DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE {IDM-E909}

DMEA NO. 3807

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract
✓ (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
✓ Report of Review
✓ Termination Notice or Agreement
Recision Notice
Assignment of Contract
✓ Contract Amendments (latest on top)
✓ Contract with all exhibits and annexes
✓ Owner's Consent to Lien Subordination Agreement
✓ Leases and assignments of leases
✓ Application and attachments
(3) Envelope for maps

Right Side

Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

✓ Final Field Team Report (Tab)
✓ Operator's Final Report
(2R) ✓ Interim Reports
(2R) ✓ Operator's monthly reports and all attachments (latest on top)
✓ On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order) Interim Summary Reports by W. O. Engineers

Right Side

Operator's Semi-Annual Report for Certified Project, Field Team Interim Reports, Operator's Monthly Report with transmittal, narrative, maps, and Field Team review.

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

R.G.S.

9775

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

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REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Reynolds Tungsten Corporation
822 First National Bank Building,
Denver 2, Colorado

pertaining to Exploration Project Contract No. Idm-E909, DMEA No. 3807, including Amendments Nos. 1 through 3, and Termination Agreement dated January 3, 1958, for the months of April, 1956 to October, 1957, inclusive, covering a project for the exploration of Tungsten on property known as the Dozer Mine located in Boulder County, Colorado.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, verification of work performed by reference to Field Team reports and correspondence, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reason:

> All of the costs incurred were under a contract provision for payment by the Government on the basis of fixed unit costs of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor		$34,918.79
Exceptions:		
Prior to this review	$0.00	
Herewith	0.00	0.00
Total Accepted Cost		$34,918.79

The contract calls for a 75 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Twenty-six thousand, one hundred eighty-nine and 09/100ths Dollars is valid and proper, provided that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

Amount payable to Operator	$26,189.09
Amount reimbursed	25,689.11
Balance due Operator	$ 499.98

Donald T. Finch

April 7, 1958

Donald T. Finch, Auditor

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Government's copy

Long
Hughes
Holt
Martin
Tyler
Selfridge

TERMINATION AGREEMENT

It is agreed this 3rd day of January, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Reynolds Tungsten Corporation, hereinafter called the "Operator," parties to that certain Exploration Project Contract No. Idm-E909 (Docket No. DMEA-3807), dated December 28, 1955, as amended, hereinafter called the "Contract," that:

1. Effective October 9, 1957, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. All rights of the Government respecting Certification of Discovery or Development, percentage royalty and liens to secure payment thereof, reports (including preservation of Operator's records), accounts, audits, and the right to recover any overpayment, are preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

IN WITNESS WHEREOF, the parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mittendorf
Administrator, Defense Minerals Exploration Administration

REYNOLDS TUNGSTEN CORPORATION

By G. C. Ridlon

Title Vice President

Government's copy

"Appd. Sol. Off."
Holt
Chapman
Martin
Chambers
Selfridge
Johnson

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA-3807

AMENDMENT NO. 3

It is agreed this 10th day of July, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Tungsten Corporation, that Exploration Project Contract No. Idm-E909 (Docket No. DMEA-3807), dated December 28, 1955, as amended, is further amended, effective June 1, 1957, as follows:

1. In Exhibit "A", under Description of the Work, Stage II is revised to read as follows:

"Crosscutting and drifting with dimensions 5 feet by 7 feet, the directions and amount of such work up to a maximum of 1,425.26 feet to be determined by the Government and approved in advance.

"Underground diamond core drilling in two holes, Nos. 3 and 4, maximum length of each hole 200 feet, total aggregate length not to exceed 400 feet, as indicated on the attached map, titled 'DMEA-3807 (Tungsten) Idm-E909 Prospect Tunnel - Dozer Mine, Boulder County, Colo. Scale: 1" = 100', May, 1957.' The holes shall be approximately horizontal and have the following approximate courses: Hole No. 3, N. 30° E., Hole No. 4, due East. Neither hole shall be drilled more than 50 feet beyond the limit of silicified rock, nor within 100 feet of the boundary of the land covered by the contract."

2. In Exhibit "A", under Estimated Costs of Proposed Exploration, Stage II, change the first item from "1,500 feet of crosscutting and drifting @ $29.65/ft. $44,475.00" to "1,425.26 feet of crosscutting and drifting @ $29.65/ft. (rounded) $42,259.00," and add a new item to read "400 feet of core drilling @ $5.54/ft. $2,216.00."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, or the fixed unit cost of any item of work.

Executed in quintuplicate the day and year first above written.

REYNOLDS TUNGSTEN CORPORATION

By G. C. Ridlon

Title Vice President

THE UNITED STATES OF AMERICA

By C. Mitterdorf

Administrator, Defense Minerals Exploration Administration

Docket from Martin

~~Draft~~-7/29/57
SPHolt/esf

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA 3807

Justification for Amendment No. 3

The Operator, by letter of May 3, 1957, requested authorization for drilling three flat diamond drill holes, aggregate length 1150 feet, from an underground station, to replace part of the authorized drifting and crosscutting.

The Field Team noted that veins intersected by DMEA crosscutting on the west, or footwall side of the Hurricane Hill breccia reef were only minor fractures, not likely to contain significant quantities of tungsten. On the east, or hanging wall side of the reef two Stage I diamond drill holes encountered a highly silicified lead-bearing zone at least 450 feet long, probably trending roughly parallel to the Hurricane Hill breccia reef, the eastern margin of which zone has not been adequately explored, and might contain significant tungsten mineralization. The Field Team therefore recommended that the Operator's request to further explore the footwall of the reef by a long (650') drill hole be denied, but that two drill holes, aggregate length 400 feet, be authorized to further explore the hanging wall side of the reef.

This amendment provides for the 400 feet of diamond drilling recommended, and for reduction of the amount authorized for crosscutting and drifting to provide sufficient funds for the drilling without increasing the overall cost of the contract.

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EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA 3807
CONTRACT NO. 14m-2909

AMENDMENT NO. 2

It is agreed this 14th day of March, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Reynolds Tungsten Corporation, hereinafter called the "Operator," parties to that certain Exploration Project Contract No. 14m-2909, Docket No. DMEA 3807, dated December 28, 1955, hereinafter called the "Contract," that:

1. In Exhibit "A", caption "Description of the Work," subheading "Stage I," item "3", the bearing "S. 30° E." is changed to read "S. 40° E."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

REYNOLDS TUNGSTEN CORPORATION

By G. C. Robert

Title V. P.

UNITED STATES OF AMERICA

By E. M. Hawkins

Acting Executive Officer
DMEA Field Team, Region III

(SEAL)

Government's copy

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Chapman
Martin
Chambers
Selfridge
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EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA-3807

AMENDMENT NO. 1

It is agreed this 20th day of March, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Tungsten Corporation, that Exploration Project Contract No. Idm-E909 (Docket No. DMEA-3807), dated December 28, 1955, is amended as follows:

1. In Article 3, the period for completion is extended from 15 months to 33 months or from March 31, 1957, to September 28, 1958.

2. In Article 7, the maximum period for royalty payments and liens to secure them is extended from ten (10) years to twelve (12) years from the date of the Contract.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O Mitchendorf
Administrator, Defense Minerals
Exploration Administration

REYNOLDS TUNGSTEN CORPORATION

By G. C. Ridlon

Title Vice President.

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No. SC 1

STATE OF COLORADO

OFFICE OF THE SECRETARY OF STATE

MEA
Date Rec'd.
JAN 6 1956
BUREAU OF MINES
Denver, Colorado

UNITED STATES OF AMERICA,
STATE OF COLORADO. } ss.

CERTIFICATE

I, George J. Baker, Secretary of State of the State of Colorado, do hereby certify that the annexed is a full, true and correct copy of AGREEMENT OF MERGER of HETZER MINES, INC. (a Colorado corporation) into COLD SPRING TUNGSTEN, INC. (a Colorado corporation), the surviving corporation, filed in this office on the THIRTY-FIRST day of MAY, A.D., 1955 at 11:45 o'clock A.M., and admitted to record.....

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed the Great Seal of the State of Colorado, at the City of Denver, this TWENTY-EIGHTH day of DECEMBER A. D. 1955

Geo. J. Baker
SECRETARY OF STATE.

By F. J. Serafini
DEPUTY.

