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

Lyons (E JTM)
McKnight
Bishop
Bradford

Re: DMA-1472

SEP 2 5 1951

Q E L

Mr. E. L. Snell
Criterion Mining Company
Fairplay, Colorado

Dear Mr. Snell:

The Defense Minerals Administration has again reviewed your application for a loan to explore your property in the Alma District, Park County, Colorado.

A report submitted by the Field Team after examination of your property indicates that there is little possibility of finding a sufficient tonnage of ore of minable grade to warrant further exploration. In view of this, we are unable to justify an expenditure of public funds for the work you propose. I regret, therefore, that your application must be denied.

We wish to thank you for bringing this property to our attention.

Very truly yours,

Tom Lyon S.F. 9-25

Tom Lyon, Director
Supply Division

EJLyons:emp
G 9-20-51
Copies to: J. H. East, Jr. Region IV (2)
Chief, Lead-Zinc branch
E. T. McKnight 4204 GSA
O. Bishop
Directors r. files 4214 GSA
Br. r. files 4214 GSA
Administrators r. file
DMA docket files

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

SEP 2 5 1951

Re: DMA-1472X
E. L. Snell, Criterion Mining Co.
Criterion Mine, Park County, Colo.
Exploration loan $12,000
(Estimated by field team)
Lead, zinc

Memorandum

To: Reports and Records Unit
Administrative Management Div.

From: Chief, Lead-Zinc Branch

Subject: Recommendation for denial of application submitted by E. L. Snell, on behalf of the Criterion Mining Company for exploration loan.

a.E.e.

The property involved has been examined and reported on by the Field Team.

The applicant proposed to rehabilitate No. 1 adit and surface workings, explore replacement zones along fissures to the northeast of the present workings, and explore for bedded replacement deposits in limestones exposed in the present drifts. Although the applicant did not estimate the cost, the examining team believes that the total cost would be $12,000.

The Criterion mine is located in the Alma Mining District, Park County, Colorado. The mine is developed on a northeast-striking fissure, which dips about 60° to the northwest. No. 1 level is in the Manitou limestone and No. 2 in the Sawatch quartzite. Although the lower levels are not accessible, it is probable that the vein is present in the Sawatch quartzite or pre-Cambrian rocks in the lowest or No. 6 level.

The deposits are fissure fillings or limestone replacements in the Manitou limestone.

In the lower levels the vein deposits have produced mainly gold and silver. A small amount of oxidized lead and zinc ores have been produced from Nos. 1 and 2 levels.

There are no measured ore reserves. The examining team, after investigating and assaying the deposit, estimated that there are present at the maximum about 500 tons of inferred ore which would average about 5% Pb and 7% Zn. Most of this is oxidized ore which could not be treated in the custom mills of the region.

Because of the small potential reserves, the relatively low grade of the ore, and the difficulty of concentrating such an ore, the Field Team recommends that the application be denied. The Lead-Zinc Branch concurs with this recommendation.

Returned herewith are:

3 copies Form MF-103 with attached letter to J. H. East, Jr.
1 copy of "Review of Application" for exploration assistance
2 copies of letter to applicant from Tom Lyon
2 " " " " T. H. Kuhn from E. L. Snell
1 copy of Field Team report.

T. P. Billings, Chief
Lead-Zinc Branch

Approved:

Director, Supply Division

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

224 New Customhouse
Denver 2, Colorado

September 14, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 1472-X, Criterion Mining Company, Zinc-Lead Mine, Alma District, Park 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 $12,000 be denied.

The brochure is enclosed.

Paul T. Allsman, Alternate

A. H. Koschmann

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

SEP 18 1951

Mining Division
Region IV

September 14, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, Docket DMA-1472-X, Criterion Mining Company, Alma Mining District, Park County, Colorado

Less than 500 tons of ore, averaging approximately five percent lead and seven percent zinc can be inferred from geologic evidence. The bulk of the possible ore is in the form of carbonates, sulphates, and oxides of lead and zinc, and cannot be treated in the custom mills of the region.

Because of the small tonnage of inferred ore, and the difficulty in concentrating mixed oxidized ores, the examining team recommended that the application for an exploration loan estimated to cost $12,000 be denied.

We concur with the findings of the examining team.

Paul T. Allsman

Paul T. Allsman

Mining Division
Date Recd.
SEP 5 1951
BUREAU OF MINES
Denver, Colorado

Building 20
Denver Federal Center
Denver 14, Colorado

September 4, 1951

Memorandum

To: Chief, Mining Division, Region IV

From: W. M. Traver, Jr.

Subject: DMA-1472K, Criterion Mining Company, Park County, Colorado.

Please find enclosed the original and seven copies of the Summary, Conclusions, and Recommendations by Harrer and Kuhn, and the identical number of copies of Harrer's Engineering Report on the subject docket.

Due to the complex ore, necessity for hand sorting, difficult winter operation conditions, and small reserves, the examining team concludes the application should be denied. I concur with their recommendations.

In addition, I believe the application could be disapproved on the basis alone that, except for the small reserve of 15 tons of indicated and 100 tons of inferred oxidized lead ore estimated where sample H525 was taken, the other reserves represent ore that, so far as I know, is unmarketable.

Obviously, ore as highly oxidized as that indicated by the other samples would not be acceptable at the Resurrection Mining Company's custom mill at Leadville, and it is too low-grade for shipment to Coffeyville, Kansas, as zinc ore. It is a certainty the oxidized zinc ores could not be upgraded at the mine to meet specifications for such class product and show a profit.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Administration
200 New Customhouse
Denver 2, Colorado

September 10, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 1472X, Criterion Mine, Criterion Mining Company, Alma Mining District, Park County, Colorado

Attached are 8 copies of the geologic report by Truman H. Kuhn, U. S. Geological Survey, covering the Criterion Mine, Alma Mining District, Colorado

Mr. Kuhn points out that geologic conditions are unfavorable to make significant ore discoveries, that the ore will be low grade and oxidized in character, which cannot be treated in local mills. He, therefore, recommends that the loan be denied.

I concur with this recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachments (8)

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1472X, Criterion Mining Company

Alma Mining District

Park County, Colo.

C. M. Harrer, Mining Engineer
Bureau of Mines

Truman H. Kuhn, Geologist
U. S. Geological Survey

August 31, 1951

CRITERION MINING COMPANY
ALMA MINING DISTRICT
PARK COUNTY, COLO.

Summary, Conclusions, and Recommendations

By C. M. Harrer
Mining Engineer
Bureau of Mines

and

Truman H. Kuhn
Geologist
U. S. Geological Survey

CRITERION MINING COMPANY
ALMA MINING DISTRICT
PARK COUNTY, COLO.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and Truman H. Kuhn

The Criterion Mining Company has applied for an exploration loan for an unstated amount to explore for lead and zinc. The examining team estimates $12,000.00 will be required to perform the work requested.

A vein which probably extends from the pre-Cambrian rocks and Sawatch quartzite exposed in the number six level to the Manitou limestone in number one level has been developed on the Criterion property. Vein deposits in the lower levels have produced mainly gold and silver, and a small amount of oxidized lead and zinc ore has been produced from the vein on the number two and number one levels. Associated with the vein on the upper levels are two small oxidized lead and zinc replacement bodies.

In general, the deposits in the Alma district are small and scattered as compared with the larger blanket deposits at Leadville.

Less than 500 tons of ore averaging approximately five per cent lead and seven per cent zinc can be inferred from geologic evidence. The ore consists predominantly of carbonates, sulphates, and oxides of lead and zinc with minor amounts of galena and sphalerite.

