

## **NURE geochemical reconnaissance maps of New Mexico**

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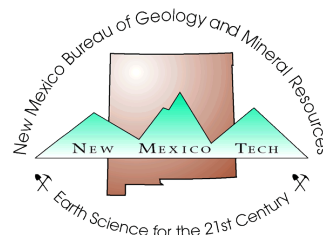
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# NURE geochemical reconnaissance maps of New Mexico

As part of the National Uranium Resource Evaluation (NURE), approximately 21,000 stream-sediment samples and 13,000 ground-water samples were collected in New Mexico for uranium and multi-element chemical analysis. At the request of the New Mexico Bureau of Mines and Mineral Resources (NMBMMR), the U.S. Department of Energy contracted Bendix Field Engineering Corporation to produce computer plots of NURE geochemical reconnaissance maps for each of the 1° × 2° quadrangles that cover New Mexico—a total of 1,220 maps that present more than 1,000,000 bits of data (Fig. 1).

Each geochemical reconnaissance map includes the following information: quadrangle name, element or other parameter plotted on map (e.g., pH), sample medium (stream sediment or ground water), analytical laboratory (Los Alamos or Oak Ridge), a 1:250,000-scale map with distinctive symbols (maximum of 15) that indicate the incremental concentration of the element at each sample

location, a chart of concentration increments and equivalent symbols, a graph of cumulative probability and standard deviation from the median, a percent frequency bar graph, and a summary of basic statistics.

Increment schemes for the geochemical maps (specified by NMBMMR) are intended, as much as possible, to allow maximum resolution of geologically significant geochemical patterns and to permit recognition of both obvious and subtle geochemical anomalies that may indicate favorable areas for mineral exploration. When employed collectively (i.e., all the geochemical data is interpreted) and integrated with geological and geophysical data, the NURE geochemical maps can be an important tool in mineral exploration or for mineral-resource assessment. These geochemical maps also can lead to new insights in regional geologic, stratigraphic, hydrologic, and environmental studies.

In addition to detecting uranium provinces, NURE geochemical maps can be useful

in detecting favorable areas for copper, lead, zinc, nickel, cobalt, chromium, vanadium, manganese, iron, and silver(?) mineralization; also molybdenum can be detected in southern New Mexico. Unfortunately, gold, tin, tungsten, and niobium maps are of relatively little value because NURE sampling techniques and analytical methods were optimized for uranium. *Guidelines for using NURE geochemical reconnaissance maps of New Mexico* (NMBMMR Open-file Report 218) is included with map orders or may be purchased before any maps are ordered.

Blueline prints of NURE geochemical maps can be purchased from the NMBMMR Information, Resource, and Service Center for \$3.00 per map. To order, photocopy Fig. 1; circle which quadrangle and element symbol(s) you want to purchase. (Use a different photocopy for each quadrangle ordered.) Be sure to distinguish the appropriate sample medium (stream sediment or ground water). For each quadrangle there is also a set of sample-location maps that can be purchased for \$3.00/map.

