



**EXPLANATION**

Middle(?) Precambrian

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PRECAMBRIAN

- Chloritized igneous intrusives and presumed intrusives
- Thick-bedded facies of the Trommald formation
- Thin-bedded facies of the Trommald formation
- Geologic contact  
*Dotted where established by mine exposures, drill holes, and projection of mine data; queried where not well defined; contact is shown projected to bedrock surface previous to mining*
- JOAN NO 1  
*Outline of ore body  
Determined by actual shape of open pit or caved area above underground mine as determined from aerial photographs; ore appears offset beneath hanging wall where mining has followed ore down-dip. Only ore derived from the thin-bedded facies is colored*

TRUE NORTH  
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION, 1962

Note: 97 percent of ore in the thin-bedded facies occurred southeast of heavy black line

Base from maps provided by the M. A. Hanna Co.  
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INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—61154  
Geology by R. G. Schmidt and C. E. Dutton, 1951-57

**APPROXIMATE OUTLINES OF ORE MINED FROM THE THIN-BEDDED FACIES OF THE TROMMALD FORMATION, MINNESOTA**