Because of the difficulty of treating the complex oxide and sulphide ores and the small inferred reserves estimated in

unimportant limestone replacement bodies, it is recommended that this application for an exploration loan be denied.

Geology

CRITERION MINE

CRITERION MINING COMPANY

ALMA MINING DISTRICT

PARK COUNTY, COLORADO

DMA DOCKET 1472X

Geology and Ore Reserves

Truman H. Kuhn, Geologist
U. S. Geological Survey

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CRITERION MINE
CRITERION MINING COMPANY
ALMA MINING DISTRICT
PARK COUNTY, COLORADO

INTRODUCTION

The Cleaner claim (U. S. Survey No. 182), owned by the Criterion Mining Company, and the Criterion claim (U. S. Survey No. 950) and the Caroline claim (U. S. Survey No. 2359), leased by the Criterion Mining Company, are located in section 3, T. 9 S., R. 78 W., on the Buckskin Gulch side of Mt. Bross in the Alma Mining District, near Alma, Park County, Colorado. E. L. Snell, a partner and acting for the company, has applied for an exploration loan of approximately $12,000.00 (DMA Docket 1472X) to explore these claims for lead and zinc.

The property was examined on July 22, 1951, accompanied by E. L. Snell, and again on August 3, 1951, accompanied by C. M. Harrer and D. L. Roberts, engineers for the U. S. Bureau of Mines.

Geology of the general area has been discussed by Quentin D. Singewald and B. S. Butler in ORE DEPOSITS IN THE VICINITY OF THE LONDON FAULT OF COLORADO, U. S. Geological Survey Bulletin 911, 1941, and summarized by John W. Vanderwilt in MINERAL RESOURCES OF COLORADO, State of Colorado Mineral Resources Board, 1947.

GENERAL GEOLOGY

In the Alma area the oldest rocks are pre-Cambrian gneiss, schist, granite, pegmatite, and granite gneiss. Unconformably overlying the

pre-Cambrian rocks are:

1. Cambrian Sawatch quartzite, including the Peerless shale member
2. Ordovician Manitou limestone
3. Devonian Parting quartzite
4. Devonian Dyer limestone
5. Mississippian Leadville limestone
6. Pennsylvanian Weber (?) formation.

All the limestones are dolomitic.

Abundant Tertiary (?) igneous rocks, close to quartz monzonite porphyry in composition, occur principally as sills in the sedimentary rocks and as dikes in the pre-Cambrian rocks.

The ore deposits of the Alma area may be classified in order of past output as:

1. Gold veins related to the footwall zone of the London fault
2. Silver-lead bedded replacement bodies and replacement veins in limestone
3. Gold veins and replacement veins in the Sawatch quartzite
4. Miscellaneous types, mainly in pre-Cambrian rocks.

Most of the ore from the silver-lead bedded replacement deposits and replacement veins occurs in the upper part of the Leadville limestone, but none of the pre-Pennsylvanian limestone is wholly barren. The deposits are small and scattered as compared with the larger "blankets" at Leadville.

Gold deposits in the Sawatch quartzite consist of oxidized ores. In places, a massive sulphide vein, lean in gold, has been mined for lead and zinc.

Small veins occur in the crystalline rocks, but the larger mines have been in the sedimentary formations.

CRITERION MINE

A northeasterly striking vein has been prospected on No. 2 level of the Criterion Mine in the Sawatch quartzite and has been followed upward through the Peerless member into the Manitou limestone on No. 1 level. The average dip of the vein is approximately 60° to the northwest. The same vein probably occurs in the Sawatch quartzite and the pre-Cambrian rock in the lowest or No. 6 level.

The Criterion vein in the upper levels is a relatively strong structure, with up to 2 feet of altered and weathered material. Vein matter consists of quartz, limonite, barite, pyrite, galena, sphalerite, and carbonates, sulphates, and oxides of lead and zinc. The offset along the vein was not determined; however, the amount could not be more than a few feet.

A very weakly mineralized fault was seen on the surface cutting the Parting quartzite. This could be the upward extension of the Criterion vein.

Vein deposits in the lower levels have produced mainly gold and silver which occurred with quartz and limonite in oxidized and weathered deposits in the Sawatch quartzite. A small amount of oxidized lead and zinc ores have been produced from the vein on the No. 1 and No. 2 levels.

Three samples cut across the vein assayed:

Sample No.	Width ft.	Level	Total Lead %	Total Zinc %	Oxide Lead %	Oxide Zinc %	Gold oz.	Silver oz.
H522	2.4	No. 1	7.15	17.3	5.8	16.6	0.07	1.5
H523	1.2	No. 2	2.9	11.75	1.1	10.5	0.06	1.3
H524	1.5	No. 2	2.55	5.5	1.25	4.75	0.03	0.7

Associated with the vein are several small replacement bodies. On No. 1 level a 4-foot bed, approximately in the middle of the Manitou limestone has been replaced northward from the vein for about 6 feet. Two samples cut across this bed assayed:

Sample No.	Width ft.	Level	Total Lead %	Total Zinc %	Oxide Lead %	Oxide Zinc %	Gold oz.	Silver oz.
H520	3.7	No. 1	1.5	2.55	0.8	2.4	0.045	0.6
H521	4.5	No. 1	3.15	5.25	2.55	5.05	0.01	0.8

On No. 2 level the Peerless member, near its contact with the Sawatch quartzite, has been replaced at least several feet from the vein proper. A samples from across this zone assayed:

Sample No.	Width ft.	Level	Total Lead %	Total Zinc %	Oxide Lead %	Oxide Zinc %	Gold oz.	Silver oz.
H525	3.0	No. 2	26.5	0.35	22.6	0.05	0.12	1.6

ORE RESERVES

No ore is blocked out and all estimated tonnages are inferred from indirect geologic evidence.

Lead-Zinc Vein Deposits

Although a few small bodies have been mined from the vein on No. 1 and No. 2 levels, the tonnage has been very small. The total future

lead-zinc production from the 1 to 2 foot vein could not be expected to exceed a few hundred tons of ore averaging approximately 5 per cent lead and 13 per cent zinc. Approximately 3 per cent lead and 12 per cent zinc is in the form of oxidized minerals, and the other 2 per cent of lead and 1 per cent of zinc is in the form of galena and sphalerite.

Lead-Zinc Limestone Replacement Deposits

On No. 1 level, one bed, averaging 4 feet in thickness, is mineralized 6 feet northward from the vein. The applicant proposes to follow downward the contact between the bed and the vein. Judging from the assays taken and from the history of the Criterion mine, an ore body, if found, could not be expected to exceed a few hundred tons of ore averaging approximately 3 per cent total lead and 4 per cent total zinc.

On No. 2 level, there are a few tons of high grade lead oxide ore near the Sawatch-Peerless contact in the vicinity of sample H525. The extent of this ore zone is limited, and the maximum expectable ore would not exceed 50 tons, the average grade of which would be considerably below the grade indicated by the one sample.

Gold-Silver Deposits

Since the loan application is for lead and zinc exploration, the possible gold-silver reserves in the Sawatch quartzite in the lower levels have not been considered for this report.

Summary

The maximum amount of inferred lead-zinc ore from the Criterion mine would not exceed 500 tons of material averaging approximately

5 per cent lead and 7 per cent zinc, most of which occurs as oxidized ores.

CONCLUSIONS AND RECOMMENDATIONS

The lead-zinc reserves in the Criterion mine are negligible, and not more than 500 tons of ore, averaging approximately 5 per cent lead and 7 per cent zinc, can be inferred from geologic evidence. The bulk of the possible ore is in the form of carbonates, sulphates, and oxides of lead and zinc and cannot be treated in the custom mills of the region. The ore must be shipped without concentrating either as zinc ore or as lead ore.

