Service/News

Starred items (*) available from New Mexico Bureau of Mines and Mineral Resources

New publications

USGS

HYDROLOGIC INVESTIGATIONS ATLAS

HA-0648—Bedrock geology, altitude of base, and 1980 saturated thickness of the High Plains aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, by J. B. Weeks and E. D. Gutentag, 1981, 2 sheets, lat about 32° to about 43°, long 96° to 106°, scale 1:2,500,000

GEOLOGIC QUADRANGLE MAPS

GQ-1556—Geologic map of the Becker quadrangle, Valencia and Socorro Counties, New Mexico, by D. A. Myers, E. J. McKay, and J. A. Sharps, 1981, scale 1:24,000, sheet 31 by 32 inches

MISCELLANEOUS INVESTIGATIONS SERIES

I-1310-A—Complete Bouguer gravity anomaly map of the Silver City 1° by 2° quadrangle, New Mexico–Arizona, by J. C. Wynn, 1981, scale 1:250,000 (1 inch = about 4 mi), sheet 24 by 37 inches

NMBMMR

***Memoir 39**—Soil and geomorphology in the Basin and Range area of southern New Mexico—Guidebook to the Desert Project, by L. H. Gile, J. W. Hawley, and R. B. Grossman, 1981, 212 p., 79 tables, 98 figs., 2 oversize sheets. $18.00

This book is intended primarily for use in field-study tours of the Desert-Soil Geomorphology Project of the U.S. Soil Conservation Service in Doña Ana County, southern New Mexico. Main purposes are to illustrate major soils and landscapes of the project area, to illustrate principles of soil and landscape evolution in a basin-and-range geomorphic setting, to show the landscape positions in which the soils are most likely to occur, to describe soil development, and to illustrate the United States system of soil taxonomy as it applies to desert soils of the region.

***Circular 179**—Porosity zones of lower part of San Andres Formation, east-central New Mexico, by William D. Pitt and George L. Scott, 1981, 20 p., 1 table, 22 figs. (2 oversize sheets) $4.00

This report is concerned with the lithologic variations within the lower part of the San Andres Formation in east-central New Mexico and the relationships of these variations to the potential occurrence of oil and gas. The genesis and spatial relationships of dolomite are emphasized because dolomite is the dominant reservoir rock for oil in the lower San Andres.

Open-file reports

NMBMMR

***152**—HYDROCARBON SOURCE-ROCK EVALUATION STUDY, COCKRELL CORPORATION NO. 1 PYRAMID FEDERAL WELL, HIDALGO COUNTY, NEW MEXICO, by L. Paul Tybor, Geochem Laboratories, Inc., 1981, 11 p. (including 2 p. text, 8 tables, 2 charts) $2.20

***153**—PETROLEUM SOURCE ROCKS IN EXPLORATION WELLS DRILLED TO PALEOZOIC OR MESOZOIC UNITS, HIDALGO AND GRANT COUNTIES, NEW MEXICO, by Sam Thompson III, 1981, 126 p. (including 96 p. text, 10 tables, 17 figs.) $27.72

***156**—HYDROCARBON SOURCE-ROCK EVALUATION STUDY, PETROLEOS MEXICANOS NO. 1 CHINOS WELL, CHIHUAHUA, MEXICO, by Paul J. Cernock and Joseph A. Haykus, GeoChem Laboratories, Inc., 1979, 24 p. (9 p. text, 8 tables, 4 figs.) $5.28

USGS NEW TOPOGRAPHIC MAPS	(year)					
*Claunch	75-81	34°7′30″	105°52′30″	1:24,000	20 ft	
*Cowboy Mesa	75-81	34°	105°	″	20	
*Duran NE	74-81	34°22′30″	105°15′	″	10	
*Encinoso	74-81	33°37′30″	105°22′30″	″	40	
*Escondido Mountain	75-81	34°7′30″	108°22′30″	″	40	
*Fullerton	75-81	33°45′	108°7′30″	″	10	
*Gacho Hill	75-81	34°22′30″	105°	″	10	
*Gacho Hill SE	75-81	34°15′	105°	″	10	
*Gallo Spring Canyon NE	76-81	34°7′30″	105°15′	″	10	
*Granville Canyon	75-81	33°30′	105°	″	20	
*Hasperos Camp	75-81	33°52′30″	105°22′30″	″	20	
*Horse Mountain East	75-81	33°52′30″	108°	″	10	40
*Jones Canyon	75-81	34°	108°52′30″	″	20	
*Kyle Harrison Canyon	76-81	33°37′30″	105°15′	″	20	
*Luera Mountains NW	75-81	33°52′30″	107°52′30″	″	10	5
*Luera Mountains West	75-81	33°45′	107°52′30″	″	40	20
*Shaw Mountain	75-81	33°45′	108°	″	40	10
*Slaughter Mesa	75-81	34°	108°22′30″	″	40	
*Wallace Mesa	75-81	34°	108°7′30″	″	20	
REVISED TOPOGRAPHIC MAPS (PHOTOREVISION)						
*Bronco	70 79-81	33°15′	103°	″	5	
*Cienega Ranch	65 78-80	33°45′	107°	″	20	
*Continental Divide	62 78-80	35°22′30″	108°15′	″	20	
*Crocker	61 78-80	33°15′	107°	″	20	10
*Fort Craig	61 78-80	33°37′30″	107°	″	20	10
*Garfield	61 78-80	32°45′	107°15′	″	20	10
*Lordsburg	63 78-80	32°15′	108°37′30″	″	10	
*Molino Peak	65 78-80	33°52′30″	107°	″	40	
*Steel Hill	64 76-81	33°30°	107°15′	″	40	
*Thoreau NE	63 78-80	35°22′30″	108°	″	20	10

