Partin 9/29/5
Office 9/30/5

No. 2

AMENDMENT OF CONTRACT: No. Idm-2491

Contract Docket No. DMEA-2685, dated February 24, 1953, between the United States of America and a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones and E. M. Lill, is hereby amended as follows, effective as of the date of said contract:

> Referring to "Article 3. Exploration Project" of Exploration Project Contract Form MF-200(A), delete "six months" and in lieu thereof substitute "seven months".

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated SEP 2 1953

By Myron L. Jones
Myron L. Jones, Partner

By Louis M. Jones
Louis M. Jones, Partner

By Paul R. Jones
Paul R. Jones, Partner

E.M. Lill, partner deceased

By Douglas C. Evans
Douglas C. Evans, Administrator of the estate of E.M. Lill

UNITED STATES OF AMERICA

By W. H. King
Executive Officer, DMEA
Field Team, Region IV

Orig. 6/12/53 Rubin

AMENDMENT OF CONTRACT: No. Idm-E491 No. 1

Contract Docket No. DMEA-2685, dated February 24, 1953, between the United States of America and a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones and E. M. Lill, is hereby amended as follows, effective as of the date of said contract:

> Referring to "Article 3. Exploration Project" of Exploration Project Contract Form MF-200(A), delete "60" and in lieu thereof insert "90".

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated 'allowable maximum'.

Dated JUN 1 1953

By Myron L. Jones
Myron L. Jones, Partner

By Louis M. Jones
Louis M. Jones, Partner

By Paul R. Jones
Paul R. Jones, Partner

By Douglas C Evans
E. M. Lill, Partner
adm. for the Estate of Ernest M Lill

UNITED STATES OF AMERICA

By W. H. King
W. H. King
Executive Officer, DMEA
Field Team, Region IV

Mr. W. H. King
U. S. Department of the Interior
DMEA
Executive Officer
Field Team, Region IV
224 New Customhouse
Denver 2, Colorado

Rico, Colorado

May, 9, 1953.

Dear Mr. King:

I request thirty days extension of the starting date of contract, DMEA 2686 (Lead-Zink), Idm-D491.

Starting was delayed due to dificultys conserning the E. M. Lill estate, and winter damage to the portal of the mine.

As work can now start immediatly no extension of completion date should be necessary.

Very truly yours,

Myron L. Jones

Docket Copy

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

224 New Customhouse
Denver 2, Colorado

June 1, 1953

Memorandum

To: C.O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Amendment No. 1 to Contract Idm-E491, Docket DMEA-2685, Myron L. Jones, Louis M. Jones, Paul R. Jones and E. M. Lill (Lead-Zinc)

Enclosed are the original and two copies of Amendment No. 1 to Contract Idm-E491. Copies of this amendment have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

Also enclosed are three copies of a letter from the operator requesting this amendment.

RECEIVED
JUN 12 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

W. H. King

W. H. King

Enclosures

cc
6/4

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2685

COMMODITY Lead-Zinc

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Idm-E491

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 13 1953

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 24th day of February, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones, all residing at Rico, Colorado and E. M. Lill of Bagdad, Arizona

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Colorado, County of Dolores, described as follows:[3]

See Annex 1

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

~~(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.~~

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Lead and Zinc

in or upon the described land; and shall bring the project to completion within a period of six months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay fifty (50) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $4,130.00, which is 50 percent of $8,260.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* .....

Executed in sextuplicate the day and year first above written.

Myron Jones Louis M Jones
Paul R Jones
(Operator)
Douglas C Evans Admr
By of C M Sill Estate

THE UNITED STATES OF AMERICA

gwo 2 1 58

By W. H. King
W. H. King
Executive Officer
DMEA Field Team, Region IV

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

Annex No. 1

The following patented mining claims: Ironclad, U. S. Survey No. 865; St. Louis, U. S. Survey No. 8099. The following unpatented mining claims: Rico Boy recorded in Book 58, page 136; Red Dog recorded in Book 58, page 167; all recorded in the Office of the County Clerk and Recorder in the Dolores County Court House.

EXHIBIT A

Description of the Work

Drift 200 feet westward from the present breast in the Ironclad main level along the horizontal vein to explore for mineralization at or near the vein intersections believed to exist ahead of the present workings.

The work is shown on Figure 3 attached hereto which is hereby made a part of Exhibit A.

Estimated Costs of the Work

Drift 200 feet at $41.30 per foot including any and all costs necessary for the completion of the work.

Total	$8,260
Government Participation 50%	$4,130

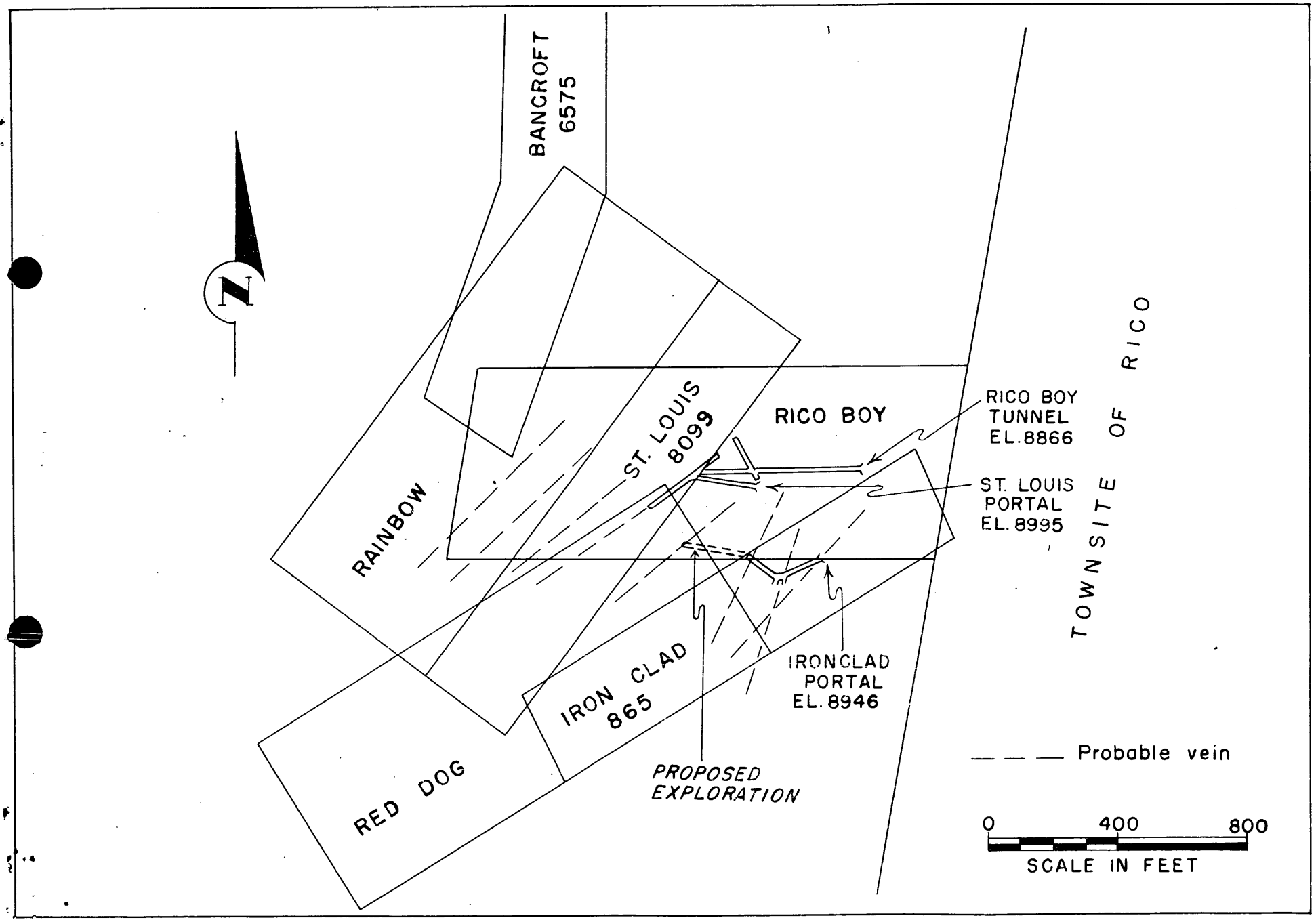

FIGURE 3 – CLAIM MAP, IRONCLAD MINE, DOLORES COUNTY, COLO., DMEA 2685

FILE COPY
SURNAME:

500

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

FEB - 5 1954

Griswold
Butler
Hatfield
Clement

Mr. Myron L. Jones, Partner
Jones, Jones, Jones, and Lill
Ouray, Colorado

Re: Docket No. DMEA-2685 (Lead-Zinc)
Myron L. Jones, et al.,
Ironclad Mine
Dolores County, Colorado
Contract No. Idm-E491

Dear Mr. Jones:

This is with reference to the subject exploration contract between your company and the Government.

The final audit of the contract expenditures and the final reports of the Operator have been received and accepted by this Administration. Of the total amount of $8,260.00, approved under the contract, such sum represents the accepted and approved expenditures actually made. Of this sum, 50 per cent, or $4,130.00, represented the Government's share. The exploration work was completed in a satisfactory manner.

Because the results of the exploration were unfavorable, it is not our intention to make a certification of discovery or development which would create a lien against the subject property. We are, therefore, closing our books and records with respect to this project. Your attention is called, however, to Article 5 of the Contract which requires the Operator to "keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract."

Your interest in the Exploration Program of the Defense Minerals Exploration Administration and your willingness to participate therein are appreciated.

WRGriswold/bjl (2/3/54)
Copy to: Docket
Admr. R. File
Op. Committee
Base Metals
Mr. Kinkel
Mr. Bishop
Region IV(2)
Chron.

Sincerely yours,

C. O. Mittendorf
Administrator

R.C.G.
2-5-54

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

COPY

224 New Customhouse
Denver 2, Colorado

January 21, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket DMEA 2685 (Lead-Zinc), Contract Idm-E491, a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones and E. M. Lill, deceased, Dolores County, Colorado

Enclosed are the following final reports pertaining to work completed under the subject contract:

1. Original and one copy of the operator's final report.

2. Original and three copies of the final geologic report by the U.S. Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

Final payment to the operator was processed by this office January 19, 1954, in conformance with the final report of review by the Contract Administration and Audit Division dated January 18, 1954.

The exploration work consisted of 200 feet of drifting at a total accepted cost of $8,260.00, in which the Government participated to the extent of 50% or an amount of $4,130.00. The exploration work did not result in a discovery of lead-zinc ore, therefore no certification of discovery or development is recommended.

/s/ W. H. King

/s/ E. N. Harshmann for
A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

2-1-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado.

January 20, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2685, Ironclad Mine, Pioneer Mining District, Dolores County, Colorado

Attached are 9 copies of the final geologic report by E. N. Harshman covering the above docket.

The Ironclad mine was explored for lead-zinc-copper ore by 200 feet of drifting at a cost of $8,260.00. No ore was found and certification of discovery was not recommended.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

Reviewed by
DMEA OPERATING COMMITTEE

2-1-54
(date)

IRONCLAD MINE

PIONEER MINING DISTRICT

DOLORES COUNTY, COLORADO

DMEA DOCKET 2685

FIELD TEAM.
FINAL REPORT.

Final Geologic Report

By E. N. Harshman
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
2-1-54
(date)

IRONCLAD MINE
DOLORES COUNTY, COLORADO

INTRODUCTION

Myron L. Jones, Rico, Colorado, applied for Government assistance, DMEA Docket 2635, to explore for lead-zinc-copper ore in the Ironclad mine about 1/4 mile southwest of Rico, Dolores County, Colorado. The applicant requested a loan of $18,200.00 to drive 700 feet of drift and to construct the necessary related facilities.

The property was examined on September 18, 1952. Subsequently an exploration program of 200 feet of drifting was recommended.

Contract Idm-E491, between Myron L. Jones, Louis M. Jones, Paul R. Jones, and E. M. Lill, was signed on February 24, 1953; it authorized 200 feet of drifting at a total cost of $8,260.00 (Government share $4,130.00). Work started on May 21, 1953, and the project was completed early in September 1953.

No ore was found by the exploration and certification of discovery is not recommended.

GEOLOGY AND EXPLORATION

The Ironclad mine is on the southwestern flank of a low structural dome, circular in shape and 10 to 15 miles across. Involved in the dome are rocks of pre-Cambrian to Jurassic age. Numerous sills of hornblende-monzonite porphyry and a quartz monzonite stock have intruded all rock units in the area. The domal structure is modified by a complex system of faulting which has dropped blocks successively away from the central and structurally highest part of the dome.

Ore deposits in the Rico area are of four general types: 1) loads; 2) blankets; 3) replacements in limestone; and 4) stocks. The ore deposits in the vicinity of the Ironclad mine are primarily of the load and blanket type.

Exploration in the early days and by the applicant prior to his request for Government assistance, exposed ore in a favorable dolomitic and calcareous shale horizon in the lower part of the Hermosa formation of Pennsylvanian age, at the intersection of northeasterly trending fissures. The DMEA project has as its objective the exploration of similar intersections that were believed to lie to the west of the Ironclad mine workings.

Under contract Idm-E409 the westerly drift was extended a distance of 200 feet in limestone and calcareous shale beds dipping 6° to 10° southwesterly and striking about N. 30° W. For the first 60 feet the drift extension followed the favorable horizon in the Hermosa formation but from that point to the face, the drift was slightly below that horizon. Several northeasterly trending fractures were encountered in the drift (figure 1) but they contained only a trace of galena, sphalerite, and chalcopyrite.

By letter of September 1, 1953, the applicant requested additional funds to extend the northwest drift under the St. Louis workings. It was concluded that additional exploration was not warranted and the request was denied by letter of November 5, 1953.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the area between the Ironclad mine and the St. Louis workings has been adequately explored by work done under contract Idm-E409. Although very minor amounts of galena, sphalerite, and chalcopyrite

were exposed on weak northeasterly trending cross fractures, no ore was discovered. Certification of a discovery is not recommended.

Mining Division
Date Rec'd.
DEC 21 1953
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
December 18, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 2685, Contract Idm-E491 (Lead-zinc) Jones, Jones, Jones, and Lill (Ironclad mine) Dolores County, Colo.

Enclosed are the original and eight copies of W. L. Dare's final engineering report on the above contract.

Dare concludes the exploration work completed did not result in an ore discovery and that the additional exploration requested by the operator would probably be equally unproductive. Certification of Discovery is not recommended.

I concur with the conclusions and recommendations.

W. M. Traver

W. M. Traver

enclosure
WMT/kp
cc 8
E491
Chron

Reviewed by
DMEA OPERATING COMMITTEE
2-1-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

FINAL ENGINEERING REPORT

DMEA 2685, Exploration Project Contract Idm-E491

Ironclad Mine

Jones, Jones, Jones, and Lill

Dolores County, Colorado

Lead-Zinc

W. L. Dare, Mining Engineer
Bureau of Mines

December 16, 1953

Reviewed by
DMEA OPERATING COMMITTEE
2-1-54
(date)

DMEA 2685
Contract Idm-E491

IRONCLAD MINE
JONES, JONES, JONES, AND LILL
DOLORES COUNTY, COLORADO

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Final Engineering Report — Page

Summary and introduction 1
Location, history, production, and ownership 2
Description of the deposit 3
Work completed under contract 3
Expenditures 5
Efficiency of operation 5
Equipment 6
Conclusions and recommendations 6
Future exploration 7

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Figure		Follows Page
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2.	Underground progress, Ironclad mine, Dolores County, Colo.....	3
3.	Plan of Ironclad mine in relationship to surrounding mine workings, Dolores County, Colo...	3 (and Figure 2)

DMEA 2685
Contract Idm-E491

IRONCLAD MINE
JONES, JONES, JONES, AND LILL
DOLORES COUNTY, COLORADO

FINAL ENGINEERING REPORT

By

W. L. Dare

SUMMARY AND INTRODUCTION

On February 24, 1953, a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones, and E. M. Lill entered into an exploration contract with the Defense Minerals Exploration Administration. This contract, Idm-E491, provided Government assistance in the exploration for lead and zinc at the Ironclad mine, Dolores County, Colo.

