

## New publications

### NMBMMR

\***Bulletin 140**—Pumice and pumicite in New Mexico, by J. M. Hoffer, 1994, 23 pp., 14 tables, 16 figs., 2 appendices. \$4.00

New Mexico has ranked in the top three states in the production of pumiceous materials in the United States since 1980. The principal domestic uses of pumice and pumicite include concrete admixtures and aggregates, building blocks, abrasives, laundry use (stone- and acid-washed denim), and landscaping. Physical properties of New Mexico pumice and pumicite are used to determine their usefulness in the laundry industry.

\***Bulletin 151**—Bibliography of New Mexico geology and mineral technology 1987, by J. C. Love, C. A. Hjellming, and T. M. Click, 1994, 91 pp. \$7.00

This volume is the 12th in a series of bibliographic bulletins and extends comprehensive coverage of the geologic literature of New Mexico through 1987. The nearly 1,200 new references include articles published in scientific journals, reports, maps, serials, and monographs published by federal and state agencies, professional societies, research institutions, and scientific publishers; abstracts of papers presented at professional meetings; and research papers, theses, and dissertations completed as part of MS and PhD degree requirements. References are listed alphabetically by senior author; junior authors with cross references are included in the alphabetical arrangement. Each reference is indexed one or more times by subject, geographic location, age, and/or rock-stratigraphic unit.

\***Geologic Map 71**—Geology of Trampas quadrangle, Picuris Mountains, Taos and Rio Arriba Counties, New Mexico, by P. W. Bauer and M. A. Helper, 1994, 2 sheets with text, scale 1:24,000. \$6.50

The Harding pegmatite mine and Precambrian metasedimentary rocks of the Copper Hill mining district are two of the more interesting geologic features of the Trampas 7.5-min quadrangle. The map area is at the westernmost point of the wedge-shaped, Precambrian-cored Picuris uplift, an isolated range that projects westward from the southern Sangre de Cristo Mountains 12.4 mi southwest of Taos. Two state highways traverse the map area. NM-68, the road from Española to Taos, crosses the northwest corner of the quadrangle parallel to the Rio Grande and Embudo fault zone. NM-75 runs east-west across the central part of the quadrangle. Early Proterozoic metamorphic rocks are exposed across most of the northern half of the quadrangle. To the west these rocks are blanketed by Neogene Santa Fe Group (Tesuque Formation) sedimentary rocks. Except for scattered outcrops of Proterozoic rock, the southern half of the quadrangle is covered by Tesuque Formation and Pliocene-Pleistocene surficial deposits. Precam-

brian and Cenozoic geology are broken down into 54 map units, each described in detail. Two cross sections illustrate local structural features.

\***Mines, mills and quarries in New Mexico**, compiled by K. S. Hatton, J. M. Barker, N. A. Gollmer, K. Campbell, L. Hemenway, and M. Mansell, 1994, 60 pp., 1 sheet, scale ~1:1,250,000. \$7.00

The data on mining operations were compiled jointly by the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department and the New Mexico Bureau of Mines and Mineral Resources from registrations received by July 1, 1994. Mines and mills (in the first section of this report) and pits and quarries (in the second section) are numbered, listed alphabetically by county, coded with a symbol identifying the type of operation, and plotted on a ~1:1,250,000-scale map. Specific data listed for each entry include the name of the operation, the commodity mined or milled, ownership, address, current status, and location (township and range). Appendices include sources for state and regional maps; addresses of county courthouses, BLM and USFS offices, and Indian pueblos and reservations; three indices (commodity, mine and plant, and operator); and mineral-industries data on employment, production, mineral uses, and revenues.

### NMGS

\***Mogollon slope, west-central New Mexico and east-central Arizona**, edited by R. M. Chamberlin, B. S. Kues, S. M. Cather, J. M. Barker, W. C. McIntosh, 335 pp.: New Mexico Geological Society, 45th Annual Field Conference, September 28–October 1, 1994, Guidebook. \$50.00

The 1994 NMGS Fall Field Conference journeyed through the serene outback of north-eastern Catron County, New Mexico and part of adjacent Apache County, Arizona. This scenic terrane of volcanic-capped ranges on the north periphery of the Mogollon-Datil volcanic field and the downwarped south margin of the Colorado Plateau was visited last in 1959 as numerous reconnaissance maps of west-central New Mexico were being completed in preparation for the now-familiar geologic map by C. H. Dane and G. O. Bachman (1965).