USGS

79-0802—Coal resource occurrence and coal development potential maps of the Kirtland SE quadrangle, San Juan County, New Mexico, by Dames and Moore, 23 p., 8 oversize sheets, scale 1:24,000

79-0803—Coal resource occurrence and coal development potential maps of the Hugh Lake quadrangle, San Juan County, New Mexico, by Dames and Moore, 23 p., 14 oversize sheets, scale 1:24,000

79-0805—Coal resource occurrence and coal development potential maps of the Moncisco Wash quadrangle, San Juan County, New Mexico, by Dames and Moore, 28 p., 28 oversize sheets, scale, 1:24,000

79-0806—Coal resource occurrence and coal development potential maps of the Carson Trading Post quadrangle, San Juan County, New Mexico, by Dames and Moore, 28 p., 17 oversize sheets, scale 1:24,000

80-1111—Evaluation of the Malaga Bend salinity alleviation project, Eddy County, New Mexico, by J. L. Kunkler, 37 p.

81-0031—Geology of Nash Draw, Eddy County, New Mexico, by G. O. Bachman, 1981, 12 p., 4 oversize sheets, scale 1:24,000

81-0035—Illustrations of plant microfossils from the Morrison Formation. I, Plant microfossils from the Brushy Basin Member, by R. H. Tschudy, B. D. Tschudy, S. Van Loenen, and G. Doher, 1981, 46 p.

81-0074—Methodology for hydrologic evaluation of a potential surface mine—the Tsosie Swale Basin, San Juan County, New Mexico, by L. M. Shown, D. G. Frickel, R. F. Hadley, and R. F. Miller, 63 p.

81-0206—Plan of study for the Central Midwest regional aquifer system analysis in parts of Arkansas, Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, South Dakota, and Texas, by D. G. Jorgensen and S. C. Signor, 28 p.

81-0294—Analyses of sieved stream sediments and the magnetic and nonmagnetic fractions of pan concentrates from the San Lorenzo 15-min quadrangle, southwestern New Mexico, by J. M. Nishi, K. C. Watts, and H. V. Alminas, 1981, 123 p.

81-0439—Geophysical log suite from drill hole no. 3, Mariano Lake-Lake Valley drilling project, McKinley County, New Mexico, 1981, 6 p., 9 oversize sheets

81-0469—Geologic data for borehole ERDA-9, Eddy County, New Mexico, by C. L. Jones, 49 p., 3 oversize sheets

81-0508—Comparison of the chemical composition of mineralized and unmineralized (barren) samples of the Morrison Formation in the Ambrosia Lake uranium area, New Mexico, by C. S. Spirakis, C. T. Pierson, and H. C. Granger, 44 p.

81-0557—Mineral resource potential of the El Malpais study area and adjacent areas, Valencia County, New Mexico, by P. R. Bigsby and C. H. Maxwell, 27 p., 1 oversize sheet

81-0610—Map of core holes and selected oil and gas test wells in the Carlsbad mining district, Eddy and Lea Counties, New Mexico, as of September 1980, 4 oversize sheets, scale 1:31,680

81-0657—Bouguer gravity map of the San Juan Basin area, Colorado, Arizona, and New Mexico, by V. J. Suits and Lindrith Cordell, 1 oversize sheet, scale 1:500,000 (1 inch = about 8 mi)

81-0783—Coal resources of the Fruitland Formation, Ojo Encino EMRIA study site, McKinley County, New Mexico, by G. B. Schneider and M. A. Kirschbaum, 26 p.

