New Mexico Bureau Geology & Mineral Resources
Socorro, New Mexico
Information: 505-835-5420
Publications: 505-835-5490
Fax: 505-835-6333

A Division of
New Mexico Institute of Mining and Technology

Dear Bureau Customer,

Enclosed is some information on gold-panning in New Mexico. The most productive streams in past years have been Moreno Creek in Colfax County and the Old and New Placers district in Santa Fe County; however, these areas are on private land, and panning there requires permission from the owners. Other streams which have produced gold include Percha Creek, east of Hillsboro, in Sierra County; Bear Creek and Rio de Arenas near Pinos Altos in Grant County; and the Rio Grande between Embudo and the juncture of the Red River with the Rio Grande. Always make sure of land ownership before entering an area to pan. Some land may be closed to panning or require that permission be obtained. Most federally owned land is open to prospecting (including panning); however, there are exceptions, notably National Parks and Monuments, Indian lands, land grants, mine grants, and military reservations. Panning on state owned land requires a general mining lease, which may be obtained from the State Land Office, 310 Old Santa Fe Trail, Santa Fe, New Mexico 87503. More information on gold, gold panning, and prospecting may be found in some of the publications in the enclosed bibliography.

Sincerely,

Virgil W. Lueth
Mineralogist/Economic Geologist

VWL/dkg
enclosure

GOLD IN NEW MEXICO

Robert M. North
New Mexico Bureau of Mines and Mineral Resources
Socorro, New Mexico 87801

Gold mining in New Mexico was reported as early as 1828, but was undoubtedly carried on much earlier by the Spanish and possibly by Indians. Total recorded production in New Mexico from 1848-1977 is 2,394,930 troy ounces, ranking New Mexico 12th among the 50 states in gold production. Production peaked in 1915 at 70,681 troy ounces. Most of the gold produced in New Mexico in recent years has been a by-product of copper mining, most notably at the Chino and Continental mines.

The gold deposits of New Mexico are, in general, distributed in a belt 50 to 100 miles wide extending from Hachita, Hidalgo County in the southwest to Elizabethtown, Colfax County in the northeast. The gold deposits are most commonly associated with intrusive rocks of Cretaceous or Tertiary age ranging in composition from quartz monzonite to graodiorite. (Elizabethtown, Central, Pinos Altos, Lordsburg, White Oaks, Nogal, Cochiti, Old Placers, New Placers and Organ districts.) To a lesser extent, the deposits are associated with Tertiary extrusive rocks (Mogollon, Steeple Rock, Hillsboro, and Rosedale districts), and Precambrian rocks (Hopewell, Willow Creek, and Hell Canyon districts). Placer deposits have been important in the Elizabethtown, Pinos Altos, Hopewell, Old Placers, New Placers, and Las Animas districts.

At the present in New Mexico, gold is being produced as a by-product of copper mining in Grant County, by cyanide heap leaching at Mogollon in Catron County and at the Ortiz mine in Santa Fe County, and as lode gold mining in the Steeple Rock district, Grant County and at the Bluebird mine in Santa Fe County. In addition, a number of small operations are also producing minor amounts of gold.

Prospecting in New Mexico

The rise in the price of gold and silver has aroused the interest and curiosity of many people. More and more common is the weekend prospector, armed with gold pan, sluice, dredge, optimism and energy. Many other comb the mountains, canyons and mesas looking for a deposit of value, from grubstake to the mother lode. The information provided here will hopefully help the beginning prospector get started, as well as provide the experienced prospector with information on precious metal deposits in New Mexico.

Getting Started

Equipment: The most important equipment needed is that necessary to protect oneself from the environment. The climate of New Mexico is harsh and large

changes in temperature are to be expected. The scalding desert heat gives way to cool and even cold evenings. Take protective clothing, light colored is best, and remember a hat. Have plenty of water, at least one gallon per person per day, and extra for your vehicle. And speaking of water, be wary of flash-flooding. Those beautiful desert canyons can fill with water alarmingly fast. If the weather upstream appears threatening, TAKE NO CHANCES! Get out of the low areas as quickly as possible.

