

UNITED STATES DEPARTMENT OF THE INTERIOR  
(BUREAU OF MINES)

173

MINERAL RESOURCES INVESTIGATION OF THE RYAN HILL RARE II  
FURTHER PLANNING AREA, SOCORRO COUNTY, NEW MEXICO

By  
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This open file report summarizes the results of a Bureau of Mines wilderness study and will be incorporated in a joint report with the U.S. Geological Survey. The report is preliminary and has not been edited or reviewed for conformity with the U.S. Bureau of Mines editorial standards. Work on this study was conducted by personnel from Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

## FOREWORD

The U.S. Bureau of Mines and U.S. Geological Survey jointly conduct mineral surveys of lands which in the U.S. Forest Service Second Roadless Area Review and Evaluation (RARE II) program have been designated for further planning. These evaluations are used in the RARE II program, which conforms with the Multiple-Use Sustained-Yield Act of 1960 (74 Stat. 215; 16 U.S.C. 528-531), the Forest and Rangeland Renewable Resources Planning Act of 1974 (88 Stat. 476, as amended; 16 U.S.C. 1601 note), and the National Forest Management Act of 1976 (90 Stat. 2949; 16 U.S.C. 1600 note). Reports on these surveys provide the President, Congress, the U.S. Forest Service, and the general public with information essential for determining the suitability of land for inclusion in the National Wilderness Preservation System.

This report is on the Ryan Hill RARE II Further Planning Area (3-008), New Mexico.

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AREA SOCORRO COUNTY, NEW MEXICO

By-Clarence E. Ellis and David C. Scott, U.S. Bureau of Mines

INTRODUCTION

In May 1980, the U. S. Bureau of Mines initiated a field examination of the Ryan Hill Roadless Area Review and Evaluation (RARE II) Further Planning Area. During the same month, a search for mining claim location notices was conducted at the Socorro County Courthouse. The Bureau of Mines returned in September 1980 and concluded the field examination. Field work on the project was performed by Bureau of Mines personnel Clarence Ellis, David Scott, Carl Almquist, S. Don Brown, and Stanley Korzeb.

Field studies included a reconnaissance of mines, prospects, and mineralized areas (pl. 1). A total of 194 samples were taken. Only the samples showing significant assay results are included on plate 1. All samples were fire-assayed for gold and silver and spectrographically analyzed; additional analyses were done for some samples. Results of all analyses are available upon request from the Bureau of Mines, Intermountain Field Operations Center, Denver Federal Center, Denver, Colorado 80225.

Location, size, and geographic setting

Ryan Hill RARE II Further Planning Area (fig. 1) is situated in the southeast portion of the Magdalena Mountains in Socorro County, New Mexico. The RARE II area consists of 36,640 acres entirely within the Cibola National Forest and is located about 7 miles southeast of Magdalena and 12 miles southwest of Socorro.

The Magdalena Mountains are a north-south oriented range. Most of the RARE II area is located on the east side of the range and is characterized by narrow, steep, timbered canyons. These canyons bisect the area, draining it to the east. That portion of the area on the west slope of the range is