Plate-tectonic maps published

Five new plate-tectonic maps of the circum-Pacific region have just been published by the American Association of Petroleum Geologists. Covering more than half the surface of the earth, these full-color maps depict active plate boundaries, plate-motion vectors, major intraplate faults, seismic epicenters, Holocene volcanic activity, and magnetic lineations. Accretionary terrane along the Pacific rim is shown on the Northeast map sheet. The basic Circum-Pacific Map Series consists of five 1:10 million scale maps: The Northwest, Northeast, Southeast, and Southwest Quadrants and The Antarctica Region. A basin-wide map at a scale of 1:20 million also is available. Additional thematic maps now under preparation include the Geologic, Tectonic, Energy Resources, Mineral Resources, and Geodynamics Series.

The plate-tectonic maps are available from the AAPG Bookstore, P.O. Box 979, Tulsa, Oklahoma 74101 at $8 each or $26 for a set of all five maps. Also available are full-color geographic maps at $12 each or $30 for a set of 6 maps, and black and white base maps with 2° grids for plotting purposes, at $6 each or $20 for a set of 6 maps. The maps are rolled, measure 52 by 40 inches, and are shipped postpaid in a tube.

Abstracts

GEOLOGY AND COAL RESOURCES PINEHAVEN QUADRANGLE, by *David Tabet,* ARCO Coal Company, Denver, CO; published in New Mexico Bureau of Mines and Mineral Resources Open-file Rept. 154, 71 p.

The Pinehaven 7½-min quadrangle is located approximately 8 mi south of Gallup. Four stratigraphic units are found in the area—the Gallup Sandstone, the Crevasse Canyon Formation, the upper Bidahochi Formation, and Quaternary alluvium. The majority of the coals present belong to the Crevasse Canyon Formation, with a few coals present in the Gallup Sandstone. The thickest, near-surface coals are found in two horizons within the Crevasse Canyon Formation. Coals are present in a lower horizon that occurs directly above the Gallup Sandstone and are high-volatile bituminous B or C in rank. The coals of the upper horizon, located in the upper portion of the Crevasse Canyon Formation, are of lower grade, having a rank of subbituminous A. Outcrop data is sparse; however, 16 drill holes provide coverage for reserve calculation for most of the quadrangle. Reserves for the measured and indicated categories are calculated to be 34.65 million tons and 146.25 million tons, respectively. These coals are low in sulfur, but may have as much as 40% ash. About 41% of the coal is owned by the Navajo tribe and 20% is owned by the Zuni tribe. The federal government owns 26% of the coal. The remaining 13% of the coal rights are held by private individuals and the State of New Mexico.

A LARGE ASSEMBLAGE OF A NEW EURYPTERID FROM THE RED TANKS MEMBER, MADERA FORMATION (LATE PENNSYLVANIAN–EARLY PERMIAN) OF NEW MEXICO, by *Barry S. Kues and Kenneth K. Kietzke;* published in Journal of Paleontology, v. 55, no. 4, p. 709–729, 3 pls., 9 text-figs. (July 1981)

Adelophthalmus luceroensis, a new species of late Paleozoic eurypterid, is described from a collection of about 150 specimens from the Red Tanks Member, Madera Formation, central New Mexico. This species is closely related to species known from the eastern and central United States, but is distinguished by an unusually wide prosoma, among other features. Juveniles as well as adults were present in the assemblage, allowing ontogenetic and other intraspecific variation to be analyzed. Among the most distinctive ontogenetic trends observed are an abrupt widening of the prosoma at an early stage of growth, a gradual decrease in the size of the eyes relative to the prosoma, a tendency for the eyes to become more centrally located on the prosoma, and a decrease in the length of the prosoma relative to pre- and postabdomen length, with increasing age. Proportions of the prosoma and prosomal structures vary ontogenetically far more than the postprosomal parts of the skeleton. *A. luceroensis* was preserved with plants, insects, brachiopods, and other organisms that indicate a fresh to brackish water habitat. There is some evidence that juveniles lived, or were preserved, in somewhat different environments than the adults, possibly further inland on the Red Tanks delta than the nearshore sands in which the adults lived.

New Mexico Academy of Science

The 1981 meeting of the New Mexico Academy of Science was held in Albuquerque, October 29–30, 1981. Papers were presented on the environment, geology, physics, engineering, biology, health, chemistry, and agriculture. Abstracts of papers dealing with geology of New Mexico are presented below.

