Service/News

Only starred items (*) are available from New Mexico Bureau of Mines & Mineral Resources

New publications

NMBMMR

***Circular 184**—Regional geology of Ochoan evaporites, northern part of Delaware Basin, by G. O. Bachman, 1984, 22 pp., 2 sheets $3.50

The evaporites of the Ochoan Series (Permian) are subject to dissolution resulting in karst features analogous to those formed in limestone regions. The Castile Formation, which is the basal unit of the Ochoan Series, underlies the Waste Isolation Pilot Plant (WIPP) site. Because of concern that evaporites in the Castile might be dissolved and the WIPP site might be unsafe, the regional setting of the Castile and its implications are examined in detail.

***Hydrologic Report 7**—Water quality and pollution in New Mexico, compiled by W. J. Stone, 1984, 300 pp. $10.00

This report is a collection of 25 papers that were presented at a symposium on the chemistry and microbiology of precipitation, surface water, soil water, and ground water in New Mexico. Water-treatment technology, resource-development impacts, and legal aspects of ground-water pollution are also discussed.

***Pricelist 18**—Publications available from the New Mexico Bureau of Mines and Mineral Resources, July 1984 Free

***Open-file List 3**—Open-file reports available from the New Mexico Bureau of Mines and Mineral Resources, July 1984 Free

USGS

CIRCULARS

896–B—Earthquakes in the United States, April–June 1982, by B. G. Reagor, C. W. Stover, J. H. Minsch, and L. R. Brewer, 1983, 28 pp.

902–A–P—Petroleum potential of wilderness lands in New Mexico, by R. T. Ryder; *in* Petroleum potential of wilderness lands in the western United States, by B. M. Miller, editor, 1983, pp. I1–I33 (*see* I–1543)

MISCELLANEOUS FIELD STUDIES MAPS

MF–1344–D—Map showing the distribution and relationships of selected metals in heavy-mineral concentrates of the Hells Hole further planning area (Rare II), Greenlee County, Arizona, and Grant County, New Mexico, by J. R. Hassemer, K. C. Watts, C. L. Forn, and E. L. Mosier, 1983, scale 1:100,000

MF–1523–B—Mineral resource potential map of the Chama River Canyon Wilderness and contiguous roadless area, Rio Arriba County, New Mexico, by J. L. Ridgley and T. D. Light, 1983, lat. 36°10′ to 36°35′ N., long. 106°30′ to l06°45′ W., scale 1:48,000

MF–1523–C—Geologic map of the Chama River Canyon Wilderness and contiguous roadless area, Rio Arriba County, New Mexico, by J. L. Ridgley, 1983, lat. 36°10′ to 36°35′ N., long. 106°30′ to 106°45′ W., scale 1:48,000

MF–1570–A—Mineral resource potential map of the Columbine–Hondo Wilderness study area, Taos County, New Mexico, by S. Ludington, J. P. Briggs, and J. M. Robertson, 1983, lat. about 36°32′30″ to 36°42′30″ N., long. about 105°22′30″ to 105°37′30″ W., scale 1:50,000

***MF–1665**—Geology and mineral deposits of the Priest Tank quadrangle, Sierra County, New Mexico, by A. V. Heyl, C. H. Maxwell, and L. L. Davis, 1983, lat. 33°15′ to 33°22′30″ N., long. 107°22′30″ to 107°30′ W., scale 1:24,000

MF–1673—Preliminary structure–contour map on the base of the Cretaceous Dakota Sandstone in the San Juan Basin and vicinity, New Mexico, Arizona, Colorado, and Utah, by R. E. Thaden and R. S. Zech, 1984, lat. about 34°45′ to 37°30′ N., long. about 106° to 110° W., scale 1:500,000

MISCELLANEOUS INVESTIGATIONS SERIES MAPS

I–1543—Petroleum potential of wilderness lands, New Mexico, by R. T. Ryder, 1982, lat. about 31° to 37° N., long. about 103° to 109° W., scale 1:1,000,000 (*see* Circular 902)

PROFESSIONAL PAPER

Wilderness mineral potential—assessment of mineral-resource potential in U.S. Forest Service lands studied, 1964–1984, edited by S. P. Marsh, S. J. Kropschot, and R. G. Dickinson, 1984, 2 v., 1183 pp.