Because of the small expectable reserves, the relatively low grade of the ore, and the difficulty in concentrating oxide ore of the mixed type, it is recommended that the application for a development loan be denied.

CRITERION MINING COMPANY
ALMA MINING DISTRICT
PARK COUNTY, COLO.

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

Engineering

CRITERION MINING COMPANY
ALMA MINING DISTRICT
PARK COUNTY, COLO.

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ILLUSTRATIONS

Figure	Follows Page
1. Index Map, Criterion Mining Co., Alma Mining District, Park County, Colo.	1
2. Level and assay map, Criterion mine, Alma Mining District, Park County, Colo.	*

*See illustration following "Geology Report".

CRITERION MINING COMPANY
ALMA MINING DISTRICT
PARK COUNTY, COLO.

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

Criterion Mining Company, of Fairplay, Colorado, identified under Defense Minerals Administration Docket 1472 X, proposes to explore certain lead-zinc exposures in the upper levels of the Criterion mine. To accomplish this, an exploration loan, estimated by the examining engineer as $12,000.00, on a 50 per cent participation basis under the Defense Production Act of 1950 has been applied for.

An examination of the company's property on August 3, 1951, by members of the U.S. Bureau of Mines and the U.S. Geological Survey is the basis of this report.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

Criterion Mining Company property is in sec. 3, T.9S., R.78W., of the 6th P.M., Alma Mining District, Park County, Colorado, 3.7 miles northwest of Alma and on the northeast side of Buckskin Gulch (fig. 1). A well maintained county road leads from Alma to the properties which are between 11,000 and 12,000 feet altitude. The terrain is steep and rugged and well wooded in part. Water is available from mine drainage, a small lake at the foot of the properties, and from Buckskin Creek.

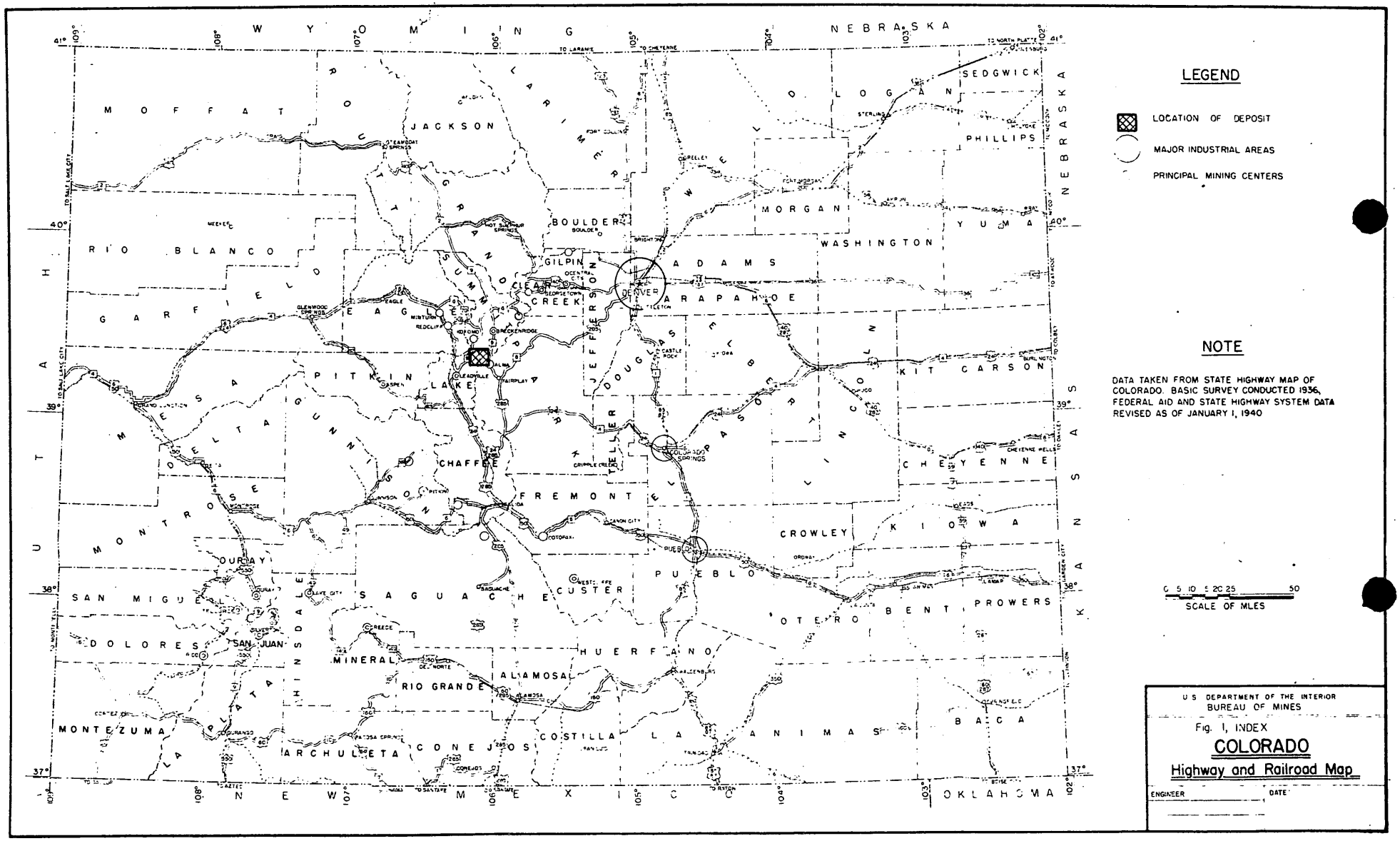

Fig. 1 - CRITERION MINING CO. ALMA MINING DISTRICT, PARK CO. COLO., DMA-1472 X

Cool summers and rigorous winters with considerable snow fall are the rule. Existing climatic conditions will not permit continuous operation for more than seven months of the year. Ready access is possible to a number of supply centers from Alma by truck and railroad combinations.

HISTORY AND PRODUCTION

The mining claims under consideration were located in 1872 by W. J. H. Miller, of Alma, Colorado. During 1882 to 1887, 450 tons of ore were reported shipped to the Grant smelter as "sand carbonates". There is no record of values other than that they returned $11.50 to $22.00 per ton. Extensive mine excavations and early reports infer a large production of gold ore. There is no complete and authentic record of this gold production.

Production statistics of the U.S. Bureau of Mines indicate that 24 tons of gold ore were produced during the period 1902 to 1903, assaying 0.7 ounces gold and 1.5 ounces silver per ton.

Sixty-one tons of lead-zinc ore from the vicinity of number one adit level, shipped to the U.S. Zinc Company, at Blende, Colorado, in 1924, assayed 0.1 ounce gold and 2.5 ounces silver per ton, 10.0 per cent lead and 20.7 per cent zinc.

During the years 1924 to 1950, a total of 116 tons of ore was reported with a recovery assay of 0.19 ounce gold and 2.7 ounces silver per ton, 11.4 per cent lead, 17.6 per cent zinc, and 0.08 per cent copper.

OWNERSHIP AND EXTENT

The Criterion Mining Company, of Fairplay, Colorado, a partnership between J. M. Youngson, of 315 Union Avenue,

Bakersfield, California, and E. L. Snell of Fairplay, Colorado, controls the following mining claims by ownership and lease:

The Cleaner Lode, patent number 182, is owned by J. M. Youngson.