PERMIAN BRACHIOPODS FROM THE ALACRAN MOUNTAIN FORMATION, FRANKLIN MOUNTAINS, TEXAS AND NEW MEXICO, by *R. Simpson and D. LeMone,* Department of Geological Sciences, University of Texas (El Paso), El Paso, TX

The Franklin Mountains are located in the extreme western tip of Texas. They extend northward into south-central New Mexico for approximately 23 mi (37 km) from El Paso, which is built around the southern end of the range. The outcrops of Permian strata in the Franklin Mountains consist mainly of small outliers on the western edge that are separated from the main range. The Permian is represented by the Hueco Group (Wolfcamp), which is divided into three formations (in ascending order): Hueco Canyon, Cerro Alto, and Alacran Mountains, with a cumulative thickness of approximately 2,514 ft (766 m). The 315-739-ft (96-225-m)-thick Alacran Mountain Formation contains 24 genera and 28 species of previously unreported brachiopods. Paleoenvironmental parameters follow the LeMone–Simpson–Klement model (1975). These are *Orbiculoidea* or *Roemerella* sp., *Petrocrania modesta* White and St. John, *Orthotichia kozlowskii* (R. E. King), *Meekella* sp., *Enteletes* sp., *Derbyia crenulata* Girty, *Pseudoleptodus* sp., *Micraphelia* sp., *Costellarina costellata* (Muir-Wood and Cooper), *Hystriculina convexa* Cooper and Grant, *Kutorginella dartoni* (R. E. King), *Nudauris reticulata* Cooper and Grant, *Nudauris transversa* Cooper and Grant, *Kozlowski capaci* (d'Orbigny), *Dasysaria wolfcampensis* (R. E. King), *Linoproductus* sp., *Pontisia franklinensis* Cooper and Grant, *Stenocisma hueconiana* (Girty), *Hustedia hessensis* R. E. King, *Hustedia huecoensis* R. E. King, *Crurithyris tumibilis* Cooper and Grant, *Neophricadothyris* sp., *Composita mexicana* (Hall), *Reticulariina heuconiana* Cooper and Grant, *Gypospirifer nelsoni* Cooper and Grant, *Chondronia obesa* Cooper and Grant, *Dielasma diabloense* Stehli, and *Dielasma* aff. *D. subcirculare* Cooper and Grant.

STRATIGRAPHY, PETROGRAPHY, AND CALCAREOUS MICROFOSSILS OF THE LIMESTONE-SHALE MEMBER, U-BAR FORMATION, BIG HATCHET MOUNTAINS, HIDALGO COUNTY, NEW MEXICO, by *James R. Weise,* Department of Geological Sciences, University of Texas (El Paso), El Paso, TX.

The U-Bar Formation (Aptian–Albian) consists of five members; they are in ascending order: Brown limestone, Oyster limestone, Limestone-Shale member, Reef limestone, and Suprareef limestone. The Limestone-Shale member is early Albian in age as indicated by the occurrence of the ammonite *Douvilleiceras mammillatum* and the foraminifera *Orbitolina texana.* The Limestone-Shale member has a maximum measured thickness of 1,041.5 ft (317 m) and thins to a measured thickness of 402 ft (122 m), 8.5 mi (13.7 km) to the northwest along the U-Bar Ridge syncline. The member consists predominantly of thin- to medium-bedded, olive-gray to bluish-gray limestones and interbedded calcareous shales. The limestones are dominantly mudstones and less commonly wackestones and packstones near the contact with the overlying Reef limestone member. The limestones contain a sparse fauna consisting of echinoderms, bivalves, ostracodes, and the foraminifera *Orbitolina texana* and *Textularia* sp. Quinqueloculid-type miliolids and spinose globigerinids are rare. Calcareous nannoplankton represented by the genus *Colomiella* sp. are rare to common and found throughout the unit. The calcareous shales contain a diverse fauna consisting of bivalves, echinoderms, and foraminifera of the following genera: *Orbitolina texana, Textularia* sp., *Lituola* sp., *Triplasia* sp., *Flabellammina* sp., *Robulus* sp., *Lenticulina* sp., *Globigerina* sp., and quinqueloculid-type miliolids. The following ostracode genera have been identified from the Limestone-Shale member: *Cytherella* sp., *Cythereis* sp., and *Cytherelloidea* sp.

OIL AND GAS POTENTIAL OF THE TULAROSA BASIN–OTERO PLATFORM AREA, OTERO COUNTY, NEW MEXICO, by *Vicki Harder,* Department of Geological Sciences, University of Texas (El Paso), El Paso, TX and *William E. King,* Department of Earth Science, New Mexico State University, Las Cruces, NM

The Tularosa Basin and the Otero Platform are two of New Mexico's inadequately explored regions for oil and gas. In particular, borehole-mechanical-log cross sections have been virtually absent from the literature. Isopach maps of the Otero Platform and lithofacies on a scale suitable for this study have not been previously drawn. A Precambrian surface structural-contour map is presented. Isopach maps of the Ordovician, Silurian, Devonian, and Mississippian have been constructed. A Pennsylvanian isopach-lithofacies map and Permian sand-shale ratio, carbonate-noncarbonate, and isopach-lithofacies maps have also been constructed. Five cross sections of the area, three of the Tularosa Basin and two of the Otero Platform, set forth the stratigraphy and structure of the region. Clearly shown is the fault-block structure of the Tularosa Basin and the influence of the Pedernal uplift of the Otero Platform. The Tularosa Basin is definitely a promising hydrocarbon province. Tests of the Houston Oil and Minerals No. 1 Lewelling and the Hodges No. 1 Houston have shown that natural gas is present in the Tularosa Basin. Source and reservoir rocks are abundantly present in the stratigraphic column. Although the Otero Platform has yet to produce hydrocarbons, many shows of oil and gas have been recorded. A number of structural and stratigraphic trap possibilities and potential reef trends remain to be explored. This last hydrocarbon frontier of New Mexico definitely has oil and gas potential.