C. F. HOECKEL CO., DENVER.

AGREEMENT OF MERGER

OF

HETZER MINES, INC.
(a Colorado corporation)

INTO

COLD SPRING TUNGSTEN, INC.
(a Colorado corporation)

Pursuant to Section 31-4-5 of the General Corporation Law of the State of Colorado

- - - - - - - -

THIS AGREEMENT OF MERGER by and between HETZER MINES, INC., a stock corporation organized and existing under the laws of the State of Colorado (herein sometimes called "HETZER") and COLD SPRING TUNGSTEN, INC., a stock corporation organized and existing under the laws of the State of Colorado (herein sometimes called "COLD SPRING"), dated May 27, 1955,

W I T N E S S E T H :

WHEREAS, HETZER was incorporated by the filing of Articles of Incorporation in the Office of the Secretary of State of the State of Colorado on May 24, 1949 and the total number of shares which it is authorized to issue is 100,000 shares of Common Stock, par value $1 each, of which 38,650 shares are issued and outstanding; and

WHEREAS, COLD SPRING was incorporated by the filing of Articles of Incorporation in the Office of the Secretary of State of the State of Colorado on May 17, 1951, and the total number of shares which it is authorized to issue is 10,000 shares of Common Stock, par value $1 each, of which 2,000 shares are issued and outstanding; and

WHEREAS, the respective Boards of Directors and stockholders of HETZER and COLD SPRING have determined that it is advisable that HETZER be merged into COLD SPRING on the terms and conditions hereinafter set forth, in accordance with the applicable provisions of the laws of the State of Colorado, which laws permit such merger;

NOW, THEREFORE, it is agreed as follows:

1. HETZER, one of the constituent corporations, shall be and hereby is merged pursuant to Sections 31-4-5 of the General Corporation Law of the State of Colorado into COLD SPRING. COLD SPRING shall be the surviving corporation and it shall continue and shall be deemed to continue for all purposes whatsoever after the merger of HETZER with and into itself.

2. Upon the effective date of this Agreement of Merger as provided by the applicable laws of the State of Colorado, the separate existence of HETZER shall cease, and COLD SPRING shall have and possess all the rights, privileges, powers and franchises as well of a public as a private nature,

and shall be subject to all the restrictions, disabilities and duties of HETZER and COLD SPRING, and all and singular the rights, privileges, powers and franchises of HETZER and COLD SPRING, and all property, real, personal and mixed, and all debts due to either HETZER or COLD SPRING on whatever account, as well as for stock subscriptions as all other things in action or belonging to each of such corporations shall be vested in COLD SPRING; and all property, rights, privileges, powers and franchises in all and every other interest shall be thereafter as effectually the property of COLD SPRING, the surviving corporation, as they were of the several and respective constituent corporations, HETZER and COLD SPRING, and the title to any real estate vested by deed or otherwise, under the laws of the State of Colorado or otherwise, in either HETZER or COLD SPRING, shall not revert or be in any way impaired by reason of the merger, provided, however, that all rights of creditors and all liens upon any property of any of the constituent corporations shall be preserved, unimpaired, and all debts, liabilities and duties of the respective constituent corporations shall thenceforth attach to COLD SPRING, the surviving corporation, and may be enforced against it to the same extent as if said debts, liabilities and duties had been incurred or contracted by it. COLD SPRING shall thenceforth be responsible and liable for all of the liabilities and obligations of each of the constituent corpora-

tions and any claim existing or action or proceeding pending by or against HETZER may be prosecuted to judgment as if the merger had not taken place or COLD SPRING may be substituted in its place, and neither the rights of creditors nor any liens upon the property of either of the constituent corporations shall be impaired by the merger.

3. The Articles of Incorporation of COLD SPRING shall be and constitute the Articles of Incorporation of COLD SPRING, the surviving corporation, but COLD SPRING, as the surviving corporation, hereby reserves and shall have the right to amend, alter, change or repeal its Articles of Incorporation, and COLD SPRING, and its shareholders, directors, officers and all other persons whomsoever, shall have all the rights, powers and privileges prescribed by the General Corporation Law of the State of Colorado.

4. Until changed by amendment in the manner therein provided, the By-laws of COLD SPRING as existing and constituted on the effective date of this Agreement of Merger shall be and constitute the By-laws of COLD SPRING, the surviving corporation.

5. The Board of Directors and members thereof and the officers of COLD SPRING on the effective date of this Agreement of Merger shall be and constitute the Board of Directors and members thereof and the officers of COLD SPRING, the surviving corporation, each to hold office as provided in the By-laws

of COLD SPRING.

6. The manner and basis of converting the shares of HETZER and COLD SPRING into shares or other securities of COLD SPRING, the surviving corporation, shall be as follows:

(a) The 38,650 issued and outstanding shares of Common Stock of HETZER, all of which are owned by COLD SPRING, shall be automatically cancelled and eliminated and no shares or other securities of COLD SPRING, the surviving corporation, shall be issued in respect thereof, and all rights in respect of all such shares shall cease to exist;

(b) All of the issued and outstanding shares of Common Stock of COLD SPRING immediately prior to the effective date of this Agreement of Merger shall continue to be issued and outstanding, and after the effective date of this Agreement of Merger, all such shares shall have the rights, designations, preferences, qualifications, limitations, special or relative rights, privileges and voting powers and the restrictions or qualifications thereof, which are set forth in the Articles of Incorporation of COLD SPRING.

7. The capital of COLD SPRING, the surviving corporation, in respect of all the issued and outstanding shares of COLD SPRING, shall be the same amount of capital in respect of each and all of such shares as the amount of capital in respect thereof immediately prior to the effective date of this Agreement of Merger. The capital in respect of all the shares of

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Common Stock of HETZER shall be eliminated.

8. HETZER and its directors hereby covenant and agree that, from time to time, as and when requested by COLD SPRING, or by its successors or assigns, and to the full extent permitted by law, they will execute, acknowledge, deliver and file all documents and will do all other acts and things, or cause the same to be done, in order to vest in and confirm to COLD SPRING, the surviving corporation, title to and possession of the property, rights, privileges, powers and franchises of HETZER and otherwise to carry out the intent and purposes of this Agreement of Merger.

9. COLD SPRING, as the surviving corporation, shall pay all expenses of the merger herein provided for.

10. Should any event occur or circumstance arise after the date of this Agreement of Merger and before the consummation of the merger herein provided for which, in the opinion of the Board of Directors of HETZER or the Board of Directors of COLD SPRING, renders the consummation of the merger herein provided for not in the best interests of such corporations, or either of them, then notwithstanding any adoption or approval of this Agreement of Merger by the stockholders of HETZER and COLD SPRING, this Agreement of Merger, before it shall be consummated, shall again be submitted to the shareholders or stockholders of each such corporation.

11. The principal office and place of business of

COLD SPRING, the surviving corporation, shall be 1036 First National Bank Building, Denver 2, Colorado.

12. This Agreement of Merger shall be submitted to the stockholders of HETZER and COLD SPRING, at special meetings called for such purpose, as provided by law, and shall take effect and be taken and deemed to be the agreement and act of merger of HETZER into COLD SPRING upon the adoption thereof by the votes, given in person or by proxy, of stockholders of HETZER and COLD SPRING representing at least two-thirds of the total number of outstanding shares of the capital stock of HETZER and COLD SPRING, and upon the filing of this Agreement of Merger, properly certified, sealed, signed and acknowledged, as required by law, in the Office of the Secretary of State of the State of Colorado, and upon the doing of such other acts or things as shall be required for accomplishing the merger by the General Corporation Law of the State of Colorado.

IN WITNESS WHEREOF, HETZER and COLD SPRING, pursuant to authority duly given by their respective Boards of Directors, have caused this Agreement of Merger to be entered into and signed by their respective directors, or a majority of them, and their respective corporate seals to be hereunto affixed,

all as of the day and year first above written.

HETZER MINES, INC.

By _____

_____

_____

constituting a majority of
the Board of Directors

[Corporate Seal]

ATTEST:

_____
Secretary

COLD SPRING TUNGSTEN, INC.

By _____

_____

_____

constituting a majority of
the Board of Directors

[Corporate Seal]

ATTEST:

_____
Secretary

CERTIFICATE OF THE SECRETARY

OF

HETZER MINES, INC.

RELATIVE TO VOTE OF STOCKHOLDERS

I, Paul J. Newlon, Secretary of Hetzer Mines, Inc., a Colorado corporation (hereinafter referred to as "Hetzer"), do hereby certify, as such Secretary and under the seal of Hetzer, that the foregoing Agreement of Merger, after having been first duly entered into and signed by a majority of the directors of Hetzer and by a majority of the directors of Gold Spring Tungsten, Inc., a Colorado corporation, was duly submitted to the stockholders of Hetzer at a special meeting of such stockholders called separately for the purpose of taking said Agreement of Merger into consideration, and duly held on May 26, 1955, all notice of said meeting have been duly waived by the stockholders of Hetzer in writing; that more than two-thirds (2/3) of the total number of shares of the outstanding capital stock of Hetzer were represented at said meeting; and that at said meeting said Agreement of Merger was considered and a vote by ballot was duly taken for the adoption or rejection of the same, and that the votes of stockholders of Hetzer representing more than two-thirds (2/3) of the total number of shares of its outstanding capital

[illegible] the execution of said Agreement of Lease.

IN WITNESS WHEREOF the seal of said Vetzer Lines, Inc., this [illegible] day of [illegible], 19[illegible].

Paul J. Newlon
Secretary

(Corporate Seal)

CERTIFICATE OF WELL STANDING

OF

GOLD SPRING CORPORATION, INC.

