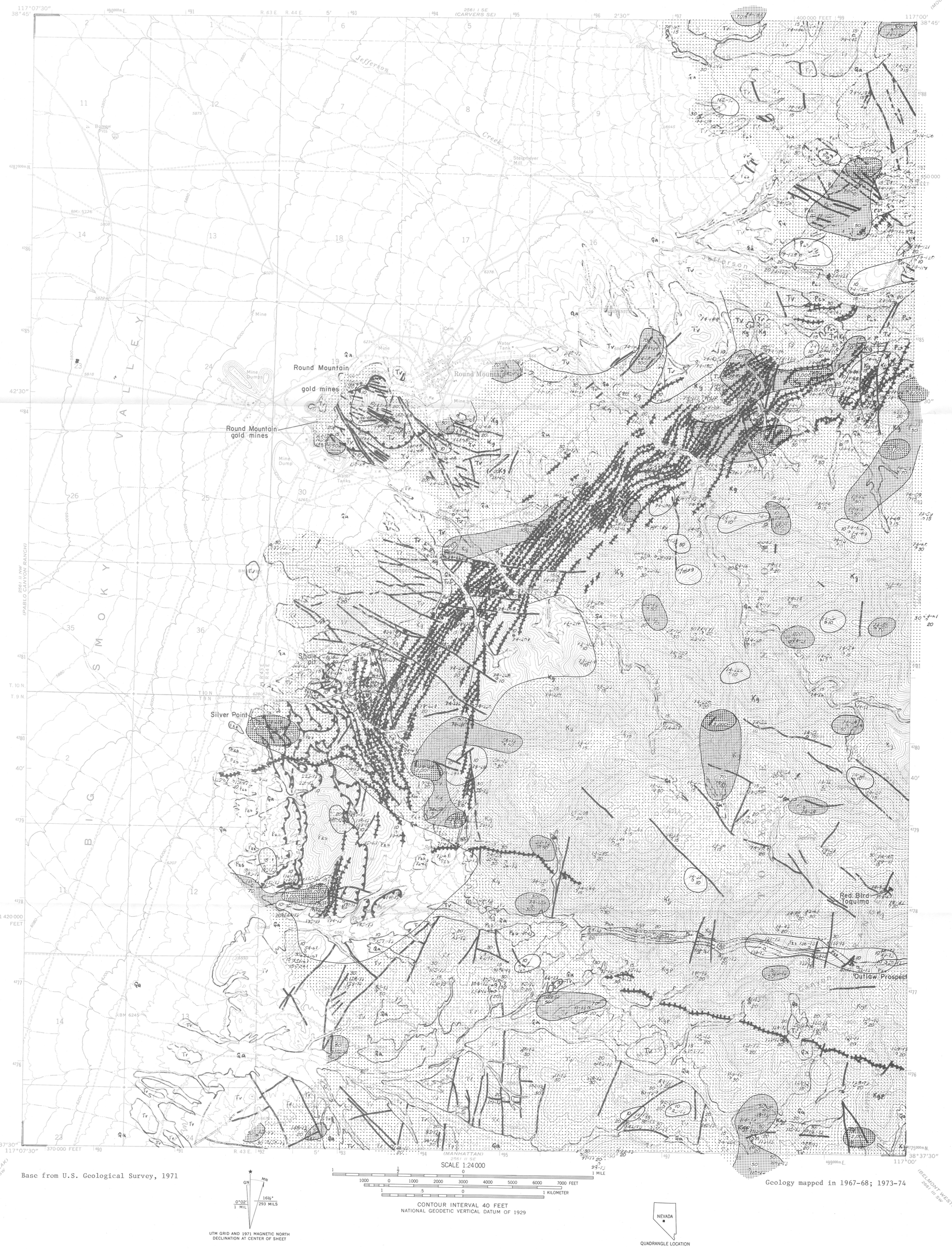
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES MAP MF-835C
Pb, 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 lead content in parts per million

- 10 and less ppm Pb
- 15-30 ppm Pb
- 50-300 ppm Pb
- 1,500->100,000 ppm Pb

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 unusually low values, 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.

Most geochemical samples collected in the quadrangle contain 15-30 ppm lead, probably a background value for the types of rocks sampled. Because of the low level of determination of lead by the semiquantitative spectrographic method it was possible to distinguish areas on the map where lead is 10 ppm or less. These areas are mainly in the vicinity of the small diorite stock east of Round Mountain, in the vicinity of a postulated buried stock south of Round Mountain, near the Oligocene rhyolite dike swarm, and along the screen of Ordovician schist in granite.

Areas where lead is anomalously high, 50-300 ppm, are widely scattered in the quadrangle. Exceptional concentrations of lead (1,500->100,000 ppm or 10 percent) are mostly adjacent to northwest-striking faults in the northeast corner of the quadrangle, adjacent to the small diorite stock east of Round Mountain, and peripheral to a postulated buried stock south of Round Mountain.

The lead distribution generally reflects that of iron and copper and probably resulted from the same intrusive-related mineralizing event that introduced iron and copper. Unusually low amounts of lead near unusually high concentrations of lead in the vicinity of intrusive centers suggests that hydrothermal solutions may have locally swept out lead from the altered rocks, and deposited it in favorable locales.

The higher concentrations of lead are comparable in amount to the higher concentrations of copper in the Round Mountain quadrangle. If the metals were deposited in a porphyry-copper system they must therefore be in a peripheral zone of the system; higher copper/lead ratios should be expected in deeper zones. Lead is anomalously low where copper is anomalously high along the screen of Ordovician schist in granite, perhaps reflecting a different type of mineralization, as at the Outlaw prospect.

Base from U.S. Geological Survey, 1971

Geology mapped in 1967-68; 1973-74

SCALE 1:24 000

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 MILE

1 KILOMETER

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

NEVADA

QUADRANGLE LOCATION

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

By
D. R. Shawe

1977

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1977

For sale by Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225