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

224 New Customhouse
Denver 2, Colorado

March 13, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration.
Attention: Code 210

From: Field Team, Region IV

Subject: DMA Docket 2085, Rock King Lode, Turret Mining District, Chaffee County, Colorado - Final Report

Enclosed are the original and threecopies of the final report on DMA Docket 2085, the original and one copy of DMA Form 3b, and a copy of the letter of denial to the applicant.

J. H. East, Jr.

A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 21 1952

Mining Division
Region IV

March 13, 1952

Memorandum

To: Field Team, DMEA, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: DMA Docket 2885, Black King Lode, Turret Mining District, Chaffee County, Colorado

Enclosed are eight copies of the report by G. E. Rarrer, Mining Engineer, covering the Black King Lode.

Due to the small size of the deposit and the low, erratic mineral content of the repositin, we agree with the recommendation of the examining engineer that the application for exploration be in the amount of $5,000.00 be denied.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 21 1952

Reviewed by
DMEA OPERATING COMMITTEE
3-24-52
JB (date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
March 7, 1952

Memorandum

To: Acting Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 2085, Rock King Lode, Turret Mining District, Chaffee County, Colorado

Please find enclosed eight copies of the "Summary, Conclusions, and Recommendations" by C. M. Harrer and W. B. Meek, and eight copies of Harrer's engineering report on the above docket.

The examiners conclude the minable ore reserves, confined to two of three pegmatites exposed on the property, totaling 42,200 tons of material, contain 12,660 tons of feldspars, 4,220 tons of scrap mica, 6.1 tons of beryl, and 0.1 ton of columbite-tantalite, with an over-all value of $4.13 a ton which is insufficient to pay mining and transportation costs. There is no tungsten shown as claimed by the applicant.

Harrer recommends denial of the request for an exploration loan of $5,000.00, and I concur.

The brochure submitted by the Region IV Field Team with their instructions to make a field examination is also returned herewith.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

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

200 New Customhouse
Denver 2, Colorado

February 29, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2085, Rock King Lode (Rare Metals), Chaffee County, Colorado

Attached are 8 copies of the geologic report by Ward S. Meek and John W. Adams covering subject docket.

The applicant has requested a loan of $5,000 with which to finance exploration of pegmatite dikes that contain beryl, columbite ?, feldspar, and muscovite. Two of the three pegmatite dikes on the property contain minerals of recognized economic value, but the tonnage and grade are so low that the gross value of the mine product would be only $4.10, too low to cover the mining and transportation costs. Furthermore, there is no available market for the feldspar and mica which carry most of the calculated value, and Meek and Adams therefore recommend that the loan be denied.

I concur with this recommendation.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA 2085, Rock King Lode

Chaffee County, Colorado

Beryl, Mica, Feldspar

C. M. Harrer, Mining Engineer
Bureau of Mines

W. B. Meek, Geologist
U. S. Geological Survey

March 7, 1952

DMA 2085

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By C. M. Barrer
Mining Engineer
Bureau of Mines
and
M. B. Meek
Geologist
U. S. Geological Survey

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and W. B. Meek

Harvey S. Moyer, owner of the Rock King lode, has requested aid in the amount of $5,000.00 (docket DMA 2085) to finance exploration of three parallel pegmatite dikes by means of an open-cut through the most promising location.

The applicant's property consists of a single, standard mining location known as the Rock King lode in sec. 34, T. 51 N., R. 9 E., Turret Mining District, Chaffee County, Colo.

The three closely-paralleling pegmatite dikes strike east and dip steeply to the north, parallel to the foliation of the enclosing pre-Cambrian schists.

The southernmost dike has been developed by 180 feet of bench cut and is the source of a small production of albite and perthite, beryl, and muscovite, totaling about $1,000.00 to date.

Examination of outcrops along the central dike eliminate it as a source of feldspar, mica, and beryl.

The northern dike shows some promise as a small source of feldspar, mica, and beryl.

There is no visible evidence of tungsten mineralization on the property.

Estimated reserves of 42,200 tons of pegmatite are confined to the southernmost and northernmost dikes. From the above total, 12,660 tons of albite and perthite, 4,220 tons of scrap muscovite, 6.1 tons of beryl, and 0.1 ton of columbite-tantalite are

are estimated as recoverable with a gross value of $174,400.00. The average value per ton of pegmatite is estimated at $4.13. This will not pay mining and transportation costs. Consideration of this factor with the small size of the deposit and low, erratic content of valuable minerals in the pegmatite discounts any chance of this becoming a profitable venture. In addition, there is no present local market for these types of feldspar or mica.

It is recommended that the application for an exploration loan of $5,000.00 under the terms of the Defense Production Act of 1950 be denied.

ROCK KING LODE (RARE METALS)

CHAFFEE COUNTY, COLORADO

DMA DOCKET 2085

Geology

By Ward B. Meek and John W. Adams
U. S. Geological Survey

ROCK KING LODE (RARE METALS)
CHAFFEE COUNTY, COLORADO

INTRODUCTION

Harvey S. Moyer, owner of the Rock King Lode since 1937, has applied for a DMA grant of $5000 ($4500 Federal participation) with which to finance exploration of pegmatite dikes that contain beryl, columbite (?), feldspar, and muscovite.

The Rock King Lode is in sec. 34, T. 51 N., R. 9 E., in Chaffee County, Colorado, at an altitude of about 8500 feet. It is within 600 feet of the junction of roads going from Turret and Calumet to Salida, and it can be reached by driving 12½ miles northward from Salida over graveled county roads Nos. 180 and 190.

This deposit was described by Hanley et al (1950, p. 27). Since that time, the bench-cut at the southern edge of the deposit has been extended to a length of 180 feet and a width of 10 feet or more. From this cut the following minerals have been mined.

Production of Minerals from the Rock King Lode

Year	Mineral	Production (in pounds)	Disposition of Minerals
1942-45	Beryl	14,000	Not verified. Reported in the application as sold at Salida to Metals Reserve Co.
1943-44	Beryl	3,287	Sold at Salida to Metals Reserve.
1951	Beryl	140	Sold at Arvada, Colo., to Beryl Ores Co. for $0.27 per pound.
1951	Beryl	100	Estimated stockpile.

1951	Columbite	4	Stockpile
1950	Feldspar	12,100	Sold at Parkdale, Colo., to Western Non-Metallics at $4.50 per ton. Not profitable.
1951	Feldspar	160,000	Estimated stockpile.
1950	Muscovite	?	Sold to Non-Metallics at Pueblo, Colo., for $27.00 per ton.
1950-51	Muscovite	3,000	Stockpile estimate.

GEOLOGY

The Rock King Lode comprises three pegmatite dikes which strike N. 86° E. and dip 83° N., paralleling the foliation of pre-Cambrian quartz-biotite-hornblende schist which encloses them. Mining has been confined to a bench-cut in the southernmost dike which has a known strike length of 350 feet and a width of 6-20 feet. The pegmatite consists of a wall zone of fine to medium grained mica-rich pegmatite and a core which is dominantly perthite and quartz. The core contains poorly-shaped crystals of perthite, quartz, muscovite, and biotite which average about 3 inches in diameter. Some of the quartz and perthite masses may be as much as 6 feet across. About 15 percent of the perthite is in graphic intergrowth with quartz. Accessory minerals of the core are albite, garnet, beryl, and columbite (?). Few of the beryl crystals exceed 5 inches in length or 3/4 inch in diameter. Crystals of garnet and columbite (?) measure about 1/2 inch to 1 1/2 inches in diameter.

