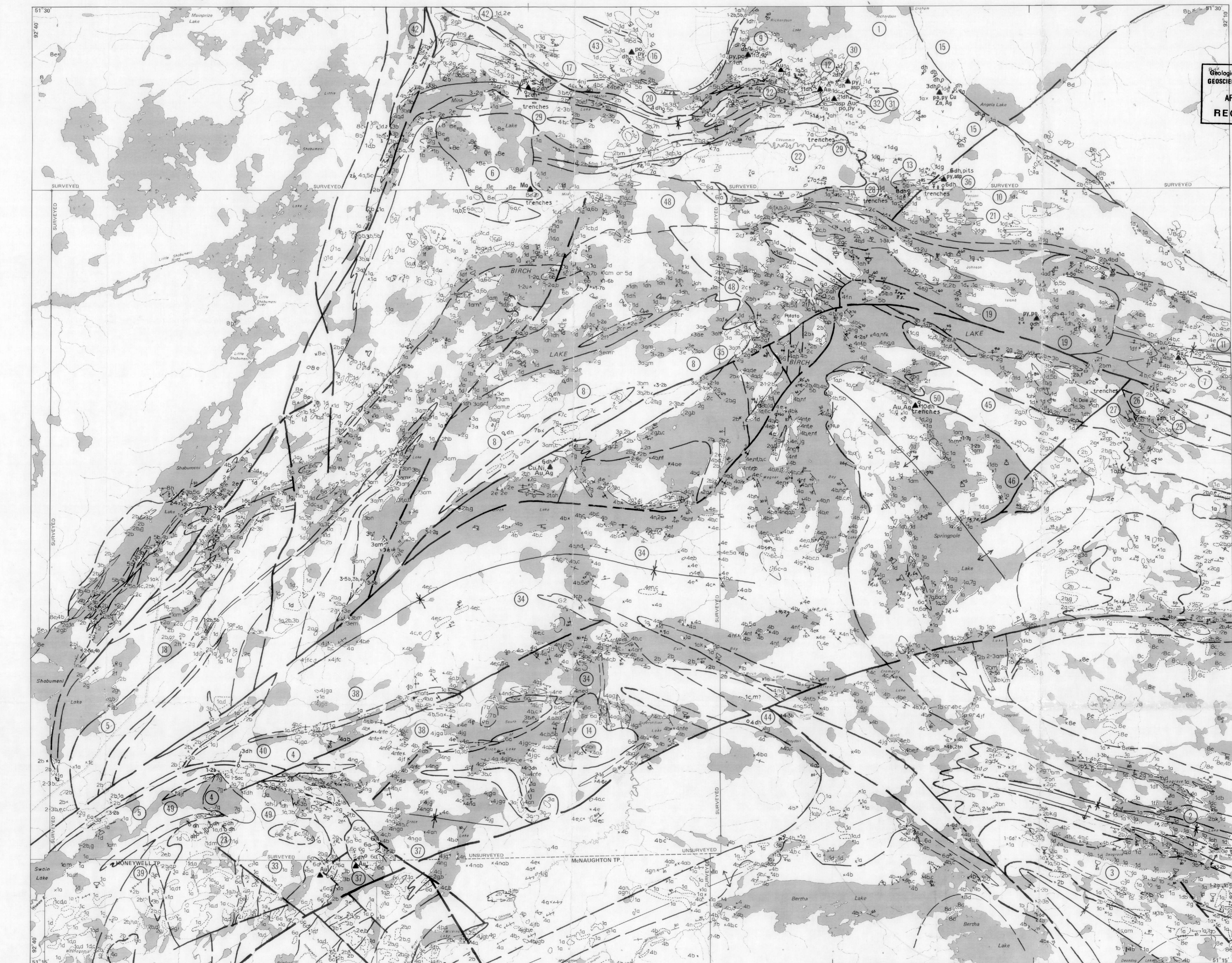
- 1. An anticline, the axial plane of which strikes southeast from the island west of 'Iron Island' (south of 'Pilot Island'). The north limb of the fold would include the metasediments found at the east end of Birch Lake, and the southwest limb the north-south trending metasediments and pyroclastic rocks in and west of Wagner Bay.
2. A syncline extending southwest from the east end of 'Birch Point'. Most of the rocks on the southern limb of this fold are truncated by the strike-slip fault extending from Swan Lake to the southwest bay of Birch Lake.
3. A syncline centered upon the west end of Exit Bay of Birch Lake, which extends southeast toward Graydon Lake and northeast to the southwest bay of Birch Lake where it is truncated by the Birch Lake fault.