The actual prospecting equipment needed ranges widely, depending on the terrain to be prospected. The following lists are of suggested prospecting equipment:

<u>GENERAL:</u>

Water
Shovel
Food
Maps
protective clothing
first-aid kit
good hiking boots
matches
compass
notebook
tape measure (50 or 100 ft)
sample bags
hatchet or ax
hand lens
knife

<u>Placer Prospecting:</u>

gold pan
water (you may have to provide your own in many parts of New Mexico - DON'T USE YOUR DRINKING OR VEHICLE WATER!)
shovel
rocker
sluice
dredge (not legal on all streams, see following section)
small plastic bottles
small artist's brush

<u>Lode Prospecting:</u>

hammer
chisels
shovel
streak plate
magnet

<u>Sources of Information:</u> Before "heading for the hills", a stop at a bookstore or library will be helpful. Publications of interest to prospectors are listed in the bibliography following this introductory guide.

Do make sure of land ownership, whether or not permission is required to prospect there, and which methods of prospecting are legal. Different state and federal agencies can answer many of the prospector's questions. For example:

Dredging -

U.S. Army Corps of Engineers
ATTN: SWACO-OR
P.O. Box 1580
Albuquerque, NM 87103

Filing a mining claim and land ownership -

Bureau of Land Management
Main Office: BLM
Federal Bldg. - U.S. Post Office
Santa Fe, NM 87501

Albuquerque: BLM
3550 Pan American Freeway, NE
Albuquerque, NM 87107

Farmington: BLM
900 La Plata Hwy.
Farmington, NM 87401

Las Cruces: BLM
1705 N. Valley Drive
Las Cruces, NM 88001

Roswell: BLM
1717 W. 2nd Street
Roswell, NM 88201

Socorro: BLM
200 Neel Ave., NW
Socorro, NM 87801

Prospecting on State owned land (requires a lease) -

State Land Office
P.O. Box 1148
Santa Fe, NM 87501

Specific information on mines and mining districts in New Mexico -

Mineralogist
New Mexico Bureau of Mines and Mineral Resources
New Mexico Tech
801 Leroy Place
Socorro, NM 87801-4796

Where and why to prospect in New Mexico. A general outline of known gold locations in New Mexico has been provided. Maps can be obtained from the New Mexico Bureau of Mines and Mineral Resources Publications Office (address above).

The gold deposits of New Mexico are, in general, distributed in a belt 50 to 100 miles wide extending from Hachita, Hidalgo County in the southwest to Elizabethtown, Colfax County in the northeast. The gold deposits are most commonly associated with intrusive rocks of Cretaceous or Tertiary age ranging in composition from quartz monzonite to graodiorite. (Elizabethtown, Central, Pinos Altos, Lordsburg, White Oaks, Nogal, Cochiti, Old Placers, New Placers and Organ districts). To a lesser extent, the deposits are associated with Tertiary extrusive rocks (Mogollon, Steeple Rock, Hillsboro, and Rosedale districts), and Precambrian rocks (Hopewell, Willow Creek, and Hell Canyon districts). Placer deposits have been important in the Elizabethtown, Pinos Altos, Hopewell, Old Placers, New Placers, and Las Animas districts.

How will you know what you've found? If you're unsure of what your efforts have reaped, the various minerals can be positively identified by the New Mexico Bureau of Mines and Mineral Resources. The Mineral Museum located at the NMBM&MR can be used for visual comparison.

Now that you're informed and equipped -- be careful, have fun and GOOD LUCK.

Remember: New Mexico is a beautiful state, let's keep it that way. If you pack it in -- pack it out.

PLACER DEPOSITS

Bernalillo-Tijeras Canyon district: placer nuggets up to $40 each reported by Burke (1896, p. 24) from the Hell Canyon subdistrict.

Chavez-Along the Rio Hondo. Also, very low gold values reported from weathered rock of the Railroad Mountain dike, northeast of Acme.

Colfax-Baldy, Cimarroncito, Elizabethtown, and Ponil districts.

Grant-Gold Hill, Malone, Pinos Altos, and Steeple Rock districts. Steeple Rock district: placer gold in Apache Creek (Pickard, 1912).

Harding-In the valley of Ute Creek, near Gallegos.

Hidalgo-Lordsburg and Sylvanite districts. Sylvanite district: placer deposits worked; nuggets as much as one ounce (Lasky, 1947).