The center dike forms the main north wall of Railroad Gulch and stands from 50 to 80 feet above the bottom of the Gulch. It is about 50 feet thick and is separated from the southernmost dike by a septum

of rock which Hanley (1950) called quartzite. The septum is 1-4 feet thick, and it is locally folded into rolls which plunge about 20° eastward. This dike is more granitic than pegmatitic in texture, and it is composed of potash feldspar, quartz, muscovite, biotite, and accessory garnet. No beryl or columbite (?) was found in it.

Another septum of quartzite separates the center dike from the northernmost dike, which is about 10 or more feet thick, and it was traced along the strike for 500 feet. This dike is similar to the southernmost one, but no columbite (?) and only one small crystal of beryl was found in it. Hanley (1950) estimated that it contains 0.02 percent beryl by volume.

ORE RESERVES

The southernmost pegmatite dike has a known length of 350 feet and an average width of 10 feet. Most of the dike above the quarry bench has been mined or eroded, but it is estimated that it may be workable for an average of 30 feet above the bottom of Railroad Gulch which is just south of the dike. Assuming these dimensions and an average specific gravity of 2.67, this dike contains about 3770 short tons of rock.

The northernmost pegmatite dike has been traced for 500 feet along the strike, and it is 10 or more feet wide. It should be workable for a vertical extent of 80 feet. Calculations from these dimensions show that this dike contains about 33,400 tons of rock.

The center dike contains no economically recoverable concentrations of valuable minerals.

Ore reserves estimated to be recoverable are tabulated below.

Mineral Reserves of the Rook King Lode

Mineral	Estimated % of minerals	Estimated Recovery of minerals	Estimated tons of mineral recoverable
S* beryl	0.15	1/3	4.38
N* beryl	0.02	1/4	1.67
			6.05
S columbite ?	0.004	1/4	0.0877
N columbite ?	tr	tr	0.0123?
			0.1000?
S feldspar	60.	1/2	2,631.
N feldspar	60.	1/2	10,020.
			12,651.
S muscovite	20.	1/2	877.
N muscovite	20.	1/2	3,340.
			4,217.

S* refers to the southernmost pegmatite dike
N* refers to the northernmost pegmatite dike

These figures show a total of 42,170 tons of indicated and inferred ore from which 6.05 tons of beryl, 0.1 tons of columbite (?), 12,651 tons of feldspar, and 4,217 tons of scrap muscovite can be recovered with the following approximate values based on previous sales of minerals from this property, except for columbite (?), none of which was marketed.

Value of Estimated Ore Reserves

Mineral	Tons	Price paid per ton	Gross value
beryl	6.05	$ 540.00	$ 3,267.00
columbite ?	0.10	2,000.00?	200.00?
feldspar	12,651.	4.50	56,929.00
muscovite	4,217.	27.00	113,859.00
			$174,255.00

The recovery of these minerals would require the mining and processing of 42,170 tons of ore. Gross value per ton of this ore is only $4.10, a

sum which will not cover the anticipated mining and transportation costs. Furthermore, there is at present no known available market for the feldspar and muscovite on whose sale the success or failure of this project depends. The estimated recovery of beryl may be increased by the finding of occasional crystals several feet long, such as were reported by Hanley (1950), but the amount to be expected is not significant in terms of the entire project.

EXPLORATION PROJECT

Since this project appears to have no merit, it is unnecessary to discuss the exploration proposal here other than to note that much of the work which the applicant desires to do is development.

SUMMARY AND CONCLUSIONS

The Rock King Lode comprises three pegmatite dikes which strike generally east and dip steeply north. They have invaded pre-Cambrian schist parallel to planes of foliation.

The southernmost and northernmost pegmatite dikes constitute a reserve of 42,170 tons of inferred and indicated ore from which may be recovered 6.05 tons of beryl, 0.10 tons of columbite (?), 12,651 tons of feldspar, and 4,217 tons of scrap muscovite. At prices paid for small and infrequent shipments of minerals made from this property in the past, the ore has a gross value of $4.10 per ton which is believed to be less than the anticipated mining and transportation costs. There is, furthermore, no market available at present for the feldspar and muscovite which contain most of the value.

RECOMMENDATION

Because of the small content and low estimated recovery of the beryl and columbite, and because the gross value of the ore, which is estimated at only $4.10 per ton, is insufficient to pay mining and transportation costs, it is recommended that this request be denied.

REFERENCE

Hanley, John B., Heinrich, E. William, and Page, Lincoln R., Pegmatite investigations in Colorado, Wyoming, and Utah: U. S. Geol. Survey Prof. Paper 227 p. 27, 1950.

DMA 2085

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

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ILLUSTRATIONS

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ROCK KING LODE
CHAFFEE COUNTY, COLORADO

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

Harvey S. Moyer, residing on his property, 7 air miles north of Salida, Colo., has applied for a Defense Minerals Exploration Administration loan of $5,000.00 to explore and mine his unpatented pegmatite property for albite and perthite, scrap muscovite, beryl, and columbite-tantalite, which are in evidence, and tungsten, which is not. He proposes to crosscut three parallel pegmatite dikes with an open-cut approximately 160 feet long by 10 feet wide by 60 feet high through his best location. He expects to separate the resulting spoil into the above-mentioned products, for sale.

ACKNOWLEDGMENTS

Harvey S. Moyer, loan applicant, was contacted at the property and proved very cooperative. W. B. Meek, Minerals Deposits Branch, and J. W. Adams, Reconnaissance Group, of the U. S. Geological Survey, participated in a joint investigation of the property.

The Rock King property is well described in U. S. Geological Survey Professional Paper 227, "Pegmatite Investigations in Colorado, Wyoming, and Utah, 1942-1944", page 27.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Rock King property is 7 air miles north of Salida, Colo., in sec. 34, T. 51 N., R. 9 E., N. M. P. M., Turret Mining District, Chaffee County, Colo. (fig. 1).

It is accessible over 12-1/2 miles of dirt roads, in good condition, which make up the Ute Trail-Turret road (County Highways 180 and 190).

Terrain generally is one of moderate relief and is lightly wooded. The altitude at the deposit is about 8,500 feet. The Rock King claim includes part of the north wall of Railroad Gulch which forms a cliff of pegmatite on the property. An intermittent stream flows along the narrow valley floor. Ample water is available for small mining operations and other supplies can be developed. Winters are mild and year-around operations can be maintained. The nearest source of electric power is 8 miles distant. The property is readily accessible to supply and market centers through Salida, Colo., by truck and the Denver and Rio Grande Western Railroad.

HISTORY AND PRODUCTION

The Rock King lode claim was located by Harvey S. Moyer in 1937 and has been worked sporadically to date. The largest production was during 1943 and 1944 when 3,287 pounds of beryl were produced and sold to the Metals Reserve Company at Salida. Since then, 140 pounds of beryl were produced during 1951 and sold to Beryl Ores Company, of Arvada, Colo., at 27 cents a pound. Total beryl production to date is estimated at 5 tons.