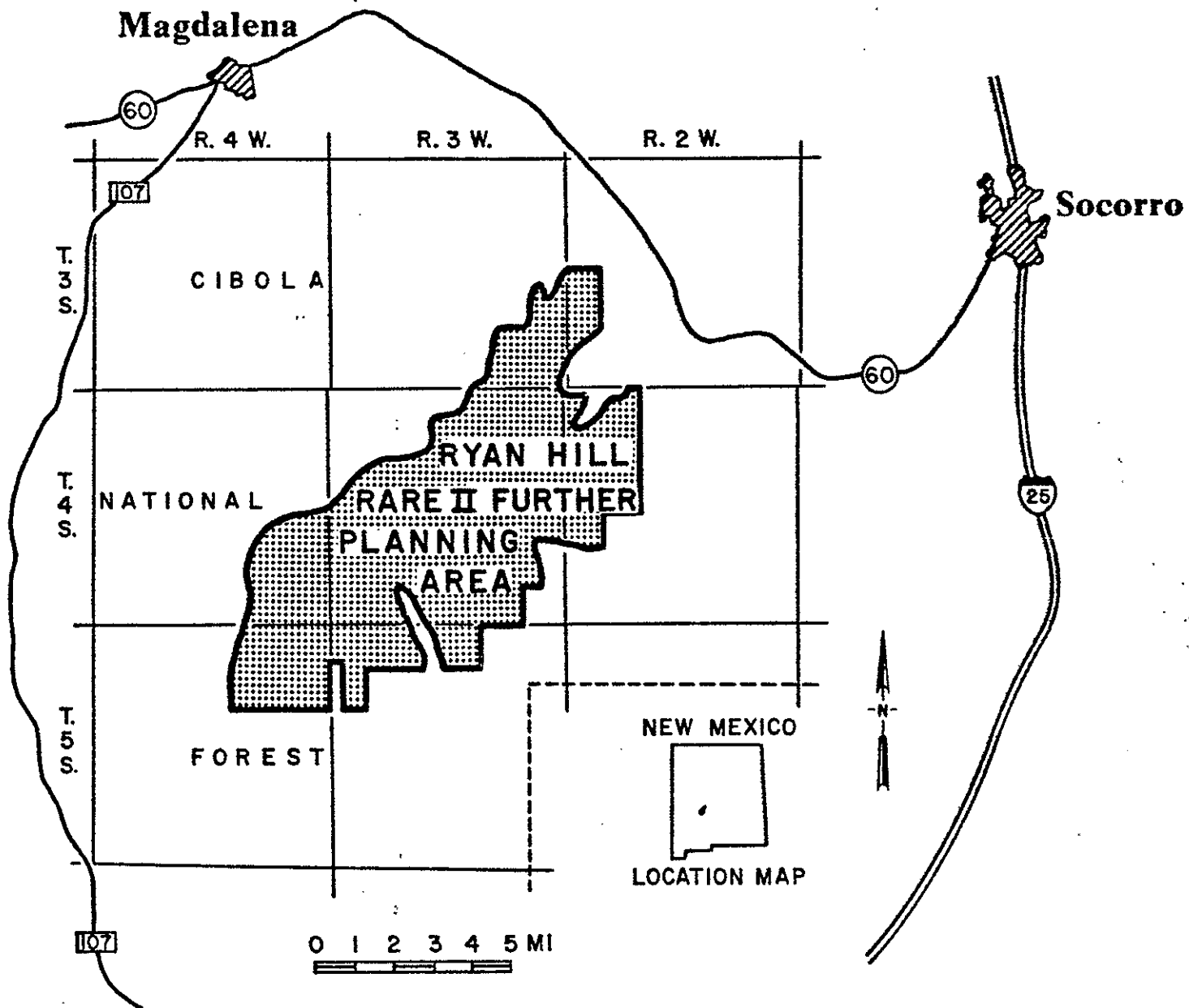


Figure 1.-Index map of the Ryan Hill RARE II Further Planning Area, Socorro County, New Mexico.

characterized by smaller canyons with westward trends. Elevations in the area range from 6,400 feet at the southwest corner of the area to 10,510 feet at Timber Peak.

Access to the north and west portions of the RARE II area is via the Water Canyon road, beginning approximately halfway between Socorro and Magdalena and ending at the Langmuir Laboratory on South Baldy mountain. From the Water Canyon road several Forest Service trails bisect the area from east to west. Three other Forest Service roads and many foot and jeep trails lead to the northwest edge of the area. Along the east side of the area, access is from Forest Service roads originating from U.S. Highway 60, between Socorro and Magdalena. Routes of access to the south portions of the area are from Interstate Highway 25 south of Socorro.

#### Mining activity

Although there is no current mining activity in the Ryan Hill RARE II Area, limited mining activity was evidenced about 2.4 miles outside the area in the northern part of the Water Canyon district. A small gold property was being worked intermittently at the head of Copper Canyon, about 2.5 miles outside the RARE II area in the Magdalena district. Courthouse records show that some mining claims have been recently located near the RARE II area.

#### MINING DISTRICTS AND MINERALIZED AREAS

Portions of two mining districts are located in and near the RARE II area (pl. 1). The Magdalena Mountains Manganese district (File and Northrop, 1966) trends north-northeast on the southeastern flank of the Magdalena Mountains and is about 8 miles long and 3 miles wide (pl. 1). The Water Canyon district (File and Northrop, 1966) is located in Water Canyon in the southern half of T. 3 S., R. 3 W. The district is about 3 miles wide and

follows the course of Water Canyon for about 4 miles (pl. 1). Located 1 mile south of the Water Canyon district is the Big Timber mineralized area (pl. 1).

#### Water Canyon District and Vicinity

Also known as the Silver Mountain district, the Water Canyon district is located on the northeast edge of the RARE II area and is drained by Water Canyon, Copper Canyon, and North Fork Canyon. Only the workings in the southeast part of the district are discussed in this report. The district is reached via the Water Canyon road, which is approximately 9 miles southeast of Magdalena on U.S. Highway 60 (pl. 1).

Prospecting in the district began in 1868, at the same time the lead-zinc mines were opened in the Magdalena district to the north (Jones, 1904). Two periods of mining occurred in the district: the first lasted until 1917; the second, from about 1929 to 1946. Sporadic activity continues today.

Although there are no patented mining claims in the part of the RARE II area in the district, two patented mining claims, the Buckeye and the Hall Lyten, are located approximately 1 mile from the RARE II area. Three unpatented claims are on the northwest edge of the area and more than two hundred claims are located within 1 mile of the area boundary. Workings on the claims consist of shafts, adits, and prospect pits, which explore a limestone-greenstone contact. A sill of andesite intrudes the greenstone, which underlies the limestone. Bureau of Mines assay results from this area show that minor amounts of gold, lead, manganese, silver, and zinc occur along this contact and in fractures in the limestone. The few workings in the RARE II area are small pits and short adits, with the same mineral occurrences.

Barite was found in a vein in a small open pit in sec. 34, T. 3 S., R. 3 W., (pl. 1). The 2- to 3-foot vein trends N 60° W away from the RARE II area and is exposed for only about 200 feet. Bureau assay results show about 1.0 percent barium present in each of the two samples, numbers 52 and 53, taken on the vein.

Although extensive exploration was done in the district, little production resulted. The Buckeye mine (pl. 1) was the major producer in the district; however, the quantity of copper ore shipped is unknown.

#### Big Timber Mineralized Area

Approximately 1 mile south of the Water Canyon district is the Big Timber mineralized area (pl. 1), where the Big Timber mine is located. Two adits and several prospect pits and trenches explore a near vertical fault zone in a rhyolite dike. Sample assay results from the area revealed trace amounts of gold, lead, silver, uranium, and zinc. A gamma-ray spectrometer was used to test for the uranium. The highest assay, 0.007 percent  $U_3O_8$ , was from sample number 21 from the upper adit. One unpatented claim in the Big Timber mineralized area lies in the RARE II area. Two patented claims and numerous unpatented claims are adjacent to this claim but are located outside the RARE II boundary.

#### Magdalena Mountains Manganese District

Located in the southeast portion of the Magdalena Mountains and parallel with the eastern side of the range is the Magdalena Mountains Manganese district. Only that part of the district in and near the RARE II area is discussed in this report.