The Criterion Lode, Patent number 950, and the Caroline Lode, patent number 2359, are controlled by a lease assignment.

At the present time Mr. Youngson expects to secure a direct lease from the C. C. Browning estate of Denver, present owners, to insure clear title.

The claims have a combined ~~area of fifteen acres.~~

DESCRIPTION OF THE DEPOSIT

Several small and irregular bodies of highly oxidized lead-zinc ore occur in the limestone host rock as replacements along its bedding and fissures, and have been developed in part by small open stopes. Excavations in the area under consideration for exploration testify to the small size of individual replacement zones containing zinc-lead ore of interest to operators and leasers.

Past development of the property, now mainly inaccessible, was for gold and silver rather than the base metals lead and zinc.

MINABLE ORE RESERVES

Six character samples, H-520 to H-525 inclusive, taken on the first and second adit levels are the basis of reserve estimates and their locations are shown and analyses listed in a table on figure two.

Two potential sources of lead-zinc ore are exposed on each level as fissure and bedded replacements of limestone by lead and zinc minerals now highly oxidized.

The Number One Adit Level:

There are no measurable ore reserves. Indicated ore reserves for the fissure replacement in the vicinity of sample H-522 are estimated at 67 tons, assaying 0.07 ounce gold and 1.5 ounces silver per ton, 7 per cent lead and 17 per cent zinc. The bedded replacement in the vicinity of samples H-520 and H-521 is estimated to contain 40 tons of indicated ore assaying 0.03 ounce gold and 0.7 ounce silver per ton, 2.3 per cent lead and 3.9 per cent zinc.

Inferred ore reserves based purely on geologic inference and the possiblity of repetition of favorable replacement zones are estimated at 100 tons, assaying 0.05 ounce gold and 1.2 ounces silver per ton, 5 per cent lead and 12 per cent zinc.

The Number Two Adit Level:

There are no measurable ore reserves.

Indicated ore reserves for the fissure replacement located by samples H-523 and H-524 are estimated at 50 tons, assaying 0.04 ounce gold and 1.0 ounce silver per ton, 2.7 per cent lead and 8.6 per cent zinc. The bedded replacement deposit at sample H-525 is estimated to contain 18 tons of indicated ore, assaying 0.12 ounce gold and 1.6 ounces silver per ton, 26.5 per cent lead and 0.35 percent zinc.

Inferred reserves are estimated at 100 tons assaying 0.08 ounce gold and 1.0 ounce silver per ton, 14.6 per cent lead and 4.5 per cent zinc.

Total reserves for the accessible parts of the Number one and number two adit levels are estimated at 375 tons of predominantly oxide ore, assaying 0.06 ounce gold and 1.0 ounce silver per ton, 8 per cent lead and 9 per cent zinc.

PRESENT STATUS

The property is idle at present. The number one adit level is readily accessible for 140 feet and difficultly accessible through caving ground for an additional 50 feet. It would require considerable rehabilitation before mining operations could be started.

The number two adit level, 64 feet below, is accessible for 190 feet. Small stopes show no evidence of caving.

The access road to the number one adit level is very steep and rough and in need of considerable repair.

PROPOSED EXPLORATION PLAN AND COSTS

The Criterion Mining Company proposes to explore replacement exposures in limestone for potential lead-zinc ores in the vicinity of the first and second levels of the Criterion mine as follows:

1. Rehabilitate the number one adit level and surface plant.
2. Explore replacement zones along fissures, northeasterly, with about 50 feet of drift and 30 feet of raise.
3. Explore the limestone bedded replacements exposed in

the drift walls with about 75 feet of drift, as conditions dictate.

It is estimated by the examining engineer that this project would cost $12,000.00 and require four months for completion.

The company lists equipment on hand and requirements for rehabilitation only. Several large items are noted as purchases. It is believed that the shortness of the program would not justify this, and rental is recommended. Equipment on hand as reported by the applicant, cost data, and an estimate of the total cost of exploration follows:

Equipment Now Available at the Criterion Mine

1. Gardner-Denver drifter, #93
2. 3½ inch drill column and arm
3. Two sets 1-1/8 inch lug Leyner steel for Timken bits
4. Gardner-Denver Jackhammer steel for Timken bits
5. Two sets 7/8 inch hex. Jackhammer steel for Timken bits
6. One set 1 inch hex. stoper steel for Timken bits
7. 1,000 feet of 2 inch airline, installed
8. Two 1 ton mine cars, 18 inch gauge
9. One 600 foot aerial tramway
10. One 60 ton ore bin at lower terminal
11. Imperial I.R. type 10 compressor, size 14 x 12 x 7½; two stage
12. 75 H.P. motor for compressor. No power available.
13. International gas engine to operate compressor
14. Miscellaneous small tools

All equipment items are reported in good condition except (9) the aerial tramway is not complete and is inoperative, (11) the compressor requires extensive repairs, (12) its motor drive is unusable as power is not connected in, and (13) the gas engine substitute drive is considered as unsatisfactory.

Estimated Cost of Equipment Required at the Criterion Mine

*1 - Stoper (rental, 4 mo. @ $66.75/mo)	$ 267.00
1 - Slusher (2nd hand, or rental, approx.)	400.00
Timken bits @ 50 ¢ each	50.00
*1 - 315 cu. ft. Compressor (rental 4 mo. @ $507.00)	2,028.00
Mining and small tools	60.00
Fuel	500.00
300 feet mine track, bolts, spikes, etc.	250.00
3 - 50 foot air hoses, complete	190.00
2 - 50 foot water hoses, complete	66.00
3,000 feet - 1 inch lumber	165.00
3,000 feet - 2 inch lumber	330.00
6 x 6 timbers	70.00
200 pounds nails	30.00
150 - 4" x 6" x 30" ties @ 20¢	30.00
17 - rolls roofing paper	68.00
1 - stove	65.00
Mine timbers	100.00
Total Estimated Cost of Equipment	$4,669.00

*Purchase of these items would increase the total estimate cost of equipment at least $5,000.00.

Estimated Labor Costs to Rehabilitate Number One Adit Level

To rehabilitate mine plant and workings	$ 900.00
Road repairs and camp construction	500.00
Installing Compressor and housing it	500.00
Total	$1,900.00

Estimated Cost of Exploration

125 feet of drifting @ $30.00 per foot	$3,750.00
30 feet of raise @ $25.00 per foot	750.00
Total	$4,500.00

Total Estimated Cost of Exploration Program

Equipment	$ 4,669.00
Rehabilitation	1,900.00
Exploration	4,500.00
	11,069.00
Contingencies	931.00
Total cost	$12,000.00

The applicant made no estimate of cost of the proposed exploration and the above estimates were made by the examining engineer.

CONCLUSIONS

The original galena and sphalerite ore has been altered to include the recognizable products of oxidation, limonite, cerrussite, plumbojarosite, smithsonite, and hydro-zincite, to form a predominantly oxide ore difficult to concentrate or turn to a maximum profit.

The ore will require hand sorting and would be shipped to the Resurrection Mining Company's mill for treatment or to

the American Smelting and Refining Company smelters at Leadville, Colorado, or Amarillo, Texas.

Rough terrain and heavy winter snows make mining operations for more than seven months a year doubtful.

Lead-zinc concetrations as replacement ore bodies in limestone appear small and erratic and offer little encouragement to any but small and intermittent leasing or "split check" operations.

There are insufficient ore reserves predictable to make this a promising venture.

RECOMMENDATIONS

It is recommended that the application of the Criterion Mining Company for an exploration loan of $12,000.00 under the Defense Production Act of 1950 be denied.