Lincoln-Gallinas Mountains, Jicarilla, Nogal, and White Oaks districts. Also along the Rio Hondo.

Mora-At a locality 1 mile southwest of Mora.

Otero-Orogrande district.

Quay-Reported in the early days along Revuelito Creek, 18 miles east of Tucumacari, in grains as large as wheat; according to F.A. Jones (1904, p. 19), the ground had been salted.

Rio Arriba-Abiquiu and Hopewell districts.

Sandoval-Placitas district.

San Miguel-Willow Creek district.

Santa Fe-Cerrillos, New Placers, Old Placers and Santa Fe districts; also along Galisteo Creek. The Old and New Placers districts have yielded nearly $4,000,000 or about 25 percent of the total placer yield of New Mexico (Wootton, 1940, p. 16). The Old Placers were discovered in 1828, and the New Placers in 1839. They have been visited and described by several explorers and geologists. Placer gold from the New Placers was analyzed by Dr. F.A. Wislizenus in 1846 (Wislizenus, 1848, p. 32; repeated by Blake, 1856a, p. 94; by J.J. Stevenson, 1881, p. 399):

Gold	Silver	Iron and Silica	Total
92.5	3.5	4.0	100.00

According to a news item in 1882, a 7-lb nugget was found in 1843. According to Dale Carlson (memo., Oct. 5, 1953), some coarse nuggets in the New Placers district have cavities lined with wires and crystals.

Sierra-Hillsboro, Las Animas Placer, and Pittsburg districts.

Taos-Anchor, Glenwoody, Red River, Rio Colorado Placers, Rio Grande Valley, and Twinning districts.

Union-Folsom district

From Minerals of New Mexico by S. A. Northrop, University of New Mexico Press,1959.

LODE DEPOSITS (Most of these carry native gold)

Bernalillo-Placitas and Tijeras Canyon districts: rare. A news story in 1882 reported that gold "in considerable quantities" had been found in slag near ancient smelters "at many places in the Sandia Mountains."

Catron-Mogollon and Wilcox districts.

Colfax-Baldy, Cimarroncito, and Elizabethtown districts. Baldy district: As wire and thread gold, and as coarse leaf gold in thin irregularly shaped masses; usually as minute particles coated with some dark material (Raymond, 1870; Lee, 1916). According to Brevoort (1874, p. 80), the Commissioner of the General Land Office reported he had received a specimen of ore from the Aztec mine, "through which are interspersed fibers of pure gold, some of which exceed two inches in length."

DeBaca-At the pyrolusite deposit on the S.A. Steele Ranch, Coyote Creek, about 6 miles west of Fort Sumner, a dollar's worth of gold was obtained from 20 lbs. of "dirt" from the prospect shaft (Allen, K., 1939).

Dona Ana-Bear Canyon, Black Mountain, Gold Camp, Organ, Potrillo Mountains, San Andres Canyon, and Texas districts. Black Mountain district: According to a news item (*Mining World*, Las Vegas, v. 3, no. 7, Jan. 1, 1883, p. 108), the Mountain Chief and Copper Duke mines are showing "the largest mass of nuggets, flour and scale gold ever seen. One lump weighed 3 pounds was four-fifths pure gold." Organ district: "fine specimens of free gold" were reported in

1882; later, gold flecks were observed in acicular malachite.

Eddy-Early reports of gold in the Guadalupe Mountains.

Grant-Bound Ranch, Burro Mountains, Carpenter, Central, Fierro-Hanover, Gold Hill, Malone, Pinos Altos, Ricolite, Santa Rita, Silver City, Steeple Rock, Telegraph, and White Signal districts. Fierro-Hanover district: as wires in sphalerite. Ricolite district: the New Mexico Ricolite Company reported finding high-grade gold ore (Anonymous, 1946a). Silver City district: in assays. Steeple Rock district: free gold left after oxidation of pyrite; "many beautiful gold specimens are taken out" (Pickard, 1912).

Harding-Gold-quartz stringers have been noted north and west of Bueyeros.

