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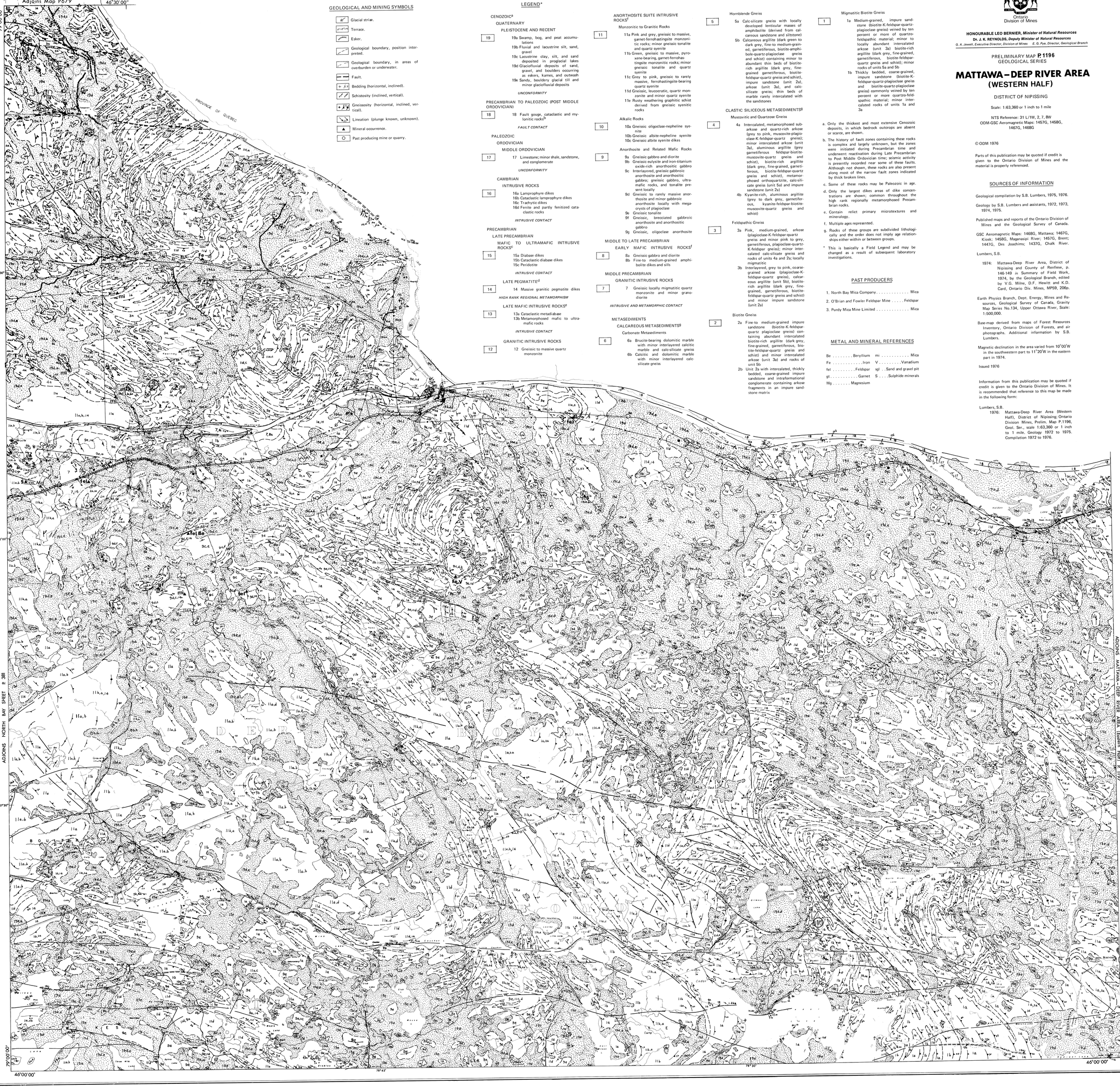

GEOLOGICAL AND MINING SYMBOLS

- Glacial striæ.
- Terrace.
- Esker.
- Geological boundary, position interpreted.
- Geological boundary, in areas of overburden or underwater.
- Fault.
- Bedding (horizontal, inclined).
- Schistosity (inclined, vertical).
- Gneissosity (horizontal, inclined, vertical).
- Lineation (plunge known, unknown).
- Mineral occurrence.
- Past producing mine or quarry.