The district was established about 1937 when three manganese claims known as the Niggerhead group were located (Farnham, 1961). Since that time, many claims have been located in a northeasterly direction along the



eastern side of the range. In 1950, a manganese occurrence was discovered on the west slope of the range in sec. 34, T. 4 S., R. 4 W. This occurrence is on the Black Goose claims and is considered part of the district. Mining in the district was sporadic from 1940 until 1959. Since that time, little activity occurred in the district.

No patented mining claims are in the district. There are, however, approximately 240 unpatented claims in the RARE II area and another 300 claims within a 2 mile radius of the area.

Known production from the district comes from several mines: Bear Canyon Bianchi, Black Eagle, Black Goose, Buena Vista, Burris, Combs and Wood, JVB, Lucky Ridge, Magnum, Manganese Chief, Manganese Queen, Niggerhead, Phillips lease, Rheinhart, and the West Niggerhead. From this group of mines, 8,171 tons of concentrates containing 34 percent manganese was produced from about 140,000 long tons of ore (Farnham, 1961). Large quantities of crushed rock used as road aggregate were produced from waste rock at some manganese mines in the district; however, tonnage figures were not available.

The Manganese Queen is geographically in the Water Canyon district, but geologically part of the Manganese district. Unlike the rest of the Manganese district, the Manganese Queen has recorded production during World War I, World War II, and the Korean conflict.

Most workings in the district are open pit. Some of the pits are several hundred feet long, exposing numerous fracture zones and faults. Manganese is associated with these faults, fracture systems, and shear zones in a rhyolite country rock. The Niggerhead mine is a typical example of one of the open pit mines where psilomelane and pyrolusite occur as thin coatings on fracture surfaces. The manganese coatings also occur around breccia fragments in shear zones and as thin seams and veinlets in the rhyolite.

High-grade manganese is generally confined to shear and breccia zones and does not persist at depth. Calcite, iron oxides, and quartz occur with the manganese. The manganese oxides are argentiferous, but this was either not recognized or not reported during the periods of production. Extensive beneficiation was required to make a saleable product from the low-grade manganese ore, and the properties were economical during war time and when the federal government had a domestic manganese ore purchase program between 1951 and 1961. Bureau assay results from this district show an average grade of 14.0 percent manganese.

#### REFERENCES

- Farnham, L. L., 1961, Manganese Deposits of New Mexico: U.S. Department of Interior, Bureau of Mines Information Circular 8030, p. 131-171.
- File, L., and Northrop, S. A., 1966, County, Township and Range Locations of New Mexico Districts: New Mexico Bureau of Mines and Mineral Resources Circular 84, p. 34-36.
- Jones, F. A., 1904, New Mexico Mines and Minerals, World's Fair edition: Santa Fe, New Mexico, The New Mexico Printing Co., p. 126.