6-303
(March 1947)

cc: P. T. Allaman
W. M. Traver, Jr.

Colorado Branch

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Salt Lake City, Utah

Date Rec'd
AUG 16 1951
BUREAU OF MINES
Denver, Colorado

No. 13

Report to Mr. C. M. Harrar

Chemical Laboratory Report

Date received Aug. 10, 1951

Date reported Aug. 15, 1951

Serial No.	DESCRIPTION	Lot No.	Au	Ag	Pb	Zn	Oxide Pb	Oxide Zn
	IMA-1472X, Criterion Mining Co. Sec. 5, T. 9 S., R. 78 W., Park County, Colorado							
97618	Drift 3.1' Width Flat vein. No.1 level.	B-520	0.045	0.6	1.5	2.55	0.8	2.4
19	Side of drift 4.5' Width Flat repl. No.1 level	21	0.01	0.8	5.15	5.25	2.55	5.05
97620	Drift face 2.4' Width Vein repl. No.1 level.	22	0.07	1.5	7.15	17.3	5.8	16.6
21	Drift 1.2' Width 45° Vein repl. Vein No.2 level.	23	0.06	1.3	8.9	11.75	1.1	10.5
22	" 1.1' Width Vein repl. No.2 level @ raise	24	0.05	0.7	2.55	5.5	1.25	4.75
23	" 3.0' Normal vein No.2 level.	25	0.12	1.6	26.5	0.35	22.6	0.05

DIST. ENGR.
EXAMINATION
DIST. CLERK
PERSONNEL
FILES

U. S. GOVERNMENT PRINTING OFFICE 16—33553-3

Signed H. E. Peterson

Back Production of CRITERION MINING CO., Buckskin District, Park County, Colorado

1930 - 1944 No production

Note: Mill constructed early 1937, small operation (no production recorded).

	Operator	Claim	Crude Ore	Gold (ounces)	GROSS METAL CONTENT Silver (ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
1945	Criterion Mining Co. Alma, Colo.	Criterion millsite	4	1	25	7	93	-
1946 - 1947	No production							
1948	Criterion Mining Co. % E. L. Snell Alma, Colo.	Pat.: Criterion Caroline Cleaner Unpat.: Brass Brass millsite	12	2	37	24	3,947	392
1949	do.	do.	39	13	103	-	9,176	-
1950	No production							
1902			9	9.0	36			
1903		Criterion	15	7.25	—	—	—	—
1924		Criterion	61	6.30	153	95	13,339	25,325
			131	29.55	318	126	26,555	25,717
		Ave		0.23	2.4+	.05%	10.13%	9.81%
1924-50		ave	167	[illegible]	3.0 2.79+	[illegible] .02	[illegible] 1.4-%	[illegible] 17.6%

6-303
(March 1947)

COPY

cc: P. T. Allsman
W. M. Traver, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Salt Lake City, Utah

No. 13

Report to Mr. C. M. Harrer

Chemical Laboratory Report

Date received Aug. 10, 1951

Date reported Aug. 15, 1951

Serial No.	DESCRIPTION	Lot No.	Au	Ag	Pb	Zn	Oxide Pb	Oxide Zn					
	DMA-1472X, Criterion Mining Co. Sec. 3, T. 9 S., R. 78 W., Park County, Colorado												
97618	3.7' width. Flat Replacement Drift No. 1 level.	H-520	0.045	0.6	1.5	2.55	0.8	2.4					
19	4.5 width. Flat Side of drift repl. No. 1 level	21	0.01	0.8	3.15	5.25	2.55	5.05					
97620	2.4' width. Vein repl. Drift face No. 1 level.	22	0.07	1.5	7.15	17.3	5.8	16.6					
21	1.2' width. Vein repl. Drift No. 2 level 45'	23	0.06	1.3	2.9	11.75	1.1	10.5					
22	1.1' width. No. 2 level @ raise Vein repl. "	24	0.03	0.7	2.55	5.5	1.25	4.75					
23	8.0' width. across bat. No. 2 level. "	25	0.12	1.6	26.5	0.35	22.6	0.05					

U. S. GOVERNMENT PRINTING OFFICE 16—33553-3

Signed

Fairplay, Colo.
July 7, 1951

Truman H. Kuhn
U. S. Geological Survey
Mineral Deposits Branch
Bldg. 2-B; Denver Federal Center
Denver, Colo.

Dear Mr. Kuhn:

Your letter of July 3 was received today.

Sunda y would be an excellent day to show you the Criterion property and if more time is required, I can arrange to be with you the following Monday.

I suggest Sunday, July 15. I have a Jeep for transportation to that part of the mine that is difficult to reach. My home is across the street from the Hand Hotel and next to the Steenbock Garage.

I am opening a tunnel on a zinc property at present and I work there every day except Sunday. I usually don't get home until after 6 p. m.

My 'phone number is Fairplay, 56J.

Very truly yours,

E. L. Snell

E. L. Snell

800 New Customhouse
Denver 2, Colo.

July 3, 1951

Mr. E. L. Snell
Criterion Mining Company
P. O. Box 171
Fairplay, Colorado

Dear Mr. Snell:

Your application for a DMA Exploration Loan recently was received in the Denver office and assigned to me for field examination.

When would it be most convenient for you to show me the property? I could be in Alma almost any time except on Saturday. Sunday would be acceptable if that would be more convenient for you.

If you can be reached by telephone, I can call you to make definite arrangements.

My address is:

U. S. Geological Survey
Mineral Deposits Branch
Building 2-2, Denver Federal Center
Denver, Colorado

and my telephone number is Hillpoint 3-3611, extension 6693.

Very truly yours,

Truman H. Kuhn
Geologist

DEPARTMENT OF INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON, D. C.

REGIONAL DIRECTOR'S
OFFICE
REGION IV
JUN 20 1951
BUREAU OF MINES
DENVER, COLORADO

JUN 20 1951

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team
Region IV
225 New Customhouse
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 1472X

Commodity Lead-zinc

Applicant Criterion Mining Company, Fairplay, Colorado

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Lowell B. Moon
For Bureau of Mines

Edwin T. McKnight
For Geological Survey

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

224 New Customhouse
Denver, Colorado

June 28, 1951

Memorandum

To: A. H. Koschmann (with brochure)

W. M. Traver, Jr.

(Through Chief, Mining Division)

From: DMA Field Team, Region IV

Subject: DMA Docket 1472X, Criterion Mining Company, Fairplay, Colorado

Herewith is the application and review of the above docket. Please make the necessary examination and report. If the exploration is being recommended for approval, also include the necessary information to complete the contract.

P. T. Allsman, Alternate

A. H. Koschmann

Attachments

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1472X

Commodity Lead-zinc

Total Amount Not stated

Govt. Participation 50%

1. Name and Address of Applicant Criterion Mining Company

Fairplay, Colorado

2. Location of Property Sec. 3 T. 9 R. 78, Park County, Colorado

3. Mineral or metal Lead-zinc Is it listed in Section 9 of MO-5?

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination Yes

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? No
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? No

Does the lease have sufficient time to run to cover a future

productive period? In good standing according to applicant

*question numbers are those of MF-103

7. Are subordination agreements necessary? _____

a) MF-201? _____

b) MF-202 _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Not known

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? _____

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

_____

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

Applicant might be able to make one

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Indeterminate from application

If not, what part of it is? _____

_____

_____

_____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Yes

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data?_____ If so, attach a draft.

e) Are the cost estimates reasonable? Yes

f) Should more information be requested from applicant?_____

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable?_____

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed?_____

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable?_____

b) Sufficient data?_____ If so, attach a draft.

c) Are rents and charges reasonable?_____

d) Is a field check needed?_____

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data?_____

b) Is the schedule adequate for the work proposed?_____

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed?_____

14. Exhibit E (question 23-c)*

a) Is it applicable? _____

b) Sufficient data? _____

c) Reasonable? _____

d) Field check needed? _____

15. In your judgment, can the proposed work be done in the proposed time? _____

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? A geological examination should be made of this property unless information is available in regional office that can be used for reaching a decision. Applicant should be requested to state the amount needed. This is given a low priority by Washington.

