UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

22d New Customhouse
Denver 2, Colorado

Air Mail

September 13, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 1052-I, L. H. Starkeall, applicant, De Forrest Copper Mine, Carbon County, Utah

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loan of $25,000 be denied.

The Brochure is enclosed.

Paul T. Allaman

Paul T. Allaman, Alternate

A. H. Koschmann

A. H. Koschmann

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

September 13, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: DMA Docket 1052-X, L. H. Startzell, applicant, De Forest Copper Mine, Carbon County, Utah

The application with the subject docket was for an exploration loan of $25,000.

A definite plan of the proposed work was not submitted with the application, and discussion with him by the examining engineer did not bring out a reasonable plan.

Weak mineralization, consisting mainly of malachite occurs along a north-south fissure wholly within Mississippian limestone.

There are no reserves, and as the geological probability of finding commercial ore is unfavorable, the examining engineer recommends that the loan be denied.

We concur with this recommendation.

Paul T. Allsman

Paul T. Allsman

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Date Rec'd.
SEP 13 1951
BUREAU OF MINES
Denver, Colorado

September 11, 1951

1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

Memorandum

To: Paul T. Allsman, Chief, Mining Division, Region IV

From: Chief, Utah-Wyoming Branch, Mining Division

Subject: DMA 1052-X, L. H. Startzell, De Forest Mine, Carbon County, Wyoming

Enclosed are 8 copies of the subject report with a section on Summary, Conclusions and Recommendations. The Survey did not participate in the examination of the property, thus the report includes both the engineering and geologic data.

The original brochure is also attached.

Stephen R. Wilson

Stephen R. Wilson

Enc. 2

DE FOREST MINE
CARBON COUNTY, WYO.

Engineering and Geologic Report

By M. H. Howes and R. L. Middleton
Mining engineers
U. S. Bureau of Mines

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By M. H. Howes and R. L. Middleton

The De Forest property was examined by Bureau of Mines engineers during August 1951 to evaluate a DMA loan proposal.

Copper mineralization was observed in a north-south fissure zone in Mississippian limestone. Underground workings are inaccessible and the exact horizon from which scattered dump ores were mined is not known. No ore reserves are present.

It is concluded that copper occurrence on the De Forest property is not sufficiently promising to warrant expenditure of funds for exploration. It is recommended that the application be denied.

DE FOREST MINE
CARBON COUNTY, WYO.

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ILLUSTRATIONS

Fig. 1 Location map, De Forest mine, Carbon County, Wyo.

INTRODUCTION

A preliminary examination of the De Forest mining property was made by M. H. Howes and R. L. Middleton, engineers for the Bureau of Mines, on August 3, 1951. The field examination was made regarding DMA Docket 1052-X. The engineers were accompanied to the property by L. H. Startzell, mine owner, and L. F. Bechans. Mr. Startzell resides at 114 E. Buffalo Street, Rawlins, Wyo.

LOCATION AND PHYSICAL FEATURES

The De Forest mine is on the south slopes of the Freezeout Mountains in the north-central part of Carbon County, Wyo. The specific location is sec. 24, T. 25 N., R. 82 W., N.M.P.M., 28 miles north of Hanna, Wyo. (fig. 1).

The mine area is one of moderate relief with altitudes ranging from 7,500 to 8,500 feet. Erosion has exposed pre-Cambrian granite in a rather flat plateau manner, while the bordering younger-bedded sedimentary deposits stand out in typical rim rock topography.

HISTORY AND PRODUCTION

The De Forest group of nine lode mining claims was first located in 1901 by L. H. Startzell and five partners. During the next 3 years, various phases of mining were done. It is reported that an inclined shaft was sunk 300 feet and an adit driven 500 feet. Both of these workings are badly caved and are not accessible. During the period 1901 to 1903, Mr. Startzell states that approximately 100 tons of

copper ore was shipped to the Argo smelter at Denver, Colo. All of this production came from the inclined shaft. From 1904 to 1951, the property was abandoned, and up to the time of the examination, no work had been done during 1951.