LEGEND*

CENOZOIC[a]

QUATERNARY

PLEISTOCENE AND RECENT

19 — 19a Swamp, bog, and peat accumulations
19b Fluvial and lacustrine silt, sand, gravel
19c Lacustrine clay, silt, and sand deposited in proglacial lakes
19d Glaciofluvial deposits of sand, gravel, and boulders occurring as eskers, kames, and outwash
19e Sandy, bouldery glacial till and minor glaciofluvial deposits

UNCONFORMITY

PRECAMBRIAN TO PALEOZOIC (POST MIDDLE ORDOVICIAN)

18 — 18 Fault gouge, cataclastic and mylonitic rocks[b]

FAULT CONTACT

PALEOZOIC

ORDOVICIAN

MIDDLE ORDOVICIAN

17 — 17 Limestone; minor shale, sandstone, and conglomerate

UNCONFORMITY

CAMBRIAN

INTRUSIVE ROCKS

16 — 16a Lamprophyre dikes
16b Cataclastic lamprophyre dikes
16c Trachytic dikes
16d Fenite and partly fenitized cataclastic rocks

INTRUSIVE CONTACT

PRECAMBRIAN

LATE PRECAMBRIAN

MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS[c]

15 — 15a Diabase dikes
15b Cataclastic diabase dikes
15c Peridotite

INTRUSIVE CONTACT

LATE PEGMATITE[d]

14 — 14 Massive granitic pegmatite dikes

HIGH RANK REGIONAL METAMORPHISM

LATE MAFIC INTRUSIVE ROCKS[e]

13 — 13a Cataclastic metadiabase
13b Metamorphosed mafic to ultramafic rocks

INTRUSIVE CONTACT

GRANITIC INTRUSIVE ROCKS

12 — 12 Gneissic to massive quartz monzonite

ANORTHOSITE SUITE INTRUSIVE ROCKS[f]

Monzonitic to Granitic Rocks

11 — 11a Pink and grey, gneissic to massive, garnet-ferrohastingsite monzonitic rocks; minor gneissic tonalite and quartz syenite
11b Green, gneissic to massive, pyroxene-bearing, garnet-ferrohastingsite monzonitic rocks; minor gneissic tonalite and quartz syenite
11c Grey to pink, gneissic to rarely massive, ferrohastingsite-bearing quartz syenite
11d Gneissic, leucocratic, quartz monzonite and minor quartz syenite
11e Rusty weathering graphitic schist derived from gneissic syenitic rocks

Alkalic Rocks

10 — 10a Gneissic oligoclase-nepheline syenite
10b Gneissic albite-nepheline syenite
10c Gneissic albite syenite dikes

Anorthosite and Related Mafic Rocks

9 — 9a Gneissic gabbro and diorite
9b Gneissic eulysite and iron-titanium oxide-rich anorthositic gabbro
9c Interlayered, gneissic gabbroic anorthosite and anorthositic gabbro; gneissic gabbro, ultramafic rocks, and tonalite present locally
9d Gneissic to rarely massive anorthosite and minor gabbroic anorthosite locally with megacrysts of plagioclase
9e Gneissic tonalite
9f Gneissic, brecciated gabbroic anorthosite and anorthositic gabbro
9g Gneissic, oligoclase anorthosite

MIDDLE TO LATE PRECAMBRIAN

EARLY MAFIC INTRUSIVE ROCKS[f]

8 — 8a Gneissic gabbro and diorite
8b Fine-to medium-grained amphibolite dikes and sills

MIDDLE PRECAMBRIAN

GRANITIC INTRUSIVE ROCKS

7 — 7 Gneissic locally migmatitic quartz monzonite and minor granodiorite

INTRUSIVE AND METAMORPHIC CONTACT

METASEDIMENTS

CALCAREOUS METASEDIMENTS[g]

Carbonate Metasediments

6 — 6a Brucite-bearing dolomitic marble with minor interlayered calcitic marble and calc-silicate gneiss
6b Calcitic and dolomitic marble with minor interlayered calc-silicate gneiss

Hornblende Gneiss

5 — 5a Calc-silicate gneiss with locally developed lenticular masses of amphibolite (derived from calcareous sandstone and siltstone)
5b Calcareous argillite (dark green to dark grey, fine-to medium-grained, garnetiferous, biotite-amphibole-quartz-plagioclase gneiss and schist) containing minor to abundant thin beds of biotite-rich argillite (dark grey, fine-grained garnetiferous, biotite-feldspar-quartz gneiss and schist), impure sandstone (unit 2a), arkose (unit 3a), and calc-silicate gneiss; thin beds of marble rarely intercalated with the sandstones

CLASTIC SILICEOUS METASEDIMENTS[g]

Muscovitic and Quartzose Gneiss

4 — 4a Intercalated, metamorphosed subarkose and quartz-rich arkose (grey to pink, muscovite-plagioclase-K-feldspar-quartz gneiss); minor intercalated arkose (unit 3a), aluminous argillite (grey garnetiferous feldspar-biotite-muscovite-quartz gneiss and schist), biotite-rich argillite (dark grey, fine-grained, garnetiferous, biotite-feldspar-quartz gneiss and schist), metamorphosed orthoquartzite, calc-silicate gneiss (unit 5a) and impure sandstone (unit 2a)
4b Kyanite-rich, aluminous argillite (grey to dark grey, garnetiferous, kyanite-feldspar-biotite-muscovite-quartz gneiss and schist)