Hidalgo-Apache No. 2, Fremont, Lordsburg, Red Hill, Steins Pass, and Sylvanite districts. Sylvanite district: the most important constituent of the veins; as rough rains, clusters or threads, invariably associated with tetradymite.

Lincoln-Estey, Gallinas Mountains, Jicarilla, Nogal, and White Oaks districts. Estey district: wire gold reported in "an old shaft worked hundreds of years ago" somewhere in the Sierra Oscura, 50 miles southeast of Socorro (*Mining World*, Las Vegas, v. 1, no. 6, Feb, 1881, p. 12). According to Peters (1882), the copper ores of the Estey district contain gold. Jicarilla district: according to Walter A. Hubbard (letters, Jan. 9 and March 10, 1943), analyses of ores by Frank P. Baldi revealed at least three types: 1) the simple gold-silver selenide, 2) a very complex gold selenide tied into a sulfo-arsenide, and 3) another very complex gold selenide and antimonide; see further under "Gold Selenide." White Oaks district: a gold nugget about the size of a pullet egg was found in the Homestake mine; it was worth $182.50 (*Mining World*, Las Vegas, v. 1, no. 8, April 1881, p. 13). Beautiful specimens of wire gold were found in the Little Mac mine in June, 1881. It was reported in March, 1882 that a chunk of gold about the size and shape of a large Bartlett pear, weighing 2 lbs and 7 oz and worth $542.50, had come from the Little Mac. At the South Homestake mine, "every shot brings to light gold flecked quartz... lumps of rock as large as a man's head with bunches of wire gold and frosted with flower gold" (*Mining World*, Las Vegas, v. 2, no. 17, June 15, 1882, p. 241). According to E.P. Smith and L. Dominian (1904).

> "An interesting, and probably unique, instance of the occurrence of native gold in gypsum is found in the Old Abe mine. The hydrous calcium sulfate occurs at the contact of the shales and the augite porphyrite...A specimen showed fine wires of gold in a slab of gypsum."

F. A. Jones (1904, p. 173) also commented on this unique occurrence of "virgin gold in gypsum," but Lindgren, Graton, and Gordon (1910, p. 180) observed that the supposed gypsum proved to be a "soft, bleached, chalky phase of the much-altered monzonite."

Luna-Carrizalillo, Tres Hermanas, and Victorio districts.

Mora-Wire gold was reported in 1882 from a locality 7 miles from Mora. Later, it was said to occur on the north fork of Rio de la Casa, 9 miles west of Mora. Reported also from northeast of Chacon. According to Anderson (1956, p. 142), "several small, very rich pockets of gold ore have been found in the lenses of

quartz in the Precambrian rocks near the upper reaches of [Rio de la Casa]."

Otero-Guadalupe Mountains, Orogrande, and Tularosa districts. Guadalupe Mountains district: reported by needs verification.

Rio Arriba-Bromide No. 2, El Rito, Hopewell, and Ojo Caliente No. 1 districts. El Rito district: in a conglomerate. Ojo Caliente No. 1 district: only a small quantity reported.

Sandoval-Cochiti, Jemez Springs, and Placitas districts. Placitas district: reported from both the La Madera and Sandia subdistricts.

San Miguel-Rociada, Tecolote, and Willow Creek districts. Tecolote district: at Mineral Hill. Also at a group of claims 10 miles south of Bernal (Chapelle).

Santa Fe-Cerrillos, Glorieta, New Placers, Old Placers, and Santa Fe districts. Cerrillos district: about 1880, gold-bearing quartz was found by D.C. Hyde (undated brochure) on the walls of a sealed-up cave. One writer (Anonymous, 1881d) refers to "gold in quartz"; another (Anonymous, 1881e) noted wire gold. News items mention wire gold at several places in 1882. Glorieta district: in the old Bradley mine and at the Jones claims. New Placers district: very fine specimens of leaf and wire gold, some inclosed in translucent to transparent calcite. According to Statz (1909a), the gold is dark colored, "being coated by a rusty of yellowish brown film." A few years later, Statz, (1912a) observed that the gold is associated with lenses of magnetite and quartz, and that

> "A characteristic of the gold found in these pockets is that it is often very coarse and is inclined to be smooth, round and flattened in shape. Both fine flakes and solid nuggets are quite common...[In a] somewhat intermediate type of pocket...gold is associated with quartz lenses in veins. This gold is also commonly quite coarse, and is characterized by rough, ragged edges, peculiarities which are distinguishable in the nuggets found in the placer mines of the camp."