APTIAN–ALBIAN AMMONOIDS OF THE OYSTER LIMESTONE MEMBER OF THE U-BAR FORMATION, BIG HATCHET MOUNTAINS, NEW MEXICO, by *Michael Sandidge,* Department of Geological Sciences, University of Texas (El Paso), El Paso, TX

The U-Bar Formation is divided into five members which are, in ascending order: Brown limestone, Oyster limestone, Limestone-Shale member,

Reef limestone, and Suprareef limestone. The formation consists primarily of medium- to thin-bedded bioclastic limestones alternating with thin beds of gray shales. The lower part of the formation contains lenses and thin beds of sandstone. Near the top of the formation is a massive carbonate containing rudist bioherms that ranges in thickness from 20 ft (6 m) to 500 ft (152 m). The presence of ammonoids in the Oyster limestone member of the U-Bar Formation permits a relatively precise age designation. *Sinzowella spathi* recovered from the Oyster limestone member has been observed in the Pacheta Member of the Lowell Formation of southeastern Arizona. The age of the Pacheta Member has been determined to be equivalent to the Middle Gargasian beds of France (Upper Aptian). *Acanthohoplites berkeyi?* has also been recovered from the Oyster limestone member. This ammonite has been observed in the Quajote Member of the Lowell Formation. The Quajote Member immediately overlies the Pacheta Member in southeastern Arizona. The age of the Quajote Member has been equated to the Clansayan beds of France which are also Upper Aptian in age.

WAULSORTIAN MOUNDS OF THE BISHOP CAP HILLS, DOÑA ANA COUNTY, NEW MEXICO, by *David V. LeMone and Baghdad Flih,* Department of Geological Sciences, University of Texas (El Paso), El Paso, TX, and *H. Richard Lane,* Amoco Production Company, Research Center, Tulsa, OK

Study of the Lake Valley formation Waulsortian mounds (Early Mississippian) in the Bishop Cap hills has delineated some 19 microfacies from the core and flanks. The fenestrate bryozoan-crinoidal biomicrudite core facies contains a minor associated fauna of brachiopods, ostracods, sponge spicules, and trilobites. Stromatolites, calcareous algae, and other indications of a shallow-water depositional environment were not observed in microfacies analysis. According to the Lane-Ormiston depositional model for Waulsortian mound development, the geometry of these small, single, flattened mounds indicate that they developed in a more shelfward position than the well-known giant Waulsortian mounds of the Sacramento Mountains (for example, Muleshoe Mound). Small mounds of this style are exposed in the Sacramento Mountains. There, they developed in a back shelf-margin depositional environment. Twelve mi (19 km) south of the Bishop Cap hills the Lake Valley formation is absent at the O'Hara Highway in the Franklin Mountains. Basinal, distal, carbonate turbidites of the Las Cruces formation (late Osage–early Meramec) overlie the Late Devonian Percha Shale at the O'Hara Highway locality.

New projects

USGS

Mineral resources activities

9330-00099—Biochemical research in geochemical exploration, by J. R. Watterson. A report on the geobotany of the Walker Lake 2-degree quadrangle, Nevada–California, will be completed during FY 1981. Field and analytical data on geobotanical relationships in the Silver City 2-degree quadrangle, New Mexico–Arizona, will be compiled. Plant sampling will be conducted over the Crandon ore deposit in Wisconsin.

9330-02996—Geochemical exploration of Bureau of Land Management wilderness areas, central region, by S. P. Marsh. Geochemical sampling will be conducted in the Bisti, De Na Zin, and Ah She Sle Pah Wilderness areas of New Mexico during FY 1981.