Under the terms of the short-form type contract the operators drove 200 feet of drift from an established face on the Ironclad No. 2 level. The project work began on May 21, 1953, and was completed during the first week of September 1953, a period of about 3-1/2 months.

Government participation, under the provisions of the short-form contract, was based on 50 percent of the estimated agreed unit cost of $41.30 per foot of drift advance. Total cost of the project amounted to $8,260.00, with total Government participation $4,130.00.

The exploration program did not result in a discovery of new lead-zinc ore reserves. Certification of Discovery is not recommended.

LOCATION, HISTORY, PRODUCTION, AND OWNERSHIP

The four claims owned by the operators, and listed in Annex No. 1 of the contract, are in sec. 35, T. 40 N., R. 11 W., Rico Mining District, Dolores County, Colo. The mine is about 1,500 feet southwest of the abandoned Rio Grande-Southern Railroad yard and shop in Rico, Colo. (fig. 1), west of the Dolores River, and is approximately 70 feet vertically above the valley floor. The mine is accessible by a fair dirt road.

The early history and production of the Ironclad and other mines in the immediate area are unknown. It is believed that work commenced in the 1880's or 1890's and that production was small. The Ironclad mine was caved for at least 45 years prior to its reopening by the operator who completed some 150 feet of work before the new exploration work was initiated.

Prior to the exploration contract date, the operator shipped 44.3 tons of ore containing an average of 0.022 ounce gold and 6.0 ounces silver per ton, 27.0 percent lead, 12.91 percent zinc, and 0.51 percent copper from the St. Louis mine.

The four claims include the two patented claims, Ironclad, U. S. Survey No. 865, and St. Louis, U. S. Survey No. 8099, and the two unpatented claims, Rico Boy, recorded in Book 58, page 136, and Red Dog, recorded in Book 58, page 167, at the Dolores County Courthouse, Dove Creek, Colo.

The beds steepened somewhat, and to keep the bedding vein in sight without increasing the grade of the drift, the drift was turned westward from its original bearing (fig. 2). However, because the known vertical veins strike N. 45°-65° E., the drift was not turned at any greater angle after about 43 feet of advance, as this would increase the distance to the inferred intersections. Consequently, after 49 feet of advance, the bedding vein was purposely allowed to diverge from the back of the drift. At completion of the project, it is believed the bedding vein is 15-20 feet above the back of the drift.

If any vertical veins of importance were encountered, it was planned to drive dog-hole type raises to explore the intersections above.

Three small, very irregular stringers, 1/2 to 1-1/2 inches in width, containing sulphides of lead and zinc, and a 3- to 6-inch barren quartz vein, containing little pyrite, were encountered in the 200 feet of drifting. Ore was not found at the intersection of the three small stringers and the bedding vein. Because of the total absence of lead and zinc sulphides in the quartz vein, and since its strike is roughly perpendicular to the strike of the ore-bearing veins, it is believed that no ore will occur at its intersection with the bedding vein.

All drifting was approved at the time of the monthly inspections by the inspecting engineer.

EXPENDITURES

Under the terms of the short-form type contract, the Government participated in the costs of the approved drifting on the basis of the estimated agreed unit cost of $41.30 per foot.

Recapitulation of Monthly Project Costs

Period	Total costs	Government participation 50 percent
May 1953	$1,032.50	$ 516.25
June 1953	2,065.00	1,032.50
July 1953	2,065.00	1,032.50
August 1953	2,065.00	1,032.50
September 1953	1,032.50	516.25
	$8,260.00	$4,130.00

The accounts are subject to final audit by the Region IV representatives of the Contract Administration and Audit Division and preparation of an Audit Certificate or Report of Review.

EFFICIENCY OF OPERATION

Myron and Paul Jones, partners, made good progress under the contract and completed the project in about 3-1/2 months. The operators were very conscientious, and with the available equipment on hand, the operation was considered efficient.

The operators used a model JR-38 Ingersoll-Rand Jackdrill and tungsten-carbide insert type bits. The drill hole pattern, called a "hammer cut" by the operator, consisted of 12 holes and using 45-percent powder, broke well in the shales.

Only one 12-cubic foot mine car was used. Plats were laid before blasting, and all muck was hand loaded and hand trammed.

Tramming distance during the latter part of the project was about 550 feet. The rate of advance, based on a 26 work-day month, was 2.2 feet per day.

EQUIPMENT

Equipment used on the project consisted of one 105-c.f.m. Shramm portable compressor, one JR-38 Ingersoll-Rand Jackdrill, and one 12-cubic foot mine car.

The small compressor proved adequate for the needs of the project.

CONCLUSIONS AND RECOMMENDATIONS

The exploration project under contract Idm-E491 did not result in a discovery of new lead-zinc ore reserves. Although the limited program of exploration, when first initiated, was considered warranted, it did not prove successful because the principal targets, northeasterly trending veins, were not encountered.

Myron L. Jones, in a letter to the Executive Officer, Region IV, dated September 1, 1953, requested additional funds be incorporated into the contract to allow for additional exploration footage to intersect the St. Louis vein. He claimed that the objective of intersecting veins was not reached.

This request was denied on November 5, 1953, on the following grounds:

1. The St. Louis vein was not specifically an objective of the program.

2. The distance to the intersection, approximately 140 feet, was considered void of other structures likely to be productive.

3. The bedding veins in both the Ironclad and St. Louis mines are considered one, which would result in no reserves in depth.

4. The point of planned intersection would not result in reserves laterally.

5. The intersection for drainage and ventilation of the St. Louis workings is considered a development problem.

Another important consideration that applied to the denial is the present attitude of the Devense Minerals Exploration Administration toward allotting additional funds for lead-zinc exploration projects unless it is believed definitely to be to the best interest of the Government to do so.

Certification of Discovery is not recommended as the exploration project under contract Idm-E491 did not result in a discovery of new lead-zinc ore reserves.

FUTURE EXPLORATION

In the future exploration of the Ironclad and St. Louis mines, with no consideration of the operator's request for additional funds, the following observation seems pertinent.

Mining has been carried on in the area east of the Dolores River, in the vicinity of the town of Rico, Colo., for many years. Little

exploration has been done west of the town. Relative to the Ironclad and St. Louis mines, it is believed that the area between the two mines has been adequately explored for northeast-southwest trending veins. The possibility of the existence of similar veins lying to the northwest and parallel to the St. Louis vein has not been eliminated, and in a case of national emergency, this area might merit some exploration.

/kp

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

224 New Customhouse
Denver 2, Colorado

January 21, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket DMEA 2685 (Lead-Zinc), Contract Idm-E491, a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones and E. M. Lill, deceased, Dolores County, Colorado

Enclosed are the following final reports pertaining to work completed under the subject contract:

1. Original and one copy of the operator's final report.

2. Original and three copies of the final geologic report by the U.S. Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

Final payment to the operator was processed by this office January 19, 1954, in conformance with the final report of review by the Contract Administration and Audit Division dated January 18, 1954.

The exploration work consisted of 200 feet of drifting at a total accepted cost of $8,260.00, in which the Government participated to the extent of 50% or an amount of $4,130.00. The exploration work did not result in a discovery of lead-zinc ore, therefore no certification of discovery or development is recommended.

W. H. King

W. H. King

for A. H. Koschmann

A. H. Koschmann

Enclosures

Engineering and Geologic Report

Docket No. DMEA 2685 Contract No. Idm-E491

This Exploration Project consistes of 200 ft. extension of the Iron Clad Drift. This extension is driven on course N. 69° W. along a Horizontal Vein, for a distance of 50 ft. The continueing 150 ft. is below the Horizontal Vein and driven on course N. 82° W. Drift demensions are 5 ft. in width and 7 ft. in highth.

Purpose of this Drift is to cross southwesterly Vertical Veins or Fissures, and explore their intersection of the Horizontal Vein. Several small (stringer) Veins carrying Lead*Zink, cross in the area between 40 and 50 ft. from the starting point. No Lead*Zink mineralization was encountered beyond this a rea. A small Quartz vein (6" vertical), course N. 65° W. is intersected at 200 ft.

The Horizontal Vein consists of a seam of quartz and calsite, from six inches to two feet in thickness, between a strata of dolomite, above and shale below. This ocures beneath a sheet of Porfery, from ten to twenty feet in thickness. This Porfery, though inclining slightly to the north, in conformation with the Rico dome structure, is esentualy flat.

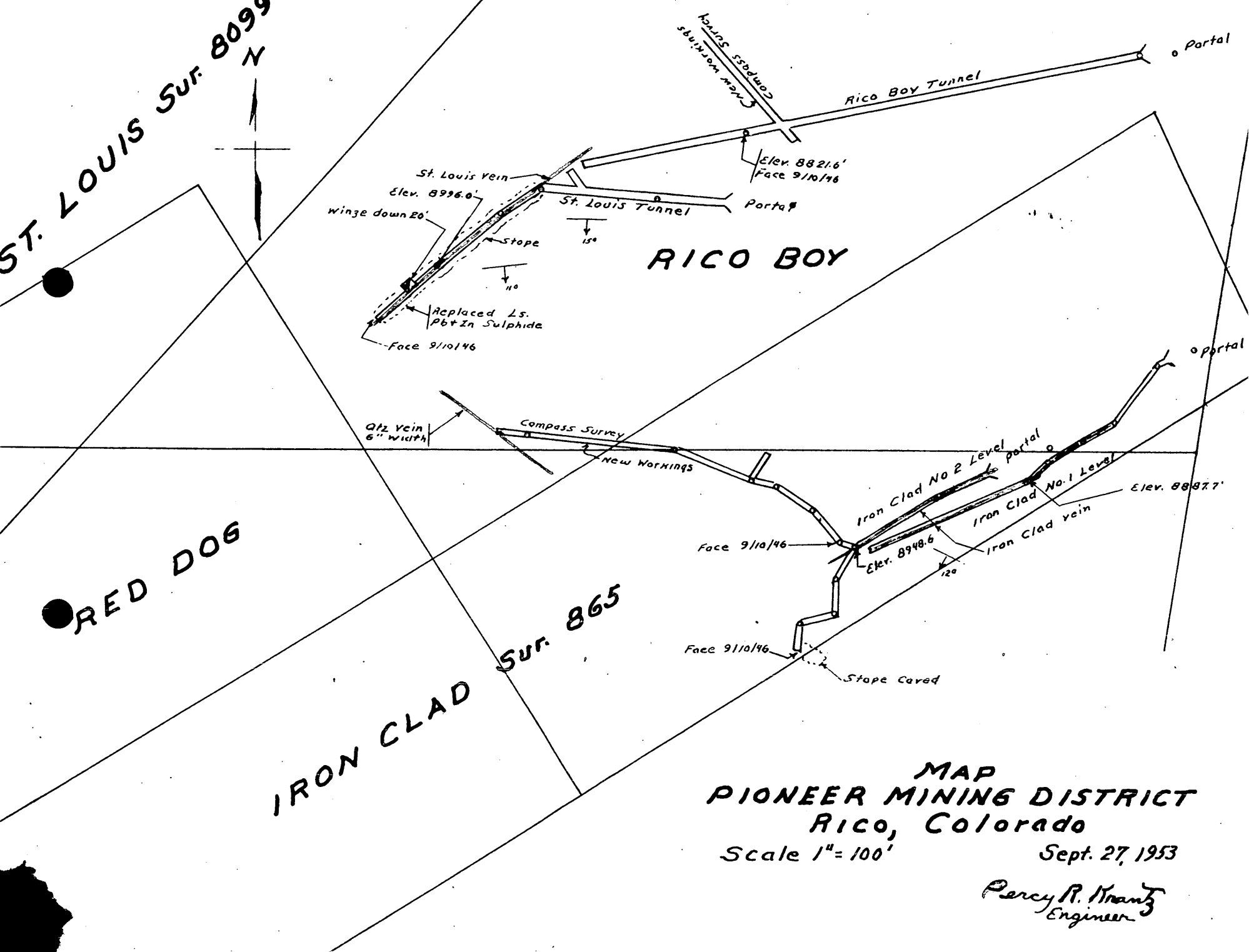
Examples of Lead-Zink mineralization at the intersection af southwesterly Veins with the Horizontal Vein, are the Iron Clad a nd the St. Louis Mines. Open, worked out stopes, following lenses of ore at the intersection are generaly from six to eight feet high and ten to fifteen feet wide.

Signed,

Myron L Jones

Myron L Jones

OPERATOR'S FINAL REPORT.


ST. LOUIS Sur. 8099
N
RED DOG
IRON CLAD Sur. 865
RICO BOY
Rico Boy Tunnel
Portal
New Workings
Compass Survey
Elev. 8821.6'
Face 9/10/46
St. Louis vein
Elev. 8996.0'
Winze down 20'
St. Louis Tunnel
Portal
Stope
15°
11°
Replaced Ls.
Pb+Zn Sulphide
Face 9/10/46
Qtz vein
6" width
Compass Survey
New Workings
Portal
Iron Clad No 2 Level
portal
Iron Clad No. 1 Level
Elev. 8887.7'
Iron Clad vein
Face 9/10/46
Elev. 8948.6
12°
Face 9/10/46
Stope Caved
MAP
PIONEER MINING DISTRICT
Rico, Colorado
Scale 1" = 100'
Sept. 27, 1953
Percy R. Krantz
Engineer

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 8 - 1953

224 New Customhouse
Denver 2, Colorado

September 2, 1953

Memorandum

To: C.O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Amendment No. 2 to Contract Idm-E491, Docket DMEA-2685 (Lead-Zinc), Jones, Jones, Jones and Lill, Dolores County, Colorado

Enclosed are the original and two copies of Amendment No. 2 to Contract Idm-E491. Copies of this amendment have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

Also enclosed are three copies of a letter from the operator requesting this amendment.

W. H. King
W. H. King

Enclosures

Cal
9-4

RECEIVED
SEP 29
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

Rico, Colorado

Aug. 18, 1953

Mr. W. H. King

Executive Officer, Field Team, Region IV

U. S. Department of the Interior, DMEA

224 New Customhouse

Denver 2, Colorado

Dear Mr. King:

Due to mechanical dificulties, Exploration Project Contract No. Idm-E491, Docket No. DMEA 2685, cannot be finished by Aug. 24th. termination date of the contract.

We request that the termination date be extended for thirty days.

Very truly yours,

Myron L. Jones

Myron L Jones

Docket Copy

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

C E Kane
4/27/53
Original

224 New Customhouse
Denver 2, Colorado

April 10, 1953

Memorandum

To: C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Contract No. Idm-E491, Docket No. DMEA 2685, a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones, and E. M. Lill.