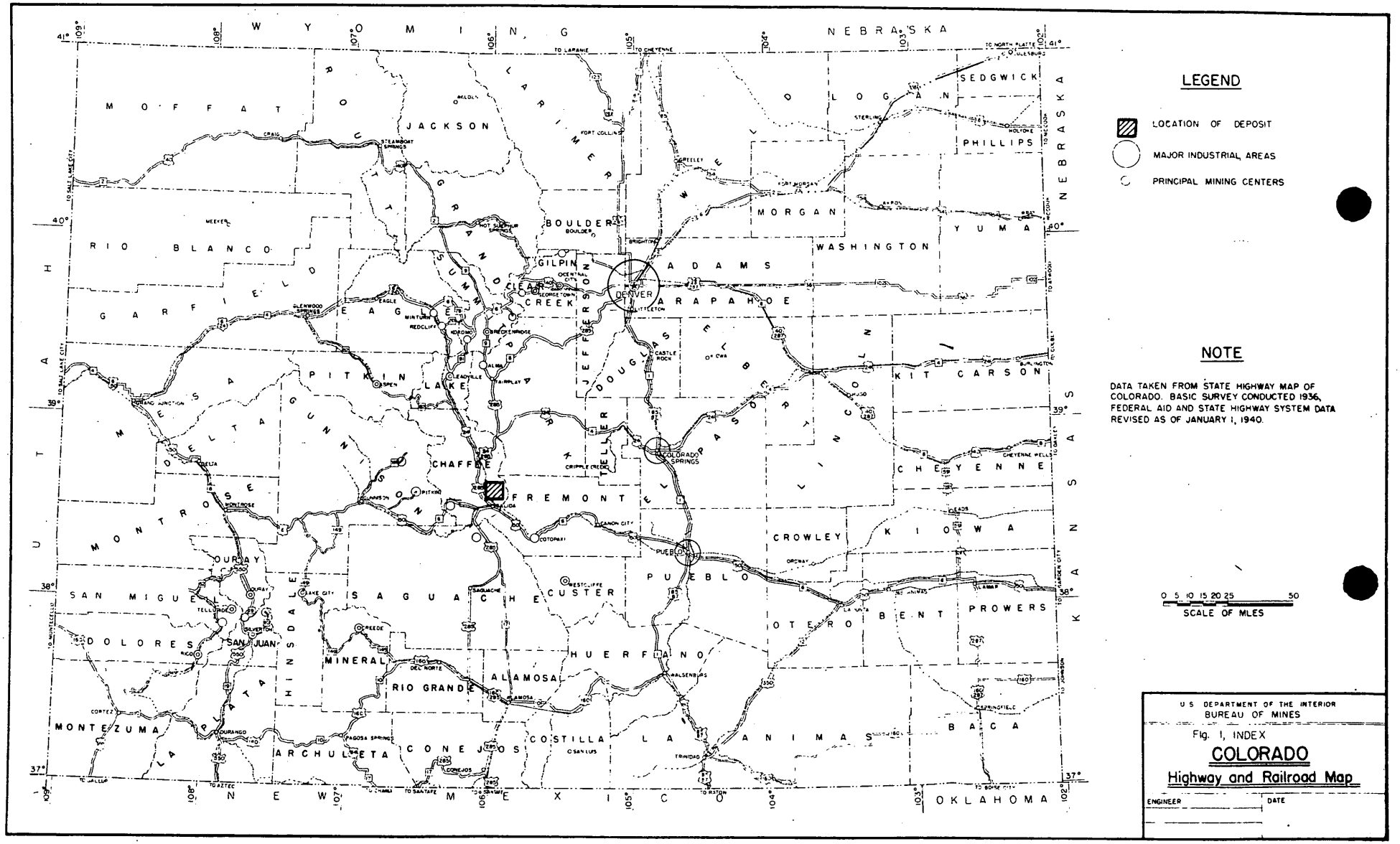

FIG.1-LOCATION MAP, H.S. MOYER ROCK KING LODE, CHAFFEE CO. COLO., DMA 2085

During 1950, 1-1/2 tons of muscovite scrap mica were sold to Western Non-Metallics Company, of Pueblo, Colo., for $27.00 a ton.

Also in 1950, 12,100 pounds of hand-sorted albite and perthite feldspar were sold to the Consolidated Feldspar Corporation plant at Parkdale, Colo., for $4.50 per ton. This was insufficient to pay for mining and the 50-mile truck haul.

There is no record of columbite-tantalite shipments. Moyer has probably sorted out a total of about 10 pounds to date, 4 pounds of which are now in his possession. At present, about 80 tons of hand-sorted feldspar, 1-1/2 tons of mica, and 100 pounds of beryl are stockpiled on the property.

OWNERSHIP AND EXTENT

Harvey S. Moyer owns the Rock King claim, a single, unpatented standard lode location, 600 feet by 1,500 feet, located in the SW.1/4 sec. 34, T. 51 N., R. 9 E., N. M. P. M., Turret Mining District, Chaffee County, Colo.

DESCRIPTION OF THE DEPOSITS

The Rock King pegmatite deposit consists of three parallel and steeply dipping pegmatite dikes striking easterly. The southernmost dike is the source of past and present production and mining has been limited to this dike. It is approximately 10 feet wide and can be traced for over 350 feet. A bench cut has been developed for 180 feet along the strike. The rock mass consists of fine-grained albite pegmatite and perthite,

with muscovite and biotite developed up to 3-inch diameters. Graphic granite and irregular concentrations of quartz are abundant. Beryl occurs in well formed crystals from 1/16 inch to 3-1/2 inches in diameter; lengths up to 8-1/2 inches were observed. The ratio of beryl to rock is estimated by the U. S. Geological Survey at less than 1:1,000 (0.1 percent by volume), with its greatest concentration over an exposure of 200 square feet about 1:500 (0.2 percent by volume). Small grains of columbite-tantalite were noted. Moyer stated that it also occurred in thin sheets and plates. Columbite-tantalite is estimated at about 0.004 percent by volume. The beryl and columbite-tantalite are distributed erratically within the main mass. No evidence of tungsten was found.

The central dike, to the north, is the largest. It is about 50 feet wide and was traced for 500 feet along the strike by the examining team. It is part of the steep cliff which rises about 80 feet above the valley floor. This dike is a fine-grained, granitic quartz-potash feldspar-biotite-muscovite pegmatite with small, red garnet crystals developed. No beryl, columbite-tantalite, commercial grade feldspar, or mica were observed and there was no evidence of tungsten mineralization.

The above dike is separated from the one farthest to the north by 30 feet of quartzite. The north dike is 10 feet wide and can be traced for 500 feet along the strike and is similar to the south dike. It is beryl bearing and may contain some columbite-tantalite although none was observed at the time of examination. Its beryl content is roughly estimated at 1:5,000

or 0.02 percent beryl by volume. Commercial grades of feldspar and mica will probably be the same as estimated for the south dike.

