

New publications

NMBMMR

***Memoir 41**—Mid-Cretaceous (Turonian) ammonite fauna from Fence Lake area of west-central New Mexico, by W. A. Cobban and S. C. Hook, 1983, 50 pp., 14 pls., 1 table, 14 figs. \$7.50

Discusses an early Turonian ammonite fauna found chiefly in Cibola County, New Mexico, consisting of nine genera and 10 species of which two genera and two species are new.

***Circular 185**—Contributions to mid-Cretaceous paleontology and stratigraphy of New Mexico, part II, compiled by S. C. Hook, 1983, 54 pp., 11 tables, 27 figs., 1 sheet of cross sections \$10.00

Second in a series that contains short papers on paleontology and stratigraphy of mid-Cretaceous of New Mexico and surrounding areas. Dealing in the stratigraphic aspects, these four papers include stratigraphy and nomenclature revision of upper Cenomanian to Turonian rocks of west-central New Mexico; principal reference section and correlation of Gallup Sandstone, northwest New Mexico; middle Turonian and younger Cretaceous rocks of northern Salt Lake coal field in Cibola and Catron Counties; and a discussion of mid-Cretaceous molluscan sequence at Gold Hill in Jeff Davis County, Texas, with faunal comparison to New Mexico.

***Geologic Map 54**—Geology of Anthony quadrangle, Doña Ana County, New Mexico, by S. Kelley and J. P. Matheny, 1983, scale 1:24,000 \$4.00

Geology of the Anthony 7½-min quadrangle is portrayed. Text gives explanations and lithologic descriptions of each unit mapped; detailed stratigraphic column is included.

***Hydrologic Report 6**—Hydrogeology and water resources of San Juan Basin, New Mexico, by W. J. Stone, F. P. Lyford, P. F. Frenzel, N. H. Mizell, and E. T. Padgett, 1983, 72 pp., 103 figs., 14 tables, 7 map sheets with figs., 8 microfiche with tables \$20.00

Cooperative report describes hydrogeology and water resources of major aquifers in San Juan Basin. Detailed well records, water-quality data, and discussions of irrigation systems and water for municipalities as well as for coal, oil, gas, and uranium development are included.

***Hydrologic Sheet 4**—Hydrogeology of Arroyo Chico-Torreon Wash area, McKinley and Sandoval Counties, New Mexico, by S. D. Craig and W. J. Stone, 1983, scale 1:500,000 \$3.50

Hydrogeology and water resources of Arroyo Chico-Torreon Wash area are discussed. This area southwest of Cuba, New Mexico, contains coal resources; impact of energy development upon water resources in area is examined.

***Resource Map 11**—Base map of New Mexico, compiled by the staff of the New Mexico Bureau of Mines and Mineral Resources, 1983, scale 1:1,000,000 \$3.00

Shows 1,000-ft contours, major topographic features, cities, highways, railroads, and national parks and monuments.

***Annual Report**—Annual report for the fiscal year July 1, 1981, to June 30, 1982, by F. E. Kottlowski and staff, 71 pp. \$3.00

Summarizes Bureau activities and services for the fiscal year. Includes articles on Upper Cretaceous guide fossil, surface mining and reclamation, Raton Basin Cretaceous-Tertiary boundary, mineral and mineral-fuel production

during 1981, and coal geology studies done by the New Mexico Bureau of Mines and Mineral Resources.

***Stratigraphic Chart 1**—Nomenclature for Cenozoic rocks of northeast Mogollon-Datil volcanic field, New Mexico, by G. R. Osburn and C. E. Chapin, 1983, 1 sheet, text, 8 tables, 18 figs. \$6.00

Field guide with concise summary descriptions for more than 50 units and with brief account of development and formalization of nomenclature. Also includes stratigraphic descriptions, cross sections, and measured sections.

USGS

COAL INVESTIGATIONS MAP

C-92A—Geologic map of Chaco Canyon 30' x 60' quadrangle showing coal zones of Fruitland Formation, San Juan, Rio Arriba, and Sandoval Counties, New Mexico, by J. W. Mytton, 1983, 1 over-size sheet, scale 1:100,000

MISCELLANEOUS FIELD STUDIES MAPS

MF-1465-A—Quaternary and Pliocene faults in the Socorro and western part of the Fort Sumner 1° x 2° quadrangles, New Mexico, by M. N. Machette and R. G. McGimsey, 1982, 12 pp., 1 map, scale 1:250,000

MF-1508-A—Geologic and isopach maps of the Bisti, De Na Zin, and Ah Shi Sle Pah wilderness study areas, New Mexico, by J. L. Brown, 1983, 2 sheets, scale 1:50,000