Enclosed are the original and two copies of contract No. Idm-E491. Copies of this contract have been given to the Operator, the Fiscal Officer of Region IV, and a copy has been retained for our files.

W. H. King
W. H. King

Enclosures

Cal
4-13

RECEIVED
APR 22 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

224 New Customhouse
Denver 2, Colorado

April 10, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 17 1953

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: The Field Team

Subject: Contract Idm-E491, Docket No. DMEA 2685, a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones, and E. M. Lill.

Enclosed are the original and three copies of the final report on Docket No. DMEA 2685.

The contract has been prepared and is in force.

W. H. King

W. H. King

A. H. Koschmann

A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
4-20-53
(date)

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

224 New Customhouse
Denver 2, Colorado

April 10, 1953

Memorandum

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 17 1953

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: The Field Team

Subject: Contract Idm-E491, Docket No. DMEA 2685, a partnership consisting of Myron L. Jones, Louis M. Jones, Paul R. Jones, and E. M. Lill.

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The contract has been prepared and is in force.

W. H. King

W. H. King

A. H. Koschmann

A. H. Koschmann

Enclosures

Received
DMEA OPERATING COMMITTEE
4-20-53

SPECIAL

C. O. Mittendorf
2-25-53
12:15

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 25 1953

BUR MINES DN235 2-25-53 10-15 AM

C O MITTENDORF

REURTEL 2-25-53. THE APPLICANTS SUBMITTING DOCKET DMEA 2685 SHOULD BE A PARTNERSHIP CONSISTING OF MYRON L. JONES, LOUIS M. JONES, AND PAUL R. JONES, ALL RESIDING AT RICO, COLORADO, AND E. M. LILL OF BAGDAD, ARIZONA.

W H KING

Denver, Colo.

FEB 25 1 25 PM '53
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

SURNAME COPY
Edward

Defense Minerals Exploration Administration
Robert E. Adams
2017

14X3923.970, Working Fund, Interior, DMEA
February 24, 1953
3:10 p.m.

W.H. King, Executive Officer, Region IV, 224 New Customhouse Bldg., Denver 2, Colorado

Assignment of Contract Number

REL RTEL 2-24-53, DOCKET DMEA 2685, A PARTNERSHIP CONSISTING OF MYRON L. JONES, LOUIS H. JONES, PAUL R. JONES, COMMONITY, LEAD-ZINC. CONTRACT NUMBER IDM-E-491 ASSIGNED THIS CONTRACT.

R.S. in R.R.

C. O. Mittendorf (for)

ADMINISTRATOR

READAMS/meb
cc to: Adm. Reading File
Mails & Files Br.
Audits Division
Miss Curtin

E. M. Lill left - off outgoing here but is on the O.D.

SENT
FEB 25 1953
Clerical Service Section

1-1027
(April 1946)

UNITED STATES
DEPARTMENT OF THE INTERIOR

AGENCY Bureau of Mines, Reg. IV

Originator:
Ext.: ..... Room: .....

TELETYPE

Appro.:
Date: 2/24/53
Time:
No.:
To: C. O. MITTENDORF ✓ DMEA WASH

DEPARTMENT OF THE INTERIOR
Bureau of Minerals Administration
RECEIVED
MAR 2 1953

Subject: PLEASE ASSIGN A NUMBER TO CONTRACT COVERING DOCKET DMEA 2685, A PARTNERSHIP CONSISTING OF MYRON L. JONES, LOUIS M. JONES, PAUL R. JONES, ALL RESIDING AT RICO, COLORADO, AND E. M. LILL OF BAGDAD, ARIZONA. COMMODITY, LEAD-ZINC. CONTRACT DATED FEBRUARY 24, 1953. TOTAL AMOUNT OF CONTRACT $8260.00, GOVERNMENT PARTICIPATION $4130.00. PROPERTY LOCATED IN DOLORES COUNTY, COLORADO.

CONFIRMATION ✓

W. H. King.
W. H. KING

Authorized:

Sign original message and transmit to Room ..... in duplicate

U. S. GOVERNMENT PRINTING OFFICE 16—50915-1

SPECIAL

C.O. Mittendorf
2-[illegible]-53
1:12

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 24 1953

D N 235 BUREAU MINES 2-24-53 11-13 AM

KE
C O MITTENDORF

PLEASE ASSIGN A NUMBER TO CONTRACT COVERING DOCKET DMEA 2685, A PARTNERSHIP CONSISTING OF MYRON L. JONES, LOUIS M. JONES, PAUL R. JONES, ALL RESIDING AT RICO, COLORADO, AND E. M. LILL OF BAGDAD, ARIZONA. COMMODITY, LEAD-ZINC. CONTRACT DATED FEBRUARY 24,1953. TOTAL AMOUNT OF CONTRACT $8260.00, GOVERNMENT PARTICIPATION $4130.00. PROPERTY LOCATED IN DOLORES COUNTY, COLORADO.

W H KING 5040

I-DME-491

Denver Colorado

FEB 24 1 33 PM '53
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

SPECIAL

C. O. Mittendorf
2-25-53
12:15

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 25 1953

BUR MINES DN235 2-25-53 10-15 AM

C O MITTENDORF

REURTEL 2-25-53. THE APPLICANTS SUBMITTING DOCKET DMEA 2685 SHOULD BE A PARTNERSHIP CONSISTING OF MYRON L. JONES, LOUIS M. JONES, AND PAUL R. JONES, ALL RESIDING AT RICO, COLORADO, AND E. M. LILL OF BAGDAD, ARIZONA.

W H KING

Denver Colo.

FEB 25 1 25 PM '53
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

November 25, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, RMSA Docket 2685, (Lead-Zinc) Myron L. Jones, Ironclad Mine, Dolores County, Colorado

Enclosed are 8 copies of the final engineering report on RMSA 2685 by Russell R. McLellan.

The applicant's original program of exploration was estimated to cost $15,800 and consisted of 700 feet of drifting.

The examining engineer recommends 200 feet of drifting in the favorable ore horizon at an estimated cost of $8,860.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

Approved by
Bd. Mine Examiners
4-20-53
(Date)

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 24, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2685 (Lead-zinc), Ironclad mine, Myron L. Jones, Dolores County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations", by Russell R. McLellan and E. H. Kernhamm, and of McLellan's engineering report on the above docket.

McLellan concludes the applicant is not able financially to carry out the extensive exploration program requested, amounting to a total of $18,200.00 and involving 700 feet of drifting along a favorable ore horizon. He does, however, consider, from the lead-zinc mineralization and favorable geologic conditions existing, that the property merits a project comprising the erection of a small surface building at the portal of the Ironclad adit to house a compressor and extension of the adit 200 feet, at an estimated cost of $8,860.00. He recommends a contract be prepared on the short form MF-200 (A) at a unit cost of $41.30 per foot for the 200 feet of drifting, subject to future recommendations for additional work if results are favorable.

I concur with his conclusions and recommendations.

The brochure provided by the Region IV Field Team is also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

WMT/eb

cc: 8
DMEA 2685
Chron.

Reviewed by
[illegible]

4-20-53

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

200 New Customhouse
Denver 2, Colorado

November 12, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2685, Ironclad Mine, Pioneer Mining District, Dolores County, Colorado. Myron L. Jones.

Attached are 8 copies of the geological report by E. M. Harshman covering DMEA Docket 2685, Ironclad Mine, Pioneer Mining District, Dolores County, Colorado.

The applicant proposes to explore for lead-zinc-copper ore in the Ironclad mine by 700 feet of drifting at an estimated cost of $18,200.

In the Ironclad mine considerable work has been done on a blanket deposit in dolomitic and calcareous shale in the Hermosa formation of Pennsylvanian age. Recent exploration by the applicant consists of 80 feet of drifting on a favorable ore horizon, stratigraphically 4 to 6 feet below a sill of monzonite porphyry. In the last 10 feet of the drift, galena, sphalerite, and chalcopyrite have been found and a high grade ore shoot up to 1.6 feet in thickness has been exposed. Here, as in other mines in the district, ore shoots formed where vertical fissures cut favorable stratigraphic horizons. Several northeast-trending fissures lie ahead of the present heading, and the intersection of these fissures with the favorable ore horizons now being explored is considered favorable ground. Harshman, therefore, concludes that exploration is justified and recommends that an exploration program of 200 feet of drifting, estimated to cost $8,260, be approved.

I concur in this recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

Reviewed by
DMEA CENTRAL FILES
4-20-53

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 2685

Dripping Mine

Dolores County, Colorado

Lead-zinc

Russell R. McLellan, Mining Engineer
Bureau of Mines

E. N. Harshman, Geologist
U. S. Geological Survey

November 19, 1952

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By Russell R. McLellan
Mining Engineer
Bureau of Mines

and

E. N. Harshman
Geologist
U. S. Geological Survey

Reviewed by
DMEA OFFICE OF MINES
4-20-53
(date)

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Russell R. McLellan and E. N. Harshman

Myron L. Jones of Rico, Colo., has applied to the Government for assistance to explore for lead and zinc in the Ironclad mine, Dolores County, Colo. The applicant proposes to drift 700 feet along a flat dipping favorable ore horizon or "contact zone" in the Hermosa shale. Ore occurs along this zone, particularly near intersections with nearly vertical fissure veins. Several intersections are believed to be within 700 feet of the present heading. The applicant estimates the total cost to be $18,200.00. Although favorable lead-zinc mineralization was observed in the mine, the applicant does not appear to be financially qualified to attempt 700 feet of drifting. An exploration program is recommended in which the footage and over-all cost are reduced.

It is recommended that 200 feet of drifting be approved for the Ironclad mine at an over-all cost estimated to be $8,260.00, of which Government participation will be 50 percent, or $4,130.00. A short form contract would be preferable at an over-all unit cost of $41.30 per foot of drift.

IRONCLAD MINE

PIONEER MINING DISTRICT

DOLORES COUNTY, COLORADO

MYRON L. JONES

DMEA DOCKET 2685

Geologic Report

By E. N. Hershman
U. S. Geological Survey

IRONCLAD MINE
DOLORES COUNTY, COLORADO

INTRODUCTION

Myron L. Jones, Rico, Colorado, has applied for government assistance, DMEA Docket 2685, to explore for lead-zinc-copper ore in the Ironclad mine. The applicant owns 3 patented and 3 unpatented claims in T. 40 N., R. 11 W. about half a mile southwest of Rico, Dolores County, Colorado. The claims, which include the Ironclad workings, lie near the foot of the east slope of Expectation Mountain at an altitude of about 8700 feet. Several local mine roads pass through or near the claims.

The applicant has requested a loan of $18,200 (Government participation 50%) to excavate 700 feet of drift and to construct the necessary related facilities.

The property was examined on September 18, 1952, in company with R. R. McClellan of the U. S. Bureau of Mines and Myron L. Jones, the applicant.

It is concluded that exploration on the property is justified but that the program should be reduced to 200 feet of drifting. After geologic conditions are ascertained by the initial work, a second stage of exploration may be justified.

GEOLOGY

Many small prospect adits at the foot of Expectation Mountain have been excavated in the lower part of the Hermosa formation. These Pennsylvanian rocks consist of shales, sandstones, and subordinate limestones,

which in the Ironclad mine strike N. 30° W., and dip 6°-10° SW. Intruded into the Hermosa formation are dikes and sills of monzonite porphyry.

F. L. Ransome (1901) classified the ore deposits of the Rico area under four general heads, namely: 1. leads; 2. blankets; 3. replacements in limestone; and 4. stocks. The ore deposits in the area immediately southeast of Rico consist primarily of leads and blankets and several of these deposits have been mined on a small scale.

In the Ironclad mine considerable work has been done on a blanket deposit in dolomitic and calcareous shale. An examination of one accessible old stope indicated that here, as in Newman Hill, to the southeast, ore shoots are formed where vertical fissure veins cut horizons in the Hermosa formation favorable to ore deposition, either because of chemical factors or because of physical openings. In Newman Hill these blanket deposits, locally known as "contacts," extended outward from the vertical fissures as much as several hundred feet; in Expectation Mountain, however, they seem less extensive. Ore occurs also in the vertical fissures.

Recent exploration by the applicant consists of about 60 feet of drifting on a favorable ore horizon, or "contact," stratigraphically 4 to 6 feet below a sill of monzonite porphyry (fig. 2). For most of the distance the "contact" was somewhat brecciated and slightly altered but contained no sulfide minerals. However, in the last 10 feet of the drift, galena, sphalerite, chalcopyrite, and pyrite replace and fill openings in the ore horizon and a high grade ore shoot up to 1.6 feet thick and of unknown lateral extent is exposed. Samples of this ore taken by the U. S. Bureau of Mines assayed as follows:

the applicant is not warranted at this time and recommends that exploration be limited to a 200 foot extension of the present northeast drift (fig. 3). Upon completion of this work, geologic data will be available upon which to judge the advisability of additional drifting.

It is recommended that the application, DMEA Docket 2685, be approved to allow for 200 feet of drifting, estimated by the U. S. Bureau of Mines to cost $8,260 (Government participation $4,130).

REFERENCE

Ransome, F. L., The ore deposits of the Rico Mountains: U. S. Geological Survey, Twenty second Annual Report, pp. 229-397, 1901.

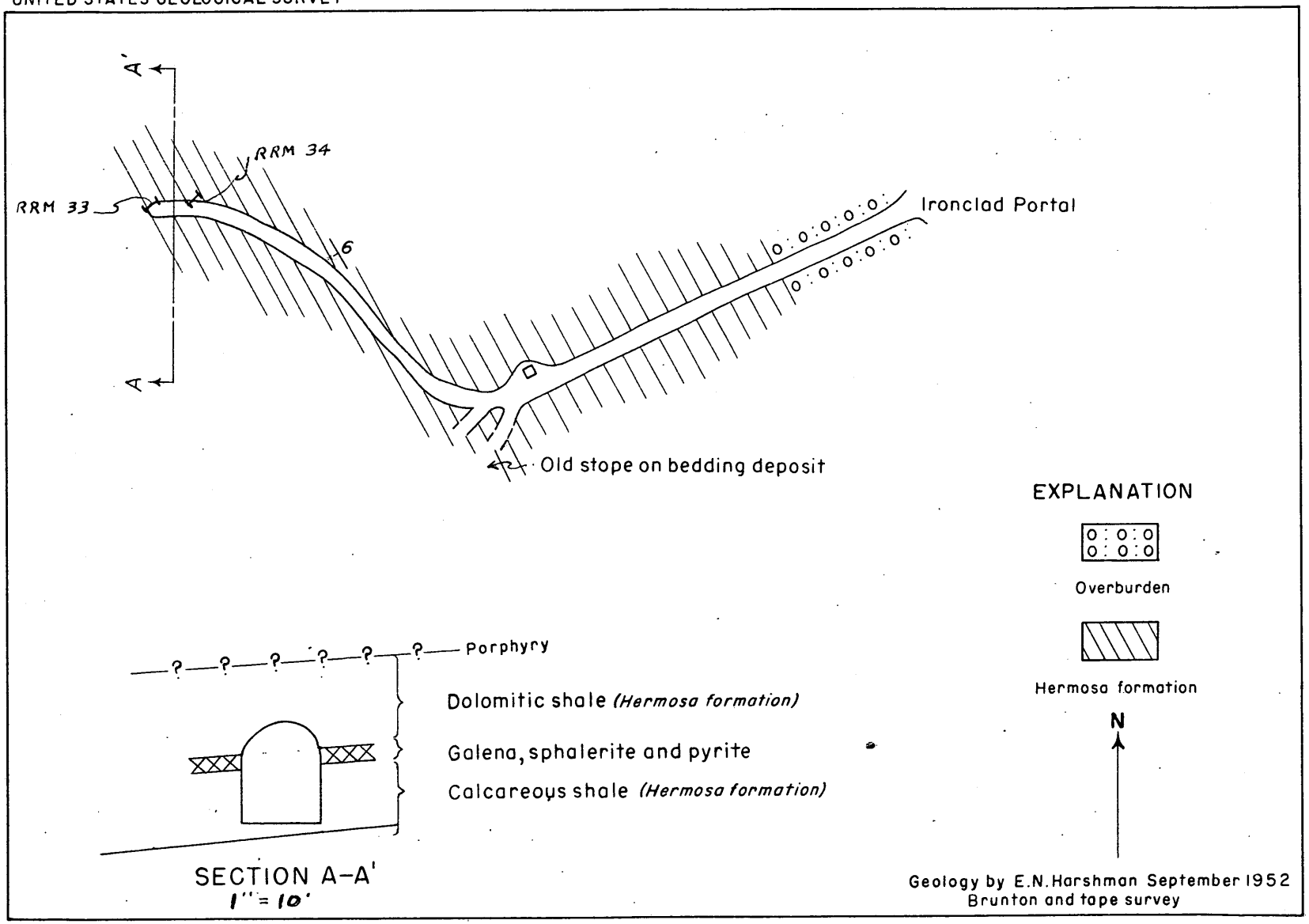

FIGURE 2.– IRONCLAD MINE, PLAN AND SECTION, RICO, DOLORES COUNTY COLORADO

40 0 40 80 Feet

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

Engineering Report

Lead-zinc

By Russell R. McLellan
Mining Engineer
Bureau of Mines

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

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Engineering Report

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Summary of costs	7
Conclusions	8
Recommendations	9