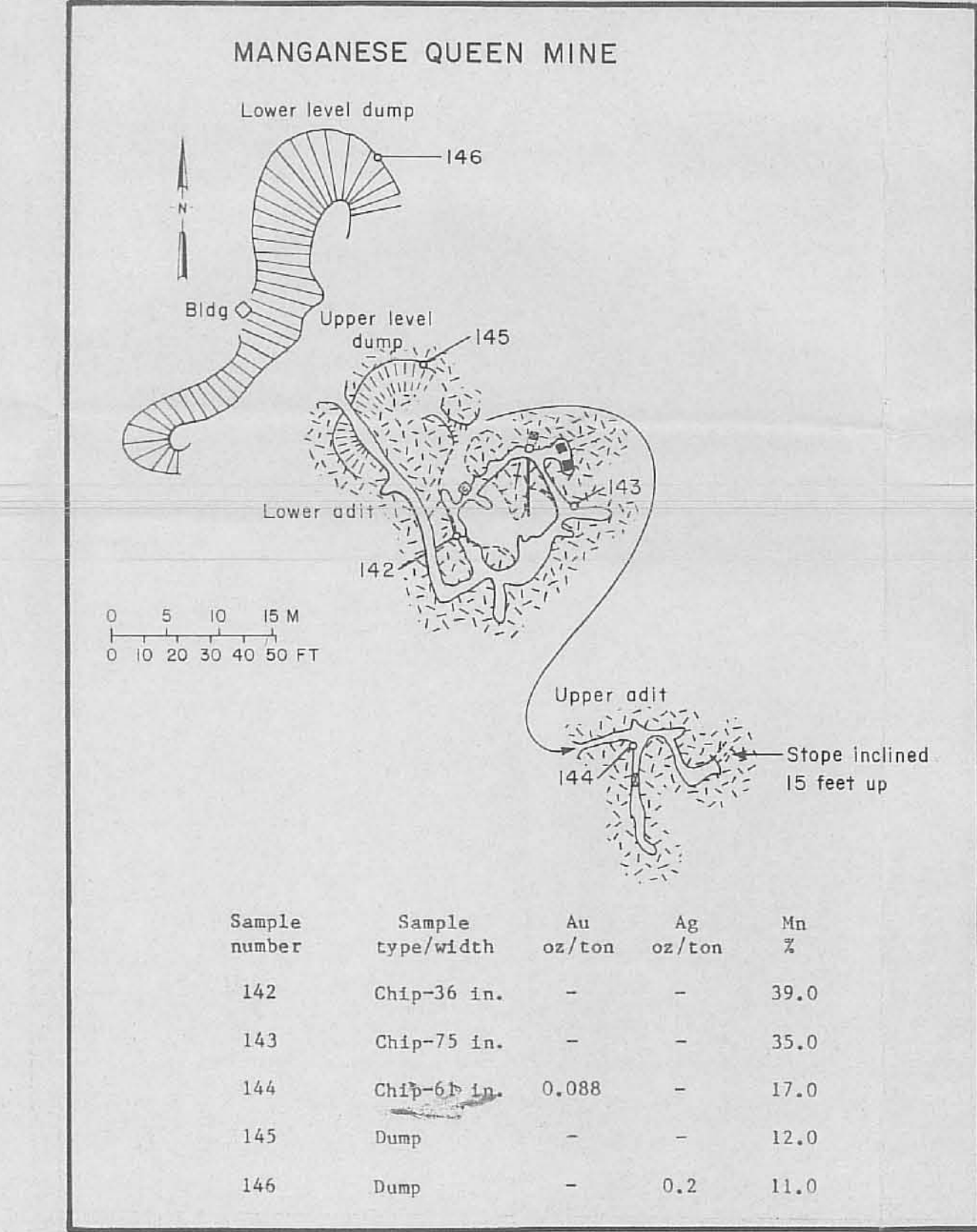
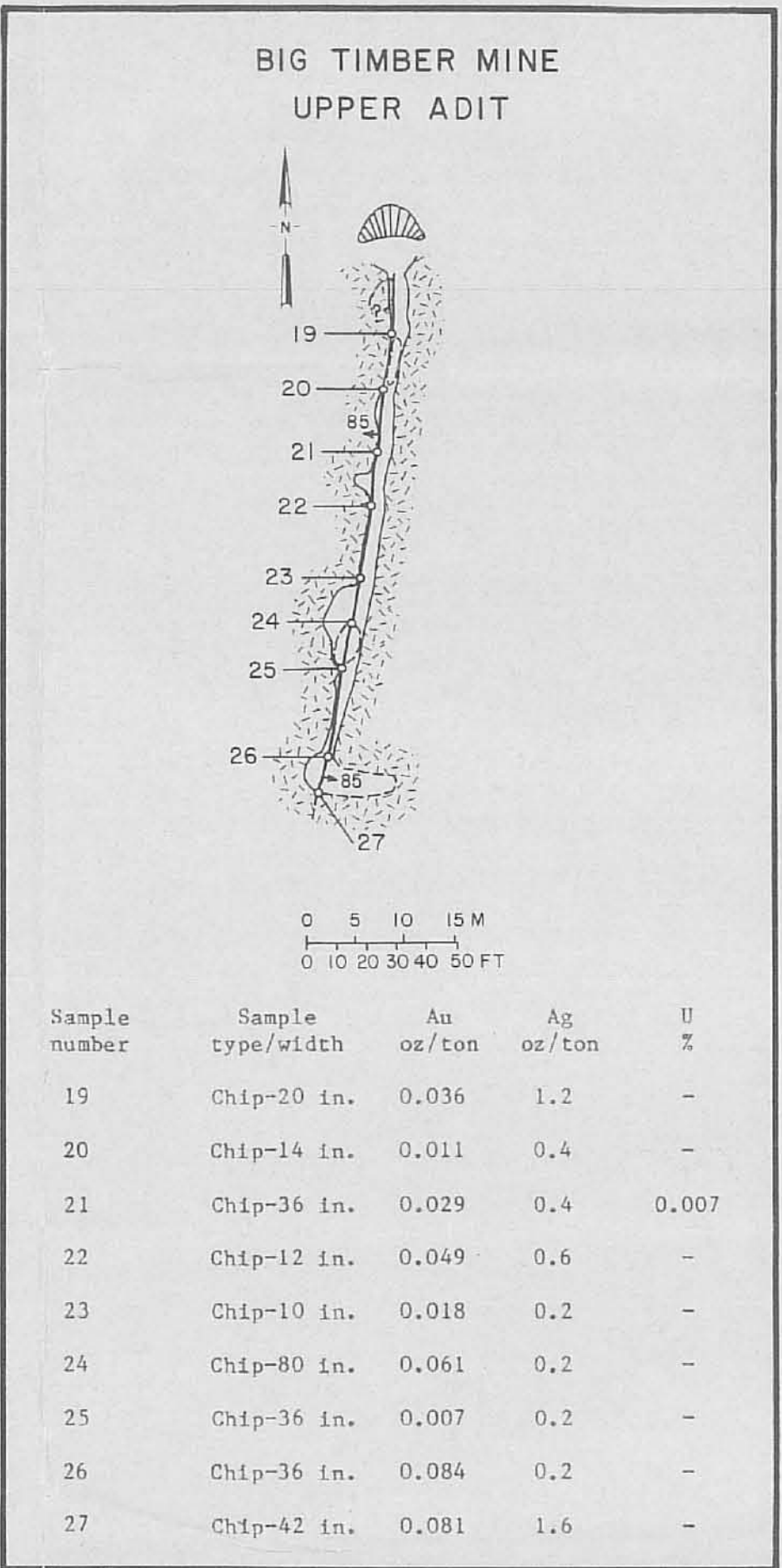
