UNITED STATES
DEPARTMENT OF THE INTERIOR
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DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

DMEA 4202

VIRGAN ALTON-LEAD CORPORATION

William Frank Brown

Gunnison and Saguache Counties, Colorado

Premium

Joint Engineering and Geologic Report

By

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DMEA 4203

# VULCAN SILVER-LEAD CORPORATION
# WILLOW CREEK GROUP
# GUNNISON AND SAGUACHE COUNTIES, COLORADO

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## CONTENTS


| Joint Engineering and Geologic Report | Page |
|---|---|
| Summary | 1 |
| Introduction | 1 |
| Acknowledgments | 2 |
| Location and accessibility | 2 |
| Property | 3 |
| History and production | 3 |
| Sampling and ore estimates | 4 |
| Present status | 4 |
| Geology | 5 |
| Applicant's proposed program | 6 |
| Conclusions and recommendations | 7 |


## ILLUSTRATIONS


| Figure | Follows Page |
|---|---|
| 1. Location map, Willow Creek Group, Gunnison and Saguache Counties, Colo., DMEA 4203 | 3 |
| 2. Geologic Map of the Data area, Willow Creek group, Saguache County, Colorado, DMEA 4203 | 6 |

DMEA 4303
Vulcan Silver-Lead Corporation
Willow Creek Group
Gunnison and Saguache Counties, Colorado

## SUMMARY

Vulcan Silver-Lead Corporation, 100 Park Avenue, New York, N. Y., has applied for a loan to assist in carrying out a $112,425.39 program, DMEA docket 4303, to drill for uranium at Willow Creek in Saguache and Gunnison counties, Colorado. Drilling would consist of six holes averaging about 500 feet each plus an additional 10,000 feet if results from the six holes warranted such additional drilling. The company proposes to explore the Salt Wash member of the Morrison formation in the vicinity of several poorly defined faults.

The closest known uranium ore body is at the Los Ochoa mine about 12 miles to the east.

Because of the lack of any known uranium mineralization in the Salt Wash in the Willow Creek area, the absence of any identifiable uranium minerals along the supposedly favorable fault zones, and the impossibility of locating the faults with present exposures closer than several hundred feet, it is recommended that the application be denied without prejudice.

## INTRODUCTION

The applicant, Vulcan Silver-Lead Corporation, requested DMEA assistance to prospect for uranium on the Willow Creek group. An examination was made of the property from the air and at the property on May 8, 1956. The DMEA examining team was comprised of Frank B. Moore, Geological Survey, and Edward V. Beal, Bureau of Mines. Accompanying the team members were Messrs. James E. Dunn, Arthur Baker III, and R. J. Flynn, respectively, manager, chief geologist,

and field supervisor of the Gunnison Field Office of Tulsam-Silver-Lead Corporation, 100 Park Avenue, New York 17, N. Y.

Conditions permitted an adequate examination of the general area both from the ground and air. The workings were sufficiently exposed for viewing the salient geological features of the area.

An aerial reconnaissance did not disclose any further information than could be obtained on the property.

## ACKNOWLEDGMENTS

Geologic mapping covering the area proposed for exploration consists of reconnaissance mapping of the San Juan region of southwestern Colorado by Whitman Cross and Roger S. Larson (U. S. G. S. Bull. 843, 1935) and the mapping done by the company geologist, Arthur Baker, III. Much of the geologic data in this report were taken from the report and maps furnished by Baker in the application for a loan. Baker's report seems to be well prepared though admittedly done on a minimum of information. The company officials were straightforward and apparently made no claims that could not be substantiated. However, their basic assumption of the similarity of Willow Creek to the Los Cubas ore body 12 miles away which leads them to suspect a similar ore body here, is believed to be somewhat over-optimistic.

Richard Rosburger of the Atomic Energy Commission was contacted regarding the property and he concurs with the writers' opinion that there is essentially no evidence to indicate the presence of an ore body.

## LOCATION AND ACCESSIBILITY

The Willow Creek group is at the headwaters of Willow, Corral, and South Beaver Creeks which are a few miles (less than 10) east of Powderhorn and south of Lake, Colorado. The claims are in secs. 2, 3, 4, 5 and 6, T. 46 N., R. 1 W., and secs. 31, 32, 33, 34, and 35, T. 47 N., R. 1 W.,

N.M.P.M., Gunnison and Saguache counties, Colorado (Fig. 1).

The property can be reached from Kitkarra, a hamlet alongside U. S. Highway 50 and less than 2 miles east of Iola. From Kitkarra the Willow Creek county road is followed for about 8 miles to the Vulcan mine road that leads along Gamp Creek. At the Vulcan mine and townsite a road turns east toward Barrel Creek. This road is traveled for about 4 miles before joining several minor roads that pass throughout the Willow Creek group.

## PROPERTY

The Willow Creek group is composed of several groups of claims referred to as the Star, Beta, Kitkarra, Blizzard, Victor, and Afterthought groups, as well as the Major and Carta Blanca claims. These claims total 149 of which 31 were not included in the application (DMEA Docket 4203).

All of the groups are owned by Vulcan Silver-Lead Corporation of 100 Park Avenue, New York 17, N. Y., except for the Star group (9 claims) and the Beta group (4 claims) which are held by the Gallatin Zinc-Lead Company, the parent company. Vulcan Silver-Lead Corporation holds a lease agreement with Gallatin Zinc-Lead Company on the Beta and Star groups.

Patented surface rights to the claims included under the Willow Creek group are held by L. H. Knock; Summers, Summers, and Mudrager; and the Pandorhorn Stock Association.