—Richard Chamberlin and Virginia McLemore

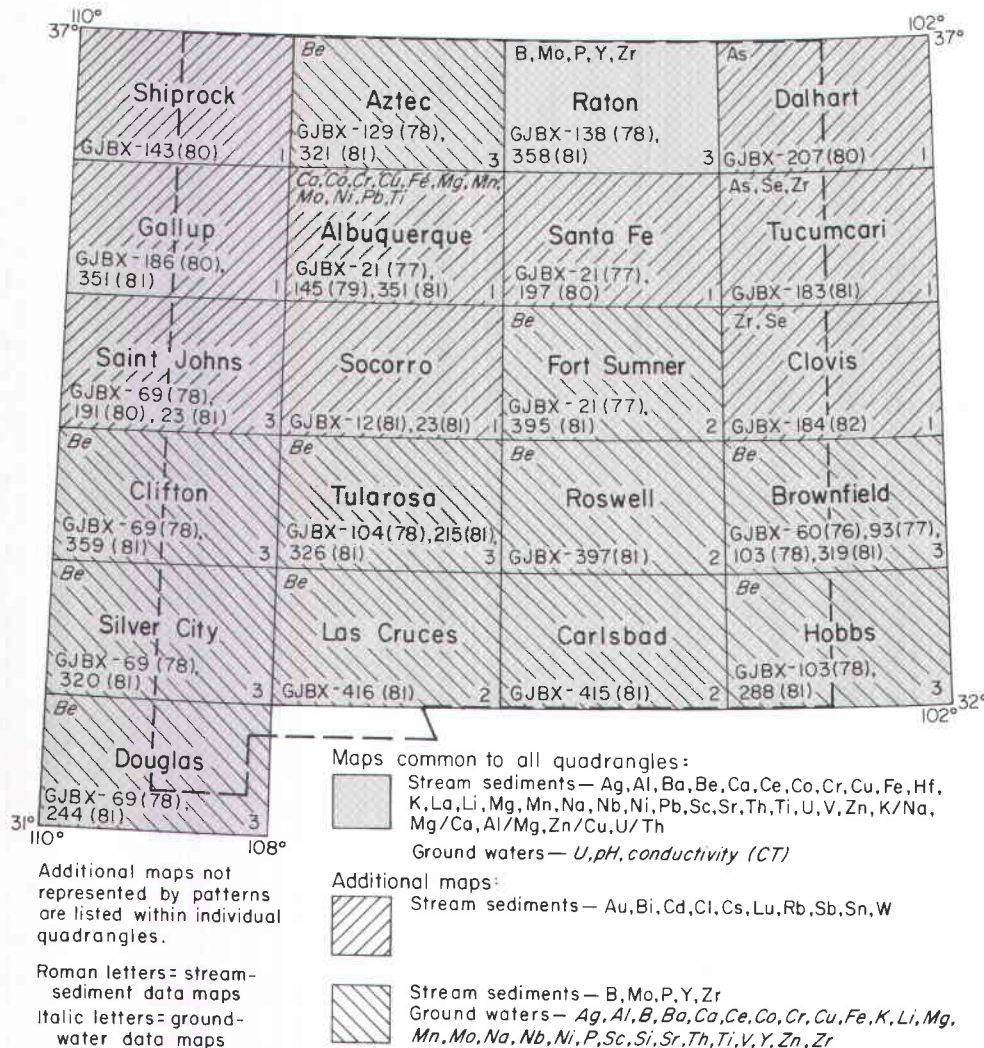


FIGURE 1—Index map for NURE geochemical reconnaissance maps of New Mexico. The "GJBX" number is the reference to the Open-file Report(s) that contain(s) the original, tabulated data for each quadrangle. These are available for examination at NMBMMR. The number in the lower right corner of each quadrangle represents the laboratory or laboratories responsible for collecting and analyzing the samples: 1, Los Alamos National Laboratory; 2, Oak Ridge Gaseous Diffusion Plant; 3, both 1 and 2.

## New Mexico Geological Society news

The spring meeting of the New Mexico Geological Society will be held on Friday, April 26, 1985, in the Macey Center, New Mexico Tech, Socorro, from 9 to 5. The annual business meeting will be held that day from 1 to 2 p.m. Symposia or technical sessions that cover many aspects of New Mexico geology are planned for a morning and afternoon session. A cocktail party and banquet will follow the day's activities. Information on registration, accommodation, and other activities planned for this meeting will be mailed to NMGS members this month. Inquiries should be directed to: G. S. Austin, General Chairman, NMBMMR, Campus Station, Socorro, NM 87801; (505) 835-5125.

## 1985 New Mexico Geological Society field conference

The 1985 New Mexico Geological Society fall field conference will be held September 26-28 in east-central New Mexico (Santa Rosa-Tucumcari Country). Emphasis will be on the stratigraphy, sedimentology, and paleontology of Mesozoic rocks and the Ogallala Formation and on the oil, gas, and uranium resources of upper Paleozoic-Mesozoic rocks. Contributed papers on this area for the guidebook are welcome. For more information contact the conference organizer: S. Lucas, Department of Geology, University of New Mexico, Albuquerque, NM 87131; telephone: 505/277-1646.