MINABLE ORE RESERVES

Only the south and north pegmatites are considered to be sources of commercial mineral products. The south dike is estimated to contain 8,800 tons of minable pegmatite and the dike to the north, 33,400 tons of minable pegmatite. From the above, totaling 42,200 tons of indicated and inferred pegmatite, the following mineral reserves are estimated for the Rock King lode:

Dike Location	Mineral	Estimated percent of mineral in the dike	Estimated Recovery	Estimated tons of recoverable mineral	
South	Beryl	0.15	1/3	4.40	
North	Beryl	0.02	1/4	1.67	
				6.07	Total
South	Columbite-tantalite	0.004	1/4	0.088	
North	Columbite-tantalite	trace		0.012	
				0.100	Total
South	Albite-perthite	60.0	1/2	2,640.0	
North	Albite-perthite	60.0	1/2	10,020.0	
				12,660.0	Total
South	Muscovite	20.0	1/2	880.0	
North	Muscovite	20.0	1/2	3,340.0	
				4,220.0	Total

Gross Value of Estimated Ore Reserves

Mineral	Tons	Price per ton	Gross Value
Beryl	6.07	$ 540.00	$ 3,278.00
Columbite-tantalite	0.10	2,000.00	200.00
Feldspar	12,660.0	4.50	56,970.00
Muscovite	4,220.0	27.00	113,940.00
Total			$174,388.00

Gross value of recoverable minerals divided by pegmatite reserves gives a gross value of $4.13 per ton.

PRESENT STATUS

Exploration and Development

The southernmost dike has been developed by a bench 180 feet long with a vertical face 10 to 40 feet high which has exposed the structure of the south side of the paralleling dikes. Two shallow pits west and north of the above development expose the dike mass near their north limit.

Mining and Milling Equipment

The only mining equipment consists of one dilapidated mine car and various hand tools. There are no milling facilities as salable products are hand-sorted and shipped whenever possible.

New Equipment

The quarry would have to be completely equipped.

Transportation

All market contacts would be by truck transportation to Salida, 12-1/2 miles distant, over the Ute Trail road, and thence by the Denver and Rio Grande Western Railroad.

Manpower

Labor is readily obtainable at Salida, at $1.50 per hour. Moyer would supervise operations.

Power

Electric power is 8 miles distant and would require a line extension.

Water

Water for mining purposes is available from a shallow well and a nearby intermittent stream.

PROJECT PROPOSALS AND COSTS

H. S. Moyer proposes to explore his pegmatite deposit by means of an open-cut through the most promising location. This cut would be about 160 feet long with a height up to 80 feet. He expects to sort pegmatite spoil into salable units of albite and perthite, muscovite, beryl, and columbite-tantalite. His estimate of $5,000.00 is probably too low. About $12,000.00 would more likely be required to complete the project as outlined over a period of six months.

PROPOSED FINANCING

The applicant expects to contribute his services to the project and raise any additional funds needed for his participation locally.

CONCLUSIONS

Only the southern and northern dikes contain minerals of strategic importance.

The estimated gross value of pegmatite is $4.13 per ton, which will not pay mining and transportation expenses at present or probable future prices.

The beryl and columbite-tantalite are distributed in comparatively small crystal units and very erratically.

The possibility that concentrations of strategic minerals within the dikes may improve over estimated content is very doubtful.

There is no local market for the applicant's hand-sorted albite and perthite and scrap muscovite. Quarrying operations for beryl and columbite-tantalite, alone, are not justified due to their low concentrations.

The project is estimated to cost about $12,000.00.

RECOMMENDATIONS

It is recommended that the application for an exploration loan of $5,000.00 under the terms of the Defense Production Act of 1950 be denied.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 4-2085

Date received 9-11-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

Harvey S. Moyer
c/o Allen W. Broadstreet
Attorney at Law
117 West Second Street
Salida, Colorado

Name and address of applicant

Date August 1, 1951

FILL IN THIS BLOCK

Date of application August 1, 1951

Estimated cost Five thousand dollars

Mineral or metal See attached sheet "A"

Percentage of Government participation 90%

Location of mine Turret Mining District, Salida, Chaffee County, Colorado.

Date of filing MF-100

DMA Docket Number, if available 2085

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? --Individual

*2. If a partnership, state names and addresses of partners--No partners

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders--Inapplicable

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project--See annexed sheet

*5. Are you the owner or the lessee of the property?--Owner

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. --None

7. If lessee, attach a copy of the lease and state if it is in good standing. --No lease

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. --None available

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?--See annexed sheet

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. --See annexed sheet

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. --See annexed sheet

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. --See annexed sheet

*13. State source and quantity of water available for operations and its sufficiency at all seasons. --See annexed sheet State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. --See annexed Sheet

15. State in detail how the ore could be shipped and how and where milled. --See annexed sheet

*16. History: --See annexed sheet

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production: --Information not available

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.) --See annexed sheet

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions. ----

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See annexed

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. --See annexed sheet

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. --None Available at this time.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above. --See annexed sheet

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. --See annexed sheet

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

(Name of company)	By Harvey S. Moyer, (Signature of authorized official)
August 1, 1951 (Date)	Owner (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Attach to form MF-103, Harvey S. Meyer, August 1, 1951

"A" The minerals and metals are: Tantalum, Columbite, Beryl, Mica, Feldspar (Three Kinds), Berillium (six kinds), and Tungsten.

4. Applicant has been engaged in active mining periodically since 1918. Since 1932, the applicant has been wholly engaged in the mining industry. The applicant has been employed with the Chaffee County Mines of Salida, Colorado and he has been employed with the Frazer Mine of Salida, Colorado. He has also worked with the American Mine and, since 1942, the applicant has been engaged in private mining operations and has also worked for the Colorado Fluorspar Corporation.

9. The operator will be able to procure funds sufficient to pay his part of the cost of the project.

10. (a and b) Legal description which appears in Location Certificate which is recorded in Book 233, Page 175 of the records of Chaffee County, Colorado:

Beginning at corner No. 1, N. E. Corner, pitch pine post 4"x6"x32" in mound of rock, thence, S¼ Cor. Section 34, T. 51 N. R. 9 E. N.M. P.M., bears, S24° 16' W., 940 feet. Thence, S2° 15' W., 250 feet to a point east of well on Turret road in Railroad Gulch, 300 feet to a point N 87° 45' W., of Government sign, 3 M. Turret. 600 feet to S. E. Cor. No. 2, and aspen post 5"x3"x32" set in ground mound of stone. Thence, N87° 45' W. 750 feet to south side center, 1800 feet to S. W. Cor. No. 3, pine post, 4"x4"x34" in mound of stone, south side of road in Railroad Gulch. Thence N2° 15' E. 300 feet to center west end line, thence, Corner no. 3, Sur. 16688 Manitou Lode bears, N44° 10' E., 160 feet to N. W. Cor. No. 4, pine post 4"x6"x34" in mound of stone. Thence, S87° 45' E., 750 feet to north side center, 1300 feet to Cor. No. 1, and place of beginning.

11. Rock King Lode in Turret Mining District.

12. The Property described in Section 10 lies North of Salida, Colorado in Railroad Gulch. County roads in good condition lead from this property into Salida, Chaffee, County, Colorado, which is the central shipping point.

13. There is approximately two (2) cubic feet of water per second of time available for use in the operation of the mining property. The source of this water is from a well and from a mountain lake.