## HISTORY AND PRODUCTION

It is believed that the Willow Creek group was located in 1953, or shortly thereafter, following the discovery of radioactive anomalies in the Willow Creek area. Vulcan Silver-Lead Corporation has conducted geological mapping and reconnaissance, made radiometric and claim surveys, acquired mining claims, and performed superficial prospect trenching and road building.

To date there have been no uranium ore minerals detected on the property; hence, there has been no production.

## SAMPLING AND ORE ESTIMATES

Samples taken by the applicant from bulldozer trenches on the Beta No. 1 claims gave the following:

| Sample No. | Description | % $U_3O_8$ | % $V_2O_5$ |
|---|---|---|---|
| 30 | Specimen containing green fluorescent chalcedony (plus or minus 10% of the sample is chalcedony) | 0.04 | 0.032 |
| 71 | Specimen containing green fluorescent chalcedony (plus or minus 25% of the sample is chalcedony). | 0.05 | 0.079 |

A grab sample taken of representative material by the DMEA examining team showed on assay returns as follows:

| Sample No. | Description | % $U_3O_8$ |
|---|---|---|
| KB-6 | Silicified siltstone with chalcedony | 0.003 |

The present exposures on the Willow Creek group do not display any conspicuous uranium ore minerals, nor evidence of any probable existence of them; hence, the property contains no known ore reserves.

## PRESENT STATUS

The Willow Creek group has been principally developed by several shallow bulldozer trenches in the Beta (claims) area. Some work preparatory to drilling, in the form of roads, drill sites, and a reservoir, has been performed.

The company plans to drill a number of shallow holes less than 100 feet deep to better define the structure of the Beta and Willow fault intersection. This work is expected to begin about May 15, 1956.

## GEOLOGY

Rock units exposed at the Willow Creek group of claims include Precambrian granite, Jurassic Morrison formation, Cretaceous Dakota formation, and Tertiary volcanics. The Morrison consists of a lower Salt Wash member, which rests on the granite, and an upper Brushy Basin member. Tertiary volcanics lie a mile to the east of the area proposed for exploration (Beta area) and, as they have no relationship to the problem other than to help indicate movement along a fault, are not discussed further. Most of the area is covered with overburden and rock exposures are generally poor. The stratigraphic section is given below.

| | Estimated Thickness |
|---|---|
| Cretaceous | |
| Dakota formation<br>Coarse sandstone with conglomerate near the base | 80 feet |
| Jurassic | |
| Morrison formation | |
| Brushy Basin member<br>Red siltstone, probably some shale. No outcrops in the area | 210 feet |
| Salt Wash member<br>Coarse sandstone, no known shale partings; forms but few outcrops | 40 feet |
| Precambrian granite | — |

The Beta area appears to be on the south flank of a broad, poorly defined anticline; the beds dip about 12° south or southeast although higher dips are reported. Two sets of faults, an east-striking set and a northeast-striking set are reported by the applicant to displace the sedimentary rocks, but this fact could not be checked in the field; because of the heavy overburden, the positions of the faults could not be determined within several hundred feet. The Beta fault, exposed in a trench near the inferred intersection with the Hiawatha fault, cannot be found along the

apparent strike in a trench less than 300 feet away. Of the faults, only the Willow, Bata, and Blizzard are important here. The Willow and the Blizzard trend about east and, with the northeast trending Bata fault, form a "Y" pattern (fig. 2).

No uranium minerals have been identified in the Bata area. Anomalous radioactivity of three to four times background occurs in five rather broad areas 1 to several thousand feet long and several hundred to a thousand feet wide, owing from a silicified siltstone in the Brushy Basin member. The anomalous radioactivity of three of the five areas may be related to faults or fault intersections. However, where the Bata fault is exposed in a trench, radioactivity is lower in the fault than in a 30-foot wide sheared zone adjacent to it. A small lens about 6 feet long by 6 inches wide in the sheared zone contains stringers of chalcedony and small masses of limonite which is slightly more radioactive than the silicified siltstone. Two samples, chosen for their chalcedony content, assayed 0.032 percent and 0.079 percent $U_3O_8$.

## APPLICANT'S PROPOSED PROGRAM

The applicant requested exploration assistance for $112,425.39 of which the Government's participation would be 75 percent or $84,319.04. The exploration program was to be completed within 19 months, including suspension of operations during the winter months.

The applicant proposed a diamond drilling program to be performed in two stages. Stage I would consist of six drill holes (Ax) totaling approximately 3,000 feet. Three of these holes would be near the projected intersection of the Blizzard and Bata faults. The locations of the other three holes would be on the purported intersection of the Bata and Willow faults. Stage II called for 10,000 feet of additional diamond drilling contingent upon the results of the drilling performed under Stage I. Location of drilling and planning of the work under Stage II would have been subject

to DMEA approval.

## CONCLUSIONS AND RECOMMENDATIONS

The Tulsam Silver-Lead Corporation proposes to drill three 450-foot holes to test the inferred intersection of the Beta and Blizzard faults and three of similar depth to test the purported intersection of the Beta and Willow faults. Both sets of holes are located to reach the fault intersection in the Salt Wash member of the Morrison formation. As no uranium mineralization has been shown in the Salt Wash in the vicinity of the Beta claims, as no uranium minerals can be seen in the Brushy Basin member, and as the locations of the faults are not well known, the evidence is insufficient to justify a program which is more in the nature of prospecting than exploration.

Because of reasons given above, the examining team recommends that the Tulsam Silver-Lead Corporation's application for a loan to drill for uranium on the Beta group of claims be denied without prejudice.