Feldspathic Gneiss

3 — 3a Pink, medium-grained, arkose (plagioclase-K-feldspar-quartz gneiss and minor pink to grey, garnetiferous, plagioclase-quartz-K-feldspar gneiss); minor intercalated calc-silicate gneiss and rocks of units 4a and 2a; locally migmatitic
3b Interlayered, grey to pink, coarse-grained arkose (plagioclase-K-feldspar-quartz gneiss), calcareous argillite (unit 5b), biotite-rich argillite (dark grey, fine-grained, garnetiferous, biotite-feldspar-quartz gneiss and schist) and minor impure sandstone (unit 2a)

Biotite Gneiss

2 — 2a Fine-to medium-grained impure sandstone (biotite-K-feldspar-quartz plagioclase gneiss) containing abundant intercalated biotite-rich argillite (dark grey, fine-grained, garnetiferous, biotite-feldspar-quartz gneiss and schist) and minor intercalated arkose (unit 3a) and rocks of unit 5b
2b Unit 2a with intercalated, thickly bedded, coarse-grained impure sandstone and intraformational conglomerate containing arkose fragments in an impure sandstone matrix

Migmatitic Biotite Gneiss

1 — 1a Medium-grained, impure sandstone (biotite-K-feldspar-quartz-plagioclase gneiss) veined by ten percent or more of quartzo-feldspathic material; minor to locally abundant intercalated arkose (unit 3a) biotite-rich argillite (dark grey, fine-grained, garnetiferous, biotite-feldspar-quartz gneiss and schist); minor rocks of units 5a and 5b
1b Thickly bedded, coarse-grained, impure sandstone (biotite-K-feldspar-quartz-plagioclase gneiss and biotite-quartz-plagioclase gneiss) commonly veined by ten percent or more quartzo-feldspathic material; minor intercalated rocks of units 1a and 3a

a. Only the thickest and most extensive Cenozoic deposits, in which bedrock outcrops are absent or scarce, are shown.

b. The history of fault zones containing these rocks is complex and largely unknown, but the zones were initiated during Precambrian time and underwent reactivation during Late Precambrian to Post Middle Ordovician time; seismic activity is presently recorded near some of these faults. Although not shown, these rocks are also present along most of the narrow fault zones indicated by thick broken lines.

c. Some of these rocks may be Paleozoic in age.

d. Only the largest dikes areas of dike concentrations are shown; common throughout the high rank regionally metamorphosed Precambrian rocks.

e. Contain relict primary microtextures and mineralogy.

f. Multiple ages represented.

g. Rocks of these groups are subdivided lithologically and the order does not imply age relationships either within or between groups.

* This is basically a Field Legend and may be changed as a result of subsequent laboratory investigations.

PAST PRODUCERS

1. North Bay Mica Company . . . . . Mica
2. O'Brian and Fowler Feldspar Mine . . . . . Feldspar
3. Purdy Mica Mine Limited . . . . . Mica

METAL AND MINERAL REFERENCES

Be . . . . . Beryllium
Fe . . . . . Iron
fel . . . . . Feldspar
gt . . . . . Garnet
Mg . . . . . Magnesium
mi . . . . . Mica
V . . . . . Vanadium
sgl . . Sand and gravel pit
S . . . . Sulphide minerals

Ontario
Division of Mines

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DR. J. K. REYNOLDS, *Deputy Minister of Natural Resources*
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PRELIMINARY MAP **P.1196**
GEOLOGICAL SERIES

MATTAWA–DEEP RIVER AREA
(WESTERN HALF)

DISTRICT OF NIPISSING

Scale: 1:63,360 or 1 inch to 1 mile

NTS Reference: 31 L/1W, 2, 7, 8W
ODM-GSC Aeromagnetic Maps: 1457G, 1458G, 1467G, 1468G

SOURCES OF INFORMATION

Geological compilation by S.B. Lumbers, 1975, 1976.

Geology by S.B. Lumbers and assistants, 1972, 1973, 1974, 1975.

Published maps and reports of the Ontario Division of Mines and the Geological Survey of Canada.

GSC Aeromagnetic Maps: 1468G, Mattawa; 1467G, Kiosk; 1458G, Maganasipi River; 1457G, Brent; 1447G, Des Joachims; 1437G, Chalk River.

Lumbers, S.B.

1974: Mattawa-Deep River Area, District of Nipissing and County of Renfrew, p. 146-149 *in* Summary of Field Work, 1974, by the Geological Branch, edited by V.G. Milne, D.F. Hewitt and K.D. Card, Ontario Div. Mines, MP59, 206p.

Earth Physics Branch, Dept. Energy, Mines and Resources, Geological Survey of Canada, Gravity Map Series No.134, Upper Ottawa River, Scale: 1:500,000.

Base-map derived from maps of Forest Resources Inventory, Ontario Division of Forests, and air photographs. Additional information by S.B. Lumbers.

Magnetic declination in the area varied from 10°00'W in the southwestern part to 11°20'W in the eastern part in 1974.

Issued 1976

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