Service/News

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New publications

NMBMMR

***Bulletin 113**—Geology of East Potrillo Mountains and vicinity, Doña Ana County, New Mexico, by W. R. Seager and G. H. Mack, 1994, 27 pp., 1 table, 16 figs., 3 sheets, scale 1:24,000. $10.00

The East Potrillo Mountains area is in southwest Doña Ana County, approximately 25 mi west of El Paso and 34 mi southwest of Las Cruces. The Mexico–United States border forms the southern limit of the map, and the 107°6'30" meridian delineates the western edge of the map; altogether, approximately 90 mi^2 of varied terrain were studied. The prominent volcanic domes of Mt. Riley and Mt. Cox dominate the view, towering 1,475 ft or so above their surroundings. To the southeast, the narrow ridge known as the East Potrillo Mountains rises approximately 900–1,000 ft above the bolson floor. Approximately 4,265 ft of sedimentary and volcanic rocks and alluvium, which range in age from middle Permian to Holocene, are exposed in the study area.

The East Potrillo Mountains area reveals important details about regional Laramide, middle Tertiary, and late Tertiary deformation. The oldest structures are folds and associated thrust faults that are the products of Laramide compression in Late Cretaceous–early Tertiary time. These structures are dissected by a system of low-angle normal faults that are associated with moderately rotated strata, presumably the result of early extension in the Rio Grande rift. The most recent structures are high-angle normal faults that cut middle Tertiary and Quaternary fanglomerate and border the modern fault-block uplifts and basins.

***Bulletin 146**—Coalbed methane in the Upper Cretaceous Fruitland Formation, San Juan Basin, New Mexico and Colorado, edited by W. B. Ayers, Jr., and W. R. Kaiser, 1994, 216 pp., 14 tables, 168 figs. $15.00

Coalbed methane is playing an increasingly important role in meeting the energy needs of the United States. This unconventional gas may supply 4–5% of the domestic natural gas in 1994. The San Juan Basin led the nation in coalbed methane production in 1992, when nearly 2,100 Fruitland coalbed wells produced approximately 447 billion cubic feet (Bcf) of coalbed methane–81% of the total U.S. coalbed methane production of approximately 553 Bcf.

This publication discusses five areas that relate to controls on the occurrence or producibility of coalbed methane in the San Juan Basin: tectonic setting; depositional setting; fracture patterns in Fruitland coal beds and adjacent strata; studies of hydrology, thermal maturity, and gas compostion; and the integration of geologic and hydrologic studies. The research, funded by the Gas Research Institute and conducted by the Bureau of Economic Geology at The University of Texas at Austin, the Colorado Geological Survey, and the New Mexico Bureau of Mines and Mineral Resources, was summarized in a topical report (GRI–91/0072) that had limited distribution. This publication includes the reviewed papers on the San Juan Basin from that report, but omits two generic papers, and makes the research results more available to geoscientists and engineers.

USGS

GEOLOGIC QUADRANGLE MAPS

GQ–1737—Geologic map of the Clifton House quadrangle, showing fossil zones in the Pierre Shale, Colfax County, New Mexico, by C. L. Pillmore and G. R. Scott, 1994, scale 1:24,000.

GQ–1749—Geologic map of the Los Pinos quadrangle, Rio Arriba and Taos Counties, New Mexico, and Conejos County, Colorado, by R. A. Thompson and P. W. Lipman, 1994, scale 1:24,000.

GQ–1750—Geologic map of the San Antonio Mountain quadrangle, Rio Arriba County, New Mexico, by R. A. Thompson and P. W. Lipman, 1994, scale 1:24,000.

WATER-RESOURCES INVESTIGATIONS

WRI 92–4188—Reconnaissance investigation of water quality, bottom sediment, and biota associated with irrigation drainage in the Pine River Project area, Southern Ute Indian Reservation, southwestern Colorado and northwestern New Mexico, 1988–89, by D. L. Butler, R. P. Krueger, B. C. Osmundson, A. L. Thompson, J. J. Formea, and D. W. Wickman, 1993, 105 pp.

WRI 93–4065—Reconnaissance investigation of water quality, bottom sediment, and biota associated with irrigation drainage in the San Juan River area, San Juan County, northwestern New Mexico, 1990–91, by P. J. Blanchard, R. R. Roy, and T. F. O'Brien, 1993, 141 pp.