OWNERSHIP AND EXTENT

The De Forest group consists of nine unpatented lode mining claims and was relocated by L. H. Startzell in the spring of 1951.

DESCRIPTION OF DEPOSITS

The major structural feature of the area is the Pathfinder uplift which strikes N. 55° W. and forms the axis of the Freezeout Mountains.[1/] The De Forest mine is on the south slopes of the Freezeout Mountains, and in the area of the mine erosion has exposed pre-Cambrian granite and two of the younger adjacent sedimentary formations.

The granite is unmetamorphosed at its contact with the Cambrian quartzite and this indicates a significant erosional period before deposition of the original sandstone. The sandstone was later metamorphosed to quartzite. The Cambrian quartzite and earlier granite do not show copper mineralization. Madison limestone of Mississippian age unconformably overlies the quartzite. It is in this limestone the copper mineralization occurs.

1/ Lovering, T. S. "The Rawlins, Shirley, and Seminoe Iron-Ore Deposits, Carbon County, Wyo." U. S. Geol. Survey Bulletin 811-D.

The De Forest copper deposit occurs along a north-south fissure whose outcrop is wholly within Mississippian limestone. Determination of the type of mineralization is difficult because no mineralization is discernible in place. Approximately one ton of malachite-bearing ore is scattered at the collar of an inclined shaft. This ore has been exposed to weathering since 1904 and undoubtedly has been altered. A sample of the high-grade portion of this ore assayed 23.4 percent copper.

A 35° inclined shaft reportedly was sunk 300 feet across the bedding of Mississippian limestone. Pockets of copper ore were mined here and there along the incline. Mr. Startzell, who assisted in mining the 100 tons of ore, does not remember if the ore was found at a definite horizon. Slickensides on limestone in the shaft dump indicate that the shaft probably followed a fault fissure. The shaft is badly caved and wall rocks were observed only to a depth of 8 to 10 feet below the ground level. Limestone walls are shattered, and etched lines and pitting indicate the limestone is partially soluble.

An adit reportedly was driven 500 feet in a westerly direction from a point east of the shaft and at an elevation of about 250 feet below the shaft collar. The adit was located to intersect the downward projection of the shaft. The shaft was not intersected and no cross-cuts were driven to locate it. The adit is caved and examination of dump material confirms Mr. Startzell's statement that the limestone-

quartzite contact was reached. No copper mineralization was found in driving the adit.

A north-south zone of shattering observed at the collar of the shaft appears to align with trenches excavated 1,000 feet to the south. Near these trenches a small amount of malachite was seen scattered through the excavated material. No malachite float or shattering of the limestone was seen between the shaft and trenches.

MINABLE ORE RESERVES

There are no minable ore reserves on the De Forest group of claims.

PRESENT STATUS

There are no mine workings which would contribute to an exploratory program.

Mr. Startzell has sufficient small tools, two 1-ton ore cars, hand forge, rail, and pipe for a small operation. This equipment is not on the property, but is stored at Rawlins. There are no buildings or other facilities on the property.

PROJECT PROPOSALS

Mr. Startzell has no definite plan for exploration. A review of the brochure indicates he had no plan at the time of application for a Government loan, and a talk with him after the field examination did not bring out a reasonable plan. He proposes to surface drill

and blast along the fissure outcrop and expose any copper mineralization.