14. There are existing, usable items of equipment such as picks, shovels, bars, and drills. There is a cabin and a shed located on the property, all of which will be devoted to the exploration work.

15. The beryl can be shipped at the buyer's cost, to Arvada, Colorado and the spar can be shipped to Parkdale, Colorado.

16. (a, b, and c) The analysis of the beryl ore shows approximately 13% BeO, the Tantalum is shown to be 71%. The fluorspar has been analyzed by the mill at Parkdale, Colorado and it shows over 90%. The analyses of the other ores are not yet available.

Attach as page 2 to form MP-103, Harvey S. Moyer, August 1, 1951

18. (a, b, and c) The body of ore is 1200 feet long and 800 feet wide and it outcrops at a point approximately 50 feet higher than the surrounding area. It is estimated by the operator to contain at least 200,000 tons of good ore. It is felt by the applicant that the ore will assay at a figure sufficient for the government's stockpile of critical minerals.

20-21. Exploration will be conducted for Tantalum, Columbite, Beryl, Mica, Feldspar, Beryllium, and Tungsten and it is estimated that the applicant will be able to ship approximately a carload, or 60 tons of ore within three to six months.

22. None available at this time.

23. Statement of the estimated cost of the Project:

Items a, b, c, and d cannot now be properly estimated in that the operator does not anticipate repair to existing facilities or structures. The expense of labor will depend solely upon the government's wishes as to the amount of ore that they desire the applicant to produce.

Items e, f, g, h, and i. The applicant wishes to purchase a bin, a jack hammer, a compressor, pipe, hose, and dynamite. The cost of these items will depend upon the feasibility of a capital investment or, whether it will be more satisfactory to begin operation by renting these items of equipment.

24. It is the opinion of the applicant that the above and foregoing information, although it is not in detail, will be sufficient to give the government a general idea of the extent of his operation. Additional data will, of course, be available at the government's request.

THE REQUIREMENTS AND COSTS

Item 23

(A) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each. Two $12.00 per day.
(B) Supervisors, by numbers and positions, with salaries of each. Myself no fixed salary.
(C) Cost of necessary repairs to existing facilities, structures, and buildings. None
(D) Cost of necessary installation or construction of additional facilities, structures, and buildings. Compressor Bldg. $500. Ore Bin $500.00 Jack Hammer and Hose etc., $600.00.
(E) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50. or more each. Compressor $2000.00.
(F) Cost of rental for equipment which the operator proposes to rent. None.
(G) Rental value of items of equipment which the operator now owns and which will be devoted to the work. None.
(H) Cost of materials and supplies, including items of equipment costing less than $50.00 each.
(I) Cost of power, water, utilities, and any other items not provided for above. None.

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

224 New Customhouse
Denver 2, Colorado

March 13, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration.
Attention: Code 210

From: Field Team, Region IV

Subject: DMA Docket 2085, Rock King Lode, Turret Mining District, Chaffee County, Colorado - Final Report

Enclosed are the original and three copies of the final report on DMA Docket 2085, the original and one copy of DMA Form 3b, and a copy of the letter of denial to the applicant.

J. H. East, Jr.

A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 21 1952

Form 3b detached in R. & R. - 3/21/52 - B.C.

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

224 New Customhouse
Denver 2, Colorado

March 13, 1952

Mr. Harvey S. Moyer
c/o Allen W. Broadstreet
117 West Second Street
Salida, Colorado

Dear Mr. Moyer:

Your application for aid, DMA Docket No. 2085, in the amount of $5,000.00 for the exploration of your property known as Rock King Lode, located in the Turret Mining District, Chaffee County, Colorado has been processed.

Examination and careful consideration indicate that the small size of the deposit and the low, erratic mineral content of the pegmatite makes it improbable that a significant quantity of strategic minerals will be found. We therefore regret to inform you that your request for exploration aid under the Defense Production Act of 1950 is denied.

Very truly yours,

J. H. East, Jr.
Field Team, Region IV

HMC:oc
cc: Acting Administrator, DMEA
WMTraver
AHKoschmann (2)
DMA Docket, Chron.

A. H. Koschmann
Field Team, Region IV

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 21 1952

Mining Division
Region IV

March 13, 1952

Memorandum

To: Field Team, DMEA, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: DMA Docket 2085, Rock King Lode, Tarvet Mining District, Chaffee County, Colorado

Enclosed are eight copies of the report by G. M. Harrer, Mining Engineer, covering the Rock King Lode.

Due to the small size of the deposit and the low, erratic mineral content of the pegmatite, we agree with the recommendation of the examining engineer that the application for exploration aid in the amount of $5,000.00 be denied.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 2 1952

Reviewed by
DMEA OPERATING COMMITTEE
3-24-52
(JB) (date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
March 7, 1952

Mining Division
Mar 11 1952
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Acting Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 2085, Rock King Lode, Turret Mining District, Chaffee County, Colorado

Please find enclosed eight copies of the "Summary, Conclusions, and Recommendations" by C. M. Harrer and W. B. Meek, and eight copies of Harrer's engineering report on the above docket.

The examiners conclude the minable ore reserves, confined to two of three pegmatites exposed on the property, totaling 42,200 tons of material, contain 12,660 tons of feldspars, 4,220 tons of scrap mica, 6.1 tons of beryl, and 0.1 ton of columbite-tantalite, with an over-all value of $4.13 a ton which is insufficient to pay mining and transportation costs. There is no tungsten shown as claimed by the applicant.

Harrer recommends denial of the request for an exploration loan of $5,000.00, and I concur.

The brochure submitted by the Region IV Field Team with their instructions to make a field examination is also returned herewith.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

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

200 New Customhouse
Denver 2, Colorado

February 29, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2085, Rock King Lode (Rare Metals), Chaffee County, Colorado

Attached are 8 copies of the geologic report by Ward B. Meek and John W. Adams covering subject docket.

The applicant has requested a loan of $5,000 with which to finance exploration of pegmatite dikes that contain beryl, columbite ?, feldspar, and muscovite. Two of the three pegmatite dikes on the property contain minerals of recognized economic value, but the tonnage and grade are so low that the gross value of the mine product would be only $4.10, too low to cover the mining and transportation costs. Furthermore, there is no available market for the feldspar and mica which carry most of the calculated value, and Meek and Adams therefore recommend that the loan be denied.

I concur with this recommendation.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA 2085, Rock King Lode

Chaffee County, Colorado

Beryl, Mica, Feldspar

C. M. Harrer, Mining Engineer
Bureau of Mines

W. B. Meek, Geologist
U. S. Geological Survey

March 7, 1952

DMA 2085

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By C. M. Harrer
Mining Engineer
Bureau of Mines

and

W. B. Meek
Geologist
U. S. Geological Survey

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and W. B. Meek

Harvey S. Moyer, owner of the Rock King lode, has requested aid in the amount of $5,000.00 (docket DMA 2085) to finance exploration of three parallel pegmatite dikes by means of an open-cut through the most promising location.

The applicant's property consists of a single, standard mining location known as the Rock King lode in sec. 34, T. 51 N., R. 9 E., Turret Mining District, Chaffee County, Colo.

The three closely-paralleling pegmatite dikes strike east and dip steeply to the north, parallel to the foliation of the enclosing pre-Cambrian schists.