WATER RESOURCES INVESTIGATIONS

WRI–82–4113—Estimation of natural streamflow in the Jemez River at the boundaries of Indian lands, central New Mexico, by E. E. Fischer and J. P. Borland, 33 pp.

WRI–83–4124—Geologic and well-construction data for the H–10 borehole complex near the proposed Waste Isolation Pilot Plant site, southeastern New Mexico, by S. L. Drellack, Jr., and J. G. Wells, 1983, 38 pp., 1 oversized sheet.

Folder—New Mexico state water-resources investigations, 1982

Other publications

Environmental characterization of bedded salt formations and overlying areas of the Permian Basin, by Office of Nuclear Waste Isolation, 1983, Columbus, OH, 414 pp.

Potential oil and gas traps along the overhang of the Nacimiento uplift, northwestern New Mexico, by L. A. Woodward, 1983, Rocky Mountain Association of Geologists, Guidebook, pp. 213–218

Cretaceous stratigraphy of south-central New Mexico and northern Chihuahua, Mexico, by R. L. Hoffer and J. M. Hoffer, 1983, El Paso Geological Society, Guidebook to 1983 field conference, pp. 249–253

Paleozoic and early Cretaceous isopach studies of the southwest border region, by D. V. LeMone and others, 1983, El Paso Geological Society, Guidebook to 1983 field conference, pp. 275–284

Open-file reports

NMBMMR

***174**—What is the Zuni sandstone today—100 years after Dutton? a discussion and review of Jurassic stratigraphy in west-central New Mexico, by O. J. Anderson, 1983, 37 pp., 4 figs. $11.90

***188**—Identification of alluvial valley floors in strippable coal areas of New Mexico, by D. W. Love, J. W. Hawley, and T. C. Hobbs, 1981, 27 pp. $5.40

***189**—Site identification for low-level radioactive waste disposal in New Mexico, by J. W. Hawley, 1983, 16 pp., 6 tables, 8 figs., 1 appendix, 1 map $9.00

***190**—Introduction to hydrogeologic features of the Mesilla Bolson, by J. W. Hawley, 1984, 8 pp., 5 pls. $9.10

***191**—Silver and gold occurrences in New Mexico, by R. M. North and V. T. McLemore, 1984, 27 pp., 1 map $7.10

In this report 139 districts are located on a New Mexico state map (scale 1:1,000,000) where silver and/or gold have been produced or occur in concentrations greater than 0.8 ppm gold or 14 ppm silver. Also included is a table that lists and briefly describes each district including silver and gold production (if known) and other commodities produced or present in the district.

***194**—Hydrocarbon source-rock evaluation study, Sunray Mid-Continent No. 1 Federal R well, Luna County, New Mexico, by L. P. Tybor, 1982, 11 pp., 5 tables $2.20

***195**—Hydrocarbon source-rock evaluation study, Skelly No. 1-A State C well, Luna County, New Mexico, by D. A. Muckelroy, 1982, 5 pp., 2 tables $1.00

***196**—Hydrocarbon source-rock evaluation study, Guest and Wolfson No. 1 Diana well, Luna County, New Mexico, by L. P. Tybor, 1982, 9 pp., 4 tables $1.80

***197**—Hydrocarbon source-rock evaluation study, Cockrell No. 1 State 1349 well, Luna County, New Mexico, by L. P. Tybor, 1982, 5 pp., 2 tables $1.00

***198**—Hydrocarbon source-rock evaluation study, Sycor Newton No. 1 State L-6350 well, Luna County, New Mexico, by L. P. Tybor, 1982, 5 pp., 2 tables $1.00

***199**—Hydrocarbon source-rock evaluation study, Grimm et al. No. 1 Mobil 32 well, Doña Ana County, New Mexico, by D. A. Muckelroy, 1982, 44 pp., 8 tables, 21 figs $8.80