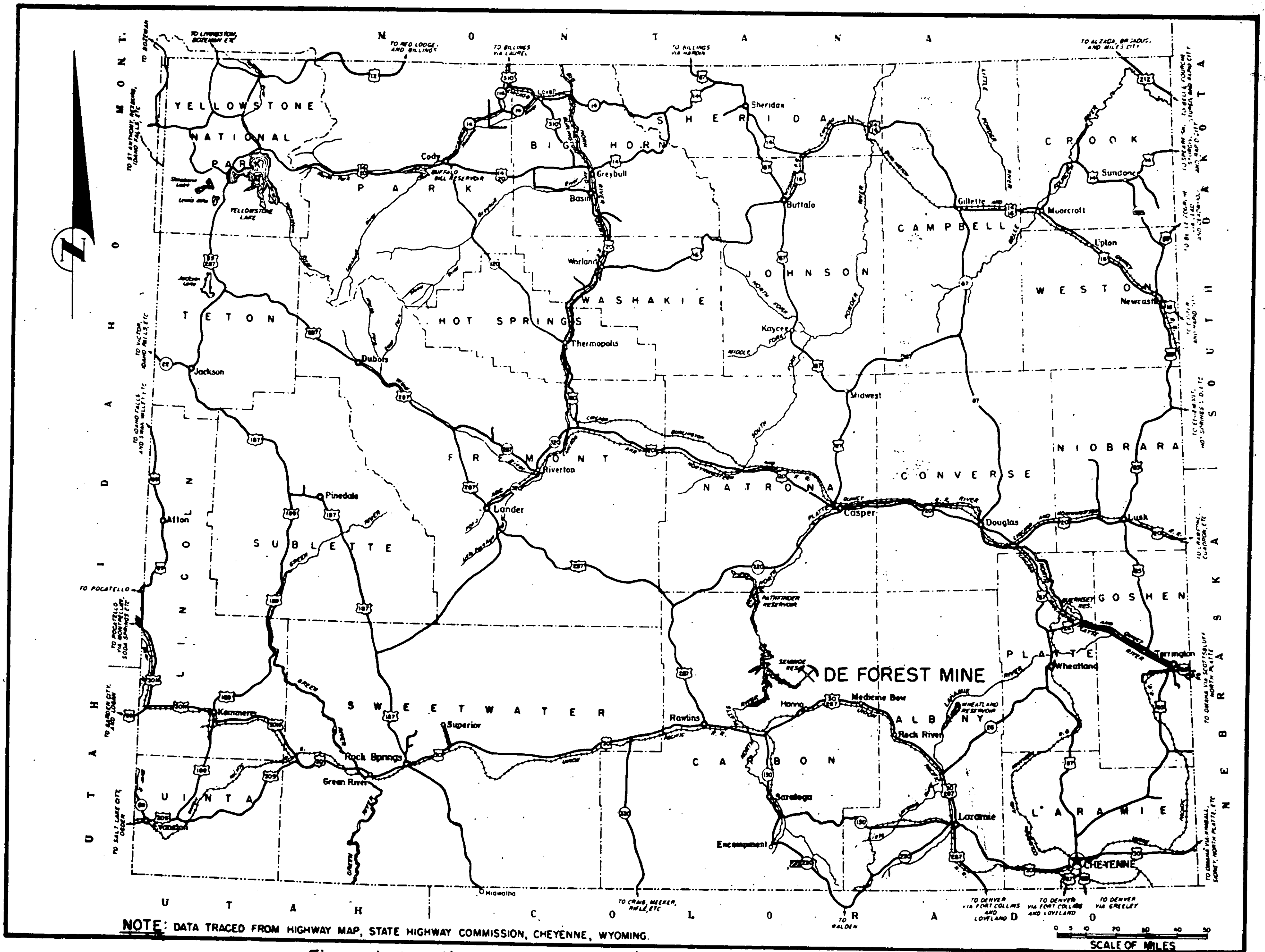
Mr. Startzell is not financially able to contribute any cash to match the requested $25,000 Government participation loan. Except for hand tools and drill steel, he has no equipment which would have a rental value for use in his proposed exploratory plan.

CONCLUSIONS

Field examination disclosed insufficient mineralization along a weak north-south fissure to indicate anything more than a pocket occurrence of copper ores. Lack of igneous intrusions in the immediate area, which are later than the limestone, is unfavorable. There are no gossan cappings or gossan float, hence no reason to anticipate secondary copper enrichment. The applicant is under the impression the DMA program is a means of obtaining a "grubstake."

RECOMMENDATIONS

The field examiners recommend that funds be denied for exploration of this deposit.



NOTE: DATA TRACED FROM HIGHWAY MAP, STATE HIGHWAY COMMISSION, CHEYENNE, WYOMING.

Figure I. Location map, De Forest Mine, Carbon County, Wyoming.

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