The southernmost dike has been developed by 180 feet of bench cut and is the source of a small production of albite and perthite, beryl, and muscovite, totaling about $1,000.00 to date.

Examination of outcrops along the central dike eliminate it as a source of feldspar, mica, and beryl.

The northern dike shows some promise as a small source of feldspar, mica, and beryl.

There is no visible evidence of tungsten mineralization on the property.

Estimated reserves of 42,200 tons of pegmatite are confined to the southernmost and northernmost dikes. From the above total, 12,660 tons of albite and perthite, 4,220 tons of scrap muscovite, 6.1 tons of beryl, and 0.1 ton of columbite-tantalite are

are estimated as recoverable with a gross value of $174,400.00. The average value per ton of pegmatite is estimated at $4.13. This will not pay mining and transportation costs. Consideration of this factor with the small size of the deposit and low, erratic content of valuable minerals in the pegmatite discounts any chance of this becoming a profitable venture. In addition, there is no present local market for these types of feldspar or mica.

It is recommended that the application for an exploration loan of $5,000.00 under the terms of the Defense Production Act of 1950 be denied.

ROCK KING LODE (RARE METALS)

CHAFFEE COUNTY, COLORADO

DMA DOCKET 2085

Geology

By Ward B. Meek and John W. Adams
U. S. Geological Survey

ROCK KING LODE (RARE METALS)
CHAFFEE COUNTY, COLORADO

INTRODUCTION

Harvey S. Moyer, owner of the Rock King Lode since 1937, has applied for a DMA grant of $5000 ($4500 Federal participation) with which to finance exploration of pegmatite dikes that contain beryl, columbite (?), feldspar, and muscovite.

The Rock King Lode is in sec. 34, T. 51 N., R. 9 E., in Chaffee County, Colorado, at an altitude of about 8500 feet. It is within 600 feet of the junction of roads going from Turret and Calumet to Salida, and it can be reached by driving 12½ miles northward from Salida over graveled county roads Nos. 180 and 190.

This deposit was described by Hanley et al (1950, p. 27). Since that time, the bench-cut at the southern edge of the deposit has been extended to a length of 180 feet and a width of 10 feet or more. From this cut the following minerals have been mined.

Production of Minerals from the Rock King Lode

Year	Mineral	Production (in pounds)	Disposition of Minerals
1942-45	Beryl	14,000	Not verified. Reported in the application as sold at Salida to Metals Reserve Co.
1943-44	Beryl	3,287	Sold at Salida to Metals Reserve.
1951	Beryl	140	Sold at Arvada, Colo., to Beryl Ores Co. for $0.27 per pound.
1951	Beryl	100	Estimated stockpile.

1951	Columbite	4	Stockpile
1950	Feldspar	12,100	Sold at Parkdale, Colo., to Western Non-Metallics at $4.50 per ton. Not profitable.
1951	Feldspar	160,000	Estimated stockpile.
1950	Muscovite	?	Sold to Non-Metallics at Pueblo, Colo., for $27.00 per ton.
1950-51	Muscovite	3,000	Stockpile estimate.

GEOLOGY

The Rock King Lode comprises three pegmatite dikes which strike N. 86° E. and dip 83° N., paralleling the foliation of pre-Cambrian quartz-biotite-hornblende schist which encloses them. Mining has been confined to a bench-cut in the southernmost dike which has a known strike length of 350 feet and a width of 6-20 feet. The pegmatite consists of a wall zone of fine to medium grained mica-rich pegmatite and a core which is dominantly perthite and quartz. The core contains poorly-shaped crystals of perthite, quartz, muscovite, and biotite which average about 3 inches in diameter. Some of the quartz and perthite masses may be as much as 6 feet across. About 15 percent of the perthite is in graphic intergrowth with quartz. Accessory minerals of the core are albite, garnet, beryl, and columbite (?). Few of the beryl crystals exceed 5 inches in length or 3/4 inch in diameter. Crystals of garnet and columbite (?) measure about 1/2 inch to 1 1/2 inches in diameter.

The center dike forms the main north wall of Railroad Gulch and stands from 50 to 80 feet above the bottom of the Gulch. It is about 50 feet thick and is separated from the southernmost dike by a septum

of rock which Hanley (1950) called quartzite. The septum is 1-4 feet thick, and it is locally folded into rolls which plunge about 20° eastward. This dike is more granitic than pegmatitic in texture, and it is composed of potash feldspar, quartz, muscovite, biotite, and accessory garnet. No beryl or columbite (?) was found in it.

Another septum of quartzite separates the center dike from the northernmost dike, which is about 10 or more feet thick, and it was traced along the strike for 500 feet. This dike is similar to the southernmost one, but no columbite (?) and only one small crystal of beryl was found in it. Hanley (1950) estimated that it contains 0.02 percent beryl by volume.

ORE RESERVES

The southernmost pegmatite dike has a known length of 350 feet and an average width of 10 feet. Most of the dike above the quarry bench has been mined or eroded, but it is estimated that it may be workable for an average of 30 feet above the bottom of Railroad Gulch which is just south of the dike. Assuming these dimensions and an average specific gravity of 2.67, this dike contains about 8770 short tons of rock.

The northernmost pegmatite dike has been traced for 500 feet along the strike, and it is 10 or more feet wide. It should be workable for a vertical extent of 80 feet. Calculations from these dimensions show that this dike contains about 33,400 tons of rock.

The center dike contains no economically recoverable concentrations of valuable minerals.

Ore reserves estimated to be recoverable are tabulated below.

Mineral Reserves of the Rock King Lode

Mineral	Estimated % of minerals	Estimated Recovery of minerals	Estimated tons of mineral recoverable
S* beryl	0.15	1/3	4.38
N* beryl	0.02	1/4	1.67
			6.05
S columbite ?	0.004	1/4	0.0877
N columbite ?	tr	tr	0.0123?
			0.1000?
S feldspar	60.	1/2	2,631.
N feldspar	60.	1/2	10,020.
			12,651.
S muscovite	20.	1/2	877.
N muscovite	20.	1/2	3,340.
			4,217.

S* refers to the southernmost pegmatite dike
N* refers to the northernmost pegmatite dike

These figures show a total of 42,170 tons of indicated and inferred ore from which 6.05 tons of beryl, 0.1 tons of columbite (?), 12,651 tons of feldspar, and 4,217 tons of scrap muscovite can be recovered with the following approximate values based on previous sales of minerals from this property, except for columbite (?), none of which was marketed.

Value of Estimated Ore Reserves

Mineral	Tons	Price paid per ton	Gross value
beryl	6.05	$ 540.00	$ 3,267.00
columbite ?	0.10	2,000.00?	200.00?
feldspar	12,651.	4.50	56,929.00
muscovite	4,217.	27.00	113,859.00
			$174,255.00

The recovery of these minerals would require the mining and processing of 42,170 tons of ore. Gross value per ton of this ore is only $4.10, a

sum which will not cover the anticipated mining and transportation costs. Furthermore, there is at present no known available market for the feldspar and muscovite on whose sale the success or failure of this project depends. The estimated recovery of beryl may be increased by the finding of occasional crystals several feet long, such as were reported by Hanley (1950), but the amount to be expected is not significant in terms of the entire project.