RELATING TO VOTE OF STOCKHOLDERS

I, Paul J. Hawlon, Secretary of Gold Spring Corporation, Inc., a Colorado corporation (hereinafter sometimes referred to as "Gold Spring"), do hereby certify, as well under my hand and the seal of Gold Spring, that the Agreement of Merger, after having been first duly signed by a majority of the directors of Gold Spring Corp., a majority of the directors of Hotzen Lines, Inc., a Delaware corporation, was duly submitted to the stockholders of Gold Spring at a special meeting of such stockholders called separately for the purpose of taking said Agreement of Merger into consideration, and duly held on May 27, 1[illegible], all notice of said meeting having been duly waived by the stockholders of Gold Spring in writing; that more than two-thirds (2/3) of the total number of shares of the outstanding capital stock of Gold Spring were represented at said meeting; and that at said meeting said Agreement of Merger was considered and a vote by ballot was duly taken for the adoption or rejection of the same, and that the votes of stockholders of Gold Spring representing more than two-thirds (2/3) of the total number of shares of its outstanding capital

stock were cast in favor of the adoption of said Agreement of Merger.

WITNESS my hand and the seal of Cold Spring Tungsten, Inc., this 27th day of May, 1955.

Paul J. Hamilton
Secretary

(Corporate Seal)

THE FOREGOING AGREEMENT OF MERGER, having been duly entered into and signed by a majority of the directors of Hetzer Mines, Inc., and by a majority of the directors of Cold Spring Tungsten, Inc., and having been duly adopted by the stockholders of Hetzer Mines, Inc. and by the stockholders of Cold Spring Tungsten, Inc., all in accordance with the provisions of the General Corporation Law of the State of Colorado, the President and Secretary of each of said corporations do now hereby execute said Agreement of Merger under the corporate seals of their respective corporations by authority of the directors and stockholders of each, as the respective act, deed, and agreement of each of said corporations, on this 27th day of May, 1955.

(Corporate Seal)

HETZER MINES, INC.

by _____
President

_____
Secretary

(Corporate Seal)

COLD SPRING TUNGSTEN, INC.

by _____
President

_____
Secretary

STATE OF NEW YORK)
; ss.:
COUNTY OF NEW YORK)

Be it remembered that on this 27th day of May, 1955, before me Nathalie Kogan a notary public in and for the County and State aforesaid and an officer also authorized by the laws of the State of Colorado to take acknowledgments of deeds, personally came Boris Pregel, President of Cold Spring Tungsten, Inc., a Colorado corporation and one of the corporations described in and which executed the foregoing Agreement of Merger, to me personally known and personally known to be such; and he, the said Boris Pregel, as such President, duly acknowledged before me that he signed, sealed and delivered said Agreement of Merger as the act, deed and agreement of said Cold Spring Tungsten, Inc., and that the signatures of the President and the Secretary of said corporation to the foregoing Agreement of Merger are in the proper handwriting of said President and Secretary of said corporation, and that the seal affixed to said Agreement of Merger as the seal of said Cold Spring Tungsten, Inc. is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office the day and year aforesaid.

Nathalie Kogan
Notary Public

NATHALIE KOGAN
Notary Public, State of New York
No. 43-7327390
Qualified in Richmond County
Cert. Filed in New York County
Commission Expires March 30, 1956

STATE OF NEW YORK)
: ss.:
COUNTY OF NEW YORK)

Be it remembered that on this 27th day of May, 1955, before me, Nathalie Kogan a notary public in and for the County and State aforesaid, and an officer also authorized by the laws of the State of Colorado to take acknowledgments of deeds, personally came Boris Pregel, President of Hetzer Mines, Inc., a Colorado corporation and one of the corporations described in and which executed the foregoing Agreement of Merger, to me personally known and personally known to be such; and he, the said Boris Pregel, as such President, duly acknowledged before me that he signed, sealed and delivered said Agreement of Merger as the act, deed and agreement of said Hetzer Mines, Inc., and that the signatures of the President and the Secretary of said corporation to the foregoing Agreement of Merger are in the proper handwriting of said President and Secretary of said corporation, and that the seal affixed to said Agreement of Merger as the seal of said Hetzer Mines, Inc., is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of office the day and year aforesaid.

Nathalie Kogan
Notary Public

NATHALIE KOGAN
Notary Public State of New York
No. 43-7327390
Qualified in Richmond County
Cert. Filed in New York County
Commission Expires March 30, 1956

302

129166

(Survivor)

DOMESTIC

FILED in the office of the Secretary of State, of the State of Colorado, on the 31st day of May A.D. 1955, at 11:45 o'clock AM

GEORGE J. BAKER
Secretary of State

Filing Clerk de Long Fees 5.00

Old Age Pension Fund .....

This document has been Inspected and properly Entered on the Records of The Fiat Tax Department.

OK

Date June 4, 1955

Hunter Clerk

PAUL, WEISS, RIFKIND, WHARTON & GARRISON
ATTORNEYS AND COUNSELLORS AT LAW
575 MADISON AVENUE
NEW YORK 22, N. Y.

RECORDED

BOOK 708 PAGE 287

Docket copy

REGIONAL DIRECTOR'S OFFICE REGION III FEB 1 3 1955 BUREAU OF MINES DENVER, COLORADO

RECEIVED FEB 1 3 1956

MF-200A
(Revised June 1954)

Docket No. DMEA -3807

Commodity Tungsten

Contract No. Idm-E 909

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT[1]
(Short Form)

It is agreed this DEC 2 8 1955 day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Reynolds Tungsten Corporation, a Colorado Corporation,

whose mailing address is 1036 First National Bank Building Denver 2, Colorado,
hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Exhibit "A," Annex I, and three sketch maps described in Annex I and Exhibit "A."

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Boulder, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] lease and option to purchase, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: .....

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.), are attached, as follows: ~~Consent to Lien by Lessor Mines, Inc., is attached.~~ Consent to Lien by Cold Spring Tungsten, Inc. is ~~attached.~~

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 7, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 7(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of tungsten. The work to be performed is described in Exhibit "A." The Operator on or before April 1, 1956 shall commence the work, and on or before March 31, 1957 (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—A fixed cost for each unit of work to be performed (per foot of drifting, per foot of drilling, per hour of operations, etc.) is hereby agreed upon, and is set forth in Exhibit "A" in connection with the estimated total cost of the project in the sum of $ 75,289.50 The Government will contribute 75 percent of the fixed unit costs as work is performed, in a total sum not in excess of $ 56,467.13 : *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 6(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work

performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records or accounts.

ARTICLE 7. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 6) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 8. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 8 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 9. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 10. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 11. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

REYNOLDS TUNGSTEN CORPORATION

(Operator)

By Douglas J. Luckhurst
Pres.

THE UNITED STATES OF AMERICA

By C. M. Mitendorf
Administrator, Defense Minerals Exploration Administration

Indutz
Dwyer
"Appd. Sol. Off."
12/16/55

McMahon
Martin
Nelson

I, Joseph Krasovich, certify that I am the Secretary secretary of the corporation named as Operator herein; that Douglas J. Luckhurst who signed this contract on behalf of the Operator, was then President 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.

Joseph Krasovich

[CORPORATE SEAL]

Selfridge
Yelverton
Fisher

U. S. GOVERNMENT PRINTING OFFICE 16—70618-1

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA-3807

ANNEX I

The following maps are attached hereto and made part of this contract:

Figure 1 - Location Map, Dozer Mine, Reynolds Corporation, Boulder County, Colo. DMEA-3807

Figure 3 - Map showing the boundary of land referred to in this Annex I, claim boundaries, and names and survey numbers of the patented claims.

The land referred to in Article 2 of the contract consists of:

(a) an irregular tract containing approximately 70 acres, and consisting of the following patented claims and portions of patented claims:

Claim	Survey No.
Dozer	20684
S.W. 1,100 feet Hurricane No. 1	18340
Hurricane No. 2	18340
N.W. 1,050 feet Hurricane No. 3	18340
Hurricane No. 4	18340
S.W. 750 feet Spencer	19949
S.W. 440 feet Bertha	19804
S.W. 440 feet May Raymond	19804
S.W. 440 feet Lost Chance	19804
S.W. 440 feet Only Chance	19804
S.W. 600 feet Gold Medal	19559
S.W. 1,800 feet Silver Light	19559
(Except portion in conflict with Forest Home)	
Expert	19559
(Except portion in conflict with Forest Home)	
Hill Top No. 4	19559
Hill Top No. 2	19559
McKnesport	18340
N E 300' Hill Top	19559
N E 200' Topay	19559

(b) a tract of land described as follows in the lease and option agreement between Hatmar Mines, Inc. and Reynolds Tungsten Corporation dated April 7, 1955:

a rectangular tract of land 1500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line: beginning at the center line of the portal of the Prospect Tunnel, which portal is situated on the Ash Pan Lode Mining Claim, Survey Lot No. 18,340, and running thence along the course of the center line of said Prospect Tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect Tunnel for a distance of 1500 feet, which point is the terminal end of said center line; including rail, air line, water line and ventilation line now installed in said Prospect Tunnel; but not including in the demised premises any part of the Lack Bill Lode Mining Claim, U. S. Survey Lot No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde or Lone Jack Lode Mining Claims, all U. S. Survey Lot No. 18,340 (except that the Lessee shall have a right of way through said Prospect Tunnel across such of said claims as said Tunnel now traverses). Those portions, if any, of any other Lode Mining Claims owned by the Lessor (except the nine claims described immediately above) which conflict with the demised premises shall be included therein. The rights and premises hereby granted are limited to within the vertical planes of the surface boundary lines of the above described premises, and all extra lateral rights, if any, are reserved to the Lessor, and the Lessee shall have no right to extend his workings beyond such vertical planes.