MF-1533—Geologic map of the Fence Lake quadrangle, Cibola County, New Mexico, by M. W. McLellan, L. N. Robinson, and L. R. Haschke, 1983, scale 1:24,000

MISCELLANEOUS INVESTIGATIONS SERIES

I-1310-B—Mineral deposit map of the Silver City 1° x 2° quadrangle, New Mexico and Arizona, by D. H. Richter and V. A. Lawrence, 1983, 70 pp. 1 map scale 1:250,000

WATER RESOURCES INVESTIGATIONS

WRI-82-4072—A data management system for areal interpretive data for the High Plains in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, by R. R. Luckey and C. F. Ferrigno, 1982, 118 pp.

U.S. Bureau of Mines

MLA 33-83—Mineral investigation of an addition to the White Mountain wilderness, Lincoln County, New Mexico, J. P. Briggs, 1983

MLA 40-83—Mineral investigation of the Ah Shi Sle Pah, Bisti, and De Na Zin wilderness study areas, San Juan County, New Mexico, by A. M. Bielski and J. E. Zelten, 1983

MLA 41-83—Mineral investigation of the Guadalupe escarpment wilderness study area, Eddy County, New Mexico, by J. R. Thompson, 1983

MLA 72-83—Mineral investigations of the Apache Kid and Withington wilderness areas, Socorro County, New Mexico, by J. T. Neubert, 1983

Other publications

Facies and stratigraphy of the San Andres Formation, northern and northwestern shelves of the Midland Basin, Texas and New Mexico, by P. J. Ramondetta and others, 1982, Bureau of Economic Geology, The University of Texas at Austin, 56 pp., 3 tables, 41 figs.

NEW PETROLEUM PUBLICATION

Petroleum Frontiers is a new petroleum magazine published by Petroleum Information Corporation. The first issue, published this summer, contained two articles: Codell Sandstone D-J (Denver-Julesburg) Basin's new objective and Pecos slope Abo red beds shallow target for New Mexico gas. For subscription information, write to *Petroleum Frontiers*, c/o Petroleum Information Corporation, P.O. Box 2612, Denver, CO 80201; phone: (303) 740-7100.

Open-file reports

NMBMMR

***180**—Precambrian geology of Elk Mountain-Spring Mountain area, San Miguel County, New Mexico, by I. Klich, 1983, 170 pp., 1 map \$35.50

***181**—Oil and gas exploration wells in southwestern New Mexico, by S. Thompson III, 1982, 18 pp. \$3.60

***184**—Regional geology of Ochoan evaporites, northern part of Delaware Basin, by G. O. Bachman, 1983, 53 pp., 2 maps \$13.60

***185**—Radionuclide and heavy-metal distribution in recent sediments of major streams in the Grants mineral belt, New Mexico, by C. J. Popp, J. W. Hawley, and D. W. Love, 1983, 221 pp. \$44.20

***186**—Geology of Luis Lopez manganese district, New Mexico, by M. E. Willard, 1973

for inspection only

***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

USGS

***81-218**—Miscellaneous surface-water data, Pecos River basin, New Mexico, by C. C. Cranston, G. E. Kues, and G. E. Welder, 1981, 545 pp.

***82-757**—Annual water-resources review, White Sands Missile Range, New Mexico, 1981, by R. R. Cruz, 1982, 24 pp.

***82-937**—Aspects of the palynology of the Chinle Formation (Upper Triassic), Colorado Plateau, Arizona, Utah, and New Mexico, by R. A. Scott, 1982

***82-1013**—Water resources of the Zuni tribal lands, McKinley and Cibola Counties, New Mexico, by B. R. Orr, 1983

***83-7**—Geochemical data for the Guadalupe escarpment wilderness study area, Eddy County, New Mexico, by T. D. Light and J. A. Domenico, 1983

***83-8**—Petrography of some Ambrosia Lake, New Mexico, pre-uranium ores and implications for their genesis, by J. D. Webster, 1983

***83-56**—Distribution of trace elements in drilling chip samples around a roll-type uranium deposit, San Juan Basin, New Mexico, by H. C. Day, C. S. Spirakis, R. S. Zech, and A. R. Kirk, 1983, 28 pp.