EXPLORATION PROJECT

Since this project appears to have no merit, it is unnecessary to discuss the exploration proposal here other than to note that much of the work which the applicant desires to do is development.

SUMMARY AND CONCLUSIONS

The Rock King Lode comprises three pegmatite dikes which strike generally east and dip steeply north. They have invaded pre-Cambrian schist parallel to planes of foliation.

The southernmost and northernmost pegmatite dikes constitute a reserve of 42,170 tons of inferred and indicated ore from which may be recovered 6.05 tons of beryl, 0.10 tons of columbite (?), 12,651 tons of feldspar, and 4,217 tons of scrap muscovite. At prices paid for small and infrequent shipments of minerals made from this property in the past, the ore has a gross value of $4.10 per ton which is believed to be less than the anticipated mining and transportation costs. There is, furthermore, no market available at present for the feldspar and muscovite which contain most of the value.

RECOMMENDATION

Because of the small content and low estimated recovery of the beryl and columbite, and because the gross value of the ore, which is estimated at only $4.10 per ton, is insufficient to pay mining and transportation costs, it is recommended that this request be denied.

REFERENCE

Hanley, John B., Heinrich, E. William, and Page, Lincoln R., Pegmatite investigations in Colorado, Wyoming, and Utah: U. S. Geol. Survey Prof. Paper 227 p. 27, 1950.

DMA 2085

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

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ILLUSTRATIONS

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1. Location map, H. S. Moyer, Rock King lode, Chaffee County, Colorado 2

ROCK KING LODE
CHAFFEE COUNTY, COLORADO

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

Harvey S. Moyer, residing on his property, 7 air miles north of Salida, Colo., has applied for a Defense Minerals Exploration Administration loan of $5,000.00 to explore and mine his unpatented pegmatite property for albite and perthite, scrap muscovite, beryl, and columbite-tantalite, which are in evidence, and tungsten, which is not. He proposed to crosscut three parallel pegmatite dikes with an open-cut approximately 160 feet long by 10 feet wide by 60 feet high through his best location. He expects to separate the resulting spoil into the above-mentioned products, for sale.

ACKNOWLEDGMENTS

Harvey S. Moyer, loan applicant, was contacted at the property and proved very cooperative. W. B. Meek, Minerals Deposits Branch, and J. W. Adams, Reconnaissance Group, of the U. S. Geological Survey, participated in a joint investigation of the property.

The Rock King property is well described in U. S. Geological Survey Professional Paper 227, "Pegmatite Investigations in Colorado, Wyoming, and Utah, 1942-1944", page 27.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Rock King property is 7 air miles north of Salida, Colo., in sec. 34, T. 51 N., R. 9 E., N. M. P. M., Turret Mining District, Chaffee County, Colo. (fig. 1).

It is accessible over 12-1/2 miles of dirt roads, in good condition, which make up the Ute Trail-Turret road (County Highways 180 and 190).

Terrain generally is one of moderate relief and is lightly wooded. The altitude at the deposit is about 8,500 feet. The Rock King claim includes part of the north wall of Railroad Gulch which forms a cliff of pegmatite on the property. An intermittent stream flows along the narrow valley floor. Ample water is available for small mining operations and other supplies can be developed. Winters are mild and year-around operations can be maintained. The nearest source of electric power is 8 miles distant. The property is readily accessible to supply and market centers through Salida, Colo., by truck and the Denver and Rio Grande Western Railroad.

HISTORY AND PRODUCTION

The Rock King lode claim was located by Harvey S. Moyer in 1937 and has been worked sporadically to date. The largest production was during 1943 and 1944 when 3,287 pounds of beryl were produced and sold to the Metals Reserve Company at Salida. Since then, 140 pounds of beryl were produced during 1951 and sold to Beryl Ores Company, of Arvada, Colo., at 27 cents a pound. Total beryl production to date is estimated at 5 tons.

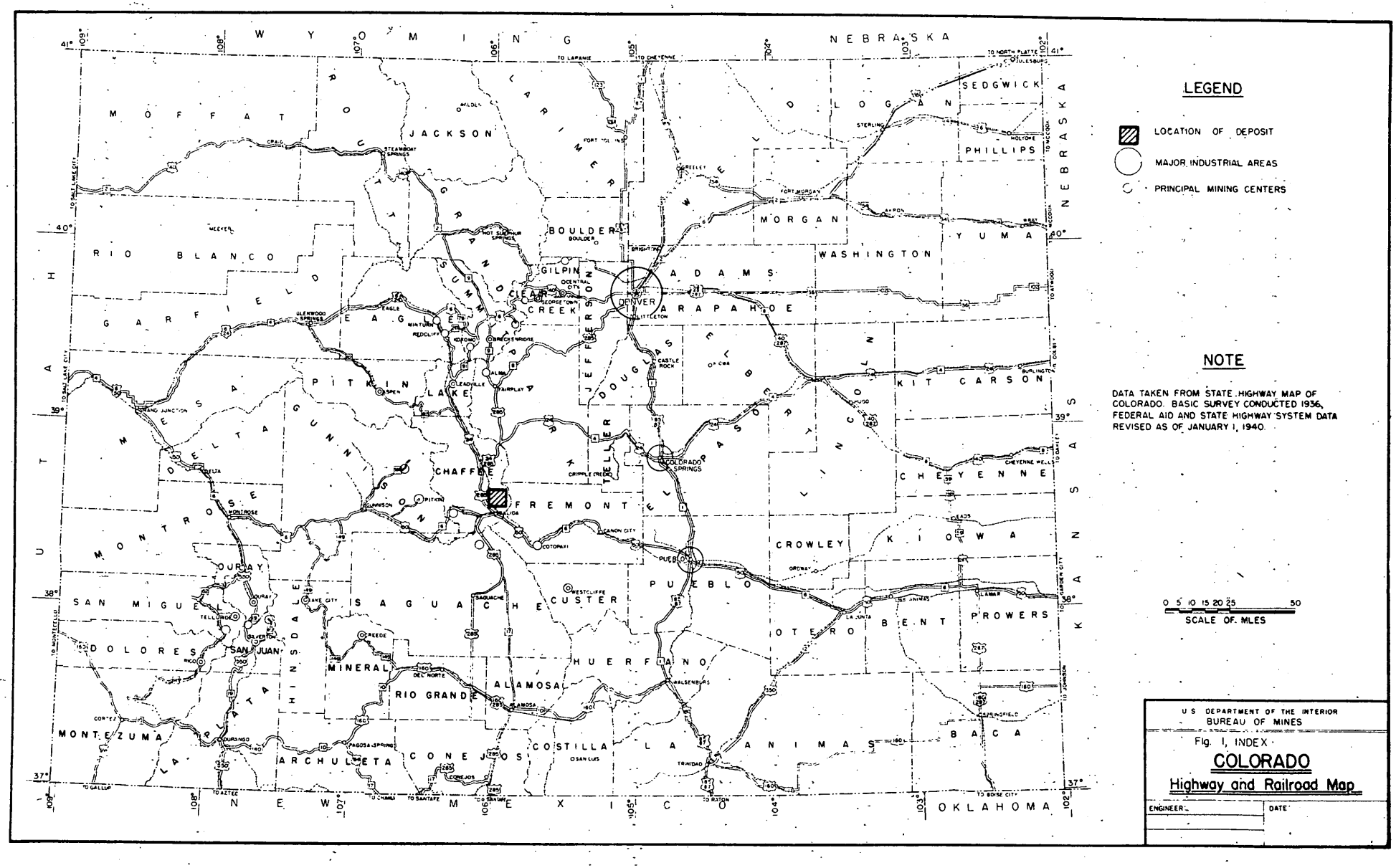

FIG.1-LOCATION MAP, H.S. MOYER ROCK KING LODE, CHAFFEE CO. COLO., DMA 2085

During 1950, 1-1/2 tons of muscovite scrap mica were sold to Western Non-Metallics Company, of Pueblo, Colo., for $27.00 a ton.