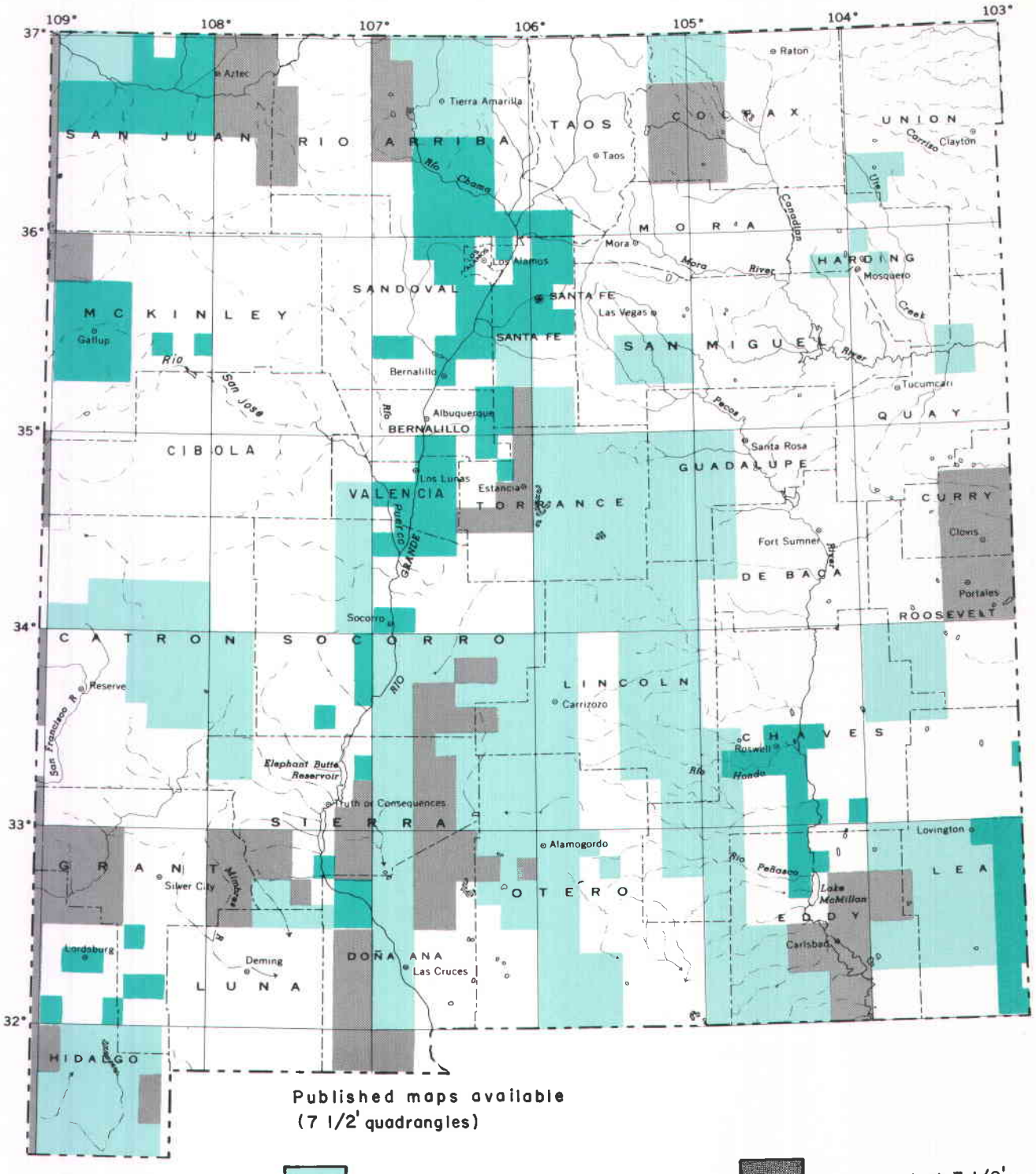
9350-00205—Basin–Range heavy metals studies, by F. G. Poole. This project was terminated at the end of FY 1980; final reports will be prepared for publication. □

MINING REGISTRATIONS
(JUNE 11, 1981 TO AUGUST 20, 1981)
State Mine Inspector 2340 Menaul N.E. Albuquerque, NM 87107