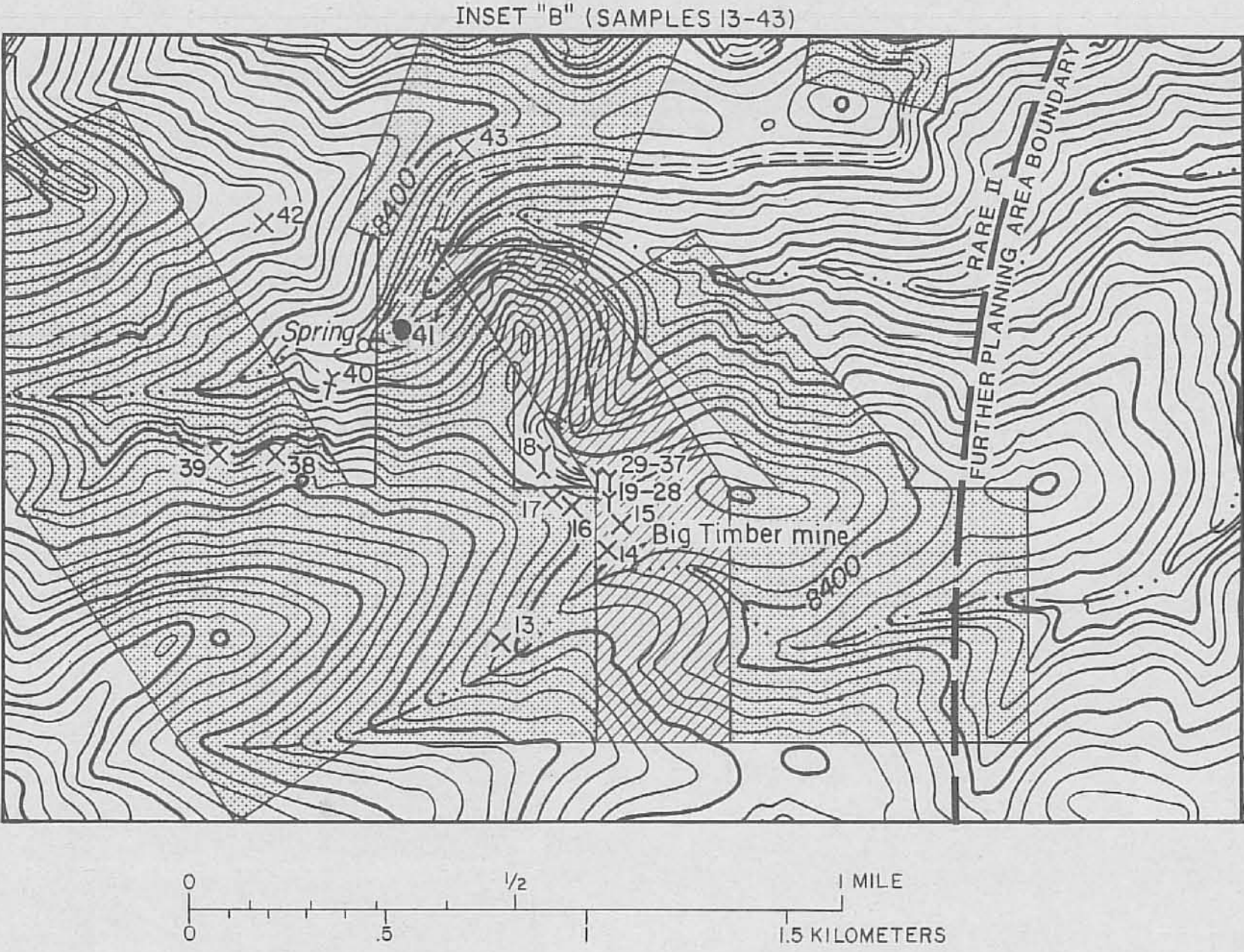
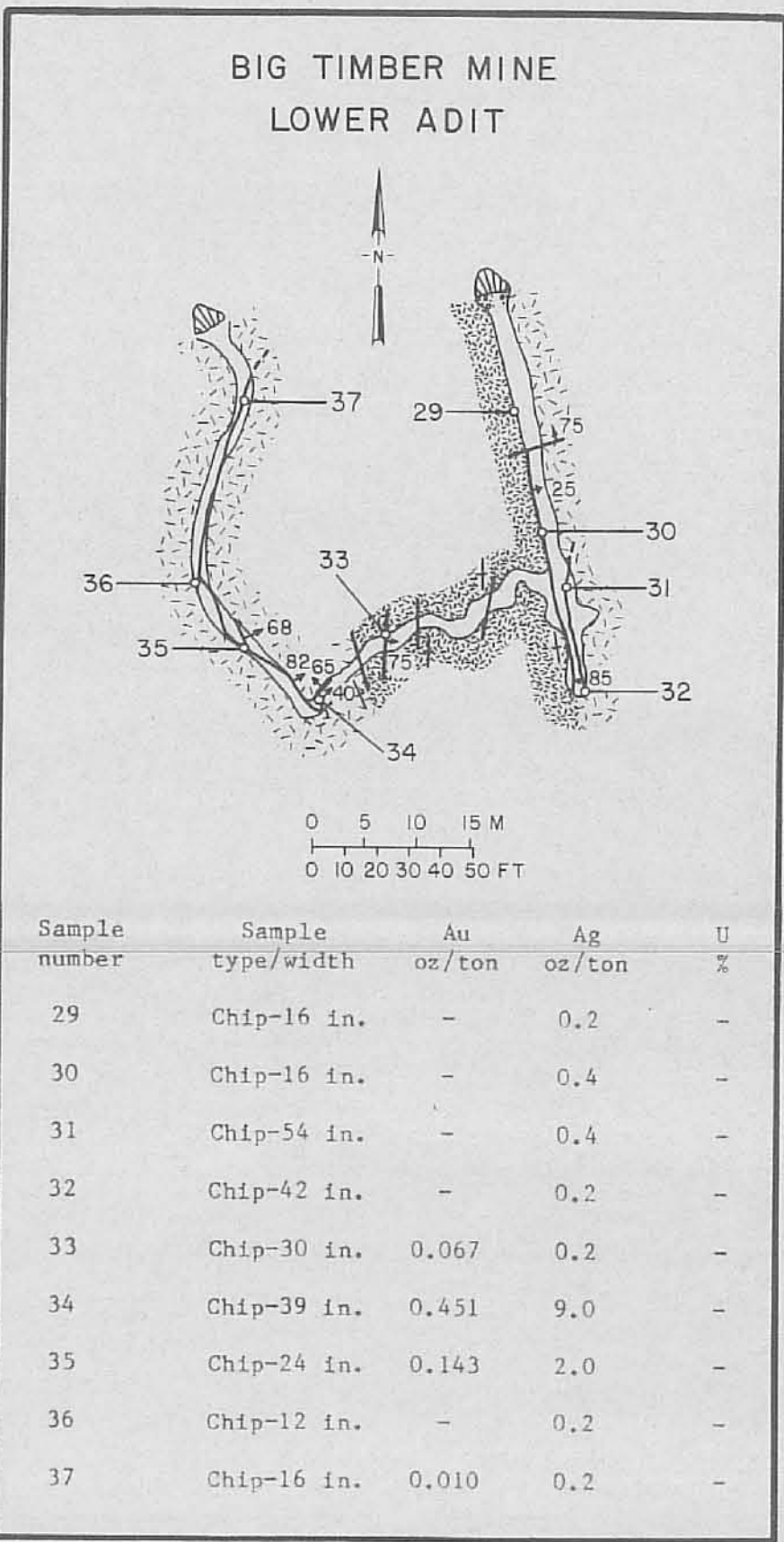
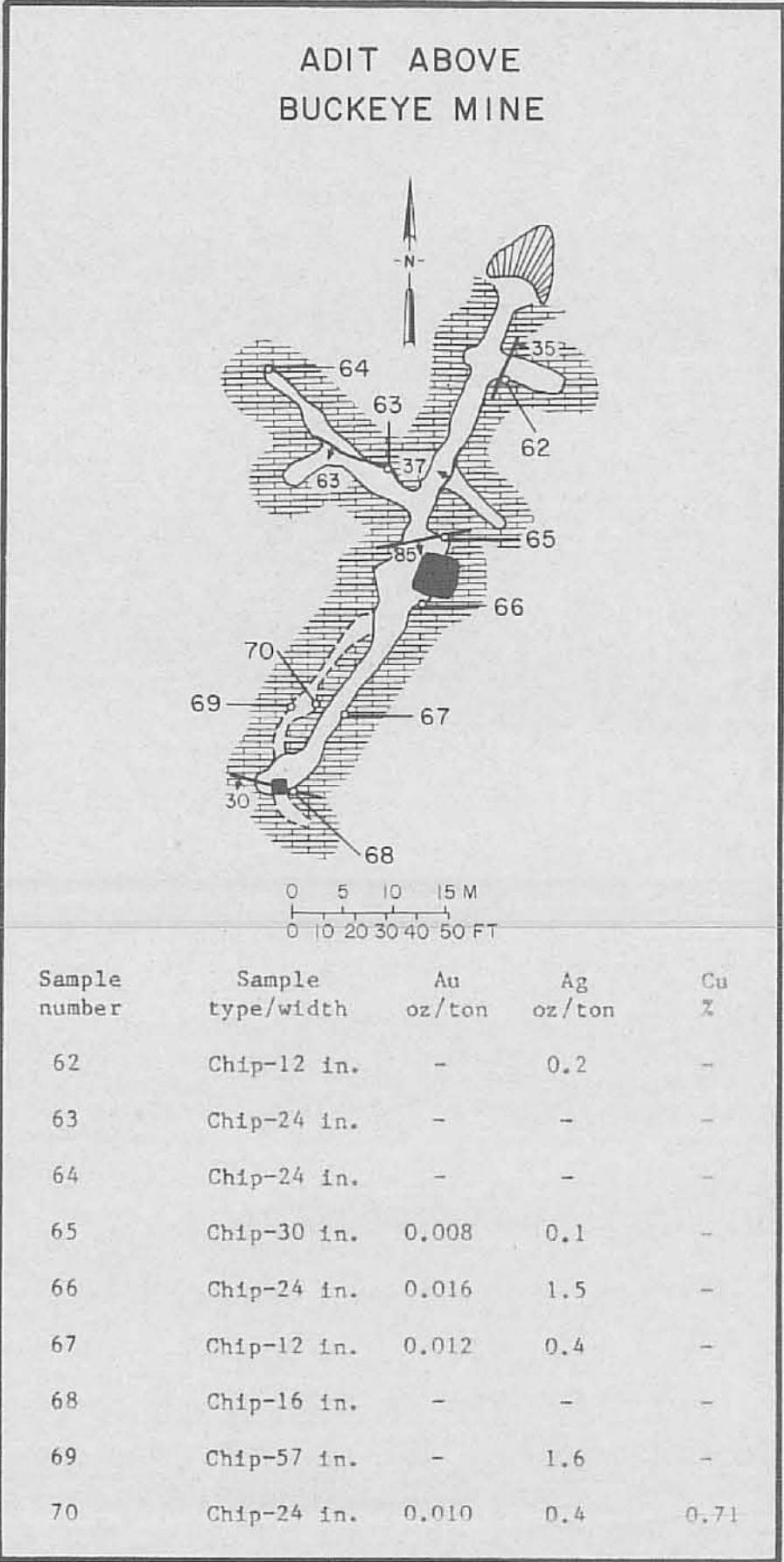