REFERENCES

- Ayres, L.D., Lumbers, S.B., Milne V.G. and Robeson, D.W. 1971. Exploratory Text, Legend, Diagrams, 1:50 Scale for Ontario Geological Map. Ontario Department of Mines and Northern Affairs, Map 2196, Compilation 1970.
Furse, G.D. 1933. Geology of the Shabumen-Birch Lakes Area, Ontario Department of Mines, Ontario Department of Mines and Northern Affairs, Paper 6, 90p.
Gochey, A.M. 1967. Volcanic Studies in the Birch-Uchi Lakes Area of Ontario, Ontario Department of Mines, Miscellaneous Paper 6, 90p.
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Thurston, P.C. 1975. The Crow River Area, Ontario Department of Mines, Vol. 47, p. 3, 1938, p. 1-45.
Thurston, P.C. 1976. Confederation Lakes Synoptic Project, District of Kenora, Patricia Portion, p. 13-14 in Summary of Field Work, 1975, by the Geological Branch, edited by V.G. Milne, D.F. Jewett, and V.O. Carr, Ontario Division of Mines, Miscellaneous Paper No. 1560.
1976. Confederation Lakes Synoptic Project, District of Kenora, Patricia Portion, p. 8-11 in Summary of Field Work, 1976, by the Geological Branch, edited by V.G. Milne, W.R. Cowan, K.D. Clark, and J.A. Robertson, Ontario Division of Mines, Miscellaneous Paper 67, 1-30.

ECONOMIC GEOLOGY

Gold exploration in the map-area has concentrated upon chert horizons and discordant quartz veins. The Argoy mine (property 22) produced during its operating life (1934-1938; 1940-1942; 1946-1952) a total of 20 835 tons of gold, yielding 2186.67 kg of Au and 55.61 kg of Ag. The gold occurs in discordant quartz veins cutting metasediments and felsic metavolcanics at high angle.
Just outside the map-area M. Kosynuk produced, between 1963 and 1966, a total of 35 020 kg of Au and 3.7 kg of Ag from 577 tons of ore at a cost of \$2.00 per ounce of Au. The chert horizons in the shallowly dipping suite are near to the contact between the granitic mag of the belt and metavolcanics.
Gold occurs in association with concordant sulfide pods (pyrite) and discordant quartz veins cutting oxide tonstone on the Canamer Mining Corporation property on the east end of Birch Lake.



1977 Birch Lake Area, p. 9-11 in Summary of Field Work, 1977 by the Geological Branch, edited by V.G. Milne, C.I. White, R.B. Barber, and J.A. Robertson. Ontario Geological Survey Miscellaneous Paper 75, 208

The lens of felsic metavolcanics centered on the north shore of Birch Lake and to the east of felsic quartz porphyry and associated igneous and pyroclastic rocks. East of this sequence is a northeast-striking fault extending from Swan Lake northward through the map area.

The major higher price of gold increases the potential of some occurrences in the map-area, particularly the Argoy Mine. There, the ironstone and the felsic metavolcanics ought to be examined with a view to large tonnage, low grade operation. The price rise also increases the potential of the Canamer occurrence, as it is somewhat reminiscent of the gold occurrences at Pickle Creek (Thurston 1939).

Conversion factor: 1 foot = 0.3048 m

Assessment Files Research Office, Ontario Geological Survey, 77 Grenville St., Toronto

Main: Ontario Department of Mines and Northern Affairs, Map 2196, Compilation 1970.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Red Lake.

LIST OF PROPERTIES

Table with columns: Property, Company, Work Done, Drilling, Comments, Assessment. Lists various land parcels and exploration activities in the area.

Table with columns: Property, Company, Work Done, Drilling, Comments, Assessment. Continuation of the list of properties.

Table with columns: Property, Company, Work Done, Drilling, Comments, Assessment. Continuation of the list of properties.

METAL AND MINERAL ABBREVIATIONS

Table mapping metal abbreviations (Ag, Au, Cu, Ni, Pt, Zn) to their full names (Silver, Gold, Copper, Nickel, Platinum, Zinc).

SYMBOLS

Table of symbols used on the map, such as 'x' for small bedrock outcrop, '---' for geological boundary, etc.

NOTES

This is basically a Field Legend and may be changed as a result of subsequent laboratory investigations. Subdivision of major rock units does not indicate age relationships. Age relations amongst units 1, 2, 3, 4, and 5 are unknown.

