

## FMS Metadata

**Map name:** Surficial Geology of the Fargo-Moorhead Area

**Map author(s):** Barbara Lusardi (Minnesota Geological Survey), Fred Anderson (North Dakota Geological Survey), and Kenneth Harris (Minnesota Geological Survey)

**Publishing organization:** (Minnesota Geological Survey)

**Date of publication:** October 2005

**Date of data:** compiled from sources released between 1975-1999

**Map key words:** surficial geology; Red River Valley, Fargo-Moorhead

**Horizontal accuracy** (Point data 50 meters. Lines must be less accurate than the points that they are based on. See below for estimated accuracy of different types of contact lines.):

**Coordinate system:** (UTM, NAD83, zone 15, or other as needed)

Lambert Conformal Conic Projection, 1983 North American Datum 1st std parallel - 33°, 2nd std parallel - 45° Central meridian - -96°, Latitude of project origin - 45°.

**Map area** (quad, county, etc., and boundary coordinates):

The study area consists of all or part of six Minnesota Counties (Norman, Clay, Wilkin, Otter Tail, Becker, and Mahanomen) and all or part of seven North Dakota Counties (Barnes, Cass, Sargent, Steele, Traill, Ransom, and Richland). This area extends from 46°N to 47.5°N latitude and is bounded on the west by 98°W longitude and on the east by 95°W longitude. The study area measures about 120 miles (193 km) east to west and about 103 miles (166 km) north to south; it covers an area of approximately 12,360 square miles (32,012 square kilometers).

**GIS files associated with map from ArcInfo or (ArcView 3.x or 8.x):** See index.txt in the Data/Surfgeol folder.

**Description of map:** Shows surface distribution of sediment types described by texture and sorting, and organized by relative age and geologic origin.

**Map scale:** 1:200,000

**Map units:** meters

**List features and accuracy as shown on map, including scales of fieldwork and compilation:**

Accuracy of contact lines for surficial geology units are variable and likely not less than plus/minus 50 meters. May be greater.

**Summary of procedures for compiling data used to make map:**

Digital files were knitted together using ArcView(?). Current unit interpretations and descriptions provided a common reference for the entire area. Texture and grain count data from earlier mapped areas were reinterpreted based on these more up to date stratigraphic interpretations.

Linework was superimposed on a shaded digital elevation model to provide control for the position of contacts and line symbols that are controlled by topography

**Lineage:** (where did map data originate and how was it incorporated into this publication?)

Data from the following sources were used to compile the map. The North Dakota Geological Survey provided digital coverages of the Sheyenne River and Goose River map areas. The Minnesota Geological Survey provided digital coverages of the Red River Valley and Otter Tail map areas. Data from the Grand Forks and Bemidji quadrangles (Sackreiter, 1975) were digitized for this project.

Harris, K.L., 1987, Surface geology of the Sheyenne River map area: North Dakota Geological Survey Atlas AS-15-A1, scale 1:250,000.

Harris, K.L., and Luther, M.L., 1991, Surface geology of the Goose River map area: North Dakota Geological Survey Atlas AS-14-A1, scale 1:250,000

Harris, K.L., project manager, 1995, Regional hydrogeologic assessment: Quaternary geology-southern Red River Valley, Minnesota: Minnesota Geological Survey Regional Hydrogeologic Assessment RHA-3, pt. A, 2 pls., scales 1:200,000 and 1:400,000.

Harris, K.L., project manager, 1995, Regional hydrogeologic assessment: Quaternary geology-Otter Tail Area west-central, Minnesota: Minnesota Geological Survey Regional Hydrogeologic Assessment RHA-5, pt. A, 2 pls., scales 1:200,000 and 1:400,000.

Sackreiter, D.K., 1975, Quaternary geology of the southern part of the Grand Forks and Bemidji quadrangles: Grand Forks, North Dakota, University of North Dakota, Ph.D. dissertation, 117 p.

Digital base modified from ESRI compiled base information from GDT, U.S. Census Bureau, and the U.S. Geological Survey; digital base annotation by the Minnesota Geological Survey

**Contact for GIS data:** Rich Lively

**Contact at MGS to obtain map:** MGS Map Sales Office, 612-627-4782 or 612-627-4780 ext. 238

**Online linkage:** <ftp://156.95.153.1/pub5/fms/>

**Other comments:**