Old Placers district: formerly much wire gold; in 1864, Prof. Richard E. Owen and E.T. Cox took more that 100 lbs of gold-quartz ore from the Ortiz shaft; assay by Cox (in Owen and Cox, 1865, p. 15; repeated p. 49):

Gold	Silver	Iridium	Total
99.170	0.782	0.048	100.00

Sierra-Caballo Mountains, Chloride, Goodfortune Creek, Hermosa, Hillsboro, Iron Mountain No. 2, Kingston (rare), San Mateo Mountains, and Tierra Blanca districts. Chloride district: "very rich silver ore fairly spangled with free gold" was found at the Ivanhoe mine in 1882. Goodfortune Creek district: gold is said to have been mined here in 1655 and from then until 1712; later the deposit was rediscovered by Dr. C.F. Blackington, who named it the Good Fortune (Leeson, 1896, p. 43). Hillsboro district: in the Bonanza mine, pyrite crystals were bound together by heavy wires of gold (Harley, 1934).

Socorro-Cat Mountain, Council Rock, Hansonburg, Lemitar Mountains, Magdalena, Mill Canyon, Mockingbird Gap, North Magdalena, Ojo Caliente No. 2,

Rosedale, San Jose, San Lorenzo, Socorro Peak, and Water Canyon districts. Council Rock district: the slag of ancient Spanish smelters yielded gold in 1882. Lemitar Mountains district: a news item (July 15, 1882) states: "The recent rich finds of gold in the Polvadero [Polvadera or Lemitar Mountains] and St. Felicite [Santa Felicita; location problematical, possibly the Socorro Peak] districts, are attracting much attention." Magdalena district: uncommon; as grains and wires with cerussite and willemite at the Stonewall mine (Lasky and Loughlin, 1943, p. 99); wire gold in seams in limestone reported by Tom Tarr (1938). Mill Canyon district: rare. Mockingbird Gap district: gold values reported in lead and copper ores in 1910. Water Canyon district: rare.

Taos-Anchor, Glenwoody, Picuris, Red River, Rio Grande Valley, and Twining districts.

Torrance-"Particles and wire gold in association with copper ores" reported from the old Spiegelburg Camp area, but also located specifically 12 miles east of Mountainair, which would place it at the north edge of Chupadera Mesa, a few miles south of Willard (Anonymous, 1909d).

Union-Folsom district.

Valencia-Zuni Mountains district: a small quantity reported.

THE MYTH OF NON-ASSAYABLE, NON-RECOVERABLE PRECIOUS METALS

Gold fever is almost an affliction. It is increasingly common, being brought on by the recent upsurge in the price of gold and other precious metals. Most people are quick enough to recognize a real estate sham, but it appears that some of us are rather quickly blinded by the glitter of anything that even resembles gold. In fact, many of us are able to imagine metallic luster where it does not exist at all. The myth of "non-assayable" and "non-recoverable" gold or other precious metals is perpetuated not only by promoters and naive customers, but by people who should know better. Any metal which cannot be assayed or recovered cannot be proven to exist.

Unfortunately, there also seems to be a number of people claiming prowess at assaying who are not qualified. The possession of an atomic absorption spectrophotometer or emission spectrographic analyzer does not qualify one as an assayer. These types of analytical equipment have their limitations, and they should be used only by persons who are fully aware of these limitations. For instance, iron in a sample can interfere with platinum absorption on the atomic absorption spectrophotometer. The novice will often report this as platinum.

Fire assaying has been used for centuries to analyze for gold, silver, and other precious metals. During all these years of application, it has been proven, time and time again, to be completely reliable. The technique has never been known to fail in the detection of precious metals in a sample where they existed to any significant extent. There have been many instances where promoters have carried tales of non-materialized rocks bearing vast fortunes in "non-assayable" precious metals. It is the old pea and nutshell game (now you see it - now you don't).