The property lies mainly in the N.½ sec. 7, T. 1 S., R. 72 W., 6th Principal Meridian, Boulder County, Colorado; and is about 3½ miles north of Nederland, Colorado, as shown on the attached map, Figure I.

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMRA-3807

EXHIBIT "A"

Description of the Work

The following map is attached hereto and made part of this contract:

Figure 2. - Composite Geologic Map of Hurricane Hill and Plan of Prospect Tunnel showing recommended exploration, Doner Mine, Boulder County, Colorado.

The Operator shall perform the work described below under Stage I, and shall perform as much of the work in Stage II as the Government shall hereafter approve in advance in writing:

Stage I

1. Drive 5 feet by 7 feet crosscut S. 72° E. from present face of Prospect Tunnel 810 feet, including excavation for a diamond drill station at the end of the completed crosscut.

2. Core drill minimum AX size N. 30° W., 600 feet horizontal.

3. Core drill minimum AX size S. 30° E., 600 feet horizontal (Figure 2).

The 810-foot crosscut will explore the ground in the footwall of the Hurricane Hill breccia reef zone for a distance of about 700 feet beyond the present face of the Prospect Tunnel and is expected to penetrate and continue through the reef zone for approximately 50 feet. The two horizontal drill holes will explore for projections of known veins in the hanging wall of the reef and are expected to reach 50 feet beyond the projected positions of the known veins.

Stage II

Crosscutting and drifting with dimensions 5 feet by 7 feet, the directions and amount of such crosscutting and drifting, up to a maximum of 1,500 feet, to be determined by the Government and approved in writing in advance of work under this Stage II.

Estimated Costs of Proposed Exploration

Stage I

810	feet of crosscutting @ $29.65/ft.	$24,016.50
1,200	feet of core drilling @ $5.54/ft.	6,648.00
10	chemical assays @ $5.00 each	50.00
	Total Stage I	$30,714.50

Stage II

1,500	feet of crosscutting and drifting @ $29.65/ft.	$44,475.00
20	chemical assays @ $5.00 each	100.00
	Total Stage II	$44,575.00
	Total Stage I and Stage II	$75,289.50
	Government Participation @ 75%	$56,467.13

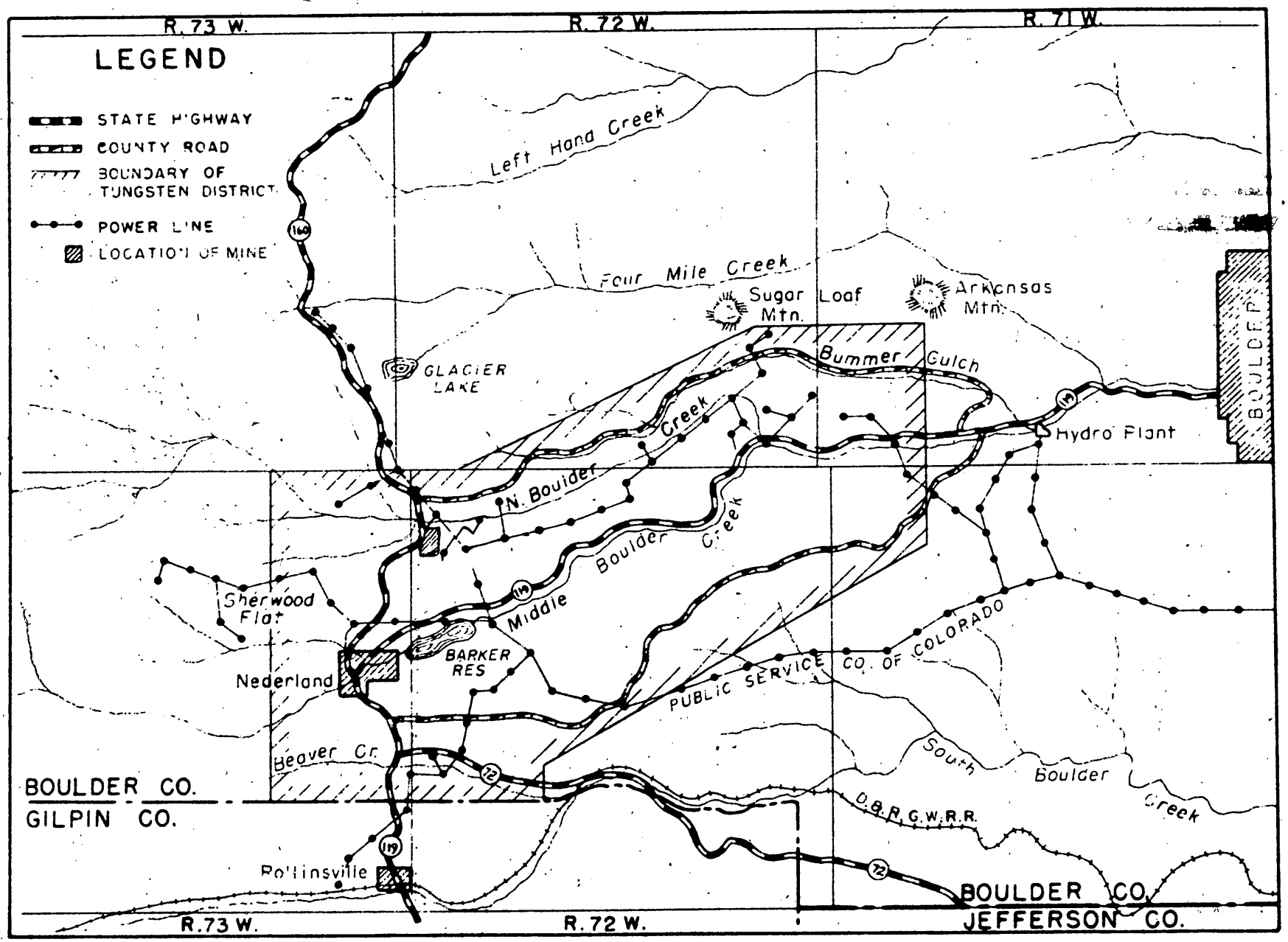
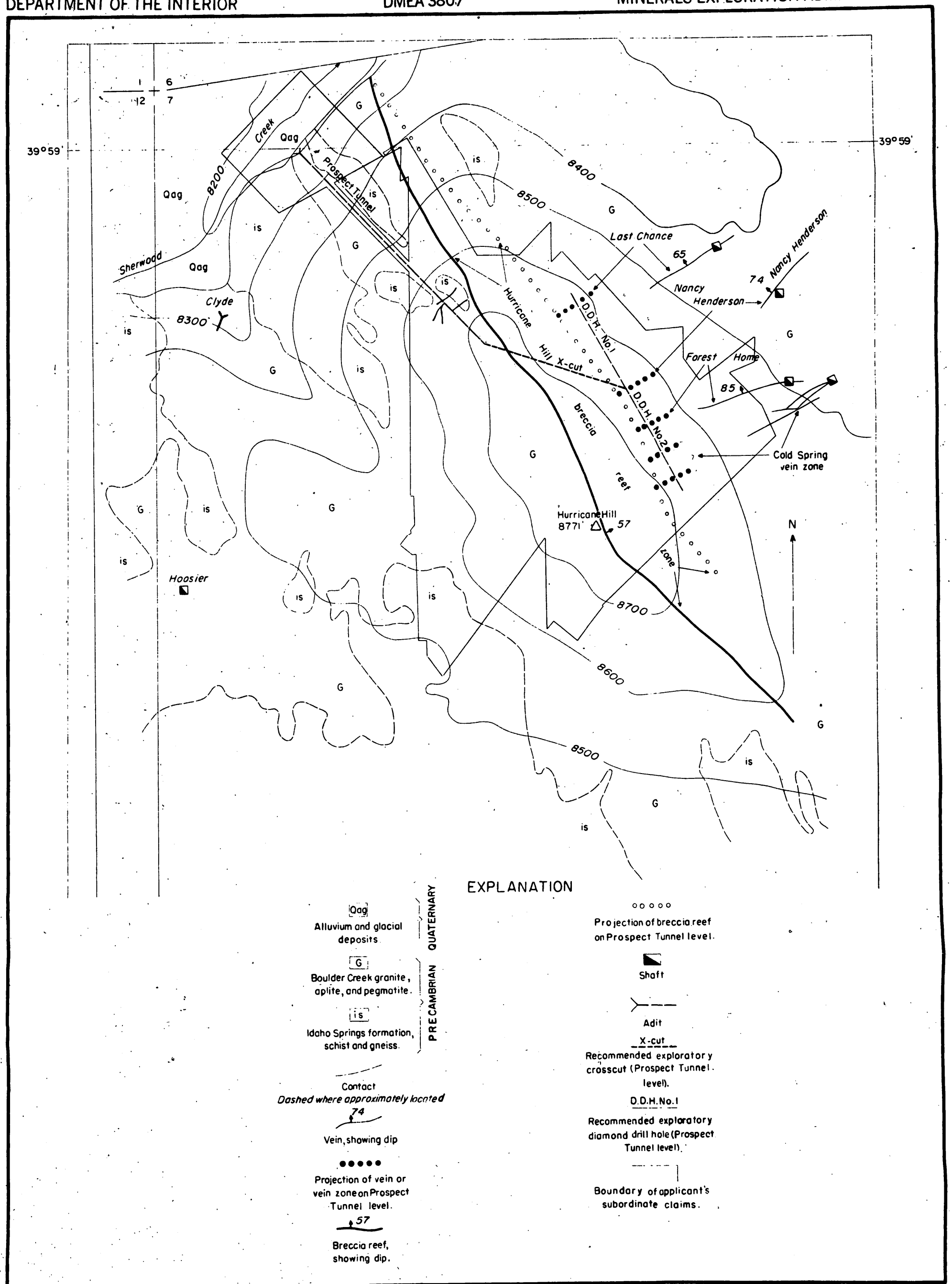