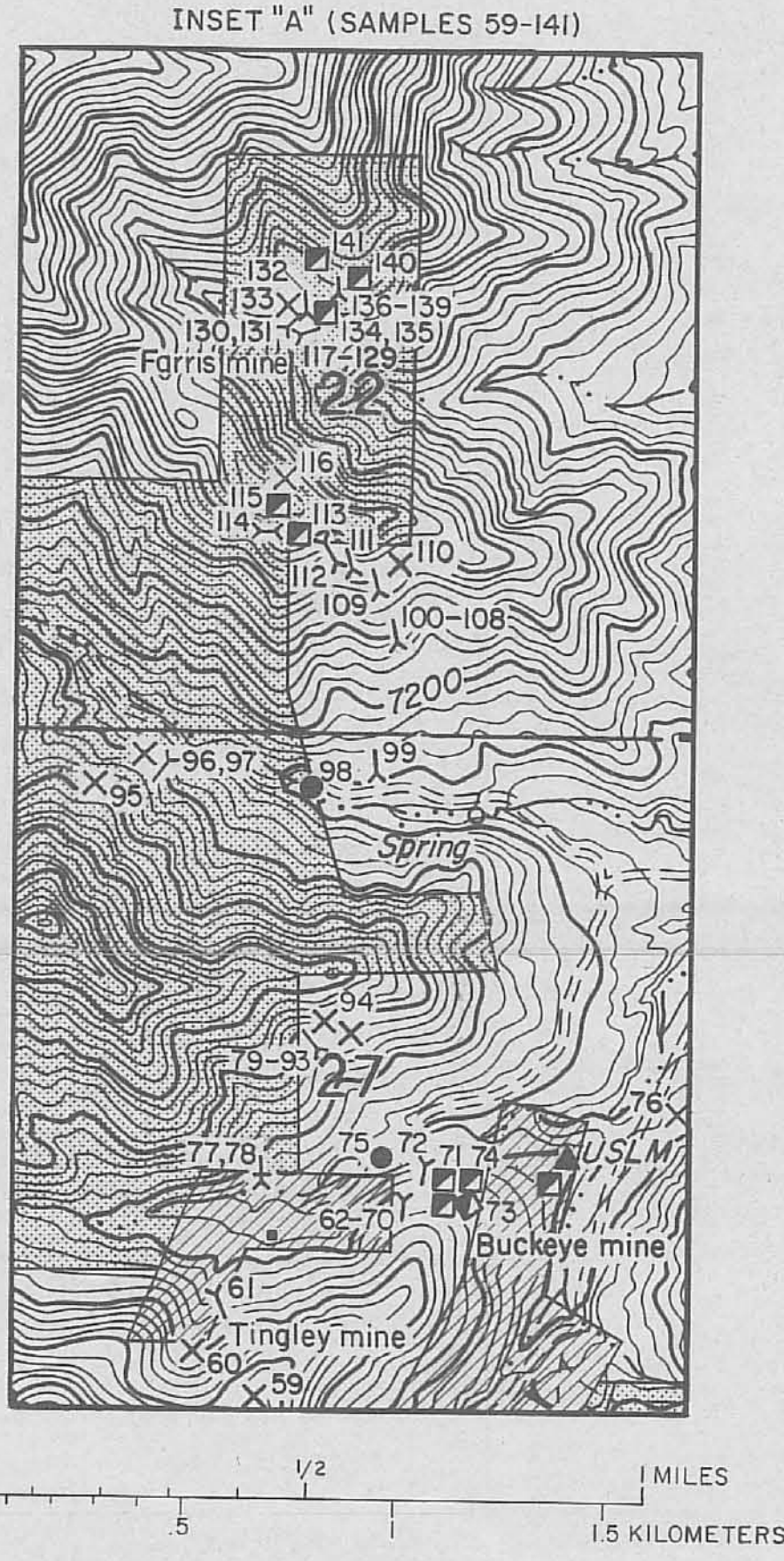
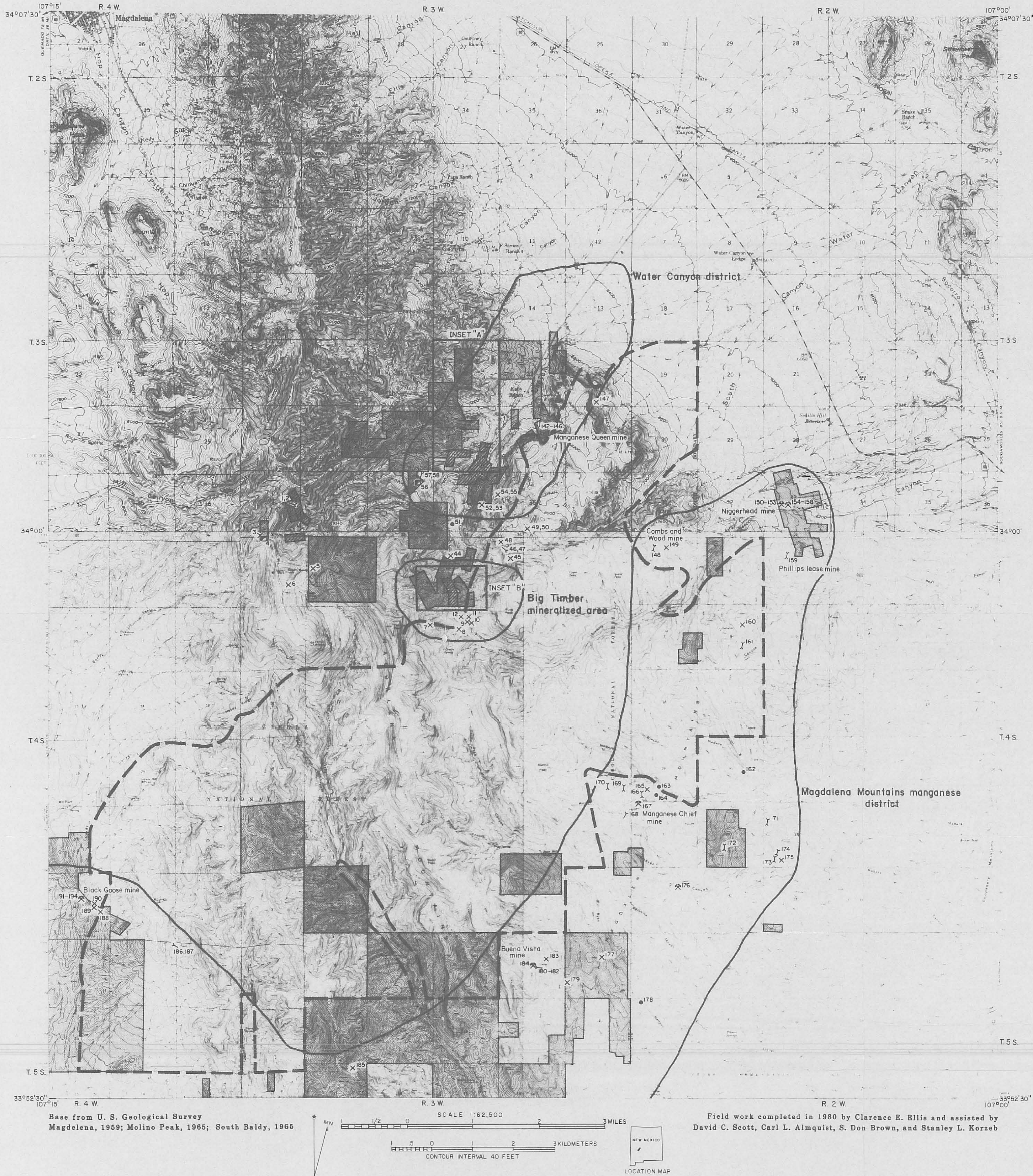


