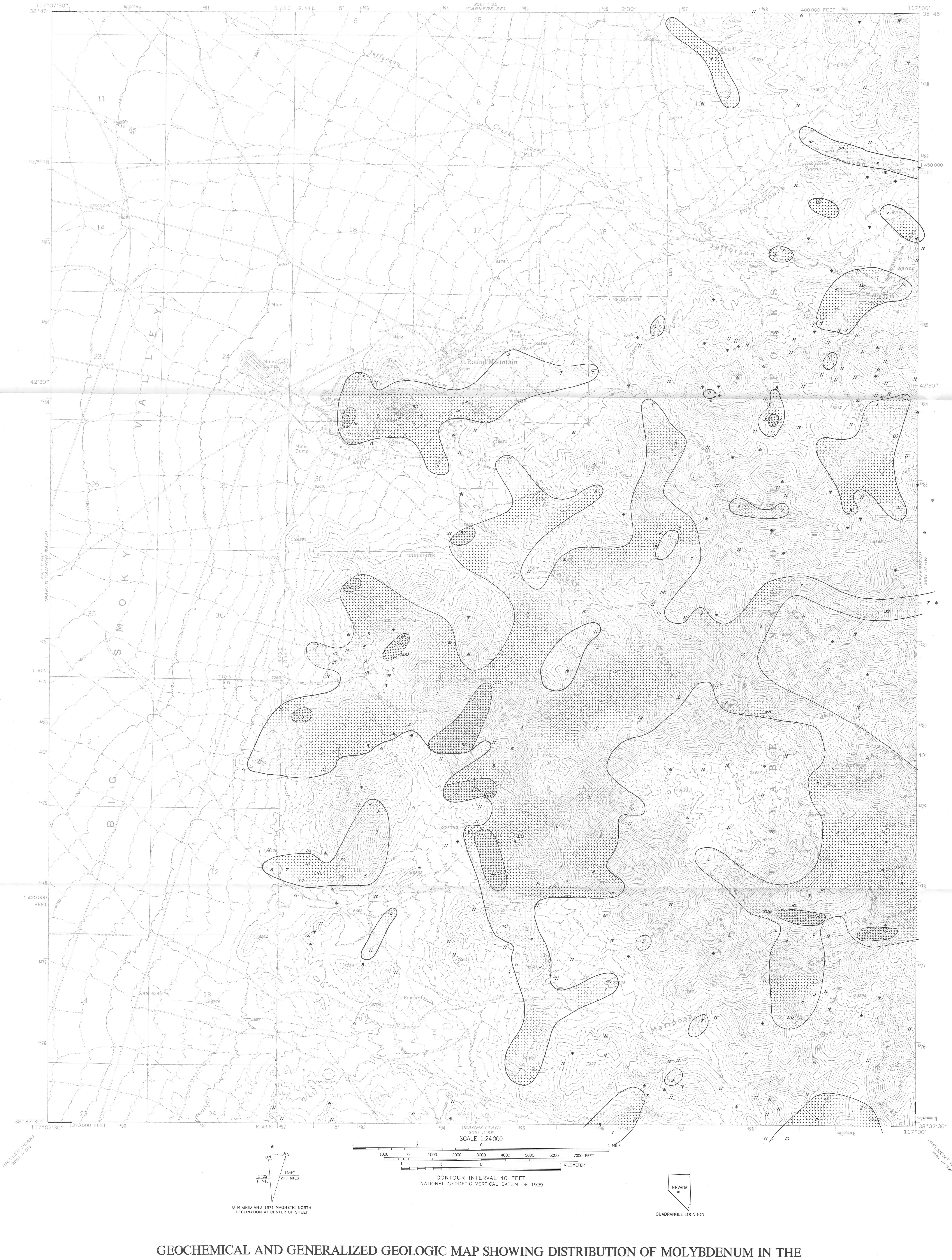
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES MAP MF-835F
Mo, ROUND MTN. QUAD., NEVADA



EXPLANATION

Qa	ALLUVIUM (QUATERNARY)
Tv	VOLCANIC ROCKS (TERTIARY)
Td	DIORITE (TERTIARY)
	RHYOLITE (TERTIARY)
Kg	GRANITE (CRETACEOUS)
Kgp	PORPHYRITIC GRANITE (CRETACEOUS)
Pzs	SEDIMENTARY ROCKS (PALEOZOIC)
	HIGH-ANGLE FAULT
	LOW-ANGLE FAULT
	CONTACT
123-73	SAMPLE LOCALITY

ISOPLETHS--Separate areas characterized by the reported element concentrations. Number shows molybdenum content in parts per million. N, not detected; L, detected below limit of determination

Less than 2 ppm Mo
2-30 ppm Mo
50-1,500 ppm Mo

DISCUSSION

This series of geochemical maps shows the distribution and abundance of iron, copper, lead, zinc, molybdenum, silver, antimony, arsenic, tungsten, barium, potassium, and boron in the Round Mountain quadrangle, Nye County, Nevada. These maps are intended to provide help in exploration for possible concealed mineral deposits in the quadrangle.

