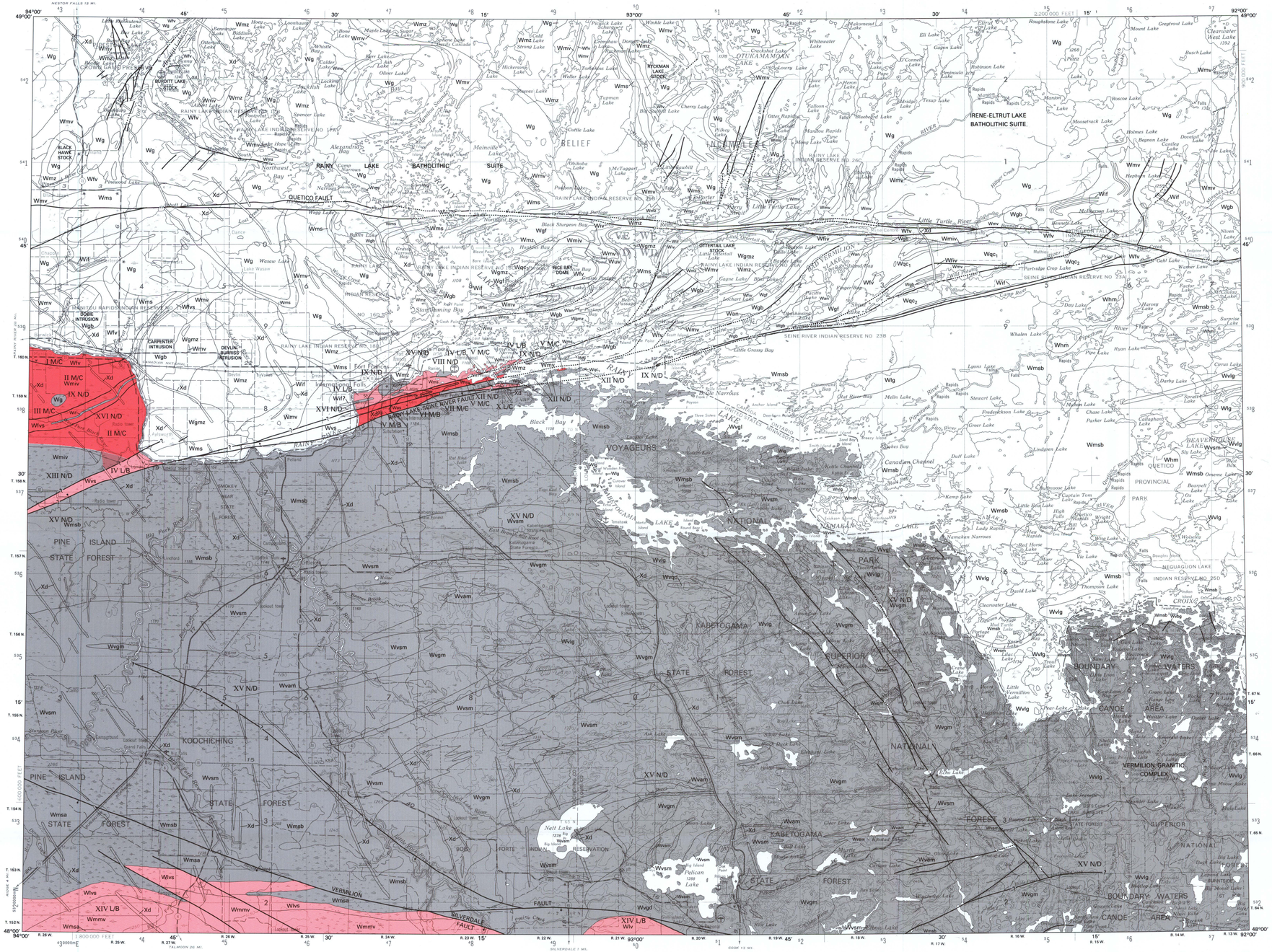


International Falls, Minn., U.S., Ont., Can. base map produced by the U.S. Geological Survey and prepared by the Defense Mapping Agency photogrammetric methods and from National Topographic Series, 1:253,440-scale Canada Department of Mines and Resources, Sheet 52–C.