***200**—Hydrocarbon source-rock evaluation study, Cities Service No. 1 Corralitos Federal A well, Doña Ana County, New Mexico, by D. A. Muckelroy, 28 pp., 8 tables, 12 figs. $5.60

***201**—Hydrocarbon source-rock evaluation study, Sinclair No. 1 Doña Ana Federal 18 well, Doña Ana County, New Mexico, by D. A. Muckelroy, 1983, 14 pp., 5 tables, 2 figs. $2.80

***202**—Petroleum source-rock study of selected wells in the Rio Grande rift area, New Mexico, by A. H. Leutloff and D. J. Curry, 1982, 28 pp., 14 tables, 8 figs. $5.60

***203**—Organic geochemical analysis, Shell No. 1 Leeman well, Sierra County, New Mexico, by S. R. Jacobson, J. S. Rankin, and J. D. Saxton, 1982, 9 pp., 3 tables $1.80

***204**—Organic geochemical analysis, Gartland No. 1 Brister well, Sierra County, New Mexico, by S. R. Jacobson, J. S. Rankin, and J. D. Saxton, 1983, 30 pp., 3 tables, 7 figs. $6.00

***205**—Organic geochemical analysis, Pure No. 1 Federal H Well, Doña Ana County, New Mexico, by S. R. Jacobson, J. S. Rankin, and J. D. Saxton, 1983, 20 pp., 1 table, 3 figs. $4.00

USGS

83–144—Instrumentation used for hydraulic testing of potential water-bearing formations at the Waste Isolation Pilot Plant site in southeastern New Mexico, by J. A. Basler, 1983, 34 pp.

***83–379**—Statistical treatment and preliminary interpretation of chemical data from a uranium deposit in the northeast part of the Church Rock area, Gallup mining district, New Mexico, by C. S. Spirakis, C. T. Pierson, E. S. Santos, and N. S. Fishman, 1983, 44 pp. ☞

*83–380—Comparison of the chemical characteristics of the uranium deposits of the Morrison Formation in the Grants uranium region, New Mexico, by C. S. Spirakis and C. T. Pierson, 1983, 22 pp.

*83–416—Seismic refraction studies in the San Juan Basin, northwest New Mexico, by D. H. Evans and L. H. Jaksha, 1984, 21 pp.

83–549—Map showing coal deposits, oil and gas wells and seeps, and tar sandstone occurrences in the Basin and Range Province, by B. T. Brady, 1983, 101 pp., 1 pl.

83–699—Geologic and hydrologic characterization and evaluation of the Basin and Range Province relative to the disposal of high-level radioactive waste—part II, Geologic and hydrologic characterization, by K. A. Sargent and M. S. Bedinger, 1983, 80 pp.

83–751—Selected geologic and hydrologic characteristics of the Basin and Range Province, western United States—Pleistocene lakes and marshes, by T. R. Williams and M. S. Bedinger, 1983, 21 pp., 1 pl.

83–756—Geologic and hydrologic characterization and evaluation of the Basin and Range Province relative to the disposal of high-level radioactive waste—part III, Geologic and hydrologic evaluation, by M. S. Bedinger, K. A. Sargent, and B. T. Brady, 78 pp.

83–759—Geologic and hydrologic characterization and evaluation of the Basin and Range Province relative to the disposal of high-level radioactive waste—part I, Introduction and guidelines, by M. S. Bedinger, K. A. Sargent, and J. E. Reed, 67 pp.

83–772—Water-resources investigations of the U.S. Geological Survey in New Mexico—fiscal year 1981, R. R. White and J. G. Wells, compilers, 43 pp.

*83–889—Mineral resource potential of the Bisti, De-na-zin, and Ah-shi-sle-pah Wilderness study areas, San Juan County, New Mexico, by A. M. Bielski, J. L. Brown, and J. R. Hassemer, 1984, 20 pp.

*83–949—Simulated changes in ground-water levels related to proposed development of federal coal leases, San Juan Basin, New Mexico, by P. F. Frenzel, 1983, 68 pp.