Date and operation	Operators and owners	Location
6-11-81 mill	Operator—Cimarron Mining Corporation, P.O. Box 486, US-380 E., Carrizozo, NM 88301; Southwest Mineral Corporation is parent company; Supt.: Garth Elison; Gen. Mgr.: Bob Watson; VP of operations: Ted Elison Property owner—Cimarron Mining Corporation, 9212 Camino Cometa NE, Albuquerque, NM 87111	Socorro Co.; secs. 14, 19, 23, 24, 30; Chupadera district; east on US-380 over bridge at NM-54-US-380 intersection in Carrizozo; ore milled or refined: iron ore; custom milling: no; capacity of mill-15,000 tons per month
8-4-81 uranium	Operator—Section 12, Cobb Resources Corp., 313 Washington SE, Albuquerque, NM 87108; Gen. Mgr.: Richard Stevenson, Box 1340, Grants, NM 87020, phone: 287-7444; Person in charge: same; Gen. Supt.: same; Other officials: George Lotspeich, same address Property owner—Cobb Resources Corp.	McKinley Co.; sec. 12, T. 14 N., R. 10 W.; Ambrosia Lake district; uranium; underground; shaft; Ambrosia Lake, NM-509 headframe in view; private land
8-4-81 uranium	Operator—Section 14, Cobb Resources Corp., 313 Washington SE, Albuquerque, NM 87108; Gen. Mgr.: Richard Stevenson, Box 1340, Grants, NM 87020, phone: 287-7444; Person in charge: same; Gen. Supt.: same; Other official: George Lotspeich, 313 Washington SE, Albuquerque, NM 87108 Property owner—Cobb Resources Corp.	McKinley Co.; sec. 14, T. 14 N., R. 10 W.; Grants mineral belt district; underground; uranium; shaft; Just past end of pavement NM-509 then east ½ mi, frame in view; federal land
8-4-81 uranium	Operator—Section 10, Cobb Resources Corp., 313 Washington SE, Albuquerque, NM 87108; Gen. Mgr.: Richard Stevenson, Box 1340, Grants, NM 87020, phone: 287-7444; Person in charge: same; Gen. Supt.: same; Other official: George Lotspeich, 313 Washington SE, Albuquerque, NM 87108 Property owner—Cobb Resources Corp.	McKinley Co.; sec. 10, T. 14 N., R. 10 W.; Ambrosia Lake district; underground; shaft; 1.5 mi past end of pavement on NM-509, north side of road; federal land
8-4-81 uranium	Operator—Westranch, Cobb Resources Corp., 313 Washington SE, Albuquerque, NM 87108; Gen. Mgr.: Richard Stevenson, Box 1340, Grants, NM 87020, phone: 287-7444; Person in charge: same; Gen. Supt.: same; Other official: George Lotspeich, 313 Washington SE, Albuquerque, NM 87108 Property owner—Cobb Resources Corp.	McKinley Co.; sec. 32, T. 15 N., R. 11 W.; Ambrosia Lake district; underground; decline; 10 mi north of Prewitt on Borrego Pass Road; private land
8-6-81 coal	Operator—Arroyo mine #1, Farris Mines, Inc., Box 687, Grants, NM; Gen. Mgrs.: Jerry Farris, Merle D. Burns, same address, phone: 287-4858; Person in charge: Merle Burns (Farris Mines, Inc.), San Mateo Rd. N, Milan, NM, same phone Owner—Arroyo mine no. 1, Arroyo Mining, Albert J. Firchau	Sandoval Co.; sec. 16; T. 17 N., R. 9 W.; state land; approximately 2 mi north of San Luis, NM
8-6-81 mill-lead, zinc, copper, gold, silver, tungsten	Operator—Patterson Canyon mill, Cobb Resources Corporation, 313 Washington SE, Albuquerque, NM 87108; Supt.: Willie Chavez, Box 623, Magdalena, NM 87825; Other official: George Lotspeich, 313 Washington SE, Albuquerque, NM Owner—Cobb Resources Corp.; Previous owned by—Cobb Nuclear Corp.	Socorro Co.; sec. 2; T. 3 S., R. 4 W. Magdalena mining district, state and federal land, 5 mi south of Magdalena off Hop Canyon Rd.; capacity of mill: 125 tons/day, 300 tons/day planned; custom milling
8-6-81 lead, zinc, copper, gold, silver, tungsten	Operator—Linchburg mine, Cobb Resources Corp., 313 Washington SE, Albuquerque, NM 87108; Person in charge: Willie Chavez, same address, phone: 854-2761; Gen. Supt.: Same; Other official: George Lotspeich, same address and phone Owner—Cobb Resources Corp.; Previous owned by—Cobb Nuclear Corp., 313 Washington SE, Albuquerque, NM 87108	Socorro Co.; secs. 6, 7, 12; T. 3 S., R. 3, 4 W.; Magdalena mining district; state, private, and federal land; 6 mi south of Magdalena in Patterson Canyon; underground
8-7-81 coal	Operator—Arroyo No. 1, Arroyo Mining Company, Inc., Star Rt., Box 16-B, Bernalillo, NM 87004; Gen. Mgr: Jack A. Lawrence, same address, phone: 867-3594; Person in charge: Merle Burns, P.O. Box 687, Grants, NM, phone: 287-4858 Owner—Albert J. Firchau, 15965 NE 85th, Suite 207, Redmond, WA 98052; Sub-leasing: Page Mills Energy Corp., 1117 W. Olympic Blvd., Montebello, CA 90640; Pres.: Michel Gibbs; Resident agent for both companies: Jack Lawrence; Mining contractor: Farris Mines, Inc.	Sandoval Co.; sec. 16, T. 17 N., R. 2 W.; state land, NM-44 to 42 mi post, turn left, go through town of San Luis, cross cattle guard, turn right and continue on to the mine; strip mine
8-20-81 gold, silver	Operator—Apache Gold, Ira Holliday Logging Inc., Truth or Consequences, NM; Gen. Mgr.: Ralph Wilderson, 229 Gale, Lordsburg, NM, phone: 542-3209; Other official: Ira Holliday, Box 206, Truth or Consequences, NM 87901 Owner—Ira Holliday Logging, Inc.	Grant Co.; sec. 6, T. 22 S., R. 16 W.; Gold Hill mining district; federal land; go east towards W. D. Ranch 6 mi; underground tunnel
8-20-81 leonardite	Operator—Black Diamond Project, NL Baroid, Box 1675, Houston, TX 77001; Person in charge: Jerry Farris or John Morgan, Box 687, Grants, NM, phone: 287-4858 Owner—Mid-Continent, contracting under NL Baroid who has agreement with Mid-Continent	San Juan Co.; sec. 28, T. 32 N., R. 13 W.; private land; NM-17 north from Farmington, NM, turn left at 16 mi marker, go approximately 2½ mi to site; strip, open pit