Transverse Mercator Projection. 10,000-meter Universal Transverse Mercator grid, zone 15.

SCALE 1:250 000

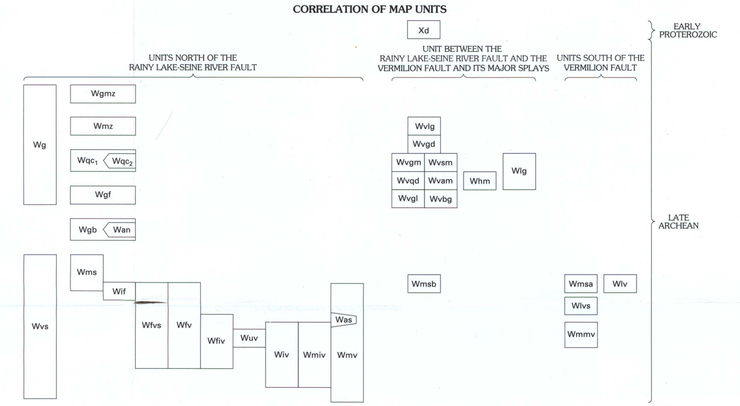
5 0 5 10 15 MILES

5 0 5 10 15 KILOMETERS

CONTOUR INTERVAL 50 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology from Day and others (1990b)

CORRELATION OF MAP UNITS



EXPLANATION OF MINERAL RESOURCE POTENTIAL

Area showing potential for volcanogenic massive sulfide deposits—Diagnostic and permissive criteria outlined in table 6. Potential for numbered tracts shown in table 7. Definitions of levels of mineral resource potential and certainty of assessment defined in appendix 1

- **Moderate potential**
- **Low potential**
- **No potential**

LIST OF MAP UNITS

EARLY PROTEROZOIC ROCKS

Xd	**Diabase, gabbro, and diorite**

LATE ARCHEAN ROCKS

Wgmz	**Granodiorite,quartz monzonite, and granite**
Wmz	**Hornblende monzonite**
	Quartzite and conglomerate
Wqc_1	**Quartzite**
Wqc_2	**Conglomerate**
Wgf	**Foliated granitoid rocks**
Wg	**Foliated and unfoliated granitoid rocks, undivided**
Wan	**Anorthosite**
Wgb	**Mafic intrusive rock**
Wms	**Metasedimentary rocks, undivided**
Wif	**Iron-formation**
Wfvs	**Felsic metavolcanic and volcaniclastic metasedimentary rocks**
Wfv	**Felsic metavolcanic rock**
Wfiv	**Felsic to intermediate metavolcanic rocks, undivided**
Wuv	**Ultramafic metavolcanic rocks**
Wiv	**Intermediate metavolcanic rocks**
Wmiv	**Mafic to intermediate metavolcanic rocks, undivided**
Was	**Amphibolitic schist**
Wmv	**Mafic metavolcanic rocks**
Wvs	**Metavolcanic and metasedimentary rocks, undivided**
Wvlg	**Lac La Croix Granite**
Wvgd	**Biotite-hornblende granodiorite and granite**
Wvgm	**Granite-rich migmatite**
Wvsm	**Schist-rich migmatite**
Wvqd	**Biotite-hornblende quartz diorite**
Wvam	**Ampibolitic migmatite**
Wvgl	**Granitic leucogneiss**
Wvbg	**Biotite-rich gneiss**
Whm	**Hornblende monzonite**
Wlg	**Leucogranite**
Wmsb	**Metasedimentary rocks, undivided**
Wlv	**Lake Vermilion Formation**
Wmsa	**Metasedimentary rocks, undivided**
Wlvs	**Layered volcanic-sedimentary rocks**
Wmmv	**Metavolcanic rocks, undivided**

- **Approximate contact**
- **Fault**
- **Fault rock**

MAP SHOWING MINERAL RESOURCE POTENTIAL FOR VOLCANOGENIC MASSIVE SULFIDE DEPOSITS IN THE U.S. PART OF THE INTERNATIONAL FALLS 1° × 2° QUADRANGLE, NORTHERN MINNESOTA

1997