In the process of fire assaying, temperatures of over 1700□F are common. The ore, flux, reducing agent and litharge mixture is molten at this temperature. The reducing agent reduces the metals to their metallic state so that they become molten metal. The lead oxide (litharge) is reduced to lead metal which separates and sinks through the molten mass collecting the precious metals while the silica and other gangue (worthless) minerals form a slag with the flux. The complete molten mass is poured into a conical mold. The lead button containing the precious metal forms in the inverted apex of the cone and after cooling may easily separated from the slag. The lead button is then heated under oxidizing conditions in a bone ash cupel. The lead is oxidized and absorbed by the cupel leaving a bead of precious metal. This bead is then further analyzed and examined to determine precious metal content. Coatings of metallic oxides on the precious metals themselves are possible but the proper assay flux will dissolve them.

It is conceivable that this technique might miss a very small fraction of the values, but is not possible that this error would make a rich ore appear barren. If a properly executed fire assay does not detect any precious metals, then none were present to begin with (within the limits of detection). Detection limits are about .02 ounces of precious metal per ton of ore.

Over the years, various federal and state agencies have traced numerous stories of

"non-assayable" precious metals. In none of these instances have any occurrences been verified or have any legitimate mining or milling operations resulted.

Why do these promoters approach inexperienced investors rather than major mining companies? The mining business is a tough and expensive game, one that requires a great deal of caution and professional expertise. If you are approached to invest in a precious metals prospect, you should be very cautious.

*Publications available through the New Mexico Bureau of Mines and Mineral Resources
OOP - out of print

GOLD

Jackson, C.F., and Knaebel, J.B., Small-scale placer-mining methods: U.S. Dept. of the Interior, Bureau of Mines Information circular 6611, 17p., 25 figs., 1932. OOP

Johnson, Maureen G., Placer gold deposits in New Mexico: U.S. Geol. Survey, Bull 1348, 46 p., 2 tables, 1 pl., 1972. OOP

Johnson, Maureen G., Placer gold deposits in the Southwest: Mining Eng., v. 26, no. 3, p. 20-23, 1 fig., 1974.

Koschmann, A.H., Principal gold-producing districts of the United States: U.S. Geol. Survey, Prof. Paper 610, 283 p., 28 figs., 1968.

Metzger, O.H., Gold mining in New Mexico: U.S. Dept. of the Interior, Bureau of Mines Information circular 6987, 71 p., 11 figs, 1938. OOP

Salsbury, M.H., Kerns, W.H., Fulderson, F.B., and Branner, G.C., Marketing ores and concentrates of gold, silver, copper, lead, and zinc in the United States: U.S. Dept. of the Interior, Bureau of Mines Information circular 8206, 150 p., 9 figs., 8 tables, 1964. OOP

Segerstrom, K., and Ryberg, G.E., Geology and placer-gold deposits of the Jicarilla Mountains, Lincoln County, New Mexico: U.S. Geol. Survey Bull. 1308, 25 p., 1 fig., 3 tables, 1 pl., 1974.

*Wells, E.H., and Wootton, T.P., Gold mining and gold deposits in New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 5, 26 p., 1932. ($2.75).

West, J.M., How to mine and prospect for placer gold: U.S. Dept. of the Interior, Bureau of Mines Information circular 8517, 43 p., 6 figs., 1 table, 1971.

GENERAL

*Anderson, E.C., The Metal Resources at New Mexico and Their Economic Features Through 1954: New Mexico Bureau of Mines and Mineral Resources Bulletin 39, 1959. OOP

*Christiansen, Paige W., The story of mining in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Scenic Trip No. 12., 112 p., 1974. OOP

*File, L., Directory of Mines of New Mexico: New Mexico Bureau of Mines and Mineral Resources circular 77, 1965. OOP

*File, L., and Northrop, S.A., County, township, and range locations of New Mexico's mining districts: New Mexico Bureau of Mines and Mineral Resources Circular 84, 66 p., 1966. ($6.25)

*Rothrock, H.E., Johnson, C.H., and Hahn, A.D., Fluorspar Resources of New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 21, 1946. OOP

Northrop, S.A., Minerals of New Mexico, University of New Mexico Press, 655 p., 1959.