WRI 93–4088—Water-level changes in the High Plains aquifer: predevelopment to 1991, by T. S. McGrath and J. T. Dugan, 1993, 53 pp.

Other publications

Anderson, O. J., and Lucas, S. G., 1994, Middle Jurassic stratigraphy, sedimentation and paleogeography in the southern Colorado Plateau and southern High Plains; *in* Caputo, M. V., Peterson, J. A., and Franczyk, K. J. (eds.), Mesozoic Systems of the Rocky Mountain region, USA: Rocky Mountain Section SEPM (Society for Sedimentary Geology), pp. 299–314.

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.

Lucas, S. G., and Anderson, O. J., 1994, Upper Permian Ochoa Group of west Texas and southeastern New Mexico: Permophiles, no. 24, pp. 43–46.

Nyman, M. W., Karlstrom, K. E., Kirby, E., Graubard, C. M., 1994, Mesoproterozoic contractional orogeny in western North America: evidence from ca. 1.4 Ga plutons: Geology, v. 22, no. 10, pp. 901–904.

Sanford, R. F., 1994, A quantitative model of ground-water flow during formation of tabular sandstone uranium deposits: Economic Geology, v. 89, no. 2, pp. 341–360.

Semken, S. C. (ed.), 1992, Field guide to a geologic excursion in the northeastern Navajo Nation: Navajo Community College, Shiprock, Navajo Nation, New Mexico, Proceedings of the Western Slope Intercollegiate Geologic Field Conference, October 9–11, 1992, 68 pp.

Wade, S. C., and Reiter, M., 1994, A hydrothermal study to estimate vertical groundwater flow in the Cañutillo well field, between Las Cruces and El Paso: New Mexico Water Resources Research Institute, New Mexico State University, WRRI Rept. 282, 71 pp.

Wade, S. C., and Reiter, M., 1994, Hydrothermal estimation of vertical ground-water flow, Cañutillo, Texas: Ground Water, v. 32, no. 5, pp. 735–742.

Open-file reports

NMBMMR

***374**—Geology along a margin of the Colorado Plateau and Rio Grande rift, north-central New Mexico: roadlog and field-stop discussions to accompany field trip #3 of the Rocky Mountain/South-central Sections annual meeting of the GSA, Albuquerque, NM, April 20–27, 1991, by M. A. Gonzalez and D. P. Dethier, 80 pp. $16.00

***405**—Geology of the Zuni Salt Lake 7.5-minute quadrangle, Catron County, New Mexico, 1994, by O. J. Anderson, 21 pp., 2 oversize sheets. $7.20

[A colored section is available to walk-in customers for an additional $3.50.]

USGS

93–292–F—Geologic radon potential of EPA Region 6; Arkansas, Louisiana, New Mexico, Oklahoma, and Texas, edited by R. R. Schumann, 1993, 160 pp.

93–456—National Water-quality Assessment Program; water use in the Rio Grande valley, 1990, by S. F. Richey and S. R. Ellis, 1993, 2 pp.

93–596–C—Plays for assessment in Region III, Colorado Plateau and Basin and Range, as of October 4, 1993; 1995 National Assessment of Oil and Gas, compiled by D. L. Gautier and K. L. Varnes, 1993, 18 pp.

93–596–D—Plays for assessment in Region IV, Rocky Mountains and northern Great Plains, as of October 4, 1993; 1995 National Assessment of Oil and Gas, compiled by D. L. Gautier and K. L. Varnes, 1993, 34 pp.

93–596–E—Plays for assessment in Region V, West Texas and eastern New Mexico, as of October 4, 1993; 1995 National Assessment of Oil and Gas, compiled by D. L. Gautier and K. L. Varnes, 1993, 9 pp.

93–680—Abstracts of the U.S. Geological Survey, Central region, 1993 poster review, compiled by C. E. Baker and A. B. Coury, 1993, 27 pp.

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—compiled by Toby Click

New Mexico Bureau of Mines and Mineral Resources staff notes

The Bureau has filled two part-time positions by hiring **Lynn Heizler** as Assistant Curator in the Mineral Museum and **Lisa Peters** as a Lab Technician in the Geochronology Lab. Anniversaries of our staff members with 5 or more years of service from September through October are: **Jacques Renault,** 30; **George Austin,** 20; **Ruben Crespin,** 19; **Bob Eveleth,** 17; **Dave Love,** 14; **Jane Love,** 13; **Ron Broadhead,** 12; **Steve Cather** and **Rebecca Titus,** 8; **Ann Lanning,** 6; **Glen Jones,** 5.