FIGURE I. - LOCATION MAP, DOZER MINE, REYNOLDS TUNGSTEN CORPORATION, BOULDER COUNTY, COLO. DMEA 3807



Modified from Plate 5, U.S. Geological Survey Boulder County Tungsten Report, Professional Paper 245.

R. U. King, Sept. 1955

FIGURE 2.- COMPOSITE GEOLOGIC MAP OF HURRICANE HILL AND PLAN OF PROSPECT TUNNEL SHOWING RECOMMENDED EXPLORATION, DOZER MINE, BOULDER COUNTY, COLORADO

500 0 500 Feet

Datum is mean sea level

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Reynolds Tungsten Corp.
Docket No. DMEA- 3007
Contract No. Idm-E
Contract Date

CONSENT TO LIEN

RECEIVED
FEB 16 1956

To the United States of America:

Referring to that certain land in the County of Boulder, State of Colorado, described as follows:1/

Certain patented lode mining claims listed and further described in Annex I which is attached hereto and made a part hereof.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby—

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: None

Dated this 30th day of December, 1955.

COLD SPRING TUNGSTEN, INC. [Seal]

By: Alexander Pregel [Seal]

Alexander Pregel [Seal]

I, Paul J. Newlon certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Alexander Pregel who signed this agreement was then Vice-President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Paul J. Newlon [Corporate Seal]

ANNEX I

Name of Claim	U. S. Survey Lot No.
Donner	20,684
S W 1100' Hurricane No. 1	18,340
Hurricane No. 2	18,340
N W 1050' Hurricane No. 3	18,340
Hurricane No. 4	18,340
S W 750' Spencer	19,949
S W 440' Bertha	19,204
S W 440' May Raymond	19,204
S W 440' Last Chance	19,204
S W 440' Only Chance	19,204
S W 600' Gold Medal	19,559
S W 1200' Silver Light - except that portion conflicting with the Forest Home	19,559
Rupert - except that portion conflicting with the Forest Home	19,559
Hill Top No. 4	19,559
Hill Top No. 2	19,559
McKeesport	18,340
N E 300' Hill Top	19,559
N E 200' Topsy	19,559

and the surface rights to a rectangular tract of land 1500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line: beginning at the center line of the portal of the Prospect Tunnel, which portal is situated on the Ash Pan Lode Mining Claim, Survey Lot No. 18,340, and running thence along the course of the center line of said Prospect Tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect Tunnel for a distance of 1500 feet, which point is the terminal end of said center line; including rail, air line, water line and ventilation line now installed in said Prospect Tunnel; but not including in the demised premises any part of the Lunk Hill Lode Mining Claim, U. S. Survey Lot No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde or Lone Jack Lode Mining Claims, all U. S. Survey Lot No. 18,340 (except that the Lessee shall have a right of way through said Prospect Tunnel across such of said claims as said Tunnel now traverses.) Those portions, if any, of any other Lode Mining Claims owned by the Lessor (except the nine claims described immediately above) which conflict with the demised premises shall be included therein.

-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Reynolds Tungsten Corp.
Docket No. DMEA- 3307
Contract No. Idm-E
Contract Date

RECEIVED
FEB 16 1956

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Boulder, State of Colorado, described as follows:1/

Certain patented lode mining claims listed and further described in Annex I which is attached hereto and made a part hereof.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: None

Dated this 30th day of December, 1955.

COLD SPRING TUNGSTEN, INC. [Seal]

By: Alexander Pregel [Seal]

Alexander Pregel [Seal]

I, Paul J. Newlon certify that I am the Secretary (Secretary, etc.) of the corporation named herein; that Alexander Pregel who signed this agreement was then Vice-President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Paul J. Newlon

[Corporate Seal]

ANNEX I

Name of Claim	U. S. Survey Lot No.
Dexer	20,684
S W 1100' Hurricane No. 1	18,340
Hurricane No. 2	18,340
N W 1050' Hurricane No. 3	18,340
Hurricane No. 4	18,340
S W 750' Spencer	19,949
S W 440' Bertha	19,204
S W 440' May Raymond	19,204
S W 440' Last Chance	19,204
S W 440' Only Chance	19,204
S W 600' Gold Medal	19,559
S W 1200' Silver Light - except that portion conflicting with the Forest Home	19,559
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Hill Top No. 4	19,559
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McKeesport	18,340
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N E 200' Topsy	19,559

and the surface rights to a rectangular tract of land 1500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line: beginning at the center line of the portal of the Prospect Tunnel, which portal is situated on the Ash Pan Lode Mining Claim, Survey Lot No. 18,340, and running thence along the course of the center line of said Prospect Tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect Tunnel for a distance of 1500 feet, which point is the terminal end of said center line; including rail, air line, water line and ventilation line now installed in said Prospect Tunnel; but not including in the demised premises any part of the Luck Bill Lode Mining Claim, U. S. Survey Lot No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde or Lone Jack Lode Mining Claims, all U. S. Survey Lot No. 18,340 (except that the Lessee shall have a right of way through said Prospect Tunnel across such of said claims as said Tunnel now traverses.) These portions, if any, of any other Lode Mining Claims owned by the Lessor (except the nine claims described immediately above) which conflict with the demised premises shall be included therein.

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

Docket

224 New Customhouse
Denver 2, Colorado

May 18, 1955

AIR MAIL

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Assistance (Tungsten), Reynolds Tungsten Corporation (Dozer mine), Grand Island Mining District, Boulder County, Colorado

In compliance with advice to you in our memorandum of May 13, 1955, second paragraph, we are enclosing a photostatic copy of Lease and Option supplied by the Applicant.

W. M. Traver

W. M. Traver

Enclosures

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
MAY 20 1955

LEASE AND OPTION

THIS INDENTURE made and entered into this 7th day of April, 1955, between HETZER MINES, INC., a corporation, hereinafter called the Lessor, and REYNOLDS TUNGSTEN CORPORATION, hereinafter called the Lessee,

WITNESSETH: That the Lessor, in consideration of the covenants and agreements of the Lessee hereinafter expressed to be kept and performed by the Lessee, and upon and subject to the conditions hereinafter provided, has leased and demised, and by these presents does lease and demise, unto the Lessee, the following described mining property or premises, located in Section 7, T. 1 S., R. 72 W., Grand Island Mining District, Boulder County, Colorado, to wit:

Name of Claim	U. S. Survey Lot No.
Dozer	20,684
S W 1100' Hurricane No. 1	18,340
Hurricane No. 2	18,340
N W 1050' Hurricane No. 3	18,340
Hurricane No. 4	18,340
S W 750' Spencer	19,949
S W 440' Bertha	19,204
S W 440' May Raymond	19,204
S W 440' Last Chance	19,204
S W 440' Only Chance	19,204
S W 600' Gold Medal	19,559
S W 1200' Silver Light -except that portion conflicting with the Forest Home	19,559
Expert -except that portion conflicting with the Forest Home	19,559
Hill Top No. 4	19,559
Hill Top No. 2	19,559
McKeesport	18,340

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Name of Claim	U. S. Survey Lot No.
N E 300' Hill Top	19,559
N E 200' Topsy	19,559

and a rectangular tract of land 1500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line: beginning at the center line of the portal of the Prospect Tunnel, which portal is situated on the Ash Pan Lode Mining Claim, Survey Lot No. 18,340, and running thence along the course of the center line of said Prospect Tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect Tunnel for a distance of 1500 feet, which point is the terminal end of said center line; including rail, air line, water line and ventilation line now installed in said Prospect Tunnel; but not including in the demised premises any part of the Luck Bill Lode Mining Claim, U. S. Survey Lot No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde or Lone Jack Lode Mining Claims, all U. S. Survey Lot No. 18,340 (except that the Lessee shall have a right of way through said Prospect Tunnel across such of said claims as said Tunnel now traverses). Those portions, if any, of any other Lode Mining Claims owned by the Lessor (except the nine claims described immediately above) which conflict with the demised premises shall be included therein. The rights and premises hereby granted are limited to within the vertical planes of the surface boundary lines of the above described premises, and all extra lateral rights, if any, are reserved to the Lessor, and the Lessee shall have no right to extend his workings beyond such vertical planes.