Samples were collected from bedrock throughout the quadrangle to assess the abundance and distribution of metals and other elements that outline mineralized systems and may indicate exploration targets. The samples were collected from the most intensely mineralized rock in any given locality, and are from shear or fault zones, fractures, jasperoid bodies, veins, and altered rocks. None of the samples necessarily represents a body of rock large enough to be mined economically.

Iron-oxide stain is the most conspicuous effect of mineralization in the rocks of the quadrangle, and most of the geochemical samples were collected because of the presence of iron-oxide stain. The iron oxide is almost certainly the result largely of weathering of pyrite in mineralized rocks. Accordingly limonite pseudomorphs after cubic pyrite are widespread.

All the elements discussed were determined by the semiquantitative spectrographic method by H. G. Neiman, M. W. Solt, and J. C. Hamilton. The elements were reported in the series 1, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, and so on. Approximate lower limits of determination for the elements reported here are: Fe, 0.001 percent; K, 0.7 percent; Cu, 1 ppm (parts per million); Pb, 10 ppm; Zn, 300 ppm; Ag, 0.5 ppm; Mo, 3 ppm; Sb, 200 ppm; As, 1,000 ppm; W, 100 ppm; Ba, 2 ppm; and B, 20 ppm. Under favorable conditions greater sensitivity is attainable for some of these elements.

The isopleths of element abundance on maps in this series were arbitrarily selected. The contour intervals were chosen to show, within the limitations of the analytical data, areas of generally low (probably background and lower than normal) values, areas of probably anomalous values, and areas of highly anomalous values. I emphasize that the isopleth lines surround areas in which the collected samples show the indicated values; most rock adjacent to and between sample localities may contain much lower elemental values than do the collected samples.

Broad areas in the Round Mountain quadrangle contain no detectable molybdenum, less than 2 ppm, and represent background values of molybdenum for the types of rocks exposed. The major areas of low molybdenum are in volcanic rocks in the south part and in the northeast corner of the quadrangle, and in granite in the east-central and southeast parts of the quadrangle. However, abnormally high amounts of molybdenum in the range 2-30 ppm occur throughout the quadrangle. Areas where geochemical samples show such amounts of molybdenum are near some of the northwest-trending faults in the northeast corner of the quadrangle, peripheral to the small diorite stock east of Round Mountain, on Round Mountain hill, in the vicinity of the Oligocene rhyolite dike swarm including a broad area of a few square miles southeast of the dike swarm, in the vicinity of the screen of Ordovician schist and northwest-trending faults north of the screen near the east boundary of the quadrangle, and in a few places in the southeast corner of the quadrangle. Highest amounts of molybdenum (50-1,500 ppm) occur mostly in an elongate zone of patches that trends S. 10° E. from Round Mountain hill for about 4 mi (6 km). In the south part of the zone the molybdenum-rich samples are closely associated with north-trending faults and rhyolite dikes. Some anomalously high molybdenum occurs along the screen of Ordovician schist.

The pattern of molybdenum enrichment is broad and irregular. Several of the areas of highest molybdenum content are in the vicinity of a postulated buried intrusive south of Round Mountain. The high molybdenum along the screen of Ordovician schist may have moved upward from intrusive bodies at depth along the rhyolite dike that crops out south of the screen.

Although quite different in detail, the distributions of molybdenum and copper generally are similar. Copper may be relatively more abundant near the northeast end of the Oligocene rhyolite dike swarm and molybdenum may be relatively more abundant near the southwest end of the dike swarm. Nevertheless the molybdenum and copper probably reflect the same mineralizing system (or systems). Possibly mineralization in the vicinity of the small diorite stock east of Round Mountain was relatively rich in copper and mineralization in the vicinity of a postulated intrusive south of Round Mountain was relatively rich in molybdenum.

Several of the molybdenum-rich samples were collected from thin molybdenite-bearing quartz veins in granite that is strongly fractured, iron stained, and veined in the manner of a stockwork.

GEOCHEMICAL AND GENERALIZED GEOLOGIC MAP SHOWING DISTRIBUTION OF MOLYBDENUM IN THE ROUND MOUNTAIN QUADRANGLE, NYE COUNTY, NEVADA

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