(TO BE CONTINUED NEXT ISSUE)

USGS topographic map coverage of New Mexico (as of November 1981)



New and revised 7½-min quadrangle maps shown are since May 1978. Areas shown as unmapped as 7½-min quadrangles are mapped at 15 min.

Topographic quadrangle sheets ($2.00 each), a complete list of published quadrangles, a detailed index to topographic maps, and an order form are available from either: New Mexico Bureau of Mines and Mineral Resources, Publications Room, Socorro, NM 87801 or U.S. Geological Survey, Map Distribution, P.O. Box 25826, Federal Center, Denver, CO 80225.

The following page contains a list of map dealers in New Mexico carrying a selected inventory of USGS topographic maps.

Where to buy USGS topographic maps

The following dealers carry a selected inventory of USGS 7½ min and 15 min topographic quadrangle maps of their respective areas:

Mountains and Rivers
2320 Central Ave. SE
Albuquerque, NM 87106

The Trailmaster II
5401 Central Ave. East
Albuquerque, NM 87108

Backwoods
6307 Menaul Blvd. NE
Albuquerque, NM 87110

The Wilderness Centre
2421 San Pedro NE
Albuquerque, NM 87110

Sandia Mountain Outfitters
For Wilderness People
9611 Menaul Blvd. NE
Albuquerque, NM 87112

Holman's
401 Wyoming Blvd. NE
Albuquerque, NM 87123

Trico International
PO Box 15191
Rio Rancho Plaza
Rio Rancho, NM 87174

Gallup Blueprint
303 S. 2nd
Gallup, NM 87301

San Juan Reproduction Co.
135 N. Airport Drive
Farmington, NM 87401

Alpine Sports, Inc.
121 Sandoval
Santa Fe, NM 87501

Base Camp
121 W. San Francisco St.
Santa Fe, NM 87501

Healy-Mathews Staioners, Inc.
515 Cerrillos Road
Santa Fe, NM 87501

Wilderness Bookstore
PO Box 321, El Prado
Taos, NM 87529

Los Alamos Stationers
1907 Central St.
Los Alamos, NM 87544

The Trailmaster
White Rock Shopping Center
Los Alamos, NM 87544

Maxae's Books
Bent Street
PO Box 1836
Taos, NM 87571

Sierra Sports, Inc.
307 S. Pueblo Rd.
Taos, NM 87571

Taos Mountain Outfitters
Box 1862
Taos, NM 87571

The Paint & Print Shop
120 N. 2nd St.
Raton, NM 87740

Bill's Pack Rat
200 Austin St.
Truth or Consequences, NM 87901

Montgomery Ward
522 Broadway
Truth or Consequences, NM 87901

OCS Sporting Goods, Unlimited
406 Broadway
Truth or Consequences, NM 87901

Blueprints & Maps
120 S. Water
Las Cruces, NM 88001

Donald H. Wiese & Co.
525 S. Melendres
Las Cruces, NM 88001

Culak Surveying, Inc.
121 West Hemlock
Deming, NM 88030

The Wilderness Society
Catwalk Road
Glenwood, NM 88039

Herb Watkins Surv. & Mapping
515 Market St.
PO Box 472
Silver City, NM 88061

Silver Sports
116 N. Bullard
Silver City, NM 88061

Vic Topmiller, Jr.
1609 N. Gold
PO Box 201
Silver City, NM 88061

Roswell Map & Blueprint Co., Inc.
410 N. Main
Roswell, NM 88201

Tex Sporting & Pawn
307 West Mermod Street
Carlsbad, NM 88220

Pat's Sporting Goods
Box 1633
Ruidoso, NM 88345

Palomas volcanic field

(*continued from p. 8*)

significantly lower MgO concentration, total Fe content, and higher SiO_2 and alkali content of the andesites and trachytes relative to the olivine basalts.

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