Reviewed by: A. L. Brokaw (GS)

Date 6/19/51

97692

June 19, 1951

Re: Docket DMA-1472X

Criterion Mining Company
c/o E. L. Snell
Fairplay, Colorado

Gentlemen:

Your application (Docket DMA-1472X) for a Government loan under the provisions of the Defense Production Act of 1950 has been reviewed by the Lead-Zinc Branch of the Defense Minerals Administration. Before final decision can be taken on your request it will be necessary to obtain additional information on your property. Your application, therefore, has been referred to Mr. H. H. East, Jr., Executive Officer of the Field Team, 224 New Customhouse, Denver 2, Colorado, for further information and advice.

Very truly yours,

Tom Lyon, Director
Supply Division

ALBrokaw:emp
G 6/19/51
Copies to: J. H. East, Jr.
Region IV (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
L. F. Strobel
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

June 19, 1951

Re: Docket DMA-1472X

Criterion Mining Company
c/o L. L. Snell
Fairplay, Colorado

Gentlemen:

Your application (Docket DMA-1472X) for a Government loan under the provisions of the Defense Production Act of 1950 has been reviewed by the Lead-Zinc Branch of the Defense Minerals Administration. Before final decision can be taken on your request it will be necessary to obtain additional information on your property. Your application, therefore, has been referred to Mr. H. H. East, Jr., Executive Officer of the Field Team, 224 New Customhouse, Denver 2, Colorado, for further information and advice.

Very truly yours,

Tom Lyon, Director
Supply Division

ALBrokaw:emp
G 6/19/51
Copies to: J. H. East, Jr.
Region IV (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
L. F. Strobel
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

FILE COPY
SURNAME:

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

Brokaw (c/me)
McKnight
Mote
Herras
McKnight for Rose
Wagner

June 19, 1951

Re: Docket DMA-1472X

Mailed 6/20/51

Criterion Mining Company
c/o E. L. Snell
Fairplay, Colorado

Gentlemen:

Your application (Docket DMA-1472X) for a Government loan under the provisions of the Defense Production Act of 1950 has been reviewed by the Lead-Zinc Branch of the Defense Minerals Administration. Before final decision can be taken on your request it will be necessary to obtain additional information on your property. Your application, therefore, has been referred to Mr. H. H. East, Jr., Executive Officer of the Field Team, 224 New Customhouse, Denver 2, Colorado, for further information and advice.

Very truly yours,

Tom Lyon, Director
Supply Division

ALBrokaw:emp
G 6/19/51
Copies to: J. H. East, Jr.
Region IV (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
L. F. Strobel
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

Docket 1472

258

FILE COPY
SURNAME:

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

June 13, 1951

Mr. E. L. Snell
Criterion Mining Company
Post Office Box 171
Fairplay, Colorado

Subject: DMA-1472X
Re: Exploration Loan -
Cleaner, Criterion, Caroline

My dear Mr. Snell:

Receipt is acknowledged of your application and attachments of May 18, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1472X and referred to Mr. Otto Herres, Lead-Zinc Branch on June 6, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1472X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

L. F. Strobel:jc
cc: Strobel
File
Herres
Lyon

DMA 1472

856

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-1472X

Date received 6/4/51

Participation

Criterion Mining Company
c/o J. J. Hall
Fairplay, Colorado.

Name and address of applicant

Date May 10, 1951

FILL IN THIS BLOCK

Date of application May 10, 1951

Estimated cost

Mineral or metal Lead and Zinc (Manganese)

Percentage of Government participation 50%

Location of mine Section 3; 10 and 9;
Range 78, Park County, Colorado.

Date of filing MF-100

DMA Docket Number, if available

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? Partnership

*2. If a partnership, state names and addresses of partners. J. J. Young-[illegible] Union Ave., [illegible],

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

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

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

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. Lease is in good standing

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.

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)?

*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.
    (*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.

*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.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
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.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*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:
    (*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.)
    (*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?

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

    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.

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.

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.

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.

Criterion Mining Company
(Name of company)

By E. P. Snell
(Signature of authorized official)

May 17, 1951
(Date)

Partner & Manager
(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

Defense Minerals Administration
Reference Slip

Date 6/6

To: 1. Dennis

2.

3.

4.

DMA 1472X

For Action ✓
Reply
Information
Remarks:

Sender LANDON F. STROBEL
OXL

3
Mr. Strobel DMA 1472X

Forwarded to

Branch

Date

Sender

2
Mr. Strobel DMA 1472X

Forwarded to

Branch

Date

Sender

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-1472X

Date received 6/4/51

Participation

Criterion Mining Company
C/o E.L.Snell
Fairplay, Colorado.

Name and address of applicant

Date May 18, 1951

FILL IN THIS BLOCK

Date of application May 18, 1951

Estimated cost

Mineral or metal Lead and Zinc (Predominate)

Percentage of Government participation 50%

Location of mine Section 3; Township 9; Range 78, Park County, Colorado.

Date of filing MF-100

DMA Docket Number, if available

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? Partnership

*2. If a partnership, state names and addresses of partners. J.M.Youngson-315 Union Ave, Bakersfield, Calif. E.L.Snell

*3. ~~If a corporation, state names and addresses of officers, directors, and five largest stockholders.~~ XXXXXXXXXXX XXXX XXXXXXXXXXXXXXXXXXXX

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

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

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. Lease is in good Standing

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.

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

16—64067-1

JUN 7 1951

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*11. State the present and former names of the property, if any.

*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.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
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.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:

(*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.

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

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

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

(*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.

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

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

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.

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.

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.

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.

Criterion Mining Company
(Name of company)

By E. L. Snell
(Signature of authorized official)

May 17, 1951
(Date)

Partner & Manager Criterion Mining Co
(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

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-1472X

Date received 6/4/51

Participation

Criterion Mining Company
C/o E.L.Snell
Fairplay, Colorado.

Name and address of applicant

Date May 18, 1951

FILL IN THIS BLOCK

Date of application May 18, 1951 Estimated cost

Mineral or metal Lead and Zinc (Predominate) Percentage of Government participation 50%

Location of mine Section 3; Township 9;

Range 78, Park County, Colorado.

Date of filing MF-100 DMA Docket Number, if available

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? Partnership

*2. If a partnership, state names and addresses of partners J.M.Youngson-315 Union Ave, Bakersfield, Calif.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders. E.L.Snell

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

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

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. Lease is in good Standing

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.

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)?

*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.
    (*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.
*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.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
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.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*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:
    (*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.)
    (*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?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

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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:
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    (*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.
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.

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.

Criterion Mining Company
(Name of company)

By E. L. Snell
(Signature of authorized official)

May 17, 1951
(Date)

Partner & Manager
(Title)

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*Same as footnote on page 1.

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

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-1472X

Date received 6/4/51

Participation

Criterion Mining Company
C/o E.L.Snell
Fairplay, Colorado.

Name and address of applicant

Date May 18, 1951

FILL IN THIS BLOCK

Date of application May 18, 1951 Estimated cost

Mineral or metal Lead and Zinc (Predominate) Percentage of Government participation 50%

Location of mine Section 3; Township 9;
Range 78, Park County, Colorado.