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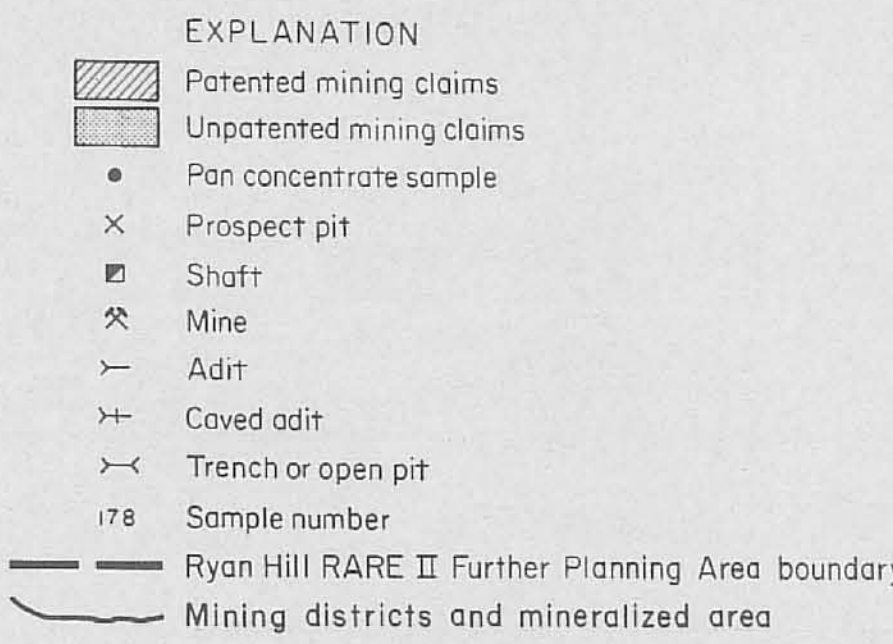
PLATE 1



