

Mappers Guidelines for New Mexico STATEMAP Quadrangles

Maps, mylar bases, orthophotos, air photos, film, field books, GPS units, gridded mylar for cross sections, etc. will be provided by the Bureau. Authors should notify Paul Bauer or Dave McCraw of their air photo needs at least 4 months prior to the start of the project. At the end of the work, air photos, photographs, and a copy of all field notes must be delivered to the Bureau.

Map Deliverables: The following must be delivered to the Bureau by May 15, 2004:

1) **Inked mylar of the geologic map.**

Map scale: Map at any scale you choose. Our large-format scanner allows us to accommodate mappers with special scale needs. Ideally, the final compilation is on a 1:24,000 greenline mylar.

Map symbols: Use the standard Bureau symbols (see <http://geoinfo.nmt.edu/statemap/mappers/>). Add any special symbols that you may need.

Solid vs. dashed contacts: In bedrock, contacts are solid if the contact is exposed, and dashed if it is accurately located but unexposed or not walked. In basin-fill and surficial deposits, the mapper can use whatever system is preferred, as long as it is consistent throughout the map and adjacent STATEMAP quads, and clearly explained on map legend. For clarity and to facilitate digitizing, dashes must be short (2 mm) and closely spaced.

Strike and dip conventions: Use dip azimuth and dip on the final maps. For digitizing purposes, both the azimuth and dip must accompany the symbol:

50-180 |

If both plane and line are shown at the same location, their azimuth and dip should be distinguished using the following convention:

50-180 | ▲ 30/120

Note that the plane azimuth & dip value are joined by a dash, whereas the line azimuth & dip value are joined by a slash. In areas where there are multiple closely spaced symbols with similar orientations, the compiler should generalize by choosing a few representative symbols.

- 2) **Edge-matching.** The compiler must check the geology against that of all adjacent geologic maps. Any edge-match problems should be addressed prior to map submittal. Ideally, contacts drawn on the final mylar should extend at least half an inch beyond the quad boundary in order to minimize edge-match problems.
- 3) **Hand-colored paper map.** It is mandatory that all compilers proof their map by coloring a paper copy. Errors should be fixed on the mylar, but it is not necessary to re-color a second paper copy if changes are shown on the color map. Quads that have not been colored will not be digitized.
- 4) **Unit descriptions.** Provide detailed descriptions of all map units and units shown on cross sections. Avoid mixing lithologic descriptions with genetic interpretations.
- 5) **Cross sections.** All maps should have at least one cross section without vertical exaggeration. Ideally, several cross sections should be made. Additional exaggerated sections can be added as needed. If sections are hand-drawn, they should be done on gridded mylar (available from the Bureau). Consider planning section lines to link with existing or future cross sections in adjacent quads.
- 6) **Correlation chart.** Each quad should have a hand- or computer-drafted correlation chart that shows the absolute time distribution of units and unconformities. Radiometric ages, timing of orogenies, etc. may be added to the chart.
- 7) **Report.** Each quad must be accompanied by a report (one paper copy plus a CD or email attachment) that summarizes the major features and findings. The report should also cite any previous work, discuss stratigraphic divisions, evaluate any new analytical data, etc.
- 8) **Multiple authors.** Where multiple authors are involved, the compiler must provide a map that clearly shows who mapped where, and where previous work was used. In areas of overlap, make a serious effort to depict who did what. The compiler has the final say in determining the division of labor. You may also want to describe responsibilities in the report.
- 9) **Point data.** Authors are encouraged to include point data (wells, sample locations, radiometric dates, mineral localities, etc.) on the final maps. However, an Excel spreadsheet file of such information must accompany the map. The point data must be located by UTM coordinates, and should correspond to the map datum listed on your mylar base map (either NAD 1927 or 1983, as shown in lower left corner of map).

Web Posting: When all the above have been delivered, the components will be scanned, arranged as a preliminary map sheet, and placed on the Bureau Web page as an Open-File, downloadable PDF file. This will allow public access to your important work without the risk of damage to the originals. When the drafted map sheet is completed, the Open-File will be replaced by a high-quality, color, ArcGIS product.

Map Review: Your final map and accompanying materials will be peer reviewed by one Bureau geologist and one non-Bureau geologist. You will be notified if significant changes are recommended.

Digitizing: Remember that although changes are possible with digital maps, they are not always easy, and never welcome. The map should be totally finished before digitizing begins. If you plan on digitizing your own map, please consult with Dave McCraw before beginning.

Derivative Publications: Acknowledge the Bureau and the USGS in all derivative publications with some variation of the following: *The geologic mapping was funded by the New Mexico Bureau of Geology and Mineral Resources STATEMAP Program and the USGS National Cooperative Geologic Mapping Program.*