Also in 1950, 12,100 pounds of hand-sorted albite and perthite feldspar were sold to the Consolidated Feldspar Corporation plant at Parkdale, Colo., for $4.50 per ton. This was insufficient to pay for mining and the 50-mile truck haul.

There is no record of columbite-tantalite shipments. Moyer has probably sorted out a total of about 10 pounds to date, 4 pounds of which are now in his possession. At present, about 80 tons of hand-sorted feldspar, 1-1/2 tons of mica, and 100 pounds of beryl are stockpiled on the property.

OWNERSHIP AND EXTENT

Harvey S. Moyer owns the Rock King claim, a single, unpatented standard lode location, 600 feet by 1,500 feet, located in the SW.1/4 sec. 34, T. 51 N., R. 9 E., N. M. P. M., Turret Mining District, Chaffee County, Colo.

DESCRIPTION OF THE DEPOSITS

The Rock King pegmatite deposit consists of three parallel and steeply dipping pegmatite dikes striking easterly. The southernmost dike is the source of past and present production and mining has been limited to this dike. It is approximately 10 feet wide and can be traced for over 350 feet. A bench cut has been developed for 180 feet along the strike. The rock mass consists of fine-grained albite pegmatite and perthite,

with muscovite and biotite, developed up to 3-inch diameters. Graphic granite and irregular concentrations of quartz are abundant. Beryl occurs in well formed crystals from 1/16 inch to 3-1/2 inches in diameter; lengths up to 8-1/2 inches were observed. The ratio of beryl to rock is estimated by the U. S. Geological Survey at less than 1:1,000 (0.1 percent by volume), with its greatest concentration over an exposure of 200 square feet about 1:500 (0.2 percent by volume). Small grains of columbite-tantalite were noted. Moyer stated that it also occurred in thin sheets and plates. Columbite-tantalite is estimated at about 0.004 percent by volume. The beryl and columbite-tantalite are distributed erratically within the main mass. No evidence of tungsten was found.

The central dike, to the north, is the largest. It is about 50 feet wide and was traced for 500 feet along the strike by the examining team. It is part of the steep cliff which rises about 80 feet above the valley floor. This dike is a fine-grained, granitic quartz-potash feldspar-biotite-muscovite pegmatite with small, red garnet crystals developed. No beryl, columbite-tantalite, commercial grade feldspar, or mica were observed and there was no evidence of tungsten mineralization.

The above dike is separated from the one farthest to the north by 30 feet of quartzite. The north dike is 10 feet wide and can be traced for 500 feet along the strike and is similar to the south dike. It is beryl bearing and may contain some columbite-tantalite although none was observed at the time of examination. Its beryl content is roughly estimated at 1:5,000

or 0.02 percent beryl by volume. Commercial grades of feldspar and mica will probably be the same as estimated for the south dike.

MINABLE ORE RESERVES

Only the south and north pegmatites are considered to be sources of commercial mineral products. The south dike is estimated to contain 8,800 tons of minable pegmatite and the dike to the north, 33,400 tons of minable pegmatite. From the above, totaling 42,200 tons of indicated and inferred pegmatite, the following mineral reserves are estimated for the Rock King lode:

Dike Location	Mineral	Estimated percent of mineral in the dike	Estimated Recovery	Estimated tons of recoverable mineral
South	Beryl	0.15	1/3	4.40
North	Beryl	0.02	1/4	1.67
				6.07 Total
South	Columbite-tantalite	0.004	1/4	0.088
North	Columbite-tantalite	trace		0.012
				0.100 Total
South	Albite-parthite	60.0	1/2	2,640.0
North	Albite-perthite	60.0	1/2	10,020.0
				12,660.0 Total
South	Muscovite	20.0	1/2	880.0
North	Muscovite	20.0	1/2	3,340.0
				4,220.0 Total

Gross Value of Estimated Ore Reserves

Mineral	Tons	Price per ton	Gross Value
Beryl	6.07	$ 540.00	$ 3,278.00
Columbite-tantalite	0.10	2,000.00	200.00
Feldspar	12,660.0	4.50	56,970.00
Muscovite	4,220.0	27.00	113,940.00
Total			$174,388.00

Gross value of recoverable minerals divided by pegmatite reserves gives a gross value of $4.13 per ton.

PRESENT STATUS

Exploration and Development

The southernmost dike has been developed by a bench 180 feet long with a vertical face 10 to 40 feet high which has exposed the structure of the south side of the paralleling dikes. Two shallow pits west and north of the above development expose the dike mass near their north limit.

Mining and Milling Equipment

The only mining equipment consists of one dilapidated mine car and various hand tools. There are no milling facilities as salable products are hand sorted and shipped where possible.

New Equipment

The quarry would have to be completely equipped.

Transportation

All market contacts would be by truck transportation to Salida, 12-1/2 miles distant, over the Ute Trail road, and thence by the Denver and Rio Grande Western Railroad.

Manpower

Labor is readily obtainable at Salida, at $1.50 per hour. Moyer would supervise operations.

Power

Electric power is 8 miles distant and would require a line extension.

Water

Water for mining purposes is available from a shallow well and a nearby intermittent stream.

PROJECT PROPOSALS AND COSTS

H. S. Moyer proposes to explore his pegmatite deposit by means of an open-cut through the most promising location. This cut would be about 160 feet long with a height up to 80 feet. He expects to sort pegmatite spoil into salable units of albite and perthite, muscovite, beryl, and columbite-tantalite. His estimate of $5,000.00 is probably too low. About $12,000.00 would more likely be required to complete the project as outlined over a period of six months.

PROPOSED FINANCING

The applicant expects to contribute his services to the project and raise any additional funds needed for his participation locally.

CONCLUSIONS

Only the southern and northern dikes contain minerals of strategic importance.

The estimated gross value of pegmatite is $4.13 per ton, which will not pay mining and transportation expenses at present or probable future prices.

The beryl and columbite-tantalite are distributed in comparatively small crystal units and very erratically.

The possibility that concentrations of strategic minerals within the dikes may improve over estimated content is very doubtful.

There is no local market for the applicant's hand-sorted albite and perthite and scrap muscovite. Quarrying operations for beryl and columbite-tantalite, alone, are not justified due to their low concentrations.

The project is estimated to cost about $12,000.00.

RECOMMENDATIONS

It is recommended that the application for an exploration loan of $5,000.00 under the terms of the Defense Production Act of 1950 be denied.