TO HAVE AND TO HOLD the said demised premises, only however to the extent necessary for the purpose of mining the same and for n o other purpose, for a term of ten (10) years from the date hereof.

IN CONSIDERATION of this lease, the Lessee covenants and agrees as follows:

1. To work the said premises in thorough mine-fashion to the end of the safe development and preservation of the same as a

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workable mine, at all times extracting as much ore therefrom as is possible consistent with safe and prudent mining.

2. To work the demised premises continuously from date hereof performing at least 40 shifts of work therein underground during each calendar month during the time this lease shall remain in force and effect; any excess labor performed during any calendar month shall not apply on the work required hereunder in any preceding or following calendar month. The word "shift" is taken and accepted to mean the labor of one man for one day of at least 8 hours.

3. To spend at least twenty-five thousand dollars ($25,000) in direct mining costs on the premises during the first 12 months that this agreement is in force, not including any financial aid donated or loaned by any government agency.

4. To make all shafts and inclines eight (8) feet long by four (4) feet wide in the clear, with bucket ways three and one-half (3½) by four (4) feet in the clear, and all drifts seven (7) feet high by four (4) feet wide in the clear, provided that existing shafts, drifts and inclines shall, unless otherwise directed by the Lessor, be continued with their present dimensions. The Lessor reserves the right to change the dimensions of any workings as and whenever in the judgment of the Mining Superintendent of the Lessor the same may be necessary or expedient.

5. To do no underhand stoping, whether for the purpose of taking out ore or for any other purpose whatsoever.

6. To neither mine, extract or remove the ground to a point nearer than four (4) feet to each side of any working shaft,

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and always to leave at least four (4) feet of ground, in its original condition, to support each such shaft. To leave more than four (4) feet of ground to support each such shaft if the Mining Superintendent of the Lessor shall so direct and to crib or riprap any shaft at the Lessee's expense, if the said Mining Superintendent shall so request the Lessee.

7. To allow the officers, agents and representatives of the Lessor at all times to enter upon and into the said premises and all parts thereof for the purpose of inspection and sampling, and to make any surveys they may desire, and to render them all the assistance in the power of the Lessee in so doing.

8. To keep and maintain the drafts, shafts, tunnels and other workings in the said premises thoroughly drained and clear of loose rock and rubbish, and in a safe and secure condition, except as prevented by extraordinary mining casualty, and to maintain at all times and leave the floors of all drifts and workings in good, even and unobstructed conditions; to stow no waste underground except with the consent in writing of and under the direction of the Mining Superintendent of the Lessor.

9. To keep posted in conspicuous places on the surface of the said premises all notices which may be furnished by the Lessor for posting thereon.

10. Not to assign this lease in whole or in part or any interest in the premises without the written consent of the Lessor first had and obtained, provided that the Lessee may sublet or

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split-check, subject to the provisions of this lease, any part of the premises which shall not be a substantial portion of the whole premises.

11. The Lessee agrees that before commencing operations on the demised premises he will take out workman's compensation insurance to protect the Lessee, his employees, and any subcontractors or sublessees; and that the Lessee will keep said compensation insurance in force during the term of this lease. If said compensation insurance is not kept in force and is not reinstated within ten (10) days after notice to the Lessee, the Lessor may terminate this lease without further notice. The Lessee further agrees that he will furnish to the Lessor a Certificate of Insurance which shall show that said compensation insurance has been obtained and that the insurance insures the Lessee and his employees, and sublessees and subcontractors, if any.

12. The Lessee agrees to pay the Lessor and the Lessor reserves a royalty of fifteen (15) per cent of the net proceeds from the sale of any ores produced from the premises. The term "net proceeds" is agreed to mean the net sale price of said ores less the cost of hauling the same to the Lessor's mill at Nederland, Colorado.

IT IS MUTUALLY AGREED by and between the Lessor and Lessee as follows:

(a) The Lessor agrees that as long as it has a market for ore, it will maintain what it considers a fair schedule of

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price for tungsten ore produced from properties owned or leased by it. The Lessor shall have the right to purchase and the Lessee agrees to sell to the Lessor all ore produced from the leased premises, provided said schedule of prices maintained by the Lessor is at least equal to the price which may be offered the Lessee by any other party. In the event the Lessee is able to sell said ore at a net price higher than offered by the Lessor, the Lessee shall have the right to sell said ore to the buyer offering a higher net price. In the event any of said ore is sold to any one other than the Lessor, said ore shall be shipped in the names of the Lessor and the Lessee, and the royalty reserved by the Lessor shall be paid directly to the Lessor. It is further agreed that in computing such royalty no hauling charges in excess of hauling said ore to Lessor's mill shall be deducted in the event said ore is sold to any one other than the Lessor. In the event any ore is sold to a buyer other than the Lessor, the Lessor shall be furnished with a weight ticket for each load sold, said ticket to be furnished within five (5) days after each load is delivered. Lessor shall also be furnished with a copy of a settlement sheet for each settlement made with any buyer and all royalties shall be paid not more than forty-five (45) days after each shipment is made.

(b) In the event the Lessee delivers to the Lessor shipments or lots of ore of a value less than $100 per lot, the Lessee shall pay to the Lessor the cost of milling such ore and the cost of sampling the same.

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(c) In the event the Lessee fails to pay the royalty herein reserved, or fails to pay compensation insurance premiums, the Lessor shall have the right to terminate this lease upon ten (10) days written notice to the Lessee; provided, that, if the Lessee shall remedy such default within such ten days, this lease shall not terminate. In the event of the violation of any other term, provision or condition of this lease by the Lessee, the Lessor shall have the right to terminate this lease upon thirty (30) days written notice to the Lessee, provided, that if the Lessee corrects any such defaults within such thirty (30) days, this lease shall not terminate. In the event any default shall not be corrected at the end of the applicable notice period, then the lease shall terminate as of the end of said period. Said notice shall be given in writing, addressed to the Lessee at First National Bank Building, Denver, Colorado. The Lessee may terminate this agreement at any time by written notice addressed to Lessor at Nederland, Colorado.

(d) Any ore broken or mined on the premises at the termination of this lease shall be the property of the Lessor, and Lessor shall not be liable for the payment to the Lessee of any costs or expenses of breaking or mining said ore.

(e) All rails, pipes, timbering, including head frames, installed in the workings on the premises shall remain a part thereof and belong to the Lessor. Movable equipment, such as compressors, drills, loaders, trammers, may be removed from the

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premises by Lessee if this agreement is terminated for any reason.

The LESSOR agrees as follows, to wit:

1. To grant an option to the Lessee to purchase the premises for the sum of five hundred thousand dollars ($500,000), and all royalty payments paid by the Lessee to Lessor will be credited towards the purchase price.

2. To execute a deed, free and clear of encumbrances, conveying said premises to Lessee, as soon as a total of seven thousand five hundred dollars ($7,500) in royalty is paid by Lessee to Lessor, and place same in escrow in The First National Bank of Denver, or any other escrow agent agreeable to both parties, with instructions to escrow agent to deliver said deed to Lessee upon full payment of the purchase price. Royalty receipts, settlement sheets, or other evidences of payments by Lessee to Lessor will constitute proof of payment to the escrow agent. If this agreement terminates before option is exercised by Lessee, the option expires and escrow agent is to return deed to Lessor.

3. To execute a government subordination agreement if and when requested to do so by Lessee.

4. To retain all royalty or other payments made by Lessee to Lessor, and credited towards the purchase price, as liquidated damages, if, for any reason, the agreement is terminated without exercise of option by Lessee.

IN WITNESS WHEREOF the Lessor has hereunto caused its

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name to be subscribed by its President and its Secretary and the corporate seal affixed, and the Lessee has caused its name to be subscribed by its President and its Secretary and the corporate seal affixed the day and year first above written.

LESSOR

(Corporate Seal)

HETZER MINES, INC.