The New Mexico Geological Society 45th Annual Field Conference was to the Mogollon Slope, west-central New Mexico and east-central Arizona. **Richard Chamberlin, Ron Broadhead, Steven Cather, James Barker, William McIntosh, Orin Anderson, Gretchen Hoffman, George Austin,** and **Norma Meeks** served on various committees and compiled road logs. Guidebook articles were written by **Richard Chamberlin, William McIntosh, Steven Cather, Nelia Dunbar, Charles Chapin, Orin Anderson, Gretchen Hoffman, Ron Broadhead, Virginia McLemore,** and **George Austin**. Guidebook preparation was aided by **Becky Titus, Kathy Campbell,** and **Jesse Dengate** who provided the line drawings and illustrations; **Lynne Hemenway** and **Terry Telles** did the word processing. Other staff attending were **Paul Bauer, Frank Kottlowski, Dave Love, Jane Love, John Hawley, William Haneberg, Neil Whitehead, III,** and **Virgil Lueth**.

Staff members presented papers at the Geological Society of America annual meeting: **Mike Whitworth** (co-author **Virgil Lueth,** "Potential geologic membrane controls on heavy metal transport"); **Virgil Lueth** (co-author **Mike Whitworth,** "Geologic membrane effects and the origin of red bed copper deposits"). **Frank Kottlowski** presented the Frye Award and attended the Coal Geology Division meeting. **Steve Cather, Bill Haneberg,** and **Matt Heizler** also attended.

Charles Chapin, Director, attended the Governor's Technical Excellence Committee meeting; NM Oil & Gas Association annual meeting (**Frank Kottlowski, Neil Whitehead, III**); Coal Surface Mining Commission meeting; NM Mining Association meeting (**Frank Kottlowski, Susan Welch** set up NMBMMR exhibit); Water Quality Control Commission hearings (**Lynn Brandvold**).

Other meetings attended by NMBMMR staff were: Geoanalysis '94 conference (**Lynn Brandvold,** poster, Distribution and partitioning of copper, lead, and zinc in stream-sediments above and below an abandoned mining and milling area near Pecos, New Mexico, U.S.A. **Jacques Renault**, talk, Method of XRF analysis for environmental lead using thin film principles); Association of Earth Science Editors (**Carol Hjellming, Nancy Gilson**); How to Supervise People workshop (**Norma Meeks, James Barker, Ron Broadhead, Bill Haneberg, Charles Chapin**); Grammar and Usage seminar (**Debbie Goering, Lois Gollmer, Theresa Lopez, Terry Telles**); Clay Minerals Society meeting and SME Restructuring Committee meeting (**George Austin**); Central SME meeting (**George Austin, James Barker, Gretchen Hoffman**); ISO 9000 meeting and SME Board of Directors meeting (**Jim Barker**); NM State Engineers Water Rights hearing (**William Haneberg**); Applied Fluvial Geomorphology short course (**William Haneberg**); Denver Gem and Mineral Show (**Vigil Lueth**); mineral display at Chaparral Gem and Mineral Show (**Virgil Lueth**); led field trip to Orogrande and Organ district for El Paso–Juarez–Las Cruces "Celebration of our Mountain" (**Virgil Lueth**); porphyry copper conference, "Bootprints along the Cordillera" (**Virginia McLemore**); management seminar (**Rebecca Titus**); Western States Seismic Policy Council, NM Geologic Delegate (**William Haneberg**); conducted topographic-map-reading workshop for teachers (**Jim Barker, Gretchen Hoffman, Susan Welch**); "Out of the Rock," workshop for teachers taught by National Energy Foundation (**Susan Welch**); Albuquerque Geological Society (**Neil Whitehead, III,** talk, Fracture at the surface in the San Juan Basin, N.M. and Colo.: implications for petroleum, groundwater, and engineering geology); New Mexico Geographic Information Council, fall meeting (**Neil Whitehead, III, Dave Love, Glen Jones**); Wastewater reuse feasibility workshop (**Mike Whitworth**); SME meeting and field trip (**Abe Gundiler**); NM Water Law conference (**Charles Chapin, John Hawley, Bill Haneberg, Mike Whitworth**).

Articles by **Orin Anderson** and **Marshall Reiter** are referenced in *Service/News, Other publications*.

Staff notes makes its final appearance in this issue as a feature in *New Mexico Geology*. The series has been discontinued.

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