ILLUSTRATIONS

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*See figure following geologic report

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

ENGINEERING REPORT

By

Russell R. McLellan

INTRODUCTION

Myron L. Jones of Rico, Colo., has applied to the Government for assistance to explore for lead and zinc in the Ironclad mine, Dolores County, Colo. The applicant proposes to drift 700 feet along a horizontal or blanket vein to explore for mineralization at or near vein intersections believed to be ahead of the present workings. The cost is estimated to be $18,200.00. The property merits exploration, but it is deemed advisable to reduce the footage to 200 feet and the corresponding cost to $8,260.00, of which the Government's share will be $4,130.00. The mine was examined on September 18, 1952, by R. R. McLellan of the U. S. Bureau of Mines and E. N. Harshman of the U. S. Geological Survey, accompanied by the applicant, Myron L. Jones.

ACKNOWLEDGMENTS

Myron L. Jones, applicant, provided maps and all necessary information pertaining to the Ironclad mine and accompanied the examining team on their underground inspection.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Ironclad claim, located in sec. 35, T. 40 N., R. 11 W., Dolores County, Colo. (fig. 1), slightly overlaps the west side line of the townsite of Rico. The mine dump is visible a few hundred feet southwest of the abandoned Rio Grande Southern Railroad switch yard and shop. The portal is approximately 70 feet above the valley floor and is accessible by a short trail.

Materials, supplies, and labor are available locally. Sufficient water is available for mining. The mine is readily accessible for year around operation.

HISTORY AND PRODUCTION

The early history and production are unknown. It is believed that work commenced in the 1880's or 1890's and that the production was small. The mine workings, caved for at least 45 years, were recently opened by the applicant who commenced drifting to the northwest on a flat contact or blanket vein. No production had been made by the applicant to the date of the examination. On that date he had encountered an encouraging streak of lead-zinc mineralization along the flat contact. Known production from a vertical fissure in the adjacent St. Louis mine amounts to 44.3 tons of ore containing an average of 0.022 ounce gold and 6.0 ounces silver per ton, 0.51 percent copper, 27.0 percent lead, and 12.91 percent zinc. The applicant proposes to intersect this fissure and several others at the Ironclad level approximately 50 feet below.

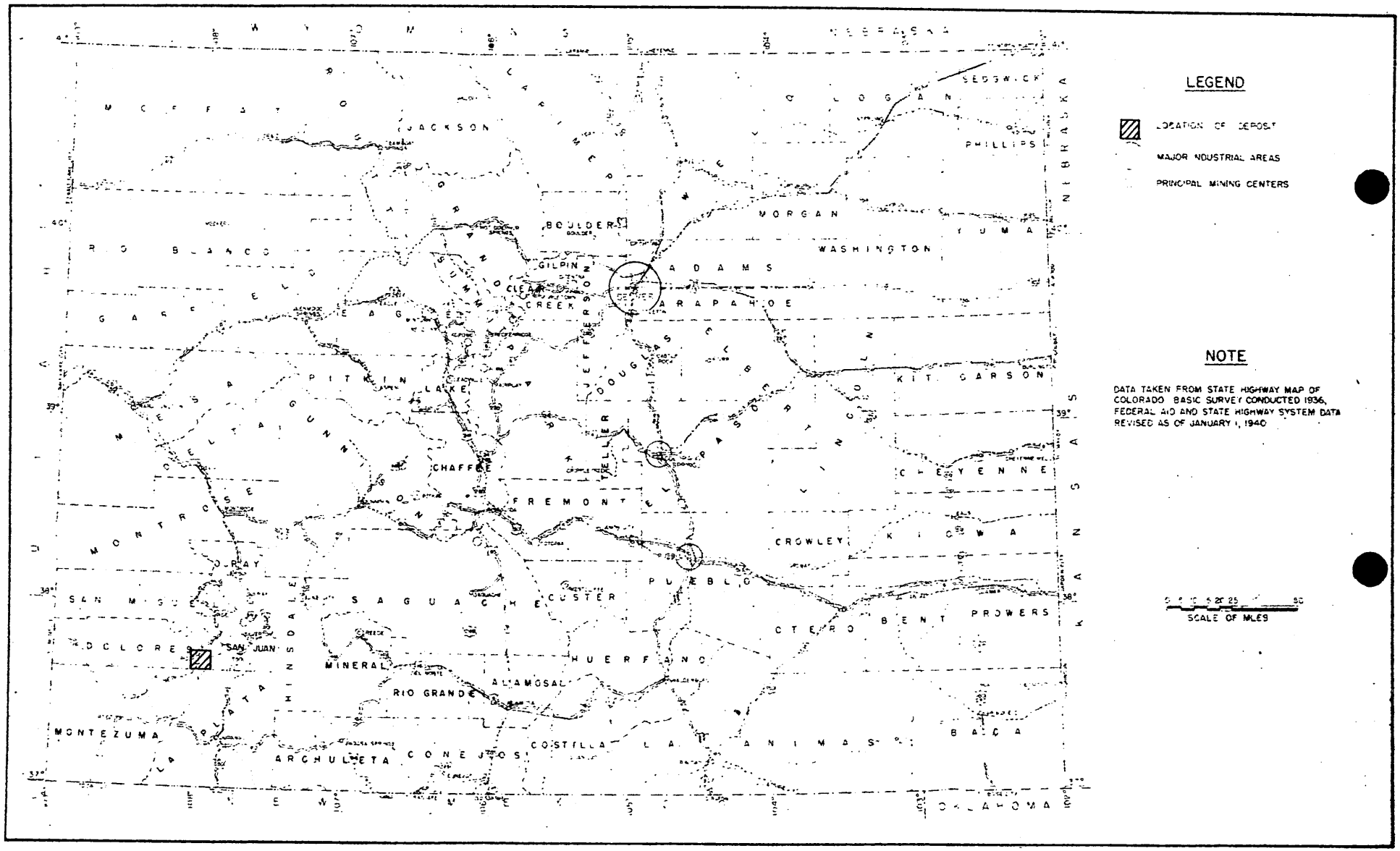

Fig. 1 Location Map, Ironclad Mine, Dolores County, Colorado, DMEA-2685

OWNERSHIP AND EXTENT

The following claims considered for exploration are owned and operated by Myron L. Jones and Louis M. Jones:

Iron Clad	U. S. Survey No. 865	
St. Louis	U. S. Survey No. 8099	
Bancroft	U. S. Survey No. 6515	
Rico Boy	Book No. 58, page No. 136	(unpatented)
Red Dog	Book No. 58, page No. 167	(unpatented)
Rainbow	Book No. 58, page No. 168	(unpatented)

DESCRIPTION OF THE DEPOSIT

On the opposite side of the valley, rich deposits of lead and zinc ore have been discovered at the intersection of vertical fissures with flat beds of limestone. Mineralization appears to have spread into the limestone from the fissures. This type of deposit may exist in the Ironclad mine. As mentioned before, the applicant had exposed an encouraging face of ore on a contact zone, but on the examination date had not encountered a vertical fissure. It was believed at the time that an intersection was nearby and that ore mineralization might increase as drifting progressed towards the fissure. One sample cut from the face across a width of 1.6 feet assayed 0.01 ounce gold, 4.3 ounces silver per ton, 0.98 percent copper, 18.8 percent lead, and 25.3 percent zinc. A second sample cut 10 feet back from the face across a width of 1.1 feet assayed 0.005 ounce gold, 2.3 ounces silver per ton, 0.53 percent copper, 0.8 percent lead, and 4.55 percent zinc.

MINEABLE ORE RESERVES

At the time of examination there was no mineable ore reserve on the property, and there was insufficient evidence to establish indicated or inferred reserves.

PRESENT STATUS

Exploration and Development

Approximately 300 feet of drift is accessible on the Ironclad haulage level (fig. 2 with Geological report). The extent of the lower workings is unknown due to flooding and caves. The St. Louis lower workings also are caved and flooded. About 400 feet of drift on the haulage level is accessible. The Bancroft claim has 150 feet of drift, and the Rico Boy claim has one development crosscut 547 feet in length. The applicant on the examination date was extending the accessible Ironclad drift westward on the line of the proposed exploration.

Mining and Milling Equipment and Other Facilites

There is available on the property the following mining facilities and equipment, all at the St. Louis tunnel portal:

1 combined tool shed, change room, blacksmith shop, and compression shed

1 portable compressor, 105 c.f.m.

1 jackhammer

1 pump

100 feet air and water hose

3 mine cars, 12 cubic feet

Small tools

The applicant also has available the following equipment forfeited to him by the discontinuance of a right away agreement by one Edward A. Edwards:

1 mucking machine, Eimco R12

1 compressor, Schramm, 315 c.f.m.

750 feet ventilation tubing

1 air fan

There may be some question as to the legal ownership of the above equipment. Although the Government cannot prevent the use of this equipment, nothing should be contributed towards depreciation until definite ownership is established.

There is no milling equipment on the property.

PROJECT PROPOSALS WITH COSTS

In the Ironclad mine, the applicant proposes to drive 700 feet westward along a limestone contact to intersect several parallel fissures that strike northeast. He estimates the cost to be $18,200.00, which is believed by the writer to be insufficient. In considering the applicant's meager finances it is believed advisable to reduce the footage to 200 feet, as shown on the claim map, figure 3. Should the 200 feet of drift expose favorable mineralization, additional exploration could be recommended.

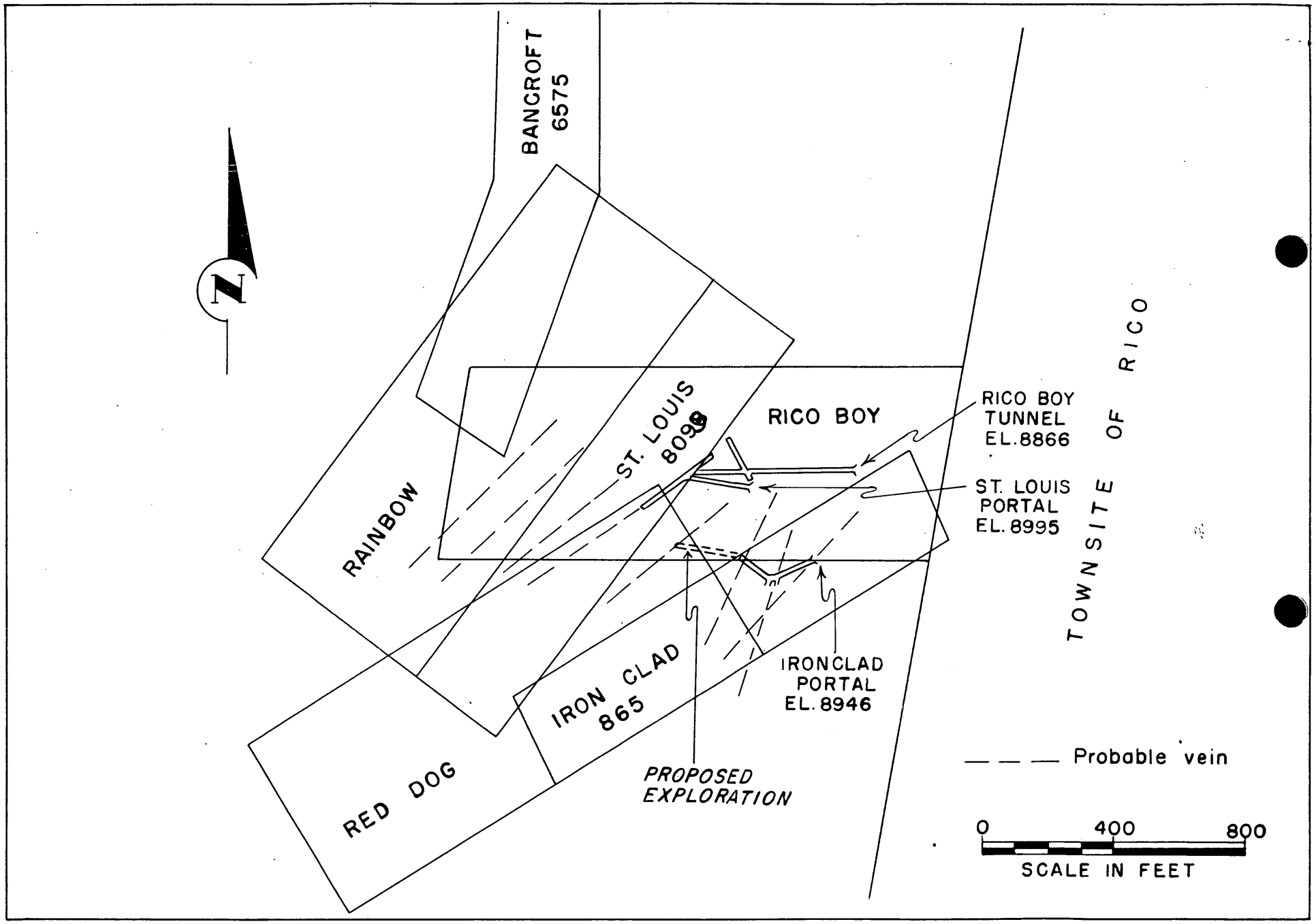

FIGURE 3 - CLAIM MAP, IRONCLAD MINE, DOLORES COUNTY, COLO., DMEA 2685

Operating Equipment

Rental			
1 air drill complete, 4 months	$ 200.00		
3 mine cars, 20 cubic feet, 4 months	120.00		
1 air tramper, 4 months	700.00	$1,020.00	
Depreciation			
1 portable compressor, 105 c.f.m., valued at $2,000.00, 4 months	$ 130.00		
3 mine cars, valued at $300.00, 4 months	20.00	150.00	$1,170.00