CREDITS

Geology by P.C. Thurston, M.C. Jackson, J. Pirie, and assistants, 1977-1978.

SOURCES OF INFORMATION

Geology from published maps of the Ontario Geological Survey, Ministry of Natural Resources.

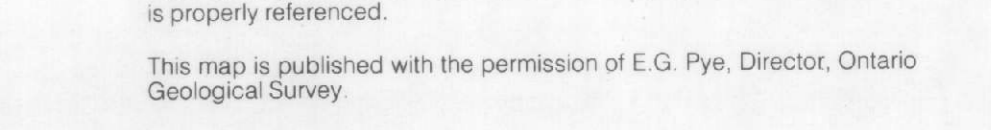
Ontario Geological Survey logo and title block: PRELIMINARY MAP P.2387, GEOLOGICAL SERIES, PRECAMBRIAN GEOLOGY OF THE BIRCH LAKE AREA, KENORA DISTRICT (PATRICIA PORTION), APR 30 1981, RECEIVED.



NTS Reference: 52N7.8, ODM-GSC Aeromagnetic Maps, 873G, 883G, ODM Geological Compilation Map: 2175.

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Scale: 1:1584 000 or 1 inch to 25 miles.

LEGEND

Legend table for geological units: PHANEROZOIC, CENOZOIC, QUATERNARY, PRECAMBRIAN, UNMETAMORPHOSED FELSIC TO INTERMEDIATE INTRUSIVE ROCKS, etc.

INTRUSIVE CONTACT

Legend for intrusive contacts: 7a Quartz porphyry, 7b Quartz felsic porphyry, etc.

METAMORPHOSED FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

Legend for metamorphosed felsic to intermediate intrusive rocks: 6a Gabbro, 6b Diorite, etc.

INTRUSIVE CONTACT

Legend for intrusive contacts: 5a Chert, 5b Ferruginous chert (<15% iron), etc.

METAVOLCANICS AND METASEDIMENTS

Legend for metavolcanics and metasediments: 4 Unsubdivided, 4a Sandstone, etc.

METAVOLCANICS

Legend for metavolcanics: 3a Flow, 3b Tuff, etc.

METAVOLCANICS

Legend for metavolcanics: 2a Flow, 2b Tuff, etc.

METAVOLCANICS

Legend for metavolcanics: 1a Flow, 1b Porphyritic flow, etc.

METAVOLCANICS

Legend for metavolcanics: 1c Porphyritic flow, 1d Pyroclastic flow, etc.

METAVOLCANICS

Legend for metavolcanics: 1e Autoclastic breccia, 1f Argyroclastic flow, etc.

METAVOLCANICS

Legend for metavolcanics: 1g Epidote-rich mafic to intermediate, 1h Hyaloclastic and/or hyaloclastic breccia, etc.

METAVOLCANICS

Legend for metavolcanics: 1i Thick bedded (>15 cm), 1j Carbonized.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 2a Flow, 2b Tuff, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 2c Pyroclastic breccia, 2d Tuff breccia, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 2e Autoclastic breccia, 2f Pyroclastic flow, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 2g Thin bedded (<3 cm), 2h Medium bedded (3-15 cm), etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 2i Thick bedded (>15 cm), 2j Carbonized.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 3a Flow, 3b Tuff, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 3c Lapillistone, 3d Pyroclastic breccia, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 3e Porphyritic flow (quartz phenocrysts), 3f Porphyritic flow (felsic phenocrysts), etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 3g Porphyritic (phenoclastic) unit (felsic phenocrysts), 3h Thin bedded (<3 cm), etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 3i Medium bedded (3-15 cm), 3j Thick bedded (>15 cm), etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 3k Carbonized.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 4a Sandstone, 4b Wacke, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 4c Slate, argillite, 4d Resonant felsic tuff, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 4e Arkose, 4f Paraconglomerate, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 4g Pebble, cobble conglomerate, 4h Thick bedded (>15 cm), etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 4i Granule, pebble conglomerate.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 5a Chert, 5b Ferruginous chert (<15% iron), etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 5c Magnetite-chert ironstone (>15% iron).

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 6a Gabbro, 6b Diorite, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 6c Serpentinized pyroxenite.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 7a Quartz porphyry, 7b Quartz felsic porphyry, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 7c Felsic felsic porphyry, 7d Porphyritic granodiorite, etc.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 7e Felsite, 7f Biotite-sericite granodiorite.

Intermediate Metavolcanics

Legend for intermediate metavolcanics: 8a Unsubdivided, 8b Porphyritic amphibole diorite, syenodiorite, etc.