



EXPLANATION

MINERAL-RESOURCE POTENTIAL

High—Geologic environment highly favorable for the occurrence of mineral resources. Includes some areas known to contain potentially economic mineral deposits.

Moderate—Geologic environment interpreted to be favorable for the occurrence of mineral resources.

Low—Geologic environment interpreted to be less favorable for the occurrence of mineral resources.

● LOCATION OF MINING DISTRICT

Discussion

This map was compiled and drafted November 28-December 5, 1977, in response to a request of the U.S. Forest Service for an immediate evaluation of the mineral-resource potential of proposed Roadless Areas in the National Forests of New Mexico. The Roadless Areas, defined by the Forest Service for purposes of the RARE II (Roadless Area Review and Evaluation) Inventory are shown on a published map (U.S. Forest Service, 1977) prepared as a base for mineral resource and other inventories. For ease of comparison, the mineral resource map was prepared at the same scale as the geologic map of New Mexico (Dane and Bachman, 1965).

The areas classified on the mineral resource map are generalized, but include the proposed Roadless Areas and adjacent land, as well as the corridors and enclaves that have not been proposed as "Roadless." Mining districts within the classified areas are identified by name.

The basis for classification of mineral resource potential is fundamentally geologic. It takes into consideration what we know about the geology of an area; the distribution of productive mineral deposits and promising mineral prospects in the area; the kind and mode of occurrence of mineral deposits in comparable areas; and, to the extent that we can estimate the nation's needs for mineral products in the foreseeable future, the expected occurrence of resources of some substances for which a use or demand is only now emerging, or for which new and unusual geologic occurrences are just now being recognized. Some examples of substances in this last category are silicon, made from high-purity quartz deposits and used for solar cells, rectifiers and magnetic used for large-scale water purification, and disseminated titanium, tantalum, and rare-earth minerals found in igneous rocks in a geologic occurrence with newly recognized resource potential.

The current evaluation of the mineral-resource potential of the proposed Roadless Areas in New Mexico is on the whole conservative because it must be defended on the basis of available data. Geologic information is sparse in some parts of the state, inadequate and outdated in many areas, and geophysical and geophysical data are almost nonexistent. Nevertheless, geologic evidence for recognizing either high or low mineral-resource potential is adequate for the immediate evaluation of most of the Roadless Areas in New Mexico. Geologic evidence for recognizing moderate mineral-resource potential is not as good. Where more evidence is needed, it will have to be obtained by field studies before the mineral-resource potential can be reevaluated. This gathering and assessing of evidence can be scheduled; it does not and should not be a chance event. In contrast, the emergence of an unforeseeable need for some mineral substance, or the discovery of a radically different geologic occurrence for a mineral deposit, can require a drastic reevaluation of the mineral-resource potential of entire regions. Such circumstances have occurred and therefore can be expected to occur, but their character and timing cannot be estimated in advance.

Most of the evidence used for the current evaluation of the mineral-resource potential of proposed Roadless Areas in New Mexico was found in numerous area and regional reports published by the New Mexico State Bureau of Mines and Mineral Resources and in "Use Deposits of New Mexico" (Lindgren and others, 1910). Some unpublished evidence was provided by the compiler and associates in the U.S. Geological Survey.

The compilation was delivered and its results presented orally to members of the U.S. Forest Service on December 8, 1977. The map has been placed in the Open-File Report series by public request.

Selected References

Dane, C. H., and Bachman, G. O., 1965, Geologic map of New Mexico: U.S. Geological Survey, scale 1:500,000.

Lindgren, W., Graton, L. C., and Gordon, C. H., 1910, The ore deposits of New Mexico: U.S. Geological Survey Professional Paper 68, 361 p.

U.S. Forest Service, 1977, Roadless and undeveloped area inventory, RARE II, National Forests, New Mexico: U.S. Forest Service Map, scale 1:1,000,000.

U.S. Geological Survey, 1965, Mineral and water resources of New Mexico: 99th Congress, 1st Session, U.S. Senate Committee on Interior and Insular Affairs, Committee Print, 437 p.

MAP SHOWING APPRAISAL OF MINERAL RESOURCE POTENTIAL OF RARE II PROPOSED ROADLESS AREAS IN NATIONAL FORESTS, NEW MEXICO (EXCLUSIVE OF COAL, OIL, GAS AND CONSTRUCTION MATERIALS)

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This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

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