New regional geologic maps of the Tularosa Mountains 30 × 60' quadrangle by J. Ratté and the late Tommy Finnell and the Quemado 30 × 60' quadrangle by R. Chamberlin, S. Cather, O. Anderson, and G. Jones (NMBMMR Open-file Rept. 406, see below) provide the geologic picture of the field conference area. As with the previous generation of maps in this area, the impetus for new regional maps is the upcoming geologic map of New Mexico (Anderson and Jones, NMBMMR Open-file Rept. 408, see below), which will supplant the map of Dane and Bachman. Bill McIntosh and Matt Heizler at the New

Mexico Geochronology Research Laboratory provided high-precision <sup>40</sup>Ar/<sup>39</sup>Ar ages for regional ignimbrite sheets and lavas that represent critical time lines on these maps.

The 26 articles, 23 minipapers, and 4 road logs that make up this guidebook represent a new geological understanding of west-central New Mexico, adjacent parts of the Mogollon-Datil volcanic field, and the south Colorado Plateau.

### USGS

#### DIGITAL DATA SERIES

\***DDS-17**—Geology and mineral and energy resources, Roswell Resource Area, New Mexico—an interactive computer presentation, by R. R. Tidball and S. Bartsch-Winkler, 1995, CD-ROM. \$35.00

This program is accessible with any Macintosh II-series (or later) computer having a CD-ROM device complying with the HFS standard. Operating system version 7.0 or later is required to accommodate scalable fonts. Additional hardware requirements include a color-graphics display and a minimum of 11 megabytes of available disk storage (if the program is to be loaded on the hard disk).

#### WATER-RESOURCES INVESTIGATIONS

**WRI-92-4156**—Geohydrology of the Mesilla ground-water basin, Doña Ana County, New Mexico, and El Paso County, Texas, by E. L. Nickerson and R. G. Myers. 1993, 89 pp.

**WRI-93-4107**—Water resources of Taos County, New Mexico, by L. A. Garrabrant, 1993, 86 pp., 2 oversize sheets.

**WRI-94-4006**—Sources and migration pathways of natural gas in near-surface ground water beneath the Animas River valley, Colorado and New Mexico, by D. T. Chafin, 1994, 56 pp., 3 oversize sheets, scale 1:24,000.

**WRI-94-4033**—Hydrogeology and aquifer test of the San Andres-Glorieta Aquifer on the southwest part of the Zuni Indian Reservation, Cibola County, New Mexico, by T. M. Crouch, 1994, 36 pp.

#### GEOLOGIC QUADRANGLE MAP

**GQ-1736**—Geologic map of the Milligan Mountain quadrangle, Catron County, New Mexico, by J. C. Ratté, D. J. Bove, and W. C. McIntosh, 1994, scale 1:24,000.

#### OIL AND GAS INVESTIGATIONS CHARTS

**OC-141**—Southwest-northeast-oriented stratigraphic cross sections of Jurassic through Paleozoic rocks, San Juan Basin and vicinity, Colorado, Arizona, and New Mexico, by A. C. Huffman, Jr. and S. M. Condon, 1994, 3 oversize sheets.

**OC-142**—Northwest-southeast-oriented stratigraphic cross sections of Jurassic through Paleozoic rocks, San Juan Basin and vicinity, Utah, Colorado, Arizona, and New Mexico, by S. M. Condon and A. C. Huffman, Jr., 1994, 3 oversize sheets.

## Other publications

- Baldrige, W. S., Ferguson, J. F., Braile, L. W., Wang, B., Eckhardt, K., Evans, D., Schultz, C., Gilpin, B., Jiracek, G. R., and Biegler, S., 1994, The western margin of the Rio Grande rift in northern New Mexico: an aborted boundary?: Geological Society of America, Bulletin, v. 106, no. 12, pp. 1538–1551.
- Bauer, P. W., 1993, Proterozoic tectonic evolution of the Picuris Mountains, northern New Mexico: Journal of Geology, v. 101, pp. 483–500.
- Bauer, P. W., and Williams, M. L., 1994, The age of Proterozoic orogenesis in New Mexico, U.S.A.: Precambrian Research, v. 67, pp. 349–356.
- Cline, J. S., and Bodnar, R. J., 1994, Direct evolution of brine from a crystallizing silicic melt at the Questa, New Mexico, molybdenum deposit: Economic Geology, v. 89, no. 8, pp. 1780–1802.
- Douglass, S. E., and Campbell, A. R., 1994, Characterization of alkaline rock-related mineralization in the Nogal mining district, Lincoln County, New Mexico: Economic Geology, v. 89, no. 6, pp. 1306–1321.
- Elston, W. E., 1994, Siliceous volcanic centers as guides to mineral exploration: review and summary: Economic Geology, v. 89, no. 8, pp. 1662–1686.
- Gee, G. W., Wierenga, P. J., Andraski, B. J., Young, M. H., Fayer, M. J., and Rockhold, M. L., 1994, Variations in water balance and recharge potential at three western desert sites: Soil Science Society of America, Journal, v. 58, no. 1, pp. 63–72.
- Goff, F., and Gardner, J. N., 1994, Evolution of a mineralized geothermal system, Valles caldera, New Mexico: Economic Geology, v. 89, no. 8, pp. 1803–1832.
- Lucas, S. G., and Anderson, O. J., 1994, The Camp Springs Member, base of the Late Triassic Dockum Formation in west Texas: West Texas Geological Society, Bulletin, v. 34, no. 2, pp. 5–15.