***83-84**—Analytical results for 328 water samples from the Silver City 1° x 2° quadrangle, Arizona and New Mexico, by J. R. Hassemer, W. H. Ficklin, J. M. Motooka, K. C. Watts, with contributions from D. J. Preston, S. M. Smaglik, and F. N. Ward, 1983

***83-86**—An earthquake catalog for the Basin and Range province, 1803-1977, by Bonny Askew and S. T. Algermissen, 1983, 42 pp., 3 over-size sheets

Abstracts

NEW MEXICO MINERALS SYMPOSIUM

The third New Mexico Minerals Symposium was held November 13 and 14, 1982, at the Macey Conference Center on the campus of the New Mexico Institute of Mining and Technology in Socorro. In addition to a day of presented talks, a day-long field trip to the Orogrande mining district in Otero County was made. Following are abstracts of presented talks.

MINERALS OF THE SILVER HILL SUBDISTRICT, SOCORRO COUNTY, NEW MEXICO, by *William P. Moats*, New Mexico Institute of Mining & Technology, Socorro, NM and *Robert M. North*, New Mexico Bureau of Mines & Mineral Resources, Socorro, NM

The Silver Hill subdistrict is located in the western half of the north Magdalena mining district, about 2 mi northwest of Magdalena, New Mexico. The district has produced a small amount of copper and silver from fissure veins in basaltic andesite. Recently, small crystals resembling fornacite (Pb, Cu_3) $[(\text{Cr, As})\text{O}_4]_2(\text{OH})$ were found on the Bullfrog #2 claim about 1/2 mi southwest of Silver Hill. SEM and microprobe analyses have shown the material to contain Pb and Cu in the +2 valence site and Mo and minor As, V, and Cr in the +5, +6 valence site in the structure. X-ray diffraction shows the mineral to have the structure of fornacite. This chemistry and structure would make the material identical to a newly described (as yet, unnamed) mineral from Tsumeb. The mineral is associated with desclozite, willemite, mimetite, chrysocolla, and hematite. Other recent finds of microcrystals in the district from other mines and prospects include dufite, $\text{Pb Cu (AsO}_4)(\text{OH})$; conichalcite, $\text{CaCu(AsO}_4)(\text{OH})$; and apatite, $\text{Ca}_5(\text{PO}_4)_3\text{F}$. Iranite, $\text{Pb}_{10}\text{Cu(CrO}_4)_6(\text{SiO}_4)_2(\text{F,OH})_2$, is also reported from the district but has not been confirmed.

CHALCOPHANITE FROM THE HANOVER-FIERRO DISTRICT, GRANT COUNTY, NEW MEXICO by *Richard W. Graeme IV*, Hanover, NM

A second New Mexico occurrence of chalcophanite, the rare zinc-manganese oxide, has recently been found. Located in the long-abandoned Lone Star mine, significant quantities of uncommonly attractive specimens have been recovered. Aside from the scarce nature of this mineral, several unusual, if not unique, depositional features accompany this occurrence. Most notably, the chalcophanite is found almost completely decorating a solution cavity that measures approximately 35 ft in length, 15 ft in width, and 10 ft in height. Secondly, the only apparent source of the necessary manganese is a solid solution mixture of the clinopyroxenes hedenbergite-johannsenite occurring immediately above the opening.

THE PHILADELPHIA MINE by *Douglas L. Graeme* and *Richard W. Graeme IV*, Hanover, NM

The Philadelphia mine is located in the Hanover mining district of Grant County, New Mexico. After a century of oblivion, it now has yielded specimens that will most certainly make it a noted locality within the state. Harrison Schmitt in his classic 1939 report on the Pewabic mine noted the occurrence of large crystals of several specimens at the nearby Philadelphia. However, few, if any, examples of these are known today. Recent work at this long-abandoned mine has produced numerous examples of quartz twins on the Japan law and some highly unusual magnetite composite crystals that may be pseudomorphs after a mineral as yet unidentified. Occurring in a pegmatite-like environment, these minerals are associated with sprays of epidote, large apatites, beryl, and nearly two dozen other species.

MINERALS OF POINT OF ROCKS MESA, by *Ramon S. DeMark*, Glendale, AZ

Northeastern New Mexico has long been known for its stark landscape, coal mines, and Capulin Volcano, but for little which is of interest to the mineral collector. Tertiary age basaltic flows have resulted in vast mesas overlying Mesozoic sediments which are irregularly punctuated by volcanic cones produced late in the extrusive sequence. While the region is certainly fascinating, it has previously been considered a highly implausible area for the occurrence of noteworthy mineral specimens. Point of Rocks Mesa, a solitary landmark along the Cimarron cutoff of the Santa Fe Trail about 24 mi east of Springer, New Mexico, has now been revealed as a location of great interest to the mineral collector and mineralogist due to the occurrence of rare mineral species in free-standing, euhedral crystals. Villiaumite, neptunite, ancylite, serandite, and nepheline, as well as other species not previously described from New Mexico, have been found in well-formed microcrystals in vugs that range from 2 mm to 5 cm. The host rock is a peralkaline phonolite which forms the upper portion of the mesa. The mesa rises about 200 ft above the surrounding plains, and a quarry on the southwest side of the mesa has been particularly productive of well developed crystals. Due to the complexity of the mineralogy at Point of Rocks Mesa, it is anticipated that additional species new to New Mexico will come to light as investigations continue.

