UNIVERSITY OF MINNESOTA
MINNESOTA GEOLOGICAL SURVEY
David L. Southwick, Director

Prepared in cooperation with
IRON RANGE RESOURCES AND REHABILITATION BOARD

OPEN-FILE REPORT 96-6

CORRELATION OF MAP UNITS

ePv, ePif, ePq	Animikie Group	EARLY PROTEROZOIC EON
A		ARCHEAN EON

DESCRIPTION OF MAP UNITS

Early Proterozoic

ePv Virginia Formation—Interbedded argillite, argillaceous siltstone, and fine-grained feldspathic graywacke

ePif Biwabik Iron Formation—Intercalated thick-bedded layers of quartz, iron-silicates, and magnetite, and thin-bedded layers of iron-silicates, carbonates, and magnetite; includes a hematite-rich algal chert unit that serves as a marker bed in the upper third of the formation; also includes local concentrations of high-grade hematite and goethite ore

ePq Pokegama Quartzite—Dominantly quartz arenite with locally interbedded conglomerate underlain by thin to thick beds of quartz-rich argillite and graywacke

Archean

A Undivided rocks—Unit includes variety of supracrustal rocks generally metamorphosed to the greenschist facies, and intruded by plutonic rocks of generally granitic composition

MAP SYMBOLS

- **Contact**—Most contacts are approximately located; dashed where inferred
- **Fault**— U, upthrown side; D, downthrown side; dashed where inferred from aeromagnetic data
- **Strike and dip of beds in sedimentary rocks**—Inclined
- **Strike and dip of foliation in metamorphic and igneous rocks**—Inclined
- **Bearing and plunge of lineation**—May be combined with other symbols
- **Anticline**—Trace of crestal plane and direction of plunge shown where known
- **Syncline**—Trace of trough plane and direction of plunge shown where known
- **Trace of algal beds in the upper cherty member of the Biwabik Iron Formation**
- **Bedrock outcrop**
- **Drill hole**
- **Test pit**
- **Outlines of iron mines as of January 1, 1986**

MINN.
QUADRANGLE LOCATION

Every reasonable effort has been made to ensure the accuracy of the factual data on which this map interpretation is based; however, the Minnesota Geological Survey does not warrant or guarantee that there are no errors. Users may wish to verify critical information; sources include both the references listed here and information on file at the offices of the Minnesota Geological Survey in St. Paul. In addition, effort has been made to ensure that the interpretation conforms to sound geologic and cartographic principles. No claim is made that the interpretation shown is rigorously correct, however, and it should not be used to guide engineering-scale decisions without site-specific verification.

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Base from U.S. Geological Survey, 1952; photorevised, 1969

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Compiled by G.B. Morey and Jane M. Cleland
Cartography by Philip Heywood

PRELIMINARY BEDROCK GEOLOGIC MAP OF THE BOVEY QUADRANGLE, ITASCA COUNTY, MINNESOTA