Miscellaneous

Repairs to equipment	$ 250.00	
Sampling and analysis	50.00	
Social security	64.00	
Workmen's compensation	126.00	490.00
Total cost of drifting		$7,760.00
Total cost of project		$8,260.00

SUMMARY OF COSTS

Contracts		
Drift 200 feet at $12.00 per foot		$2,400.00
Labor and Supervision		
Construct compressor shed	$ 163.00	
Supervision at $400.00 per month	1,600.00	$1,763.00
Operating Materials and Supplies		
Construct compressor shed	$ 330.00	
Drift 200 feet	2,100.00	2,430.00

Following are detailed costs for a total of 200 feet of drifting and for the construction of a compressor shed at the Ironclad adit portal:

1. Construct compressor shed

Labor and Supervision		
1 carpenter-supervisor, $1.65 per hour, including overtime, 1 week	$ 85.00	
1 helper, $1.50 per hour, including overtime, 1 week	78.00	$ 163.00
Materials and Supplies		
Lumber	$ 270.00	
Roofing, hardware, etc.	60.00	330.00
Miscellaneous		
Social security	$ 2.50	
Workmen's compensation	4.50	7.00
Total cost of compressor shed		$ 500.00

2. Drift 200 feet, estimated time, 4 months

Contracts, Drifting		
200 feet at $12.00 per foot, including overtime		$2,400.00
Supervision		
1 superintendent, full time, 4 months at $400.00 per month		1,600.00
Operating Materials and Supplies		
Timber	$ 100.00	
Powder, caps, and fuse	700.00	
Pipe	200.00	
Track	200.00	
Gas and oil for compressor	650.00	
Drill steel and bits	150.00	
Other	100.00	2,100.00

Operating Equipment			
Rental			
1 air drill complete, 4 months	$ 200.00		
3 mine cars, 20 cubic feet, 4 months	120.00		
1 air tramer, 4 months	700.00	$1,020.00	
Depreciation			
1 portable compressor, 105 c.f.m., valued at $2,000.00, 4 months	$ 130.00		
3 mine cars, valued at $300.00, 4 months	20.00	150.00	$1,170.00
Miscellaneous			
Repairs to equipment		$ 250.00	
Sampling and analysis		50.00	
Social security		64.00	
Workmen's compensation		126.00	490.00
Total cost of drifting			$7,760.00
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SUMMARY OF COSTS

Contracts		
Drift 200 feet at $12.00 per foot		$2,400.00
Labor and Supervision		
Construct compressor shed	$ 163.00	
Supervision at $400.00 per month	1,600.00	$1,763.00
Operating Materials and Supplies		
Construct compressor shed	$ 330.00	
Drift 200 feet	2,100.00	2,430.00

Operating Equipment		
Rental		
For drifting	$1,020.00	
Depreciation		
For drifting	150.00	$1,170.00
Miscellaneous		
Repairs to equipment	$ 250.00	
Sampling and analysis	50.00	
Social security	66.50	
Workmen's compensation	130.50	497.00
Total cost of exploration		$8,260.00
Over-all cost per foot of exploration		$ 41.30

Although the applicant proposes to buy several mine cars, a trammer, and a rock drill, it is believed advisable to avoid participating in the cost of such equipment except upon a rental basis as listed above.

CONCLUSIONS

Sufficient lead-zinc mineralization has been exposed in the Ironclad mine to merit a limited program of exploration. The applicant's proposal to drift 700 feet at a cost of $18,200.00 is believed to be overly ambitious for footage and underestimated for cost. Considering the poor financial condition of the operator, no more than 200 feet of drifting should be considered at this time. The total cost is estimated to be $8,260.00, of which the Government's share will be 50 percent, or $4,130.00.

RECOMMENDATIONS

The following proposals are recommended for approval:

1. Drift 200 feet west in the Ironclad main level.
2. Construct a compressor shed at the Ironclad portal.

It is recommended that the exploration program be placed on a short form contract at an over-all cost of $41.30 per foot of drifting.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

November 28, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2685, (Lead-Zinc) Myron L. Jones, Ironclad Mine, Dolores County, Colorado

Enclosed are 8 copies of the final engineering report on DMEA 2685 by Russell R. McLellan.

The applicant's original program of exploration was estimated to cost $18,200 and consisted of 700 feet of drifting.

The examining engineer recommends 200 feet of drifting in the favorable ore horizon at an estimated cost of $8,260.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

4-20-53

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 24, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2685 (Lead-zinc), Ironclad mine, Myron L. Jones, Dolores County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations", by Russell R. McLellan and E. N. Marshman, and of McLellan's engineering report on the above docket.

McLellan concludes the applicant is not able financially to carry out the extensive exploration program requested, amounting to a total of $18,200.00 and involving 700 feet of drifting along a favorable ore horizon. He does, however, consider, from the lead-zinc mineralization and favorable geologic conditions existing, that the property merits a project comprising the erection of a small surface building at the portal of the Ironclad adit to house a compressor and extension of the adit 200 feet, at an estimated cost of $8,260.00. He recommends a contract be prepared on the short form MW-200 (A) at a unit cost of $41.30 per foot for the 200 feet of drifting, subject to future recommendations for additional work if results are favorable.

I concur with his conclusions and recommendations.

The brochure provided by the Region IV Field Team is also enclosed.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

WMT/ch

cc 8
DMEA 2685
Chron.

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

200 New Customhouse
Denver 2, Colorado

November 12, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2685, Ironclad Mine, Pioneer Mining District, Dolores County, Colorado. Myron L. Jones.

Attached are 8 copies of the geological report by E. N. Harshman covering DMEA Docket 2685, Ironclad Mine, Pioneer Mining District, Dolores County, Colorado.

The applicant proposes to explore for lead-zinc-copper ore in the Ironclad mine by 700 feet of drifting at an estimated cost of $18,200.

In the Ironclad mine considerable work has been done on a blanket deposit in dolomitic and calcareous shale in the Hermosa formation of Pennsylvanian age. Recent exploration by the applicant consists of 80 feet of drifting on a favorable ore horizon, stratigraphically 4 to 6 feet below a sill of monzonite porphyry. In the last 10 feet of the drift, galena, sphalerite, and chalcopyrite have been found and a high grade ore shoot up to 1.6 feet in thickness has been exposed. Here, as in other mines in the district, ore shoots formed where vertical fissures cut favorable stratigraphic horizons. Several northeast-trending fissures lie ahead of the present heading, and the intersection of these fissures with the favorable ore horizons now being explored is considered favorable ground. Harshman, therefore, concludes that exploration is justified and recommends that an exploration program of 200 feet of drifting, estimated to cost $8,260, be approved.

I concur in 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

DMEA 2685

Ironclad Mine

Dolores County, Colorado

Lead-zinc

Russell R. McLellan, Mining Engineer
Bureau of Mines

E. N. Harshman, Geologist
U. S. Geological Survey

November 19, 1952

4-20-53

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By Russell R. McLellan
Mining Engineer
Bureau of Mines

and

E. N. Harshman
Geologist
U. S. Geological Survey

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Russell R. McLellan and E. N. Harshman

Myron L. Jones of Rico, Colo., has applied to the Government for assistance to explore for lead and zinc in the Ironclad mine, Dolores County, Colo. The applicant proposes to drift 700 feet along a flat dipping favorable ore horizon or "contact zone" in the Hermosa shale. Ore occurs along this zone, particularly near intersections with nearly vertical fissure veins. Several intersections are believed to be within 700 feet of the present heading. The applicant estimates the total cost to be $18,200.00. Although favorable lead-zinc mineralization was observed in the mine, the applicant does not appear to be financially qualified to attempt 700 feet of drifting. An exploration program is recommended in which the footage and over-all cost are reduced.

It is recommended that 200 feet of drifting be approved for the Ironclad mine at an over-all cost estimated to be $8,260.00, of which Government participation will be 50 percent, or $4,130.00. A short form contract would be preferable at an over-all unit cost of $41.30 per foot of drift.

IRONCLAD MINE

PIONEER MINING DISTRICT

DOLORES COUNTY, COLORADO

MYRON L. JONES

DMEA DOCKET 2685

Geologic Report

By E. N. Harshman
U. S. Geological Survey

IRONCLAD MINE
DOLORES COUNTY, COLORADO

INTRODUCTION

Myron L. Jones, Rico, Colorado, has applied for government assistance, DMEA Docket 2685, to explore for lead-zinc-copper ore in the Ironclad mine. The applicant owns 3 patented and 3 unpatented claims in T. 40 N., R. 11 W. about half a mile southwest of Rico, Dolores County, Colorado. The claims, which include the Ironclad workings, lie near the foot of the east slope of Expectation Mountain at an altitude of about 8700 feet. Several local mine roads pass through or near the claims.

The applicant has requested a loan of $18,200 (Government participation 50%) to excavate 700 feet of drift and to construct the necessary related facilities.

The property was examined on September 18, 1952, in company with R. R. McClellan of the U. S. Bureau of Mines and Myron L. Jones, the applicant.

It is concluded that exploration on the property is justified but that the program should be reduced to 200 feet of drifting. After geologic conditions are ascertained by the initial work, a second stage of exploration may be justified.

GEOLOGY

Many small prospect adits at the foot of Expectation Mountain have been excavated in the lower part of the Hermosa formation. These Pennsylvanian rocks consist of shales, sandstones, and subordinate limestones,

which in the Ironclad mine strike N. 30° W., and dip 6°-10° SW. Intruded into the Hermosa formation are dikes and sills of monzonite porphyry.

F. L. Ransome (1901) classified the ore deposits of the Rico area under four general heads, namely: 1. loads; 2. blankets; 3. replacements in limestone; and 4. stocks. The ore deposits in the area immediately southwest of Rico consist primarily of loads and blankets and several of these deposits have been mined on a small scale.

In the Ironclad mine considerable work has been done on a blanket deposit in dolomitic and calcareous shale. An examination of one accessible old stope indicated that here, as in Newman Hill, to the southwest, ore shoots are formed where vertical fissure veins cut horizons in the Hermosa formation favorable to ore deposition, either because of chemical factors or because of physical openings. In Newman Hill these blanket deposits, locally known as "contacts," extended outward from the vertical fissures as much as several hundred feet; in Expectation Mountain, however, they seem less extensive. Ore occurs also in the vertical fissures.

Recent exploration by the applicant consists of about 80 feet of drifting on a favorable ore horizon, or "contact," stratigraphically 4 to 6 feet below a sill of monzonite porphyry (fig. 2). For most of the distance the "contact" was somewhat brecciated and slightly altered but contained no sulfide minerals. However, in the last 10 feet of the drift, galena, sphalerite, chalcopyrite, and pyrite replace and fill openings in the ore horizon and a high grade ore shoot up to 1.6 feet thick and of unknown lateral extent is exposed. Samples of this ore taken by the U. S. Bureau of Mines assayed as follows:

Sample No.	Width	% Pb	% Zn	% Cu	oz. Ag
RRM-33	1.6	18.8	25.3	0.98	4.3
RRM-34	1.1	0.8	4.6	0.53	2.3

Note: Sample RRM-34 taken on southeast fringe of the ore shoot.

Several northeast trending vertical fissures lie ahead of the present heading of the Ironclad drift and sulfide ore may occur at the intersection of these fissures and the favorable ore horizon now being explored by the applicant. Because of the very limited extent of the exploration in the Ironclad mine area, it is not possible to estimate the grade or extent of such ore shoots.

ORE RESERVES

Ore reserves in the Ironclad mine are negligible.

CONCLUSIONS AND RECOMMENDATIONS

High grade lead-zinc-silver ore is known to occur in the Rico district in blanket deposits, particularly at the intersection of a favorable bed or "contact" with a vertical mineralized fissure. Exploration in the Ironclad mine has exposed some ore along a favorable horizon in the lower part of the Hermosa formation. Surface exposures are poor in the area, but from an examination of old prospect tunnels and surface outcrops, it is concluded that several northeast trending vertical fissures lie ahead (northwest) of the present Ironclad drift face.

Exploration for the intersection of vertical fissures with the known favorable ore horizon exposed in the Ironclad mine appears justified. However, the examining team believes that the 700 foot drift proposed by

the applicant is not warranted at this time and recommends that exploration be limited to a 200 foot extension of the present northeast drift (fig. 3). Upon completion of this work, geologic data will be available upon which to judge the advisability of additional drifting.

It is recommended that the application, DMEA Docket 2685, be approved to allow for 200 feet of drifting, estimated by the U. S. Bureau of Mines to cost $8,260 (Government participation $4,130).

REFERENCE

Ransome, F. L., The ore deposits of the Rico Mountains: U. S. Geological Survey, Twenty second Annual Report, pp. 229-397, 1901.

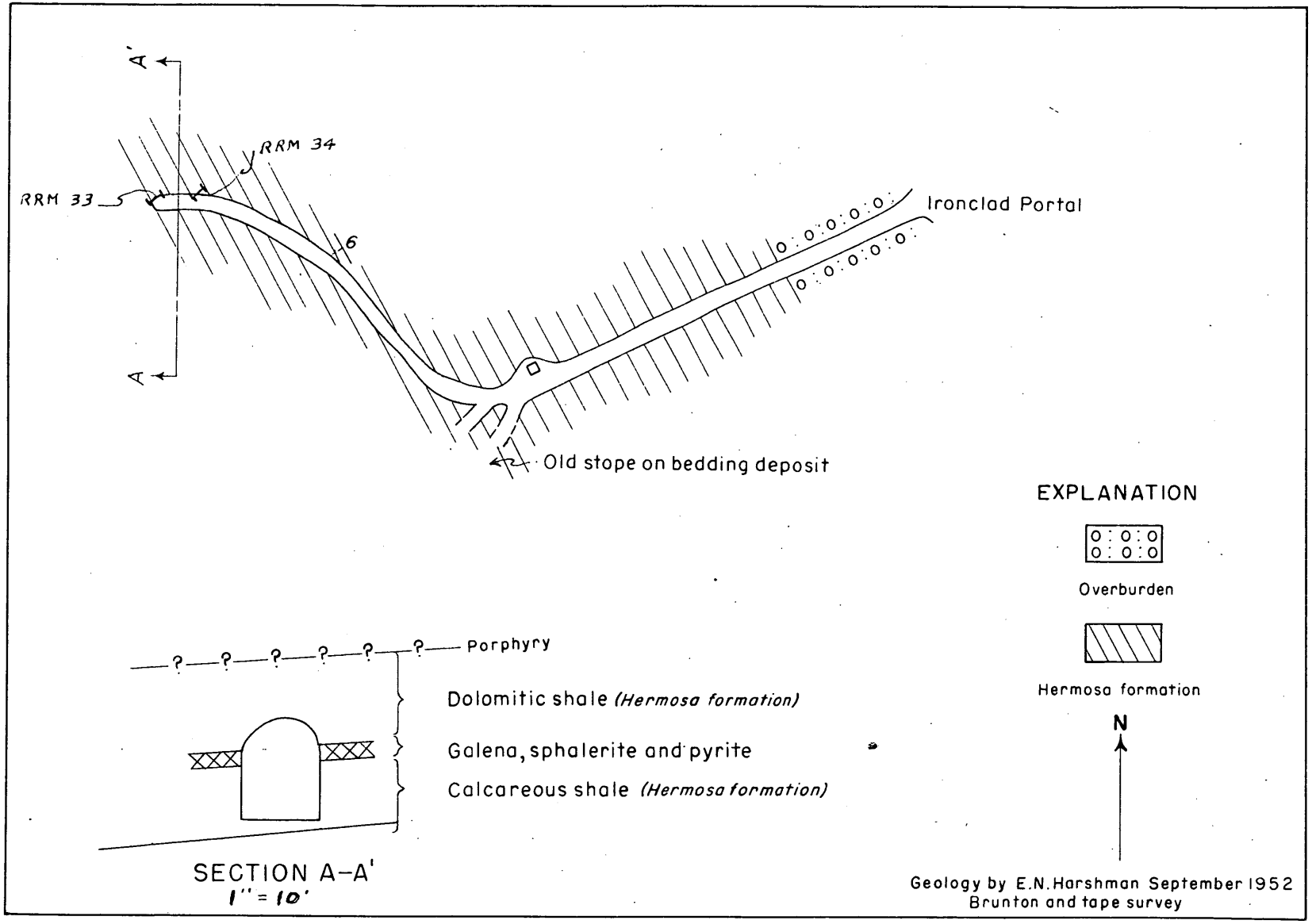

FIGURE 2.– IRONCLAD MINE, PLAN AND SECTION, RICO, DOLORES COUNTY COLORADO

40 0 40 80 Feet

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

Engineering Report

Lead-zinc

By Russell R. McLellan
Mining Engineer
Bureau of Mines

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

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3. Claim map, Ironclad mine, Dolores County, Colorado	5

*See figure following geologic report

DMEA 2685

IRONCLAD MINE
DOLORES COUNTY, COLORADO

ENGINEERING REPORT

By

Russell R. McLellan

INTRODUCTION

Myron L. Jones of Rico, Colo., has applied to the Government for assistance to explore for lead and zinc in the Ironclad mine, Dolores County, Colo. The applicant proposes to drift 700 feet along a horizontal or blanket vein to explore for mineralization at or near vein intersections believed to be ahead of the present workings. The cost is estimated to be $18,200.00. The property merits exploration, but it is deemed advisable to reduce the footage to 200 feet and the corresponding cost to $8,260.00, of which the Government's share will be $4,130.00. The mine was examined on September 18, 1952, by R. R. McLellan of the U. S. Bureau of Mines and E. N. Harshman of the U. S. Geological Survey, accompanied by the applicant, Myron L. Jones.