IGNEOUS ROCKS AND RELATED MINERALS OF THE NORTHERN DELAWARE BASIN, REVISITED, by *Norbert T. Rempe*, Yates Petroleum Corporation, Artesia, NM

Mid-Tertiary igneous activity in the northern Delaware Basin of southeastern New Mexico and adjacent Texas resulted in dikes, "plugs," and even ore mineralization. Known intrusive bodies lie parallel and conjugate to prevailing regional tectonic trends. Many more features of igneous origin may be hidden under Cenozoic cover. Guadalupian

bentonites bear witness to volcanic activity nearby. Correct interpretation should shed new light on plate configuration and dynamics during the Upper Permian.

MANGANESE OXIDES (PSILOMELANE) FROM SOCORRO COUNTY, NEW MEXICO, by *Peter J. Modreski*, U.S. Geological Survey, Denver, CO

The exact nature of the banded, massive to radiating-fibrous black manganese oxides from the Luis Lopez district, Socorro County, has long been and continues to be a mineralogical riddle. The material has been described variously as psilomelane, "pseudopsilomelane," pyrolusite, pseudomorphs of psilomelane after pyrolusite, hollandite, coronadite, and intergrowths of hollandite + romanechite. The difficulties arise because the material is mineralogically complex and does not fall into simple mineral categories. Much of it is poorly crystalline and gives diffuse x-ray diffraction patterns. Its chemical composition is variable, with the proportions of large metal cations (Ba, Pb, K, Sr), the water content, and the proportions of manganese in different oxidation states all varying between ideal end members such as hollandite, $\text{Ba (Mn}^{+4}, \text{Mn}^{+2})_8\text{O}_{16}$; coronadite, $\text{Pb (Mn}^{+4}, \text{Mn}^{+2})_8\text{O}_{16}$; cryptomelane, $\text{K (Mn}^{+4}, \text{Mn}^{+2})_8\text{O}_{16}$; and romanechite, $\text{Ba(Mn}^{+2}, \text{Mn}^{+4})_8\text{O}_{16}(\text{OH})_2$. Banded, fibrous material from the vicinity of the Tower and Nancy mines at the head of Black Canyon, Luis Lopez 7 1/2-min topographic quadrangle, gives x-ray powder diffraction patterns that generally match hollandite. Electron microprobe analysis shows this material to be chemically zoned; individual layers range from nearly pure barium manganese oxide (containing 5–15 mole percent cryptomelane but no lead) to material containing as much as 20 weight percent PbO, close to coronadite in composition. Turner and Buseck (1979, *Science*, v. 203, p. 456–458), using high-resolution transmission electron microscopy, have shown that individual crystal fibers from the Rattlesnake mine in the Luis Lopez district are composed of a mixture of submicroscopic regions, with single unit-cell layers of romanechite randomly distributed within a crystal lattice which is dominantly hollandite. This variably constituted mineral only marginally satisfies the criteria of crystal structure, fixed chemical composition, and homogeneity that are used to define a specific mineral species. The material could be called hollandite because that is its dominant composition and crystal structure. Alternatively, it might be considered a mineraloid rather than a particular mineral species, and the old general term, psilomelane, may be the best name to use after all.

ZEOLITE MINERALS FOUND NEAR THE GILA CLIFF DWELLINGS NATIONAL MONUMENT, by *Patrick E. Haynes*, Virgin Mining Company, Truth or Consequences, NM

Several good collecting sites have been found recently in the extrusive andesites near the Gila Cliff Dwellings National Monument.

Specimens of the zeolite minerals chabazite, mesolite, stilbite, heulandite, analcime, and levyne have been found. Associated minerals are quartz, commonly with pagoda or scepter terminations, calcite, and rarely apophyllite. All of the specimens found so far have been along more easily accessible locales along forks of the Gila River. Up to the Middle Fork of the Gila River have been found chabazite crystals over an inch on an edge, heulandite crystals over one-half inch long, and stilbite crystals over an inch long. Occasionally found associations may include one-third inch chabazite crystals on an amygdular section composed mostly of pagoda and quartz scepters; or a stilbite bowtie sitting on well-formed one-quarter inch heulandite crystals. Near the junction of the East Fork of the Gila River with the Gila River are sporadic concentrations of mesolite. Mesolite amygdules are typically small but have been seen to reach over five inches. The mesolite may occur as acicular puffs or as a complete fuzzy lining. Associated zeolites with the mesolite are heulandite, chabazite, stilbite, analcime, and in only three specimens, levyne. Thus far, only a small portion of the total possible areas of zeolite occurrences in the Gila have been investigated by mineral collectors. As new areas are investigated, certainly some good locales will come to light and, possibly, other zeolite species can be added to the current list.