ATTEST:

Secretary

By

President

LESSEE

(Corporate Seal)

REYNOLDS TUNGSTEN CORPORATION

ATTEST:

Secretary

By

President

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STATE OF NEW YORK)
SS.:
COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 11th day of April, 1955 by BORIS PREGEL as President of Hetzer Mines, Inc.

Witness my hand and official seal.

Nathalie Kogan
Notary Public

(Seal)

My commission expires

NATHALIE KOGAN
Notary Public, State of New York
No. 43-7327390
Qualified in Richmond County
Cert. Filed in New York County
Commission Expires March 30, 1956

STATE OF NEW YORK)
SS.:
COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 11th day of April, 1955 by Douglas J. Luckhurst as President of Reynolds Tungsten Corporation.

Witness my hand and official seal.

Harriett G. Bealer
Notary Public

(Seal)

My commission expires

HARRIETT G. BEALER
Notary Public, State of New York
No. 24-0202200, Qual. in Kings Co.
Cert. filed in New York County
Commission Expires March 30, 1957

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MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Defense Minerals Administration
RECEIVED
MAY 16 1955

DMEA
Date Received
MAY 10 1955

Form Approved.
Budget Bureau No. 42-R1035.2.

BUREAU OF MINES
Denver, Colorado

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3807
Metal or Mineral Tungsten
Date Received 5-16-55
Estimated Cost 258,795.00
Participation (Government %) 75

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Reynolds Tungsten Corporation, 1036 First Nat'l Bank Bldg., Denver 2, Colorado
D. J. Luckhurst, President, 27 William Street, New York 5, New York
G. C. Ridland, Vice President, 1036 First National Bank Bldg., Denver 2, Colorado
J. Masopust, Secretary, 52 Chambers Street, New York, New York

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract
Please see additional sheets attached.

(*b*) State any mine name by which the property is known. Dozer Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lessee with an option to purchase

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Copy of Lease and Option attached.

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Tungsten in the form of ferberite

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 30 days and be completed within 24 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested-use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated May 9, 1955

REYNOLDS TUNGSTEN CORPORATION
(Applicant)

By G. C. Ridland

Vice President

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—66551-1

REYNOLDS TUNGSTEN CORPORATION

1036 First National Bank Building
Denver 2, Colorado

MAY 16 1955

APPLICATION FOR AID IN AN EXPLORATION PROJECT,

PURSUANT TO DMEA ORDER 1

1. (a) Applicant: Reynolds Tungsten Corporation, 1036 First National Bank Building, Denver 2, Colorado.

(b) Corporation - incorporated in the State of Colorado.

(c) Officers: D. J. Luckhurst, President, 27 William Street, New York 5, New York
G. C. Ridland, Vice President, 1036 First National Bank Building, Denver 2, Colorado
J. Masopust, Secretary, 52 Chambers Street, New York, New York
Shirley Willman, Assistant Secretary, 86 Grant Street, Denver, Colorado
Bernice Hepola, Treasurer, 1042 Pearl Street, Denver, Colorado

3. (a) Legal description of the land: The following described mining property or premises located in Section 7, T. 1 S., R. 72 W., Grand Island Mining District, Boulder County, Colorado:

Name of Claim	U. S. Survey Lot No.
Dozer	20,684
S W 1100' Hurricane No. 1	18,340
Hurricane No. 2	18,340
N W 1050' Hurricane No. 3	18,340
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S W 440' Bertha	19,204
S W 440' May Raymond	19,204
S W 440' Last Chance	19,204
S W 440' Only Chance	19,204
S W 600' Gold Medal	19,559
S W 1200' Silver Light - except that portion conflicting with the Forest Home	19,559
Expert - except that portion conflicting with the Forest Home	19,559
Hill Top No. 4	19,559
Hill Top No. 2	19,559
McKeesport	18,340
N E 300' Hill Top	19,559
N E 200' Topsy	19,559

and the surface rights to a rectangular tract of land 1500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line:

beginning at the center line of the portal of the Prospect Tunnel, which portal is situated on the Ash Pan Lode Mining Claim, Survey Lot No. 18,340, and running thence along the course of the center line of said Prospect Tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect Tunnel for a distance of 1500 feet, which point is the terminal end of said center line; including rail, air line, water line and ventilation line now installed in said Prospect Tunnel; but not including in the demised premises any part of the Luck Bill Lode Mining Claim, U. S. Survey Lot No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde or Lone Jack Lode Mining Claims, all U. S. Survey Lot No. 18,340 (except that the Lessee shall have a right of way through said Prospect Tunnel across such of said claims as said Tunnel now traverses). Those portions, if any, of any other Lode Mining Claims owned by the Lessor (except the nine claims described immediately above) which conflict with the demised premises shall be included therein.

(b) Mine Name: Dozer Mine; Dozer Property; also has been called the Prospect Tunnel Mine or Prospect Tunnel.

(c) Interest in the Land: Lessee

(d) Copy of the "Lease and Option" is attached.

4. (a) Physical Description:

No current operation.

Existing workings: Prospect Tunnel is a 9' x 9' transportation tunnel 1400' long with portal on the Ash Pan Claim (18,340) at a distance of 1000' from the easterly boundary of that claim and heading S 45° E. There is 18" diameter vent pipe installed in the tunnel from the portal to 1000' in the tunnel, also rails on stull ties for 1200' of the tunnel and a quantity of vent pipe piled at hand.

Following are lateral tunnels in order of distance from portal:

First lateral is named No. 4 Drift which is approximately 50' long and heads southwest from the Prospect Tunnel. It has a raise driven up through the "first intermediate" level to the second level at a height of approximately 100' above the level of the Prospect Tunnel. No. 4 Drift and the raise as far up as the first intermediate level are accessible. No. 4 Drift is at 1075' from portal of the Prospect Tunnel.

Second lateral is named No. 2 Drift which is approximately 95' long and heads northeast from the Prospect Tunnel. A raise has been driven up through the first intermediate and second levels to the 150 level at a height of approximately 150' above the level of the Prospect Tunnel. No. 2 Drift is accessible, but the ladders in the

raise are badly rotted and broken to render it inaccessible. No. 2 Drift is at 1085' from portal of the Prospect Tunnel.

Third lateral is named No. 1 Drift which is approximately 40' on one vein where it splits, one artery continuing 80' on the same vein and the other going 105' in a southerly direction on another vein. No. 1 Drift heads southwest from the Prospect Tunnel. A raise has been driven up to the first intermediate level at approximately 50' above the level of the Prospect Tunnel. No. 1 Drift is accessible but the raise is not. No. 1 Drift is at 1095' from portal of the Prospect Tunnel.

Fourth lateral is named No. 3 Drift which is approximately 110' long and heads northeast from the Prospect Tunnel. A raise has been driven up an unknown height and an unknown amount of stoping done. The No. 3 Drift is accessible but the raise is not. No. 3 Drift is at 1150' from the portal of the Prospect Tunnel.

Winzes: A winze was started on the west side of the Prospect Tunnel at 1095' from the portal. It is approximately 15' deep and is inaccessible being filled with water.

First Intermediate Level: The first intermediate level is at a height of 50' above the level of the Prospect Tunnel and extends from the raise from No. 4 Drift a distance of about 100' to the raise from the No. 2 Drift. There is a small stope below the level of unknown extent between the raises from No. 2 and No. 4 Drifts and a large stope 60' long and varies from 5 to 15 feet in width. This last stope extends from the first intermediate level to approximately the horizon of the second level. The first intermediate level is accessible as is the stope extending above the level.

Second Level: The second level is at a height of 100' above the level of the Prospect Tunnel and extends from 70' southwest of the raise from No. 4 Drift a distance of 170' northeasterly to 30' northeast of the raise from No. 2 Drift. A raise has been extended up from the second level approximately 50' from a point 45' southwest of the raise from No. 4 Drift. This raise which has a short drift at the top about 20' long is inaccessible. Also, the second level, on account of the condition of the ladders in the raise from No. 2 Drift, is to all intent and purposes inaccessible.

150' Level (Third Level): It is at a height of 150' above the level of the Prospect Tunnel and extends northeasterly 360' from where it starts at the raise from the No. 2 Drift. A raise was driven up 50' at a point 50' from the raise from No. 2 Drift. An unknown amount of stoping was done above the level, but the workings on this level are inaccessible.

(b) Past production: The property originally was developed and operated by the Wolf Tongue Mining Company, which company kept records of the production of their own properties and also records of ores purchased from other properties of the district. These

records are believed to be reliable. According to these records the Prospect Tunnel (Dozer) Mine yielded 4,144,131 pounds of ore with a content of 65,667.50 pounds WO_3 for an average grade of 1.58% WO_3.

No Current Production.

No Ore Reserves.

(c) Geologic features: The existing workings are on veins and stringers containing intermittent ferberite in pegmatite, schist and granite (easterly extension of Clyde vein ?). Considerable stringers of ferberite are visible in the walls of the old stopes, but no exploratory work has been done below the level of the Prospect Tunnel, and it would seem advisable to diamond drill this downward extension with an idea to sink a winze and do further exploration by drifting.