*United States Geological Survey, Mineral and Water Resources of New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 87, 437 p., 1965. ($12.00)

*Verity, V.H., and Young, R.J., Laws and Regulations Governing Mineral Rights in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 104, 70p., 1973. OOP

OTHER COMMODITIES

*Kelley, V.C., Geology and technology of the Grants uranium region: New Mexico Bureau of Mines and Mineral Resources, Memoir 15, 227 p., 1963. ($18.00)

*Lufkin, J.L., Tin mineralization within rhyolite flow-domes, Black Range New Mexico: New Mexico Bureau of Mines and Mineral Resources, Open-file Report 57, 162 p., 8 tables, 48 figs., 6 pls., 1972. ($42.90)

*McNaulty, W.N., Fluorspar in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Memoir 34, 61 p., 1978. ($10.50)

*Schilling, J.H., Molybdenum Resources of New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 76, 76p., 1965. ($7.00)

*Weber, R.H., and Kottlowski, F.E., Gypsum resources of New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 68, 68 p., 1959. ($4.75)

*Williams, P.V., and Bloom, P.A., Barite deposits of New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 76, 46 p., 1964. ($5.25)

COUNTY REPORTS

*Reports on the geology and mineral resources of the following counties are available from the New Mexico Bureau of Mines and Mineral Resources:

Socorro Co. (Bull. 8)	($11.00)
Sierra Co. (Bull. 10)	$11.50)
Union Co. (Bull. 63)	($17.75)
Lincoln Co. (Bull. 67)	($12.50)
Taos Co. (Bull. 71)	($9.00)
Luna Co. (Bull. 72)	($14.75)
Bernalillo, Sandoval and Santa Fe Counties (Bull. 81)	($7.00)
Grant Co. (Bull. 83)	($15.00)
Rio Arriba Co. (Bull. 91)	(OOP)

SELECTED PUBLICATIONS PERTAINING TO NEW MEXICO'S METAL DEPOSITS AVAILABLE FROM THE NEW MEXICO BUREAU OF MINES AND MINERAL RESOURCES

ORDERING INFORMATION: The following publications are available from the New Mexico Bureau of Mines and Mineral Resources, NM Tech 801 Leroy Place, Socorro, NM 87801-4796

Postage and handling fees are as follows (classified "books and printed matter"):

0 - $4.99 order - add $1.50

$5.00 - $25.00 order - add $2.50

each additional $25.00 - add $2.50

All orders are tax exempt. A list of publications is available at no charge. The Bureau also sells USGS topographic maps of New Mexico ($4.25 each). An index map of USGS topographic maps is available for $1.25.

Anderson, E.C. 1957, The metal resources of New Mexico and their economic features through 1954: New Mexico Bureau of Mines and Mineral Resources, Bulletin 39, 183 pp. OOP

Atkinson, W.W., Jr., 1961, Geology of the San Pedro Mountains, Santa Fe County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bull. 77, 50 pp. OOP

Barker, J.M., and Logsdon, M.J., continuously updated, Active mines and processing plants in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Resource map 14, Plate A-Energy Resources of New Mexico, color, 8½"X11" map,scale,1:3,500.00. OOP

Blakestead, R.B., 1978, Revised geology of a portion of the Kelly mining district, Socorro County, New Mexico: M.S. thesis, University of Colorado, 149 pp. (New Mexico Bureau of Mines and Mineral Resources, Open-file Report 43). $38.30

Bundy, W.M., 1958, Wall-rock alteration in the Cochiti mining district, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 59, 71 pp. $4.75

Chapin, C.E., Elston, W.E., and James, H.L., eds. 1978, Field guide to selected cauldrons and mining districts of the Datil-Mogollon volcanic field, New Mexico: New Mexico Geological Society, Special Publication 7, 149 pp. $10.00

Chapman, Wood, and Griswold, Inc., 1974, Geologic map of Grants uranium region: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 31, scale 1:126,720. $9.00

Christiansen, P.W., 1974, The story of mining in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Scenic trip to the geologic past 12, 112 pp. OOP

Clark, K.F., and Read, C.B., 1972, Geology and ore deposits of Eagle Nest area, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 94, 152 pp. OOP

Dane, C.H., and Bachman, G.O., 1965, Geologic map of New Mexico: U.S. Geological Survey, scale 1:500,00. Two sheets. OOP

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