A PROPOSAL FOR EDUCATIONAL MINERAL EXHIBITS FOR THE NEW MEXICO MUSEUM OF NATURAL HISTORY, by *Jeffry Gottfried*, Albuquerque, NM, and *Robert M. North*, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM

The New Mexico Museum of Natural History had its groundbreaking ceremonies on November 8th in Albuquerque. The museum has space planned for a mineral exhibit, affording mineral enthusiasts of New Mexico a rare opportunity to help plan a mineral display from "ground zero." Presently, two areas are allocated for mineral-related displays: a general mineral display and the Naturalist Center. The proposed general displays will be organized around the theme of mining districts, displaying the various ore and gangue minerals from selected districts in a context of the human interaction with minerals. While the minerals and their natural beauty will be the main theme, a small bit of human history will help tie together the natural mineral associations. This type of display is designed to draw and hold the interest of the average person, one without extensive knowledge of chemistry or geology. The geology and chemistry of the ore deposits will be woven into the display for those who are interested. The Naturalist Center, sponsored in part by the Junior League of Albuquerque, will contain animal, plant, and mineral specimens in an informal setting that will encourage visitors to experiment and find out about minerals from firsthand knowledge. The Naturalist Center is being designed with children in mind, but will appeal to visitors of all ages.

Date and operation	Operators and owners	Location
1-26-83 gypsum	Operator—Western Mining, Harry Griffin, Western Mining Co., 7708 North Ridge NE, Albuquerque, NM 87109; Gen. Mgr.—Harry Griffin, 7708 North Ridge NE, Albuquerque, NM 87109, phone: 298-5834; Gen. Foreman—Garland Griffin, same address; Property owner—same as above	Sandoval Co.; sec. 28, T. 15 N., R. 1 E.; surface mine; federal property; directions to mine—3½ mi from San Ysidro
1-27-83 silver, lead, zinc	Operator—James R. Grainger, P.O. Box 361, El Prado, NM 87529; Gen. Mgr.—James R. Grainger, same address, phone: (505) 758-8431; Gen. Supt.—same as above; Property owner—Stephen G. Zahony, 2876 S. Race St., Denver, CO 80210	Sierra Co.; sec. 12, T. 13 S., R. 9 W.; Hermosa mining district; federal property; directions to mine—from Winston, NM, 20 mi south on Forest Service Road #157 at Wagon Bed Spring turn east for ½ mi, 4 wheel-drive is recommended
1-27-83 potash	Operator—Kerr-McGee Chemical Corp., P.O. Box 610, Hobbs, NM 88240; Gen. Mgr.—Walter S. Case, Hobbs Potash Facility, phone: (505) 397-3261; Gen. Supt.—Melvin R. Pyeatt, same address, phone; Official—Raymond D. Nations, same address; Property owner—National Potash Co., P.O. Box 731, Carlsbad, NM 88220	Lea Co.; sec. 18, T. 20 S., R. 32 E.; Carlsbad mining district; private property; directions to mine—30 mi northeast of Carlsbad on US-62-180, then 3 mi north on NM-176
2-9-83 mill	Operator—Flor de Mayo, Midland Mining Company, P.O. Box 515, Elephant Butte, NM, phone: 744-5645; Supt.—Eddie Harris & Patt Gooden, Two First City Center, Suite 1365, Midland, TX, phone: (915) 683-9112; Gen. Mgr.—Ken Cook, same address as company; Asst. Mgr.—Rick Gibson, same address and phone as company; Property owner—Donald Fingado & Marcella Fingado, P.O. Box 101, Truth or Consequences, NM 87901	Sierra Co.; sec. 17, T. 16 S., R. 4 W.; Pittsburg mining district; custom milling; no capacity of mill: unknown—projected 300 tons per day; gold and silver; BLM land; directions to mill: cross Caballo Dam, continue on main road east-northeast 1 mi, turn north, continue 1½ mi