ACKNOWLEDGMENTS

Myron L. Jones, applicant, provided maps and all necessary information pertaining to the Ironclad mine and accompanied the examining team on their underground inspection.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Ironclad claim, located in sec. 35, T. 40 N., R. 11 W., Dolores County, Colo. (fig. 1), slightly overlaps the west side line of the townsite of Rico. The mine dump is visible a few hundred feet southwest of the abandoned Rio Grande Southern Railroad switch yard and shop. The portal is approximately 70 feet above the valley floor and is accessible by a short trail.

Materials, supplies, and labor are available locally. Sufficient water is available for mining. The mine is readily accessible for year around operation.

HISTORY AND PRODUCTION

The early history and production are unknown. It is believed that work commenced in the 1880's or 1890's and that the production was small. The mine workings, caved for at least 45 years, were recently opened by the applicant who commenced drifting to the northwest on a flat contact or blanket vein. No production has been made by the applicant to the date of the examination. On that date he had encountered an encouraging streak of lead-zinc mineralization along the flat contact. Known production from a vertical fissure in the adjacent St. Louis mine amounts to 44.3 tons of ore containing an average of 0.022 ounce gold and 6.0 ounces silver per ton, 0.51 percent copper, 27.0 percent lead, and 12.91 percent zinc. The applicant proposes to intersect this fissure and several others at the Ironclad level approximately 50 feet below.

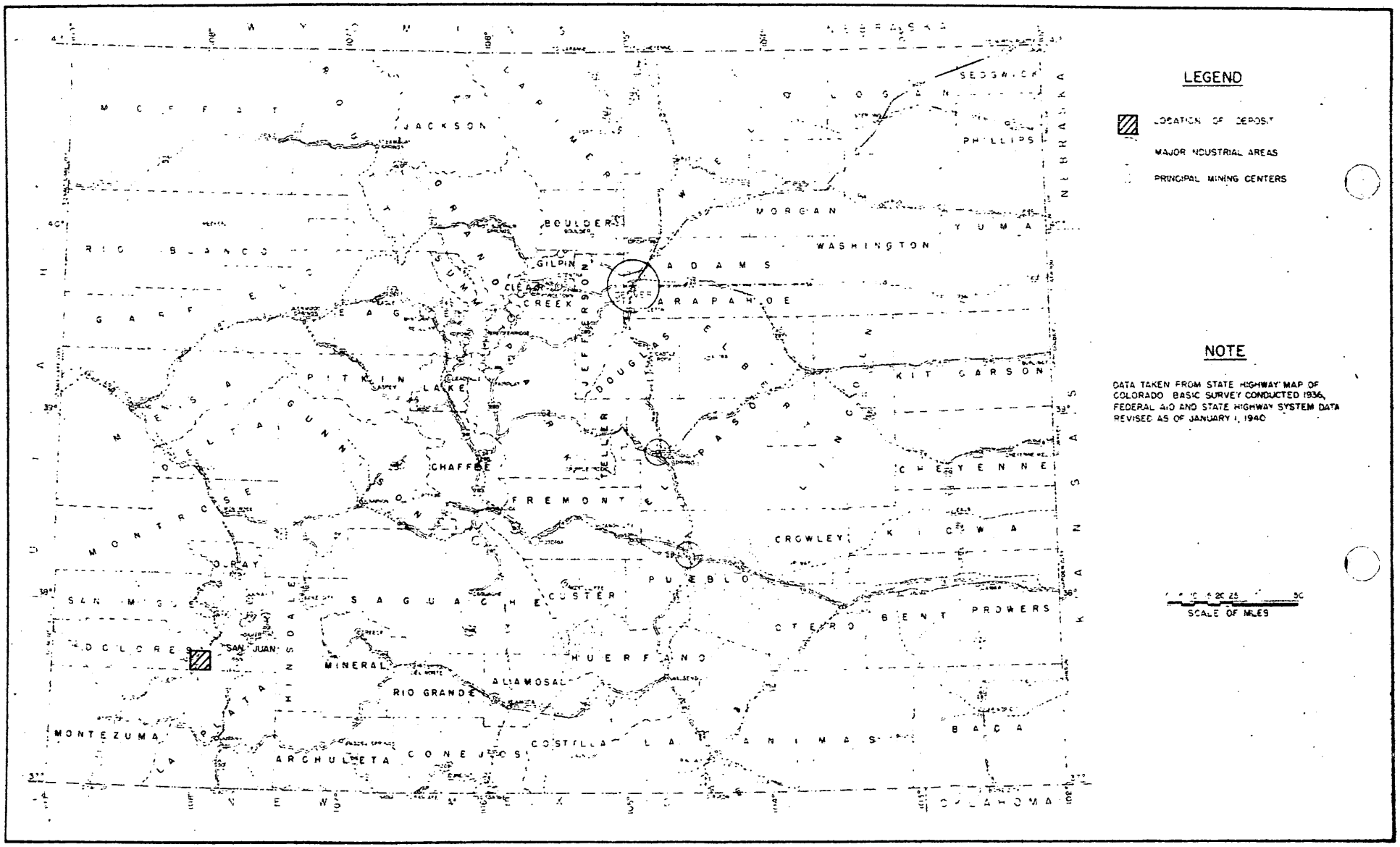

Fig. 1 Location Map, Ironclad Mine, Dolores County, Colorado, DMEA-2685

OWNERSHIP AND EXTENT

The following claims considered for exploration are owned and operated by Myron L. Jones and Louis M. Jones:

Iron Clad	U. S. Survey No. 865	
St. Louis	U. S. Survey No. 8099	
Bancroft	U. S. Survey No. 6515	
Rico Boy	Book No. 58, page No. 136	(unpatented)
Red Dog	Book No. 58, page No. 167	(unpatented)
Rainbow	Book No. 58, page No. 168	(unpatented)

DESCRIPTION OF THE DEPOSIT

On the opposite side of the valley, rich deposits of lead and zinc ore have been discovered at the intersection of vertical fissures with flat beds of limestone. Mineralization appears to have spread into the limestone from the fissures. This type of deposit may exist in the Ironclad mine. As mentioned before, the applicant had exposed and encouraging face of ore on a contact zone, but on the examination date had not encountered a vertical fissure. It was believed at the time that an intersection was nearby and that ore mineralization might increase as drifting progressed towards the fissure. One sample cut from the face across a width of 1.6 feet assayed 0.01 ounce gold, 4.3 ounces silver per ton, 0.98 percent copper, 18.8 percent lead, and 25.3 percent zinc. A second sample cut 10 feet back from the face across a width of 1.1 feet assayed 0.005 ounce gold, 2.3 ounces silver per ton, 0.53 percent copper, 0.8 percent lead, and 4.55 percent zinc.

MINEABLE ORE RESERVES

At the time of examination there was no mineable ore reserve on the property, and there was insufficient evidence to establish indicated or inferred reserves.

PRESENT STATUS

Exploration and Development

Approximately 300 feet of drift is accessible on the Ironclad haulage level (fig. 2 with Geological report). The extent of the lower workings is unknown due to flooding and caves. The St. Louis lower workings also are caved and flooded. About 400 feet of drift on the haulage level is accessible. The Bancroft claim has 150 feet of drift, and the Rico Boy claim has one development crosscut 547 feet in length. The applicant on the examination date was extending the accessible Ironclad drift westward on the line of the proposed exploration.

Mining and Milling Equipment and Other Facilites

There is available on the property the following mining facilities and equipment, all at the St. Louis tunnel portal:

1 combined tool shed, change room, blacksmith shop, and compression shed

1 portable compressor, 105 c.f.m.

1 jackhammer

1 pump

100 feet air and water hose

3 mine cars, 12 cubic feet

Small tools

The applicant also has available the following equipment forfeited to him by the discontinuance of a right away agreement by one Edward A. Edwards:

1 mucking machine, Eimco B12

1 compressor, Schramm, 315 c.f.m.

750 feet ventilation tubing

1 air fan

There may be some question as to the legal ownership of the above equipment. Although the Government cannot prevent the use of this equipment, nothing should be contributed towards depreciation until definite ownership is established.

There is no milling equipment on the property.

PROJECT PROPOSALS WITH COSTS

In the Ironclad mine, the applicant proposes to drive 700 feet westward along a limestone contact to intersect several parallel fissures that strike northeast. He estimates the cost to be $18,200.00, which is believed by the writer to be insufficient. In considering the applicant's meager finances it is believed advisable to reduce the footage to 200 feet, as shown on the claim map, figure 3. Should the 200 feet of drift expose favorable mineralization, additional exploration could be recommended.

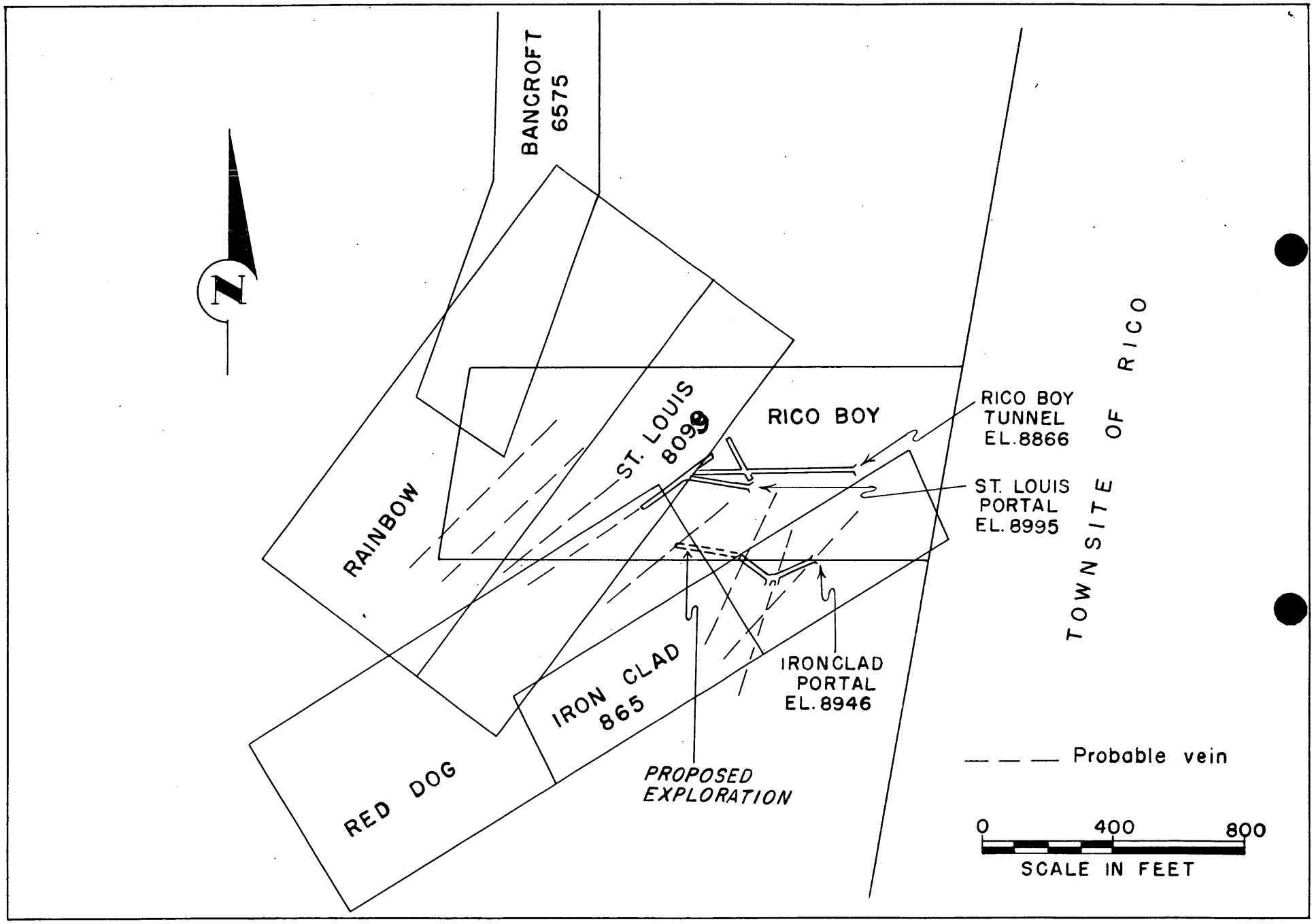

FIGURE 3 – CLAIM MAP, IRONCLAD MINE, DOLORES COUNTY, COLO., DMEA 2685

Following are detailed costs for a total of 200 feet of drifting and for the construction of a compressor shed at the Ironclad adit portal:

1. Construct compressor shed

Labor and Supervision		
1 carpenter-supervisor, $1.65 per hour, including overtime, 1 week	$ 85.00	
1 helper, $1.50 per hour, including overtime, 1 week	78.00	$ 163.00
Materials and Supplies		
Lumber	$ 270.00	
Roofing, hardware, etc.	60.00	330.00
Miscellaneous		
Social security	$ 2.50	
Workmen's compensation	4.50	7.00
Total cost of compressor shed		$ 500.00

2. Drift 200 feet, estimated time, 4 months

Contracts, Drifting		
200 feet at $12.00 per foot, including overtime		$2,400.00
Supervision		
1 superintendent, full time, 4 months at $400.00 per month		1,600.00
Operating Materials and Supplies		
Timber	$ 100.00	
Powder, caps, and fuse	700.00	
Pipe	200.00	
Track	200.00	
Gas and oil for compressor	650.00	
Drill steel and bits	150.00	
Other	100.00	2,100.00

Operating Equipment

Rental			
1 air drill complete, 4 months	$ 200.00		
3 mine cars, 20 cubic feet, 4 months	120.00		
1 air trammer, 4 months	700.00	$1,020.00	
Depreciation			
1 portable compressor, 105 c.f.m., valued at $2,000.00, 4 months	$ 130.00		
3 mine cars, valued at $300.00, 4 months	20.00	150.00	$1,170.00

Miscellaneous

Repairs to equipment	$ 250.00	
Sampling and analysis	50.00	
Social security	64.00	
Workmen's compensation	126.00	490.00
Total cost of drifting		$7,760.00
Total cost of project		$8,260.00

SUMMARY OF COSTS

Contracts		
Drift 200 feet at $12.00 per foot		$2,400.00
Labor and Supervision		
Construct compressor shed	$ 163.00	
Supervision at $400.00 per month	1,600.00	$1,763.00
Operating Materials and Supplies		
Construct compressor shed	$ 330.00	
Drift 200 feet	2,100.00	2,430.00

Operating Equipment		
Rental		
For drifting	$1,020.00	
Depreciation		
For drifting	150.00	$1,170.00
Miscellaneous		
Repairs to equipment	$ 250.00	
Sampling and analysis	50.00	
Social security	66.50	
Workmen's compensation	130.50	497.00
Total cost of exploration		$8,260.00
Over-all cost per foot of exploration		$ 41.30

Although the applicant proposes to buy several mine cars, a trammer, and a rock drill, it is believed advisable to avoid participating in the cost of such equipment except upon a rental basis as listed above.