Date of filing MF-100 DMA Docket Number, if available

INSTRUCTIONS

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*1. Is applicant an individual, partnership, or corporation? Partnership
*2. If a partnership, state names and addresses of partners. J.M.Youngson-315 Union Ave, Bakersfield, Calif.
*3. ~~If a corporation, state names and addresses of officers, directors, and five largest stockholders.~~ E.L.Snell
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16—64067-1

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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.

15. State in detail how the ore could be shipped and how and where milled.

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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.

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.

Cascade Mining Company
(Name of company)

By E. H. Snell
(Signature of authorized official)

May 17, 1982
(Date)

Partner & Manager
(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

Alma-1472X

Fairplay, Colorado
January 31, 1951

REGIONAL DIRECTOR'S
OFFICE
REGION IV
MAY 28 1951
BUREAU OF MINES
DENVER, COLORADO

Mr. John East
Regional Director
Bureau of Mines
Federal Center
Denver, Colorado

Dear Mr. East:

I wish to go on record in your office for government aid in the mining of lead and zinc ore. The properties are:

Cleaner--patent No. 182
Criterion--Patent No. 950
Caroline--patent No. 2359

These properties are located in the Alma district.

We have developed or operated for several yea rs as best we could on limited means and equipment and have good lead and zinc values opened up. We have also picked up an heretofore undeveloped vein and we now want to drift for the junction. These values carry some copper and also gold.

The ore beddings run from four to five feet thick and the veins are always mineralized with lead and zinc. I am working on a sample map and will send it as soon as possible, but for the present, the following will give you some facts concerning the values we have developed and also the value of ore we have shipped:

Hanging wall top of No. 2 raise, bedding 5 ft. thick; exposed for 20 ft., composite #50 sample cut over full thickness: pb. 14%; zn. 6.2%.

Bedding on foot wall side at point ahead in drift, 5 ft. bedding opened up for 15 ft. Sample No. 55 pb. 4.6 %; zn. 15 %.

Near surface ahead where two veins intersect, sample of small streak hanging wall, assayed sample # 69: au. 026 oz.; ag. 11.20 pb. 60.7 (zn. not assayed.) and copper 1.0 %.

A grab sample of the rest of the area near intersection over a wide area, sample No. 70 ran. pb. 10.2% amd zn. 19.50%. (This sample No. 70 is of especial interest especially because I took pains to keep out anything that showed any of the high grade streak.

Two lots were shipped to the A. S. & R. Smelter at Leadville.. These cpntained lead ore. These shipments had to be kept low in zinc because of penalties and zinc was put over the dump. Please find attached smelter settlements.

The beddings along the main vein have regular occurances and the west vein at point of intersection and beyond gives us many sound reasons to expect higher values and larger ore bodies.

These properties are located on the Buckskin side of Mt., Bross opposite the Phillips workings and approximately 2000 ft. westerly and midway between the Phillips and Mineral Park. Our best values are in the white limestone below the parting quartzite. These has been no development so far at this point.

Mr. J. M. Youngson is the owner of the Cleaner property (pat. No. 182) and is interested with me in this operation. Mr. Youngson formerly operated a business on 38th St. in Denver and also at 315 Union Ave., Bakersfield, Calif. Mr. Youngson has the respect of people for his fair ~~judgment~~ dealing and good judgment.

I have been employed in mining and milling for almost my entire life, and have held positions with the following companies:

Climax Molybdenum Co., as night mill foreman 1923-27.

Molybdenum Corporation of America, Yucca Ariz.-1927--
Molybdenum Corporation of America, Questa, New Mexico as construction and mill superintendent to 1946
I have also leased mining claims and have been in the garage business.

At present, I am mine superintendent for the Shelby-Johnson Mines, Inc., Alma, Colo.

You may contact the following men as references:

J. B. Carman, manager, Molybdenum Corp. of America, Questa, New Mex.

O. R. Whitaker, Consulting engineer, Equitable Bldg. Denver.

John W. Vanderwilt, president, School of Mines, Golden, Colo.

C. H. Jordan, owner and operator of the Phillips Mine, Alma, Colo.

Our surveying and mapping has not been kept up-to-date because of the expense involved and in our operation, this has not been necessary.

If there is any assurance of getting federal aid, any requests for mapping could be complied with. Would it be possible for your engineers to make a preliminary examination?

At this time I cannot say how much financial aid we would need to carry out an operation that would be efficient in every detail, but I have listed all equipment necessary to carry on for a time. You will find explanitory sheets attached.

#5

(The cost of drilling, bits consumption and explosives can be kept at a minimum by using food judgment in drilling and loading powder. the road level at No. 1 dump is at a level with the truck and would be changed for gravity loading.)

I could give you an all-over estimate on what we would expect to spend, but it is obvious that your experience in these undertakings would give you knowledge in arriving at an estima te that would be more nearly correct.

I ha ve spent a ll my years of mine and mill work in studying how to get the most work in the nost efficient way out of what was on hand--either man power or equipment. I believe we have reasons to expect that this property will easily produce tonnage and values in badly needed materials in quantity to justify the effort and expense. A crew of four miners could mine a five to seven ton truck load per day.

Kindly let me know as soon as possible if this fits the present needs and whether you can send and engineer to examine the properties. On 24 he. notice, I can arrange my affairs to be at liberty to show him around.

Very truly,

CRITERION MINING CO.

By E. L. Snell

E. L. Snell
P. O. Box 171
Fairplay,
Colorado

#3

JAN. 1951 EQUIPMENT AT CLEANER AND CRITERION MINE

1. Denver Gardner # 93 Drifter, 3½ inch column and arm--good condition.

2 sets 1 1/8 Lug. liner steel, max. 8 ft. long--good condition.
All steel for Timken bits.

1 Denver Gardner jack hammer steel--fair condition. All steel for Timken bits.

2 sets 7/8 " Hex Jack hammer steel--good condition. All steel for Timken bits.

1 set 1" O Hex. stoper steel. All steel for Timken bits.

1000 ft. 2 " air line installed. Good condition.

2 ore cars 18" gauge--good condition. Track #2 and #6 levels--good condition,
(No track on No. 1. level)

1 (approximately) 600 ft. aerial tram (not complete)

1 60 ton ore bin lower and tra m for truck loading.

1 Imperia l I. R. type 10 compressor, size 14 x 12--7½ x ;2--two stage--
needs repairing.

1 electric motor for above 75 H. P. Not used at present to power compressor because of lack of power line to compressor house.

1 International gas and oil engine used to run compressor at 80 R. P. M. Compressor speed. (Not satisfactory.)

1 Shop equipment in compressor house for sharpening picks, pipe work, etc.

I have my own mechanical, carpentry and pipe threading tools.