2-9-83 gold, silver	Operator—Great Republic ID 2901770, Capitan Resources, Inc., 2709D Pan American NE, Albuquerque, NM 87107; Gen. Mgr.—Floyd Ingraham, same address, phone: 345-8585; Person in charge—Jack Cook, Winston, NM; Property owner—Ed James, Jr., 1085 Peary Court, Livermore, CA 94550	Sierra Co.; sec. 2, T. 10 S., R. 5 W.; Black Range mining district; private land; directions to mine: 14 mi north of Winston, NM; 1 mi south of Beaverhead highway
2-9-83 mill	Operator—Lea mine & mill, Kerr-McGee Chemical Corp., Hobbs Potash Facility, P.O. Box 610, Hobbs, NM 88240, phone: 397-3261; Supt.—James D. Waters, same address and phone; Gen. Mgr.—Walter Case, same address and phone; Official—Raymond D. Nations, Safety Supt., same address and phone; Property owner—National Potash Co., P.O. Box 731, Carlsbad, NM 88220	Lea Co.; sec. 18, T. 20 S., R. 32 E.; Carlsbad mining district; private land; ores milled: sylvinitic; custom milling; no capacity of mill: approximately 6,500 tons ore/day; directions to mill: 30 mi northeast of Carlsbad on US-62-180, then 3 mi north on NM-176
2-9-83 mill	Operator—Section 12, Cobb Resources Corp., 313 Washington SE, Albuquerque, NM 87108, phone: 883-7333; Name of mine having mill: London; Supt.—Mr. Raymond Chavez, P.O. Box 4044, Ambrosia Lake, NM 87020	McKinley Co.; sec. 12, T. 14 N., R. 10 W.; Ambrosia Lake mining district; custom milling; yes; directions to mine: Ambrosia Lake district, NM
3-1-83 mill	Operator—St. Cloud mill, St. Cloud Mining Co., P.O. Box 11398, Albuquerque, NM 87192, phone: 281-5340; Supt.—John Gilson, same address, home phone: 293-1207; Gen. Mgr.—P. S. Freeman, same address, home phone: 984-7739 Property owner—The Goldfield Corp., 65 E. Nasa Blvd., Melbourne, Fla 32901	Sierra Co.; sec. 4, T. 12 S., R. 8 W.; Chloride mining district; private land; ores milled: base and precious metals; custom milling; yes; capacity of mill: approximately 400 tons per day; directions to mill: near Winston, NM
3-1-83 mill	Operator—Bad Bob mine, Ford Spoonemore, P.O. Box 1178, Truth or Consequences, NM, phone: 894-2033; Supt.—Ford Spoonemore, same address and phone Property owner—Harold Boutwell, Albuquerque, NM	Sierra Co.; Gold Dust mining district; private land; ores milled: placer operation; custom milling; no; capacity of mill: 50-60 tons per day; directions to mill: 1 mi north of Quintana's Copper Flat Project
3-21-83 potash	Operator—Addition to Shaft #5, International Minerals & Chemical Corp., P.O. Box 71, Carlsbad, NM 88220; Gen. Mgr.—R. W. Hougland, 1405 W. Edwards, Carlsbad, NM, phone: 885-5730; Gen. Supt.—W. E. Thayer, 1313 Riverside Dr., Carlsbad, NM, phone: 885-6017 Property owner—IMCC, 2315 Sanders Road, Northbrook, Ill 60062	Eddy Co.; sec. 6, T. 23 S., R. 30 E.; federal land; directions to mine: 500 yards south of Jal highway, 4 mi east of Route 31
3-21-83 gold	Operator—Opportunity, Sierra Corporation, Box 2107, El Paso, TX, phone: (915) 544-4647; Gen. Mgr.—George Omo, same address and phone; person in charge—Caesar Fulton, Box 49, Truth or Consequences, NM, phone: 894-7128	Sierra Co.; sec. 3, T. 16 S., R. 7 W.; Hillsboro mining district; vein; private land; directions to mine: turn right on dirt road which is 2 mi east of Hillsboro on NM-90
3-21-83 mill	Operator—Bi-metallic Mining Enterprises Corp., P.O. Box 2943, Ruidoso, NM 88345; Supt.—Rudy Amascaray (VP), Box 827, Carrizozo, NM 88301; Vice President—Terry Jon Thomas; President—Billy D. Thomas, 200 Hull Rd., Box 2943, Ruidoso, NM 88345 Property owner—City of Carrizozo (land) mill under lease purchase from American Mineral Recovery Corp.	Lincoln Co.; N½ of sec. 11, T. 8 S., R. 10 E.; Lincoln mining district; ore milled: gold, silver, lead; city land; no custom milling; capacity: 150 Tpd maximum; directions to mill: south end of Carrizozo, 0.4 mi east of town on paved road across railroad track then 0.1 mi north on dirt road to mill