- Mellere, D., 1994, Sequential development of an estuarine valley fill: the Twowells Tongue of the Dakota Sandstone, Acoma Basin, New Mexico: Journal of Sedimentary Research, v. B64, no. 4, pp. 500–515.
- Neal, W. S., and Larson, P. B., 1994, Mineral and fluid geochemistry of the Hoosier vein, Chloride mining district, Sierra County, New Mexico: Economic Geology, v. 89, no. 8, pp. 1752–1768.
- Staffeu, J., and Sonnenfeld, M. D., 1994, Seismic models of a shelf-margin depositional sequence: upper San Andres Formation, Last Chance Canyon, New Mexico: Journal of Sedimentary Research, v. B64, no. 4, pp. 481–499.
- Turner, C. E., Fishman, N. S., Hatcher, P. G., and Spiker, E. C., 1993, Nature and role of organic matter in sandstone uranium deposits, Grants uranium region, New Mexico, USA; in Parnell, J., et al. (eds.), Bitumens in ore deposits: Springer-Verlag, Special Publication no. 9 of the Society for Geology Applied to Mineral Deposits, pp. 239–275.
- Wiberg, T. L., and Smith, G. A., 1994, Pennsylvanian glacioeustasy recorded in a carbonate ramp succession, Ancestral Rocky Mountains, New Mexico; in Pangea: global environments and resources: Canadian Society of Petroleum Geologists, Memoir 17, pp. 545–556.

## Open-file reports

### NMBMMR

- \*406—Reconnaissance geologic map of the Quemado 30 × 60-minute quadrangle, Catron County, New Mexico, by R. M. Chamberlin, S. M. Cather, O. J. Anderson, and G. E. Jones, 1994, 30 pp., 1 table, 7 figs., 1 sheet, scale 1:100,000. \$9.00
- Includes descriptions and correlation of map units, summary of stratigraphic and structural data, and discussion of regional hydrostratigraphic units.

- \*407—The geology, exploration, and production history of the Begay #1 and Carrizo #1 uranium-vanadium mines, San Juan County, New Mexico, by W. L. Chenoweth, 19 pp., 2 tables, 2 figs., 1 sheet, scale 1 inch = 50 ft. \$5.30
- \*408—A—Geologic map of New Mexico, 1:500,000, by O. J. Anderson and G. E. Jones, 1994, 43 pp., 2 sheets. \$92.00
- Text includes bibliography and map explanation; map (preliminary version) is plotted in black on 2 sheets. A published color version is anticipated in 1996.
- \*408—B—Geologic map of New Mexico, 1:500,000, by O. J. Anderson and G. E. Jones, 1994, 43 pp. \$30.00
- Text includes bibliography and map explanation; map (preliminary version) is available on 15 diskettes. NOTE: User must have GS-map software program (available from U.S. Geological Survey) and DOS 6.0 or later.
- \*409—A—Potential environmental impact of the abandoned La Bajada uranium mine on Cochiti Pueblo, by T. M. Whitworth, 1995, 272 pp., 9 tables, 1 fig., 2 appendices (A. Summary of June 3 meeting; B. Data used to prepare report). \$54.40
- \*409—B—Potential environmental impact of the abandoned La Bajada uranium mine on Cochiti Pueblo, by T. M. Whitworth, 1995, 33 pp., 9 tables, 1 fig., no appendices. \$6.60

### USGS

- 93-419—Methods for estimating magnitude and frequency of floods in the Southwestern United States, by B. E. Thomas, H. W. Hjalmarson, and S. D. Waltemeyer, 1994, 211 pp.
- 93-661—Water-resources activities of the U.S. Geological Survey in New Mexico, fiscal year 1992, compiled by H. R. Allen, 1994, 75 pp.
- 94-356—Chemical, geologic, and hydrologic data from the Little Colorado River basin, Arizona and New Mexico, 1988–91, by G. G. Fisk, S. A. Ferguson, D. R. Rankin, and L. Wirt, 1994, 468 pp. □

## New Mexico GEOLOGY

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