*84–17—Density, porosity, and magnetic susceptibility of rocks from the Silver City 1° × 2° quadrangle, Arizona and New Mexico, by D. P. Klein and J. C. Wynn, 1984, 13 pp.

*84–83—Thermoluminescence dating of soil carbonate, by R. J. May and M. N. Machette, 1984, 25 pp.

*84–135—Data for ground-water studies of the San Juan Basin, New Mexico (1982–83), by R. L. Klausing and G. E. Welder, 1983, 49 pp.

84–215—Analytical results and sample locality map of stream-sediment, heavy-mineral concentrate, water, and rock samples from the Bisti, De-na-zin, and Ah-shi-sle-pah Wilderness study areas, San Juan County, New Mexico, by M. S. Erickson and J. R. Hassemer, 1984, 36 pp.

New projects

USGS

9980–03720—Early and middle Cenozoic volcanic centers, western conterminous United States, by R. G. Luedke. The purpose of the study is to synthesize fundamental geological and geochemical data in order to produce models that will provide exploration techniques for ore deposits and improve resource assessment. Projected completion date: 1988.

9980–03715—Rhyolite lavas and tin mineralization, by W. A. Duffield. The primary objectives of this study are: 1) to decipher sequence and geographic pattern of dome emplacement; 2) to determine petrographic/chemical relations among domes; 3) to determine radiometric ages of domes; 4) to locate dome vents that may have served as permeable conduits for degassing of underlying unerupted magma; and 5) to evaluate time-space relations between domes and tin mineralization. Projected completion date: 1989.

9590–03738—Palynology of the thrust belt, western U.S., by D. J. Nichols. The primary objectives of the study are: 1) to refine and extend a biostratigraphic framework for the largely nonmarine Cretaceous and Paleogene strata of the region extending from Montana to New Mexico; 2) to develop a high-precision geologic time scale that includes palynologic, isotopic, and paleomagnetic data; 3) to provide age data for solution of geologic problems in the area; 4) to evaluate the palynological record of floral extinctions at the K–T boundary and their relation to the terminal Cretaceous extinction episode; and 5) to document palynofloras of Cretaceous and Paleogene age in the thrust belt and Western Interior. Projected completion date: 1988.

9590–03759—Upper Paleozoic extinctions, by B. R. Wardlaw. The purpose of the study is to establish the geologic framework of segments of the Earth's crust in order to identify the distribution, character, age, and tectonic interaction of crustal materials and structures and to evaluate and document the existence, magnitude, and timing of major extinction episodes of fossil floras and faunas in Phanerozoic time. Projected completion date: 1989. □