CONCLUSIONS

Sufficient lead-zinc mineralization has been exposed in the Ironclad mine to merit a limited program of exploration. The applicant's proposal to drift 700 feet at a cost of $18,200.00 is believed to be overly ambitious for footage and underestimated for cost. Considering the poor financial condition of the operator, no more than 200 feet of drifting should be considered at this time. The total cost is estimated to be $8,260.00, of which the Government's share will be 50 percent, or $4,130.00.

RECOMMENDATIONS

The following proposals are recommended for approval:

1. Drift 200 feet west in the Ironclad main level.
2. Construct a compressor shed at the Ironclad portal.

It is recommended that the exploration program be placed on a short form contract at an over-all cost of $41.30 per foot of drifting.

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

224 New Customhouse
Denver 2, Colorado

November 28, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2685 (Lead-Zinc) Myron L. Jones, Ironclad Mine, Dolores County, Colorado

The application for Government assistance in exploration work estimated to cost $8,260 has been approved by us and a contract is being prepared.

Government participation will be 50 percent, or $4,130.

Four copies of the Final Report will be forwarded when the contract is processed.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

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

224 New Customhouse
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DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2685

Name of Applicant Myron L. Jones

Change:	From		To		
	III 1	☐	III 1	☒	11-28-52
	III 2	☐	III 2	☐	
	III 3	☐	III 3	☐	
	III 4	☒	III 4	☐	
	III 5	☐	III 5	☐	

Add:

II 7 $ 18,200

II 8 $ 8,260

II 8a % 50

Remarks:

Initials of person preparing sheet H.M.C.

Date sheet prepared 11-28-52

17367

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2685

Name of Applicant Myron L. Jones

Change:	From		To		
	III 1	☐	III 1	☒	11-28-52
	III 2	☐	III 2	☐	
	III 3	☐	III 3	☐	
	III 4	☒	III 4	☐	
	III 5	☐	III 5	☐	

Add:

II 7 $ 18,200

II 8 $ 8,260

II 8a % 50

Remarks:

Initials of person preparing sheet H.M.C.

Date sheet prepared 11-28-52

17367

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

224 New Customhouse
Denver 2, Colorado

August 29, 1952

Memorandum

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

From: Executive Officer, Field Team, Region IV

Subject: Docketing for Exploration Assistance

Enclosed herewith in duplicate is DMA Form 3a and MF-100 and MF-103 in triplicate and supporting data pertaining to the following application for Government assistance in exploration work:

Myron L. Jones
Rico, Colorado - DMEA-2685

W. H. King

W. H. King

Enclosures

Returned to Region IV - 2 copies each MF-103 and MF-100, and 2 copies of a map (DMEA-2685).

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. DMEA-2685
Metal or Mineral
Date Received 9-2-52
Amount $
Participation (Government %)

Myron L. Jones.
Rico,
Colorado.

Name and address of applicant

Date Aug. 19, 1952.

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*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*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

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

   NOTE: (1) 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 (*c*) 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.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

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

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 Myron L. Jones (Signature of authorized official)
Aug. 19, 1952 (Date)	General 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.

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Aron L. Jones
Rico, Colorado

Form MF-103

Answers

1. (a) Description;
Iron Clad mining claim; U. S. Survey no. 865
St. Louis " " " " 8099
Bancroft " " " " 6515
Rico Boy " " Book no. 58 Page no. 136
Red Dog " " " " 58 " " 167
Rainbow " " " " 58 " " 168
situated in Pioneer Mining District, County of Dolores, State of Colorado

(b) Property described is owned by applicants

(c) Same as (a)

2. (a) Expect to find, lead, zink, copper, silver and gold.

(b) Ore occurs in contact of vertical fissure, with blanket or contact vein in lime stone, beneath sheat of porfery. At times in contact only, and at times also in vertical. A number of vertical fissures (at least 8) show on the surface that have never been prospected on or below the blanket vein. Commercial ore (lead, zink and silver) were produced on the only two verticals cut on blanket vein.

3. (a) Proposed work; Drift 700 ft. in a north westerly direction, starting from Iron Clad. Purpose would be to cut south westerly fissures on or below the contact vein.

Estimated cost; $18200

(b) Project now started. Would require 14 months to complete.

4. Map.

5. Existing facilities; Tool Shed, change room, blacksmith shope and compressor shed in operable condition.

6. Needed facilities;

Compressor shed	$500
Powder Magazine	500
Ore bin	500
Road	50

7. (a) Rented; none

(b) Purchased;

300 ft. air tubing	$300	(cost estimated)
6 mine cars (20 cu. ft.)	900	
1 motor	1200	
1 drill (liner)	1200	
1 air fan	500	
300 ft. pipe (2 in.)	300	

(c) Furnished; Compressor (165) Depreciation not known
Rails (1600 ft.)
Pipe (400 ft.)
Drill (jack hammer)
Pump
Hose (water & air, 50 ft. each)
Tools (picks shovels ect.)
Mine cars (3, 12cu. ft.)
See No. 11. conserning the following
Mucking machine (Eimco B12.)
Compressor (315 Schramm)
Air tubing (750 ft.)
Air fan

Form MF-103

Myron L. Jones
Rico, Colorado

8. Labor; Miners (4) at$1.50 per. hour or $12 per. ft. contract.
General Manager$400 per. mo.

9. Materials ect.;

Powder, $3 per. ft.	$2100
Bits, $.50 " "	350
Drill rods $8 per.100ft.	56
rail spikes$10 " "	70
Fish Plates	
Bolts $10 " "	70
Power	2520
Engineering&assaying	200

10. (a) We are Prepared to invest labor plus materials, supplys and equipment on hand for 50% of total cost.

(b) This amount is sufficient to pay our part of the cost of the project.

11. The following equipment and supplys were forfeited to us by the discontinuance of a right of way agreement by Edward A. Edwards and the ownership may be disputed
Mucking machine (Eimco B12)
Compressor (315 Schramn)
Air tubing (750 ft.)
Air fan

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2685

Date received 9-2-52

Myron L. Jones
Rico,
Colorado.

Name and address of applicant

Date Aug. 19, 1952

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*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.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Myron L. Jones Rico, Colorado							
Louis M. Jones Rico, Colorado							
Paul R. Jones Rico, Colorado							
E. M. Lill Bagdad, Arizona							
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(b) If deposit is other than pl

Form MF-100
Answers

Myron L. Jones
Rico, Colorado

1. Materials produced;
   (a) Chief products are lead, zink, silver and gold.
   (b) No byproducts.

2. Names; Iron Clad, St. Louis, and Bancroft mines.
   Extent of workings;
   (a) Shafts; none assesable.
   (b) Drifts and croscuts; Iron Clad, 300 ft. St. Louis, 400 ft. Bancroft, 150 ft.
   (c) Tunnels; Rico Boy 547 ft.
   (d) Other; none
   St. Louis is stoped and flooded below drift level, can be drained by proposed drift from Iron Clad. Iron Clad is stoped and caved and flooded below drift level. Productive capacity not known. Open stopes of old workings on contact are 10 to 15 ft. wide and 6 to 8 ft. high. Ore mined from vertical fissure below drift level of St. Louis varied from 6 in. to 2 ft. in width. Shipment shown on acompaning settlement sheet was taken from section of fissure 30 ft. long and 8 ft. high.

3. (a) This property joins the town of Rico on the west.
   (b) Pioneer Mining dist.
   (c)
   (d) Dolores County Colorado.

4. (a) Property is now in operation by Myron L. and Louis M. Jones.
   (b) We are operating this property as owners.

5. Produced lead-zink in 1948. Gold in 1950 and 1951.

6. Louis M. Jones and E. M. Lill have had over 20 years mining experience in this district. Paul R. Jones and Myron L. Jones (applicant) have had 3 years mining experience in the Rico Argentine mines and Woods Hole leese. All have nad 5 years experience on property involved.

7. History;
   (a) Operation prior to 1947 is not known. Atempts were made by present operators to mine the St. Louis below drift level in 1948, and one shipment of lead-zink ore was made (see accompanying settelment sheet). Was abandoned because of water, poor ventilation and disadvantage of hoisting ore and waste from below level, as well as subsequent drop in price of lead-zink.
   (b) Neighboring property of Rico Argentine (Silver Swan) to the south is now in production. The Shamrock and Atlantic Cable to the north and north east respectively, have been large producers of lead-zink. Newman Hill, directly east was famous as a lead silver producer. All these propertys now belong to the Rico Argentine Mining Co.
   (c) Have no available private reports.

11. Can not answer.

12. Answered on form MF-103 2. (b).
   (b) Cannot answer.

13. 800 ft. of road needed from Iron Clad to connect with present road to St. Louis. This is dirt road.

14. Sufficient water for all seasons of the year from the St. Louis mine.

15. Power; Compressor is gasoline powered. Uses approximately 2 gallons per hour. Electricity is avalable.

16. Labor; from partners conserned.

17. Equipment and Facilities; described on form MF-103 all in serviceable condition.

18. See form MF-103 (11)

(b) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(c) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

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)

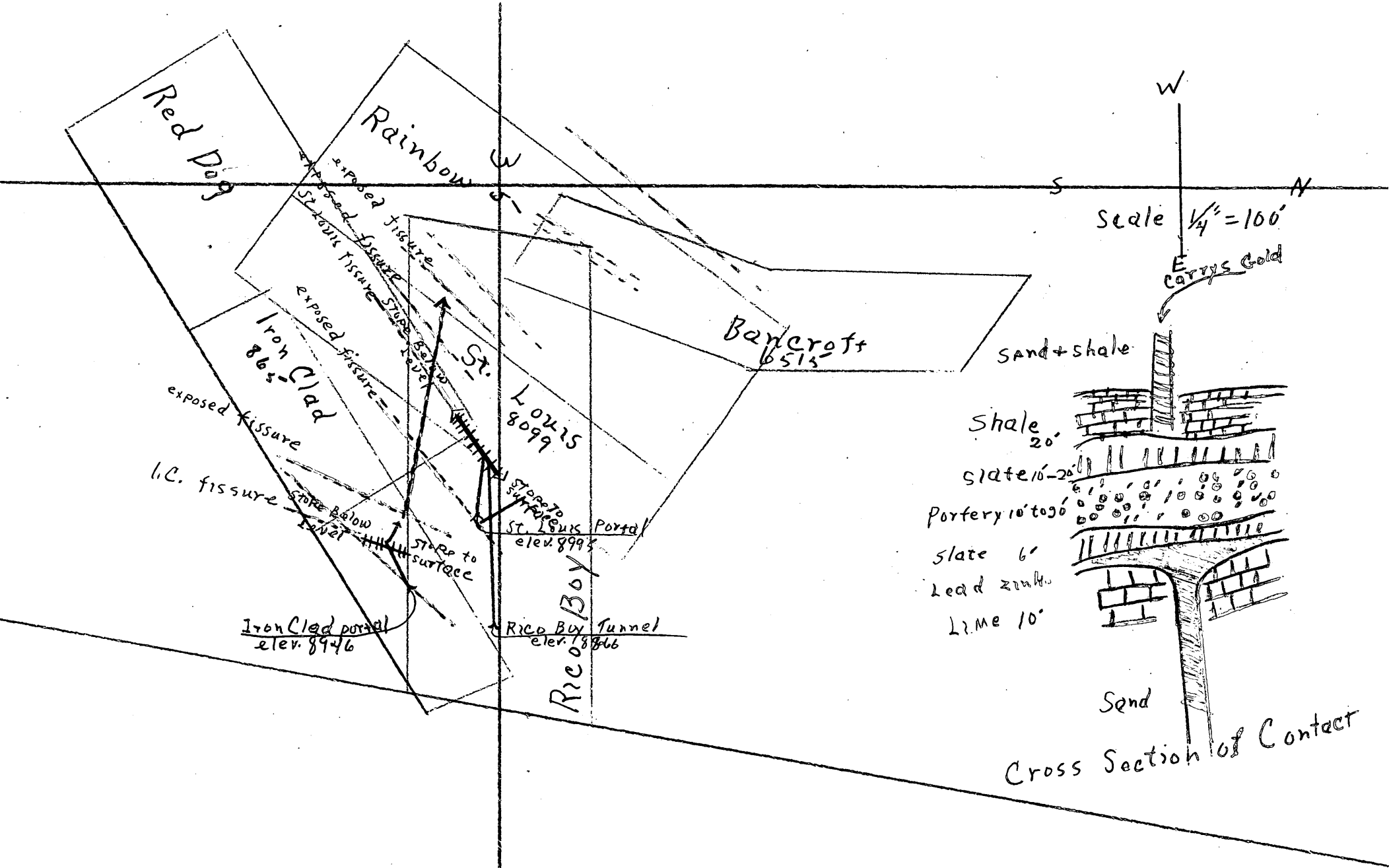
By Myron L. Jones
(Signature of authorized official)

Aug. 19, 1952
(Date)

General 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.

