



MINERAL RESOURCE POTENTIAL OF THE SILVER CITY 1°X2° QUADRANGLE, NEW MEXICO - ARIZONA

By
D. H. Richter and W. N. Sharp
1984

Notes for map G:

Areas of iron, nickel, and cobalt potential are outlined. Remainder of the quadrangle, hardrock terranes and basin-fill is low (L) in iron, nickel, and cobalt potential, or unassessed (U). Screened base shows smoothed contacts of the basin and range physiography—hardrock terranes of the ranges; and, alluvium and basin-fill deposits.

For details refer to USGS Open-File Report 83-924.

Areas of overlap have potential in two types of deposits. See table also on this sheet.

STATEMENT

This folio of maps of the Silver City 1° x 2° quadrangle essentially duplicates resource information shown on small-scale maps in Open-File Report 83-924. They are offered here, as a supplement to that report, at scale of 1:250,000 to provide work sheets for better land and resource planning—activities that require more precise locations of resource area boundaries; and, more specific potential estimates and confidence levels with these estimates. The various commodities generally are dealt with individually, one element to a map sheet. Exceptions are with metals that are virtually everywhere closely associated in nature.

Further insight into geologic and basic resource information can be obtained from published reports and maps listed in the Reference of Open-File Report 83-924. The published and planned sheets of the Silver City CUSMAP Folio are listed along with other resource-focused publications.

Mineral resource potential is defined as the likelihood of the occurrence of mineral deposits in a defined area; it is not a measure of the resources, their size, or their profitability.

High mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of data indicate a high degree of likelihood for resource accumulation, where data support occurrence and (or) genetic models indicating presence of resources, and where evidence indicates that mineral concentration has taken place. Assignment of high resource potential requires positive knowledge that resource-forming processes have been active in at least part of the area; it does not require that occurrences or deposits be identified.

Moderate mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of data indicate a reasonable chance for resource accumulation, where an application of genetic and (or) occurrence models indicates favorable ground.

Low mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate the existence of resources is unlikely. This level of potential embraces areas with dispersed mineralized rock, as well as areas with few or no indication of mineralization. Use of the low potential category requires specific positive knowledge.

Unknown mineral resource potential is assigned to areas where the level of knowledge is so inadequate that classification of the area as high, moderate, or low would be misleading. The use of the phrase "no mineral resource potential" should be applied only to a specific commodity in a well-defined area. The no classification should not be used if there is the slightest possibility of occurrence; it is not appropriate as the summary rating for any area.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards.

IRON AREAS

Skarn-associated Fe replacement deposits

Economic significance - (high) Large replacement masses; some ore remains in known deposits. Other commodities - Cu, Zn.

| Area of favorability | Criteria | | | Levels of potential and certainty. See plot. |
|----------------------|----------------|--------------------------------------|---|--|
| | Known deposits | Known favorable geologic environment | Inferred favorable geologic environment | |
| A-1 | X | | | A-1 H/D |
| A-2 | | X | | A-2 N/B |
| A-3 | | X | | A-3 N/B |
| A-4 | | X | | A-4 N/B |
| A-5 | | X | | A-5 N/B |
| A-6 | | X | | A-6 N/B |

Sedimentary Fe deposits

Economic significance - (low) large low grade deposits. Other commodities - none.

| Area of favorability | Criteria | | | Levels of potential and certainty. See plot. |
|----------------------|----------------|--------------------------------------|---|--|
| | Known deposits | Known favorable geologic environment | Inferred favorable geologic environment | |
| B | X | | | B N/D |

NICKEL AND COBALT AREAS

Ni-Co-Ag (U) vein deposits

Economic significance - (low) Veins in small area only. Nickel and cobalt probably more a curiosity than a resource.

| Area of favorability | Criteria | | | Levels of potential and certainty. See plot. |
|----------------------|----------------|--------------------------------------|---|--|
| | Known deposits | Known favorable geologic environment | Inferred favorable geologic environment | |
| C | X | | | C N/D |

Level of Resource Potential

| Level of Resource Potential | O/A | H/B | H/C | H/D | Favorable |
|-----------------------------|-------------------|--------------------|--------------------|--------------------|-------------|
| | Unknown Potential | High Potential | High Potential | High Potential | |
| M | | M/B | M/C | M/D | Favorable |
| | | Moderate Potential | Moderate Potential | Moderate Potential | |
| L | | L/B | L/C | L/D | Unfavorable |
| | | Low Potential | Low Potential | Low Potential | |
| N | | | | N/D No Potential | |
| Level of Certainty → | | | | | |