#4

JAN.1951 EQUIPMENT NEEDED--CLEANER (PAT. NO. 182) & CRITERION MINE

1 No. Ingersoll-Rand stoper		$400.00	
1 Tugger (used)		600.00	
Timken bits		45.00	
350 cu. ft. compressor oil or gasoline		700.00	
or power line for motor drive for compressor		??	
Picks, misc. tools and lube. oils		60.00	
Gasoline, oil or power	est.	500.00	
300 ft. #12 rails--bolts and spikes		85.00	
3 50 ft. lengths 3¼ " air machine hose		45.00	
2 50 ft. lengths ½" water machine hose		20.00	
2 Fittings for above			
Building, lagging, chute material at #1 level			
3,000 ft. 1" lumber		165.00	
3,000 ft. 2" lumber including 2 x 4 and 6's		165.00	
6 x 6 square timber		70.00	
150 4 x 6 x 30 mine ties.		30.00	
200# nails 10 d; 20 d; 40 d and 61 d.	--		
17 rolls roofing paper		68.00	
1 stove for compressor and fuel	est.	65.00	
Native round lumber for stulls and tunnel sets		100.00	
500# DuPont 45% #2 Gelex		110.00	
			9528.00
Labor for putting workings in shape		900.00	
Road repair and loading bin for ore	est.	500.00	
Buildings and installing compressor	est.	500.00	
		1900.00	~~1142.80~~ 11,428.00

ORE RESERVE CALCULATIONS

CRITERION MINING CO. DMG 1472 X.

No. 1 Adit Level:

Measureable Ore ✓ None. ✓

Indicated ore:

(a) Fissure replacement in vicinity of sample H-522. $\frac{20'l \times 20'w \times 2'\text{thick}}{12}$ = 67. Tons,

assaying the same as sample H-522, i.e.,

Pb	Zn	Au	Ag
7.15	17.3	0.07	1.5 ✓

(b) Bed replacement in vicinity of samples H-520 and H-521. $\frac{20'l \times 6'w \times 4'\text{thick}}{12}$ = 40 tons,

assaying the same as the average of the above 2 samples, i.e.,

Pb	Zn	Au	Ag
2.3	3.9	0.03	0.7

Inferred ore estimated as 100 tons, assaying

Pb	Zn	Au	Ag
5.2 ✓	12 ✓	0.05 ✓	1.2 ✓

, which is

the weighted average of the above Indicated ore reserves.

~~Total ore reserves for the No. 1 adit level are 207 tons.~~

No. 2 Adit Level:

Measureable ore None.

Indicated ore:

(a) Fissure replacement in the vicinity of samples H-523 and H-524. $\frac{60'l \times 10'w \times 1'thick}{12} =$ 50 Tons assaying Pb 2.7, Zn 8.6, Cu 0.04, Ag 1.0, which is the average of the above 2 samples.

(b) Bed replacement in the vicinity of sample H-525, $\frac{10'l \times 7'w \times 3'thick}{12} = 18$ Tons assaying Pb 26.5, Zn 0.35, Cu 0.12, Ag 1.6, which is the same as the above sample.

Inferred ore is estimated at 100 Tons divided equally between both structures,

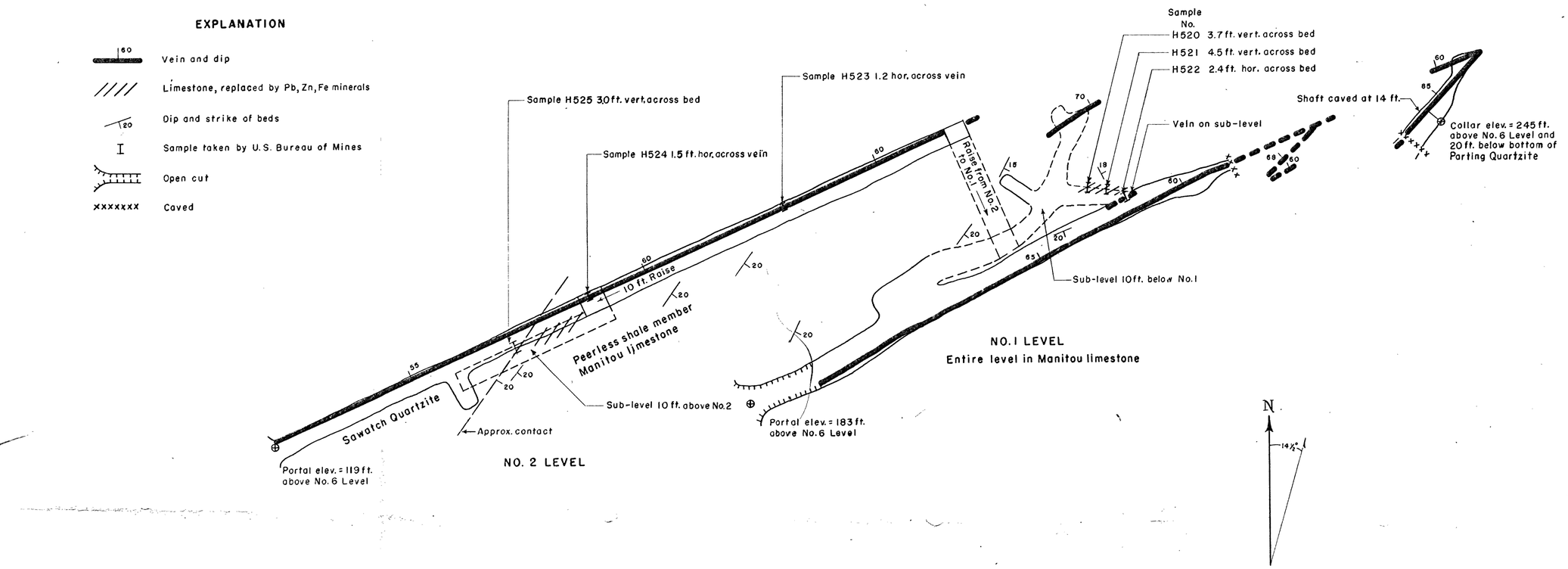
	Pb	Zn	Cu	Ag	
assaying	14.6	4.5	0.08	1.3	average both above inferred ores.

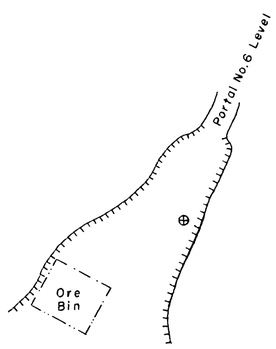
Total reserves are the weighted average of the above, or 375 Tons assaying about

Pb	Zn	Cu	Ag
8.X	9.0	0.06	1.2

	Pb	Zn	Cu	Ag
	8.X%	9%	0.06	1.2
67	4.69	11.39	4.69	100.5
40	.92	1.56	1.20	28.0
175	8.75	21.00		
100	5.20	~~12.00~~	5.00	120.0
50	1.35	4.30	2.00	50.0
18	4.77	.06	2.16	28.8
100	14.60	4.50	8.00	130.0
375	31.53	33.91	23.05	457.3

450





U. S. BUREAU of MINES ASSAYS

Sample No.	Width	Level	Total Lead %	Total Zinc %	Oxide Lead %	Oxide Zinc %	Gold oz.	Silver oz.
H520	3.7 ft vert. across bed	No. 1	1.5	2.55	0.8	2.4	0.045	0.6
H521	4.5 ft. vert. across bed	No. 1	3.15	5.25	2.55	5.05	0.01	0.8
H522	2.4 ft. hor. across vein	No. 1	7.15	17.3	5.8	16.6	0.07	1.5
H523	1.2 ft. hor. across vein	No. 2	2.9	11.75	1.1	10.5	0.06	1.3
H524	1.5 ft. hor. across vein	No. 2	2.55	5.5	1.25	4.75	0.03	0.7
H525	3.0 ft. vert. across bed	No. 2	26.6	0.35	22.6	0.05	0.12	1.6

Department of Interior
U. S. GEOLOGICAL SURVEY

CRITERION MINE

CRITERION MINING COMPANY

Alma Mining District
Park County, Colorado

Brunton and Tape Survey

August 10, 1951 — Truman H. Kuhn

SCALE 20 10 0 20 40 FT.

DMA DOCKET 1472X — Fig. 2