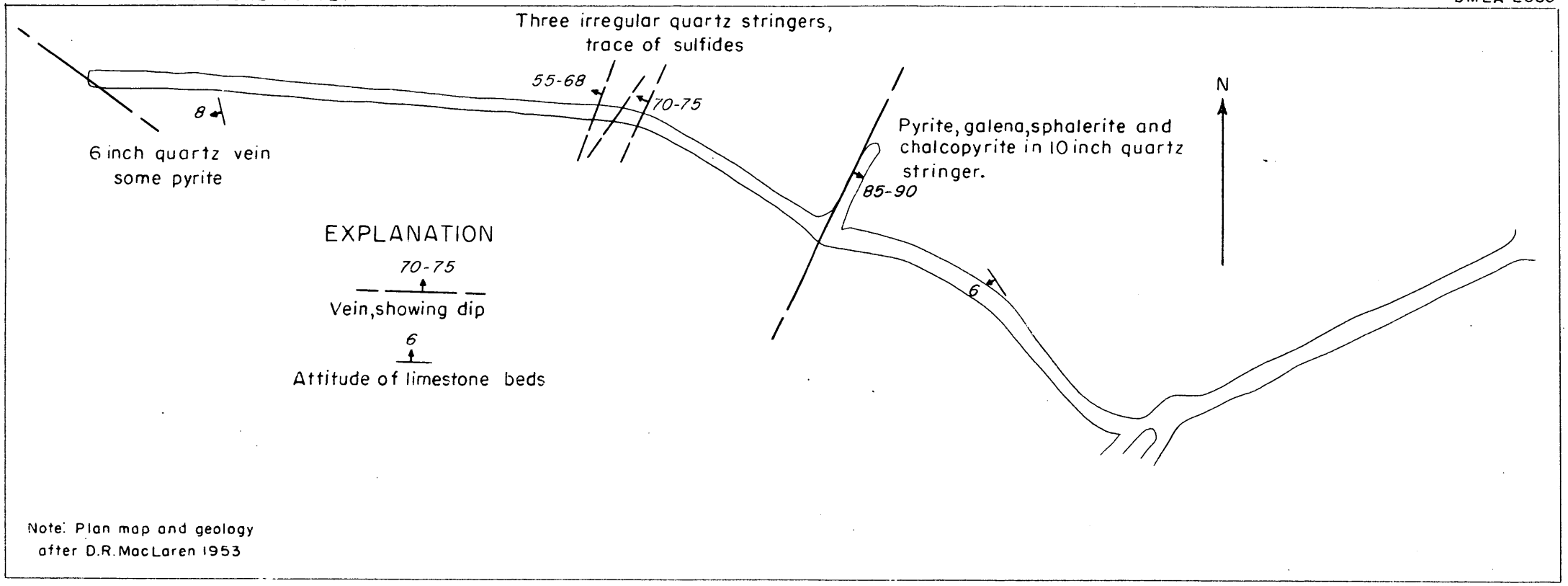
U. S. GOVERNMENT PRINTING OFFICE 16—63792-1



Townsite of Rico

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

DMEA 2685



E.N. Harshman Jan. 1954

FIGURE 1.—GEOLOGIC PLAN IRON CLAD MINE, RICO COLORADO.

40 0 40 80 Feet

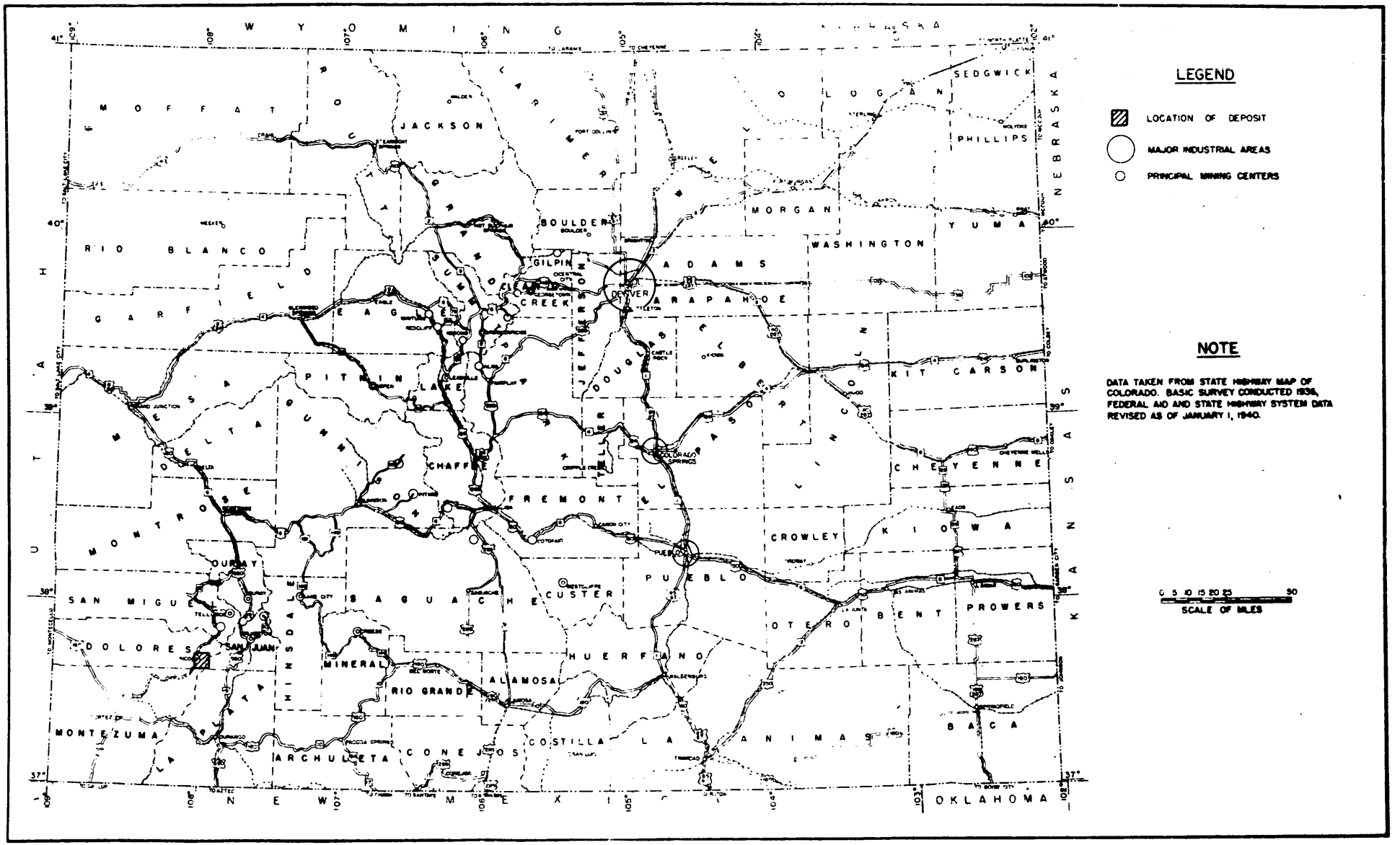


FIGURE 1. - LOCATION MAP, IRONCLAD MINE, DOLORES COUNTY, COLORADO (DMEA 2685)

DESCRIPTION OF THE DEPOSIT

Limited exploration in the immediate vicinity of the Ironclad and St. Louis mines reveals that lead-zinc sulphide ore occurs at the intersections of vertical fissure veins with favorable calcareous horizons and horizontal bedding veins. The ore found to date has occurred as small blanket-like deposits; the ore replacing the favorable beds at the vein junctions.

On the opposite side of the valley the deposits have been much larger with larger replacement of the flat limestone beds.

WORK COMPLETED UNDER CONTRACT

Drifting under the contract was initiated on May 21, 1953, and was completed during the first week of September 1953 as shown on figures 2 and 3. Figure 3 also shows the claims listed in Annex No. 1 of the contract.

Tabulation of Monthly Drifting Accomplishments

May 21-31, 1953	25 feet
June 1953	50 feet
July 1953	50 feet
August 1953	50 feet
September 1953	25 feet
Total	200 feet

The contract specified 200 feet of drifting, westward along the horizontal or bedding vein, then exposed in the breast at the back of the existing drift, to explore for mineralization at or near the intersections with more or less vertical veins which cut the strata and were believed to lie ahead.

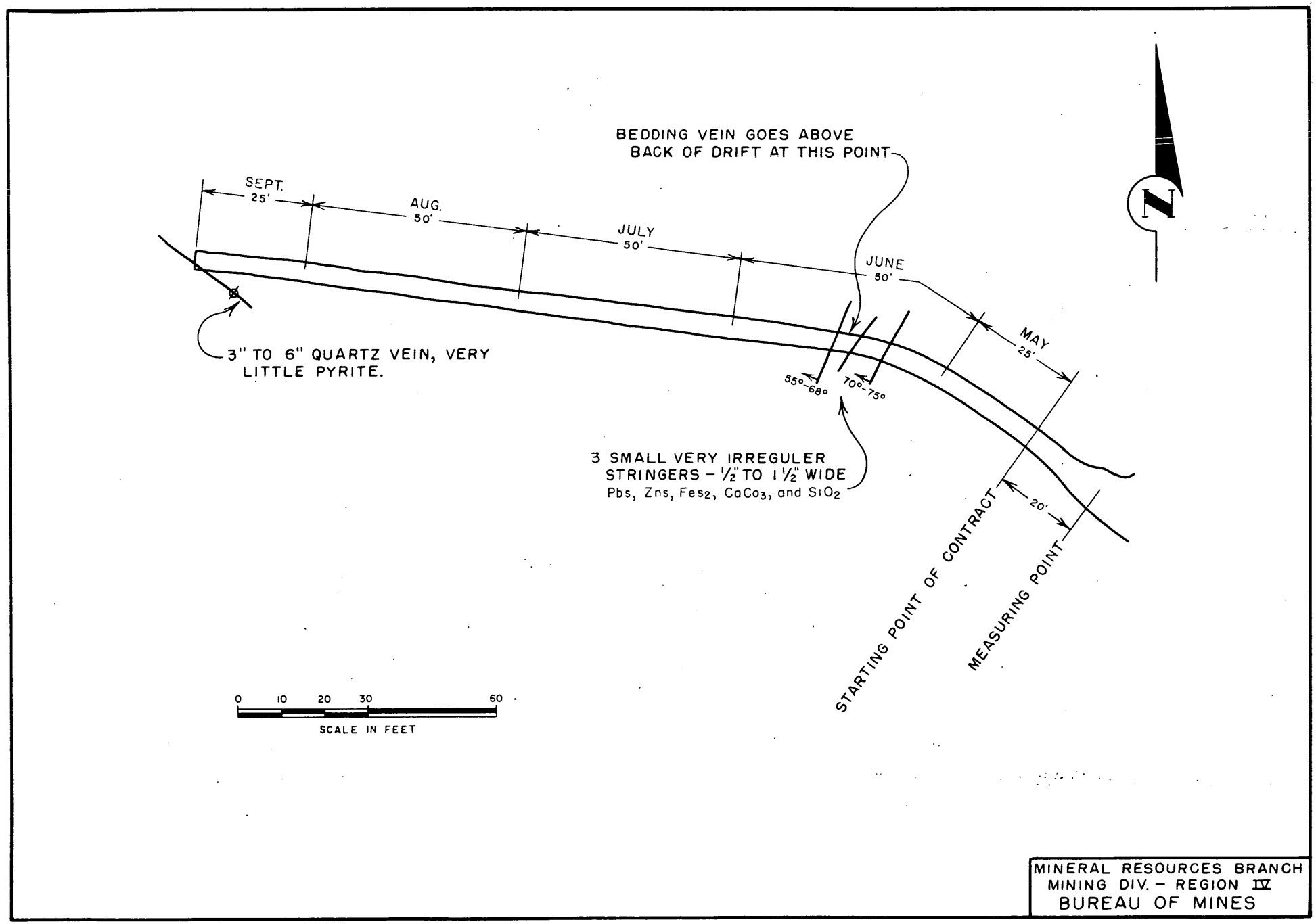


FIGURE 2 - UNDERGROUND PROGRESS, IRONCLAD MINE, DOLORES COUNTY, COLO. (Idm E491, DMEA 2685)

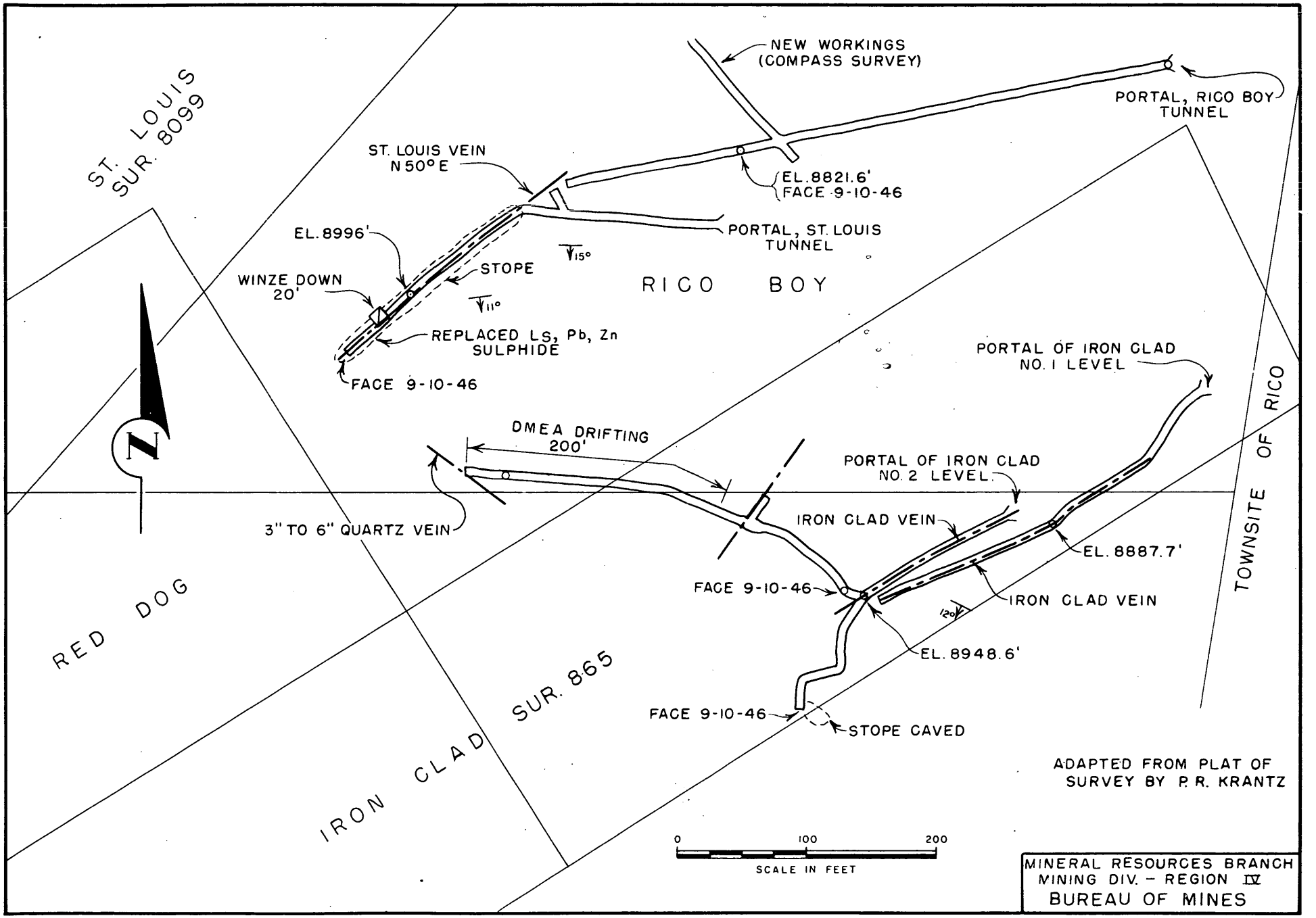


FIGURE 3 - PLAN OF IRON CLAD MINE IN RELATIONSHIP TO SURROUNDING MINE WORKINGS, DOLORES COUNTY, COLO.
(Idm-E491, DMEA 2685)

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