



**Digitizing of Coal Outcrop Maps: New Mexico Bureau of
Geology Geologic Map 49- Coal Geology of Torreon Wash
Area, Southeast San Juan Basin, New Mexico**

by

Gretchen K. Hoffman and Cathryn Pokorny

New Mexico Bureau of Geology and Mineral Resources, New Mexico Tech
Socorro, New Mexico 87801

Open-file Report 552

June, 2013

Digitizing of Coal Outcrop Maps: New Mexico Bureau of Geology Geologic Map 49- Coal Geology of Torreon Wash Area, Southeast San Juan Basin, New Mexico

Gretchen K. Hoffman and Cathryn Pokorny
New Mexico Bureau of Geology & Mineral Resources/ New Mexico Tech
Socorro, NM 87801
(575) 835-5420 Fax: 575-835-6333 <http://geoinfo.nmt.edu>
Version 1.1

NMBGMR Open- File Report 552

The GIS project included in this open file report reflect the coal outcrop data available on NMBG Geologic Map 49 by Tabet and Frost (1979). This work was completed through funding from the US Geological Survey, (Cooperative Agreement G10AC00463), as part of the National Coal Resource Data System state cooperative project. The three sheets comprising the geologic map from the above referenced publication were combined and scanned for this project. Cathryn Pokorny georeferenced the original map and digitized the coal crop features with assistance from Mark Mansell. Mark Mansell created the geodatabase used for digitizing. Gretchen Hoffman added the drill hole database and layer to the ArcMap project, and supervised the process of producing the project.

- The original printed maps were combined and scanned as tiff files, palletized and brought into an ArcMap 10.1 project.
- The scanned image was georeferenced to a topographic map in the appropriate scale: 1:24,000. The map was georeferenced in Lambert Conformal Conic projection coordinate with GSC Clarke 1866 geographic coordinate system.
- A geodatabase was created and populated with coal outcrop features using the FGDC (Federal Geographic Data Committee) Digital Cartographic Standard for Geologic Map Symbolization guidelines. The types of geologic lines follow the descriptions from the original map. The Torreon area has coal outcrops in the Cleary Coal Member (Kmf_c) and upper coal member (Kmf_u) of the Menefee Formation. Coal thickness attribute is dependent on original map data.
- The base map in the ArcMap project is a topographic map compiled in All Topo to the scale of the project map and clipped to the extent of the map.
- Non confidential drill sites from the NMBG coal database for the map area are included as a separate layer. These data points are projected in ArcMap from a Microsoft Access database. The formation and coal thickness tables in the database are related to each drill site seen on the map. By using the information pointer the user can drill down through these data points for this information.
- Metadata was entered via the FGDC metadata editor in ArcCatalog 10.1 and in the ArcMap layer descriptions.

System Requirements:

A computer capable of running some or all of the following software:

Adobe Acrobat (v.7 or later) to view plates (*.pdf)

--freeware: <http://adobe.com>

ArcGIS (v. 10.1 or later) to open GIS projects/data (*.mxd)

Or

ArcReader (v.10.1 or later) to view GIS [projects/data (*.pmf)

--freeware: <http://www.esri.com/software/arcgis/arcreader>

Access 2003 or later for drill hole database (*.mdb)

Files of interest:

GM49_CoalCrops.pdf

-Pdf from ArcMap showing full extent

TorreonWash.mdb

-database containing drill hole data projected in ArcGIS project

GM49_CoalCrops.mxd or .pmf

-ArcGIS ArcMap document or ArcReader document containing digital coal outcrop and projected drill hole data.

You may wish to install a copy to a hard disk to speed up the loading of the ArcMap project.

Reference:

Tabet, David E.; Frost, S. J., 1979, Coal geology of Torreon Wash area, southeast San Juan Basin, New Mexico, New Mexico Bureau Mines Mineral Resources, Geologic Map, v. 49. <http://geoinfo.nmt.edu/publications/maps/geologic/gm/49/>