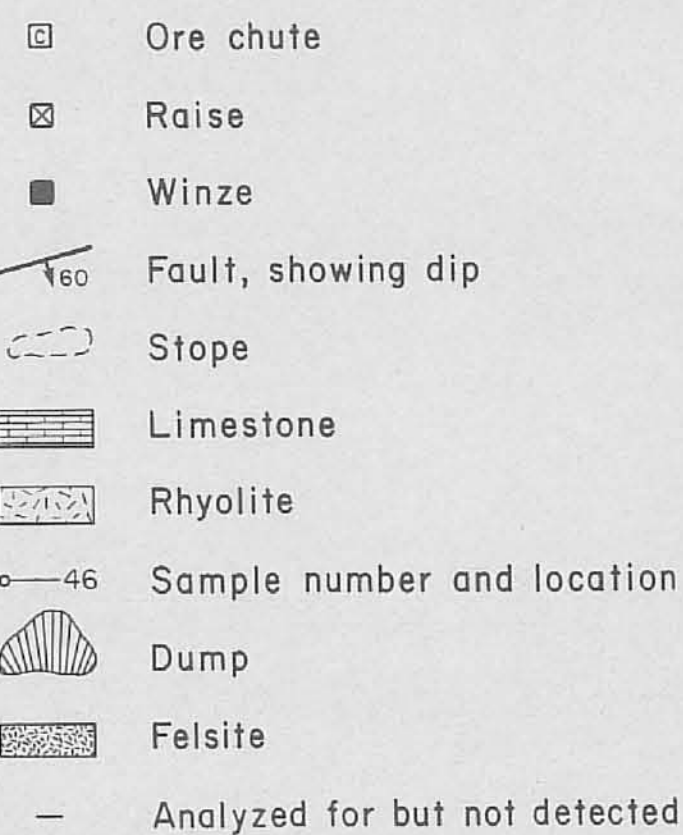
MINE AND PROSPECT MAP OF THE RYAN HILL RARE II FURTHER PLANNING AREA,  
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EXPLANATION (for mine maps)



Analysis of samples within the Ryan Hill RARE II Further Planning Area, near the Big Timber mineralized area.

Sample No.	Sample Type/Width	Au oz/ton	Ag oz/ton	Ba %	Pb %
7	Chip-18 in.	-	0.2	-	-
8	Dump	0.045	-	-	-
9	Dump	0.031	0.8	-	0.28
10	Dump	-	-	-	-
11	Dump	-	0.2	-	0.13
12	Dump	-	0.2	-	-
45	Dump	-	0.2	1.0	0.01
46	Chip-48 in.	-	0.4	0.1	-
47	Chip-24 in.	0.007	0.2	0.1	-
48	Chip-24 in.	-	0.4	1.0	0.06
49	Chip-30 in.	0.028	0.2	1.0	0.8
50	Chip-30 in.	-	0.4	-	1.0