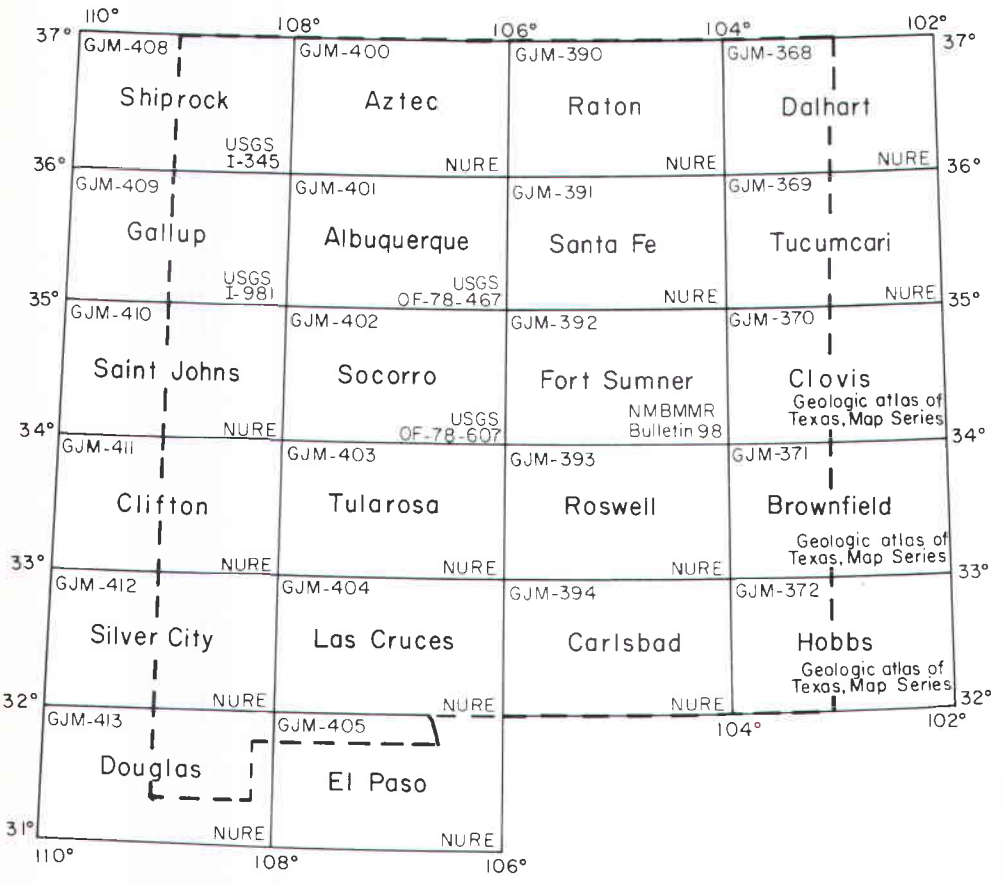
USGS

TOPOGRAPHIC MAPS—NEW (scale 1:24,000)

	yr	lat. N.	long. W.	contour (ft)	
Apache Mesa	1978–83	36°37′30″	106°45′	20	
Brazos	1978–83	36°45′	106°30′	20	
Brazos Peak	1978–83	36°45′	106°22′30″	20	
Canada Ojitas	1978–83	36°22′30″	106°52′30″	20	
Canjilon Mountain	1978–83	36°30′	106°15′	20	
Cebolla	1978–83	36°30′	106°22′30″	20	
Cedar Canyon	1978–83	36°37′30″	106°52′30″	20	
Cordova Canyon	1978–83	36°45′	106°52′30″	20	
Dulce	1978–83	36°52′30″	106°52′30″	20	
East Gavilan Canyon	1978–83	36°37′30″	106°15′	20	
El Vado	1978–83	36°30′	106°37′30″	20	
Fifteenmile Lake	1975–82	33°	106°15′	10	
French Mesa	1978–83	36°15′	106°45′	20	
Garton Lake	1975–82	32°45′	106°7′30″	10	
Heart of the Sands	1975–82	32°45′	106°15′	10	5
Heart of the Sands NE	1975–82	32°52′30″	106°15′	10	
Heart of the Sands NW	1975–82	32°52′30″	106°22′30″	10	
Heart of the Sands SW	1975–82	32°45′	106°22′30″	10	5
Heron Reservoir	1978–83	36°37′30″	106°37′30″	20	
Holloman	1975–82	32°45′	106°	10	
Horse Lake	1978–83	36°45′	106°45′	20	
Laguna Gurule	1978–83	36°15′	106°52′30″	20	
Lagunitas Creek	1978–83	36°45′	106°15′	20	
Lake Lucero	1975–82	32°37′30″	106°22′30″	20	10
Llaves	1978–83	36°22′30″	106°45′	20	
Los Indios Canyon	1978–83	36°30′	106°52′30″	20	10
Lost River	1975–82	32°52′30″	106°7′30″	10	
Lumley Lake	1975–82	33°	106°22′30″	10	5
Lumley Lake NE	1975–82	33°7′30″	106°15′	10	
Lumley Lake NW	1975–82	33°7′30″	106°22′30″	10	
Peñasco Amarillo	1978–83	36°37′30″	106°22′30″	20	
Pipeline Canyon	1975–82	32°30′	105°52′30″	20	10
Pounds Mesa	1978–83	36°30′	106°45′	20	
Sawmill Mesa	1978–83	36°45′	106°37′30″	20	
Selden Canyon	1973–82	32°30′	106°52′30″	20	
Selden Canyon NE	1974–82	32°37′30″	106°45′	10	
Taylor Well	1974–82	32°30′	106°37′30″	10	5
Thorn Well	1974–82	32°37′30″	106°52′30″	10	
Tierra Amarilla	1978–83	36°37′30″	106°30′	20	
West Fork Rio Brazos	1978–83	36°52′30″	106°22′30″	20	