Date and operation	Operators and owners	Location
4-21-83 copper, zinc	Operator—Pinos Altos Phase 1 Expl., Gates & Box Co., Inc., P.O. Box 2830, Silver City, NM 88061; Gen. Mgr.—Ed Hill, 6030 King Rd., Loomis, CA, phone: (916) 652-7292; Person in charge—Ken Frego, 210 Cactus, Silver City, NM, phone: 388-2924; Proj. Engr.—Merlin Miller Property owner—Boliden Minerals, 2596 North Silver St., Silver City, NM 88061	Grant Co.; sec. 30, 25 T. 16 S., R. 13, 14 W.; federal land; underground; directions to mine: approximately 2 mi past Pinos Altos in the Gila National Forest, US-180
4-21-83 coal	Operator—Smouse Pit, Carl Peskor, P.O. Box 602, Farmington, NM; Person in charge—same Property owner—Sam Smouse, Box 93, Fruitland, NM 87416	San Juan Co.; sec. 3, T. 29 N., R. 15 W.; private land; directions to mine: next to "My Place"
5-24-83 fluorspar	Operator—Little Granite, Road Runner Chemical Co., P.O. Box 24, Red Rock, NM 88055; Pres.—Ray L. Winslow, P.O. Box 24, Red Rock, phone: (602) 297-4479 or (505) 542-9715; VP—J. D. Brandt, same address and phone; Property owner—Fred McCauley, Cliff, NM	Grant Co.; private land; directions to mine: through Red Rock, left over bridge, first right after bridge, stay on road past NM Game and Fish, go to end of road
5-24-83 silver, gold	Operator—Volcano Mining Corp., Box 134, Duncan, AZ 85534; Gen. Mgr.—Dolan Campbell, same address, phone: (602) 687-1556; Property owner—Bonnie Stolz, % Metropolitan State Bank, 73rd & Magnolia St., Commerce City, CO 80022	Hidalgo Co.; sec. 17, T. 23 S., R. 21 W.; Kimball mining district; private land; directions to mine: approximately 6 mi north of Steins (Steins is 18 mi west of Lordsburg)
5-24-83 gold, silver	Operator—Little Wonder, Turley Mining, Rt. 1, Box 53, Deming, NM 88030; Gen. Mgr.—C. R. Turley, 1501 Gilbert Rd., Mesa, AZ 85203, phone: (602) 834-9102; Person in charge—Mr. Mack Thompson, NM-497 W., Deming, NM, phone: 546-9740; Property owner—C. R. Turley, address same as Gen. Mgr.	Sierra Co.; sec. 9, T. 10 S., R. 9 W.; Black Range (Grafton) mining district; underground adit; federal land; directions to mine: take forest road 524 from Winston, northwest approximately 10 mi, turn north 1/4 mi before reaching Sunset mine, travel very poor road 2 mi to mine site
5-24-83 tunnel repair	Operator—Niagara Tunnel, Phelps Dodge Corp., Tyrone Branch, Tyrone, NM 88065; Branch Mgr.—R. E. Rhoades, same address, phone: 538-2772; Person in charge (mine foreman)—J. E. Cross, 2807 12th Ave., Safford, AZ 85546, phone: (602) 428-5349; VP & Gen. Mgr.—S. C. Holmes, same address; Property owner—Phelps Dodge Corp., Tyrone, NM 88065	Grant Co.; sec. 22, T. 19 S., R. 15 W.; Tyrone mining district; private land; directions to mine: tunnel portal is within the Tyrone open-pit mine
5-25-83 mill— (gold, silver)	Operator—Turley Pilot mill, Turley Mining, Rt. 1, Box 53, Deming, NM 88030; Gen. Mgr.—C. F. Turley, 1501 Gilbert Rd., Mesa, AZ 85203, phone: (602) 834-9102; Person in charge—Mack Thompson, NM-497 W., Deming, NM, phone: 546-9740; Mill owner—C. F. Turley, same address as gen. mgr.	Luna Co.; sec. 10, T. 24 S., R. 9 W.; private land; type—gravity; works—crusher, rolls, ball mill, and tables; directions to mill: take Columbus road south of Deming, proceed approximately 1/4 mi, turn right on NM-497, proceed to large white house (3rd house), turn right to back yard
5-25-83 gold, silver	Operator—Sunset, Turley Mining, Rt. 1, Box 53, Deming, NM 88030; Gen. Mgr.—C. F. Turley, 1501 Gilbert Rd., Mesa, AZ 85203, phone: (602) 834-9102; Person in charge—Mack Thompson, NM-497 W., Deming, NM, phone: 546-9740; Property owner—C. F. Turley, same address as gen. mgr.	Sierra Co., sec. 22, T. 10 S., R. 9 W.; Black Range (Grafton) mining district; federal land; underground-adit; directions to mine: travel forest road 524 from Winston, northwest approximately 10 mi, road passes mine site
5-25-83 gold, silver	Operator—Summit, S&I Ltd., Box 1559, Claypool, AZ 85532; Person in charge—Dave Chapman, % Apache Grove, Rt. 2, Box 70-A, Duncan, AZ 85534, phone: (602) 687-1120 or 473-2473; Official—John Ellis, Box 1559, Claypool, AZ 85532, phone: (602) 473-2473	Grant Co.; sec. 35, 36, T. 16 S., R. 21 W.; Steeple Rock mining district; underground; private land; directions to mine: 17 mi northeast of Duncan, AZ, on county road 5-12-1
6-14-83 gold, silver	Operator—Little Granite, Anglo-Asian Minerals, 2244 Tranwood, Suite 212, El Paso, TX 79936; Gen. Mgr.—George Jackson Miller, same address, phone: (915) 593-7008; Person in charge—Robert Rogers, Box 1068, Silver City, NM; Gen. Supt.—Ron Samaniego, 514 Poplar, Truth or Consequences, NM, phone: 894-3876; Property owner—Anglo-Asian Minerals, address above	Sierra Co., Black Range mining district; state land; type—quartz; works—drift; directions to mine: Turkey Creek road
6-16-83 gold, silver	Operator—Little Granite, Turley Mining, Rt. 1, Box 53, Deming, NM 88030; Gen. Mgr.—C. F. Turley, 1501 Gilbert Rd., Mesa, AZ 85203, phone: (602) 834-9102; Person in charge—Mack Thompson, NM-497 W., Deming, NM, phone: 546-9740; Property owner—C. F. Turley, same address as above	Sierra Co.; sec. 16, T. 10 S., R. 9 W.; Black Range (Grafton) mining district; federal land; underground vein; shaft and adits; directions to mine: take forest road 524 northwest from Winston, approximately 10 mi, up Turkey Creek, road leads directly to mine
6-16-83	Operator—U.S. Treasury, Todilto Exploration & Development Corporation, 3810 Academy Pkwy. NE, Albuquerque, NM 87109; Gen. Mgr.—George Warnock, same address, phone: 345-8391; Person in charge—Ron Ingimundson, same address and phone; Gen. Supt.—Ron Ingimundson; Property owner—St. Cloud Mining Co., P.O. Box 11398, Albuquerque, NM 87112	Sierra Co.; sec. 25, T. 11 S., R. 9 W.; Chloride mining district; private and federal land; directions to mine: from I-25, 35 mi on NM-52 to Winston, 1 mi through Winston, turn left, travel 4 mi, turn right, and travel 5 mi passing St. Cloud mill site, turn right out of South Fork Creek, and 2.5 mi to mine site

