

# GIS Compilation of MN DNR Project 255-1, 265, and 266: Drill Core Repository Sampling Projects

## A Minerals Diversification project

*GIS Data Completed: January, 2014 by Wes Rutelonis*

*Original Data Completed: 1989*

*Authors: E.H. Dahlberg, D. Peterson, and B.A. Frey*

Provided here is a general description of files that are found in 'mpes255\_1\_265\_266.zip'

[Link to project webpage](#)

[Link to project report](#)

### Abstract:

255-1: page 1      The zip file contains data for 512 samples extracted from 17 drill holes described in the Minnesota Department of Natural Resources (MnDNR), Division of Land and Minerals Report, "Drill Core Repository Sampling Projects; Reports 255-1, 265, 266," published in 1989.

265: page 131      The zip file contains data for 251 samples extracted from 24 drill holes described in the Minnesota Department of Natural Resources (MnDNR), Division of Land and Minerals Report, "Drill Core Repository Sampling Projects; Reports 255-1, 265, 266," published in 1989. The report revisits the underground Soudan Mine in northern Minnesota. The spatial information provided was created using a mine grid. A mine grid image was georectified and used to plot points for each drilling location. These points are subsurface and x, y, and z coordinates are provided for collar location. However, these holes were often drilled at an angle and therefore close attention must be paid to individual sample location with regards to azimuth, angle and 3D space.

266: page 239      The zip file contains data for 213 samples extracted from 12 drill holes described in the Minnesota Department of Natural Resources (MnDNR), Division of Land and Minerals Report, "Drill Core Repository Sampling Projects; Reports 255-1, 265, 266," published in 1989.

Each folder in the zip file contains data from the report in a different format. The data is presented in its original format data files, a Microsoft Access database, dBase IV files, and ArcGIS File Geodatabase. The conversion of the original digital data file to these formats was completed in January of 2014 and is described below. The data sets (feature classes) enumerating drill hole or core sample data contain geospatial information in the form of Universal Transverse Mercator (UTM) East and North coordinates, a "Z" field with the elevation of the drill hole top, and elevation the of top and bottom of the individual samples; all elevations are in feet above sea level. Additional information about the data fields can be found in the report listed below under the section titled 'RAW\_DATA'. The data is designed to be used as a supplement to the report and plates.

Folders and their contents:

## **ACCESS\_DB\_FILES**

Below is a suite of Access databases created for the purpose of assigning proper field headings, assigning data type, and exportation into dbase IV format for projects 255-1, 265, and 266. **Note**, at this juncture all blank or “NULL” cells were replaced by “-999” to avoid replacement by zeros when pulled into mapping software.

- ACCESS\_DB\_255\_1
- ACCESS\_DB\_265
- ACCESS\_DB\_266

## **DBF\_EXPORTED\_FROM\_ACCESS**

Microsoft Access was used to give the appropriate field headings and data type. The following tables were then exported for use in mapping software.

- 255\_GAB.dbf
  - Contains the analytical package for project 255 along with spatial information
- ANA\_255.dbf
  - Contains analysis type and spatial information for project 255
- 255LITH.dbf
  - Contains lithology and spatial information for project 255
- 265MAST2.dbf
  - Contains the analytical package for project 265 along with spatial information
- CHEM266E.dbf
  - Contains the analytical package for project 266 along with spatial information

## **FILE\_GEODATABASE**

**[Only viewable in ArcGIS 9.3 and above]**

**File name - project255\_265\_266.gdb**

- **Feature Dataset – Features\_255**
  - project255\_analysis\_type
    - Contains sample number, drillhole name, spatial information, assay type and whether or not thin sections exist (POLSHD\_TS stands for polished thin section). This information can be found in Appendix B (pages 90-100) of the report.
  - project255\_gabbro\_granite\_analytical\_package
    - Contains sample number, drillhole name, spatial information and the results of the geochemical assay. These results can be found in Appendix C (pages 101-126) of the report.
  - project255\_locations\_lithology
    - Contains sample number, drillhole name, spatial information, sampling interval and brief lithological summaries. This information can be found in Appendix A (pages 79-89) of the report.

- **Feature Dataset – Features\_265**

- DDH\_265
  - This feature class was created using georeferenced images of the mine grid for the Soudan Mine. No sample location information is provided in this feature class. Mine grid coordinates for sampled holes can be found on page 142 of the report.
- project265\_chemistry\_and\_mine\_ddh
  - Combines spatial information created in DDH\_265 with geochemical analytical results. Sample information can be found in the report Appendix C (pages 203-221). Analytical results can be found in Appendix D (pages 222-235).

- **Feature Dataset – Features\_266**

- project266\_analytical\_package\_with\_lithology
  - Contains sample numbers, drillhole name, spatial information and analytical results. The report has sample information in Appendix A (pages 263-299) and analytical results in Appendix B (pages 300-311).

## **RAW\_DATA**

The following folders contain data in its original format for each portion of the report.

- REPORT255\_1\_DATA
- REPORT265\_DATA
- REPORT266\_DATA

## **MINE\_IMAGES**

This folder contains three images of the Soudan Mine grid that were used to create spatial points for project 265 using georeferencing and data within the report.

## **SHAPEFILES**

Two shape files were created for project 255 and project 266 for the purpose of assigning spatial information to each feature class based on existing drillhole data.

- DDH\_255.shp
- DDH\_266.shp

Any questions regarding the GIS compilation contact:

Kevin J Hanson  
*Geographer/GIS Specialist*  
Mineral Potential Evaluation Section  
Aggregate Resource Mapping Program  
MN DNR - Division of Lands & Minerals  
Work Phone - 651-259-5429  
Work Email - kevin.hanson@state.mn.us