INTERMEDIATE TOPOGRAPHIC MAPS (scale 1:100,000)

	yr	lat. N.	long. W.	contour (m)	
Animas (NM–Mex.)	1983	31°30′	108°	50	25
Sanders (AZ–NM)	1982	35°	109°	50	
Taos	1983	36°	105°	50	
Tularosa Mountains	1983	33°30′	108°	50	



U.S. Department of Energy

MAGNETIC CONTOUR MAPS

Blueline prints of residual-intensity magnetic-anomaly contour maps for 1° × 2° quadrangles (scale 1:250,000) in New Mexico, generated as part of the NURE (National Uranium Resource Evaluation) ARMS (Aerial Radiometric and Magnetic Survey) program, can be ordered from NMBMMR Information and Resource Center for $2.25 each. These maps were processed by Bendix Field Engineering Corp. at a contour interval of 20 gammas from data collected at approximately 400 ft above the ground and at flight line spacing of 3 mi or 6 mi. The number of the magnetic map is given in the upper left-hand corner of each quadrangle on the location map to the right.

The main purpose of the ARMS program was to collect as much useful radiometric and magnetic data on a reconnaissance scale as quickly as practical. The radiometric data were most important to the ARMS program; therefore, the surveys were conducted at optimum conditions for collecting such data (e.g., 400 ft flight elevation). Collection of the magnetic data was secondary. The data were collected by up to five different contractors; therefore, magnetic data from adjacent maps may not always match because of 1) different contractors, 2) different detection instruments, or 3) different times of data collection. Furthermore, the smallest magnetic anomalies or features that can be detected from these contour maps must be at least the size of the flight line spacing. However, these magnetic contour maps may indicate favorable areas for additional geophysical surveys as well as regional magnetic features.

GEOLOGIC MAPS

Blueline prints of geologic maps for 1° × 2° quadrangles (scale 1:250,000) in New Mexico, generated as part of the NURE program, also can be ordered from NMBMMR Information and Resource Center for $2.25 each. Maps that are available for the 1° × 2° quadrangles have the acronym NURE written in the lower right-hand corner on the location map to the right. If a NURE geologic map does not exist for a particular quadrangle, an appropriate reference is given.

New Mexico Mineral Symposium

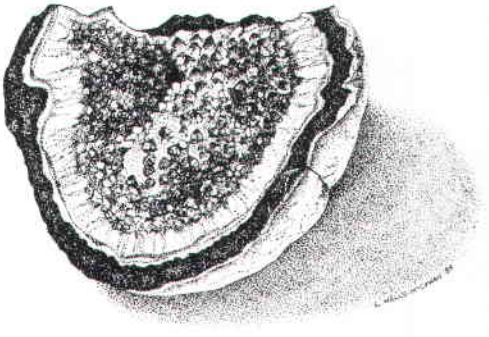
The 5th annual New Mexico Mineral Symposium will be held at the New Mexico Institute of Mining and Technology in Socorro, New Mexico, on November 10 and 11, 1984. Sponsors of the annual symposium are the New Mexico Bureau of Mines and Mineral Resources, the Albuquerque Gem and Mineral Club, the New Mexico Tech Mineralogical Society, the New Mexico Museum of Natural History, and the University of New Mexico, Department of Geology.

This year's symposium will again feature 30-minute papers, a silent auction, and a dinner on Saturday night. The sponsors invite professionals and amateurs alike to attend all of this year's scheduled events.