(TO BE CONTINUED NEXT ISSUE)

Utah Geological Association field trip

The Utah Geological Association has announced a call for papers for their field trip to northwest Utah and adjoining parts of Idaho and Nevada. Participants for the September 19-22, 1984, field trip will visit the Albion Range and the City of Rocks in Idaho and the Raft River Range, Grouse Creek Mountains, and the Gold Hill mining district in Utah. The last stop of the trip will be Getty Oil Company's Mercur gold mine in the Oquirrh Mountains. For information, contact Howard F. Albee, Box 11334, Salt Lake City, UT 84147; phone (801) 943-4622.

Back issues available

Back volumes of *New Mexico Geology* can be purchased at the following rates: 1979 (v. 1), \$3.00; 1980 (v. 2), \$3.00; 1981 (v. 3), \$4.00; 1982 (v. 4), \$5.00; 1983 (v. 5), \$6.00. Single issues published from 1979 through 1980 are \$1.00 each; issues published after 1980 are \$2.00 each. Most of the issues are original copies of the magazine; however, several early issues are available only as photocopies. Requests for back issues of *New Mexico Geology* may be included in the attached 1984 renewal envelope by listing the issues you wish to receive on a separate sheet of paper and adding the appropriate amount of money onto your renewal check.

Special session on Rio Grande rift

A special session on the Rio Grande rift has been arranged for the fall American Geophysical Union (AGU) meeting in San Francisco, California. The dates of the meeting are December 5-10, 1983; however, the date of the session will not be set until the program is finalized. The session is sponsored by the seismology, tectonics, and volcanology-geochemistry-petrology sections of AGU. For information, contact: Fall Meeting, American Geophysical Union, 2000 Florida Avenue, NW, Washington, D.C. 20009.

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