General registration for the 1984 symposium is $10.00; registration for students and senior citizens (over age 60) is $5.00. To obtain registration information, contact Robert M. North, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM 87801, (505) 835–5246.

New Mexico Geological Society news

The annual spring meeting, held in Socorro on April 27, was very successful, with more than 180 registrants. The symposium on epithermal ore deposits was well attended. Those interested in the symposium papers should watch for NMGS Special Publication 11 on epithermal deposits, to be published next year. The first NMGS fellowship was awarded to Michael Williams of the University of New Mexico to continue his study of Precambrian rocks in the Tusas Mountains in northern New Mexico. During the business meeting, members voted to retain the present flexible policy of paying dues throughout the year. However, the annual membership list will be published in July instead of December and will contain only those members who have paid dues by July 1. The members present voted to increase active and associate NMGS member dues to $10 and student member dues to $6 beginning in 1985 and to provide members with a subscription to *New Mexico Geology* at no additional cost. The executive committee decided to begin charging 1985 rates for dues at the 1984 fall field conference and to consider those who join at the conference members for both 1984 and 1985. Plans for the 1984 fall field conference in Taos, cosponsored by NMGS and Los Alamos National Laboratory, are almost complete. NMGS members will receive registration announcements soon. Others interested in the field conference should contact Los Alamos National Laboratory, PR1–M.S. P355, Los Alamos, NM 87545 (phone: (505) 667–8451) after September 1. Spencer Lucas has offered to be in charge of organizing the 1985 fall field conference in east-central New Mexico, with headquarters in Santa Rosa. New developments in upper Paleozoic and Mesozoic stratigraphy and recent oil, gas, and CO_2 exploration make this area important and interesting. This 1985 field conference also would include discussion about Precambrian rocks of the Pedernal Hills and southern Sangre de Cristo Mountains, Cenozoic deposits (particularly the Ogallala Formation), and Karst terranes. Tentative field-trip routes include one day east of Santa Rosa to Tucumcari, Logan, Mosquero, Bell Ranch, and back to Santa Rosa. The second day's route would take us through the Las Vegas area, Trujillo, and return via Newkirk. The third day would include Fort Sumner, Vaughn, and the Pedernal Hills. All those wishing to contribute should contact Spencer Lucas or Jeff Grambling, Department of Geology, University of New Mexico, Albuquerque, NM 87131 (phone: (505) 277–4204). The 1986 fall field conference remains open for suggestions and volunteers. If interested, please contact Jeff Grambling at the above address.



New Mexico Bureau of Mines and Mineral Resources staff notes

Mark Tuff joined the staff in May as X-ray Technician to oversee the XRF laboratory. Richard Chavez had served 27 yrs in February, and Bob Weber had served 34 yrs in May. The CRIB (Computerized Resource Information Base) cooperative project with the USGS was renewed for FY 83–84 with Bob Eveleth, Diane Murray, and Bob North serving as principal investigators.

Bill Stone was the chief organizer for a symposium held on April 12 at New Mexico Tech on pollution and quality of New Mexico's water resources. Selected papers presented were published in Hydrologic Report 7, *Water quality and pollution in New Mexico*, which was compiled by Bill Stone and edited by Jiri Zidek; the report included articles by Lynn Brandvold, Dave Love, John Hawley, and Bill Stone, as well as 49 other authors.

Chuck Chapin and Bob Osburn hosted an informal workshop with participants from the USGS and the University of Texas (Austin) on dating Cenozoic volcanic rocks. George Austin and Jim Barker met with program committees at the AIME meeting in Los Angeles; Jamie Robertson attended the SEG executive meeting in Los Angeles. The New Mexico Coal Surface Mining Commission, chaired by Frank Kottlowski, approved revised bonding, blasting, and road regulations.

Gary Johnpeer was invited to comment on mud-flow problems in Albuquerque's Sandia Heights area. George Austin summarized mineral exploration in New Mexico during 1983 for *Engineering & Mining Journal*. Marshall Reiter gave a talk called "Heat flow and tectonics in Four Corners region" at a New Mexico Tech geophysics seminar. Ron Broadhead and Tony Budding have been invited to give a talk on the Santa Rosa tar sands at a UN–AAPG symposium in October.

Bill Stone is doing a cooperative study with Utah International Inc. in the Navajo mine area using chloride concentrations to evaluate ground-water recharge. George Austin wrote a chapter for *State Geologists Journal* on NMBMMR projects. John Hawley's chapter entitled "Quaternary geology of the Rhodes Canyon archaeological site" was published in a book called *Prehistory of Rhodes Canyon*.

Ron Broadhead served as a Matson Award judge at the San Antonio AAPG meeting; Frank Kottlowski was an SEPM judge; Gretchen Roybal gave a paper entitled "Coal geology of the Salt Lake coal field" that she had written with Frank Campbell. Ron Broadhead's report on regional subsurface petroleum geology of the Santa Rosa Sandstone, northeast New Mexico, has gone to press.

Bob North, Bob Eveleth, and Don Wolberg set up a mineral and fossil exhibit at the state Science Fair; Lynn Brandvold, Diane Murray, Ron Broadhead, Barbara Popp, and Virginia McLemore were judges. Virginia McLemore gave a talk on carbonatites in New Mexico at a geoscience seminar. Geologic Map 58, by Clemons and Brown, "Geology of the Gym Peak quadrangle," was drafted by Deb Vetterman and James Brannan and edited by Steve Blodgett.

The Geological Society of America, Rocky Mountain section, meeting in Durango, Colorado, featured talks by Bill Stone on depositional significance of the sandstone–mudstone interval of the Pictured Cliffs Sandstone, by Jacques Renault on major-element stratigraphic correlation in the Tesuque Formation, by Jamie Robertson on geochemistry of the Pecos greenstone belt, by Gerry Clarkson (written with Marshall Reiter) on thermal history of the San Juan Basin, and by Adrian Hunt and Spencer Lucas on dinosaurs in the Morrison Formation.

John Hawley was notified by William Lutz, U.S. Attorney, that a Federal Court ruled, based on testimony by John and other geologists, that caliche is a reserved mineral under the Taylor Grazing Act. John had prepared a detailed report on caliche for the Court. Don Wolberg's review of the Christensen bog mastodon-bone bed was published in the *Journal of Vertebrate Paleontology*.

Joe Ramey reported that New Mexico's oil production was up 8.2% and that gas production was up 9.7% in February. Dick Chamberlin and Virginia McLemore attended a workshop on the NURE data in Grand Junction. Geologic Map 56, "Geology of Capitol Dome quadrangle," by Russ Clemons, was edited by Jane Calvert Love and drafted by James Brannan. The April announcement card of new publications was assembled by Carol Hjellming. Circular 189, "Devonian stratigraphy of the San Andres Mountains," by J. E. Sorauf was edited by Steve Blodgett and drafted by Linda Wells-McCowan.

New hydrocarbon source-rock reports on petroleum tests in southwest and south-central New Mexico, compiled by Sam Thompson, are now Open-file Reports 194–205. A chapter on the mineral industry of New Mexico in 1982, by Al Ward and Bob Eveleth, was published in the U.S. Bureau of Mines *Minerals yearbook*. Mike Harris described NMBMMR's metallurgy facilities to a southeast New Mexico AIME meeting in Carlsbad. John Hawley gave a talk to the Albuquerque Geological Society on possible sites for disposal of low-level radioactive waste.

JoAnne Osburn will give a talk on coal geology of the northern Datil Mountains area at the SEPM August meeting in San Diego. Bob Eveleth and Frank Kottlowski presented a paper entitled "1984 status of New Mexico's mining industry" at the Interstate Mining Compact Commission meeting; Governor Anaya was the banquet speaker. An excellent meeting of the New Mexico Geological Society was held at New Mexico Tech in April; Bob Bieberman was registration chairman with help from Annabelle Lopez; Norma Meeks handled NMGS publications.

New Mexico GEOLOGY
• Science and Service
New Mexico Bureau of Mines & Mineral Resources, Socorro, NM 87801