Southeasterly of the present face of the Prospect Tunnel the ground is at present unexplored, but being aplite and pegmatite is of a type favorable to occurrences of veins of ferberite. The area is overlain with overburden to the extent of being unsuitable for surface exploration, although amounts of ferberite float have been picked from the flanks of Hurricane Hill indicating vein and ore occurrences. Also, there are veins, notably the Last Chance, Nancy Henderson, Forest Home and Cold Spring, which have been mined successfully, which trend towards the area immediately south of the Prospect Tunnel. To the southwest of this area, though at some distance, there are various old workings on veins which also trend towards the same locality. The Hurricane Hill breccia reef zone is known to be mineralized to a greater or less degree, and, in fact, in about 1860-70 a prospect shaft (no present records available) in the breccia reef zone in the vicinity of the Hurricane No. 2 claim showed considerable mineralization. Sulfide deposits occur in the reef zone at a point on the strike of the Forest Home vein as well as on the north slope of Hurricane Hill (G.S.P.P. 245, page 143).

Considering these factors it would seem probably that there should be commercial tungsten vein occurrences southeast of the present face of the Prospect Tunnel on both sides of the Hurricane Hill breccia reef zone.

(d) There is a good road from Nederland which is 1½ miles S.S.E. and where there is a mill and residences. Supplies are available in Boulder, 17 miles from Nederland, or Denver, 36 miles from Nederland.

(e) Manpower, water and power are immediately available at or near the project, and materials, supplies and equipment are available in Boulder or Denver.

5. (a) Tungsten in the form of ferberite.

(b) Work to be executed in two stages, "A" and "B".

A. (1) Diamond drill DDH 1-1 and 1-2 to test for veins and commercial ore occurrences south of present face of Prospect Tunnel.

DDH 1-1	S 30° E	1000' deep, horizontal

(2) Drive tunnel northeasterly from present face of Prospect Tunnel to a point 150' northeast of the breccia reef zone. 550'.

(3) Diamond drill three holes, DDH 2-1, 2-2, and 2-3, to test downward extension of present workings in Prospect Tunnel.

DDH 2-1	S 45° E -45°	230' deep
DDH 2-2	S 25° E -45°	230' deep
DDH 2-3	S 68° E -45°	230' deep

(4) Diamond drill two holes, DDH 3-1 and 3-2, from east end of tunnel (2) to test for vein and commercial ore occurrences south of present workings.

DDH 3-1	S -27° E	horizontal	1100' deep
DDH 3-2	S -42° E	horizontal	1150' deep

B. Dependent on favorable results from phase "A".

(1) Sink a winze and drift to explore downward extension of existing workings in Prospect Tunnel.

Winze	150'
Drifting	250'

(2) Dependent on whether ore occurrences are more favorable from diamond drilling on east or west side of breccia reef zone drive a crosscut from (a) present face of Prospect Tunnel or (b) from east end of tunnel driven across breccia reef zone and drift on veins encountered.

Crosscut	1150'
Drifting	1450'

(3) Raise on veins encountered (not shown on plan) for purposes of exploring upward extension of veins.

(c) The work will start within 30 days and be completed within 24 months from the date of an exploration project contract.

(d) The applicant is a corporation just formed for the purposes of carrying out the proposed program. The company is a wholly-owned subsidiary of Reynolds Uranium Corporation which is currently conducting mining operations at the Jo Reynolds Mine, Lawson, Colorado. The same personnel will manage the operation outlined herein.

Dr. G. C. Ridland, consulting geologist and vice president of the applicant, will act as consultant and supervise geological and engineering work. Alexander Baldo, mining engineer and mine superintendent

at the Jo Reynolds mine, will directly supervise the mining operation. A foreman, to be chosen, will be placed in charge at the property.

The applicant is adequately financed, through its parent corporation Reynolds Uranium Corporation and D. J. Luckhurst, New York investment banker and president of the applicant, to carry out its share of the proposed program.

6. Estimate of Costs:

Stage A

(a) Independent contracts: Diamond drilling, minimum hole size AX to be performed by an independent contractor. The applicant believes it possible to have diamond drilling contracted at $5.00 per foot plus the cost of power, engineering and geological work involved.

3,940 feet @ $5.00 per foot	$19,700
Plus engineering, geology, power, etc.	

(b) Labor, supervision, consultants: Time required to complete (2) of Stage A is estimated at 110 shifts or 80 days or approximately 4 months. Diamond drilling (1), (3) and (4) can be conducted simultaneously.

4 Miners* 1760 Hrs. @ $1.75	$3,080
4 Muckers* 1760 Hrs. @ $1.75	3,080
2 Trammers 880 Hrs. @ $1.75	1,540
2 Surface men 880 Hrs. @ $1.65	1,452
1 Shift boss or foreman 1000 Hrs. @ $2.00	2,000
1 Superintendent, engineer 4 mo. @ $500 per Mo.	2,000
1 Consulting geological engineer 4 Mo. @ $200 per Mo.	800
Total	$13,952

* This labor can be contracted in the district for $10.00 per foot of advance.

(c) Operating materials and supplies:

Small tools, shovels, picks	$ 100
Pipe, 2" water 1000' @ $ .65	650
Pipe, 4" air 1000' @ $1.00	1,000
Pipe, 18" vent 550' @ $2.25	1,237
Fittings and misc.	100
Power, 7200 KWH @ $ .033	2,376
Timber, $1/ft. off vein	550
Water, available free	
Fuel, not required	
Track, 20#/yd. @ $2.00/ft.	1,100
Powder, 15#/ft., 2.125 tons @ $452/ton	968
Fuse and caps	200
Steel and bits $.90/ft.	495
	$8,776

(d) Operating equipment: Operator will furnish all equipment on the following suggested use-allowance:

	Value	Per Month Use-Allowance
1 Compressor (750 c.f.m.)	$4,000	$100
2 Drifters	1,500	50
1 Trammer (battery)	5,000	120
1 Mucking machine	3,100	75
6 Mine cars	1,200	50
Per Month		$395
4 Months		$1,580

(e) Rehabilitation and repairs: None

(f) New buildings, improvements, installations: None

(g) Miscellaneous:

Maintenance of equipment $100/mo.	$400
Accounting $150/mo.	600
Workmen's compensation $13,952 @ .0337	470
Employer's liability insurance $2/mo.	8
Payroll taxes $13,952 @ .02	279
	$1,757

(h) Contingencies:

Estimated	$1,000

Stage B

(a) Independent contracts: None

(b) Labor, supervision, consultants:

Miners)	Winze	4,320 Hrs.		
Muckers)	Crosscut	6,720		
Trammers)	Drifts	11,520		
)	Raises	2,743		
		25,303 Hrs.	@ $1.75	$44,280

Surface men:

1 Compressor man (per shift))		
1 Hoistman (per shift))	7,260 Hrs. @	
1 General)	$1.65	11,979

Shift boss 3,120 Hrs. @ $2.00	6,240
Superintendent 18 Mos. @ $500	9,000
Consulting geological engineer 18 Mos. @ $200	3,600
	$75,099

(c) Operating materials and supplies:

Small tools, shovels, picks, etc.	$ 100
Pipe, 2" water: shaft 150' @ $.65	98
crosscut 1150' @ $.65	748
Pipe, 1" water: drifts 1700' @ $.50	850
Pipe, 4" air: shaft 150' @ $1.00	150
crosscut 1150' @ $1.00	1,150
Pipe, 2" air: drifts 1700' @ $.65	1,105
Vent pipe: 15" for crosscut 1150' @ $1.75	2,012
15" for shaft 150' @ $1.75	262
12" for drifts 1700' @ $1.00	1,700
Fittings and misc.	250
Electric power 530,648.88 KWH	17,512
Water available free	
Fuel not required	
Track: crosscut @ $2.00 per ft.	2,300
drift @ $1.47 per ft.	2,499
2" Air line in raise 400' @ $.65	260
1" Water line in raise 400' @ $.50	200
Timber: shaft	550
raise	560
Powder	9,551
Fuse and caps	1,067
Drill steel	1,428
Hoisting rope	250
Pipe, 4" water from shaft	150
Ladders in raise	245
	$44,997

(d) Operating equipment:

	Value	Per Month Use-Allowance
2 Compressors		
1 750 c.f.m.	$4,000	$100
1 500 c.f.m.	3,500	90
2 Trammers (battery)	10,000	240
2 Mucking machines	6,200	150
12 Mine cars	2,400	100
4 Drifters	3,000	100
1 Pump (10HP)	2,500	100
2 Sinkers	1,400	50
1 Stoper	500	20
1 Hoist (20HP)	1,000	25
1 Skip or bucket	50	5
Operating equipment, per month		$980
18 Months @ $980 per month		$17,640

(e) Rehabilitation and repairs: None

(f) New buildings, improvements, installations: None

(g) Miscellaneous:

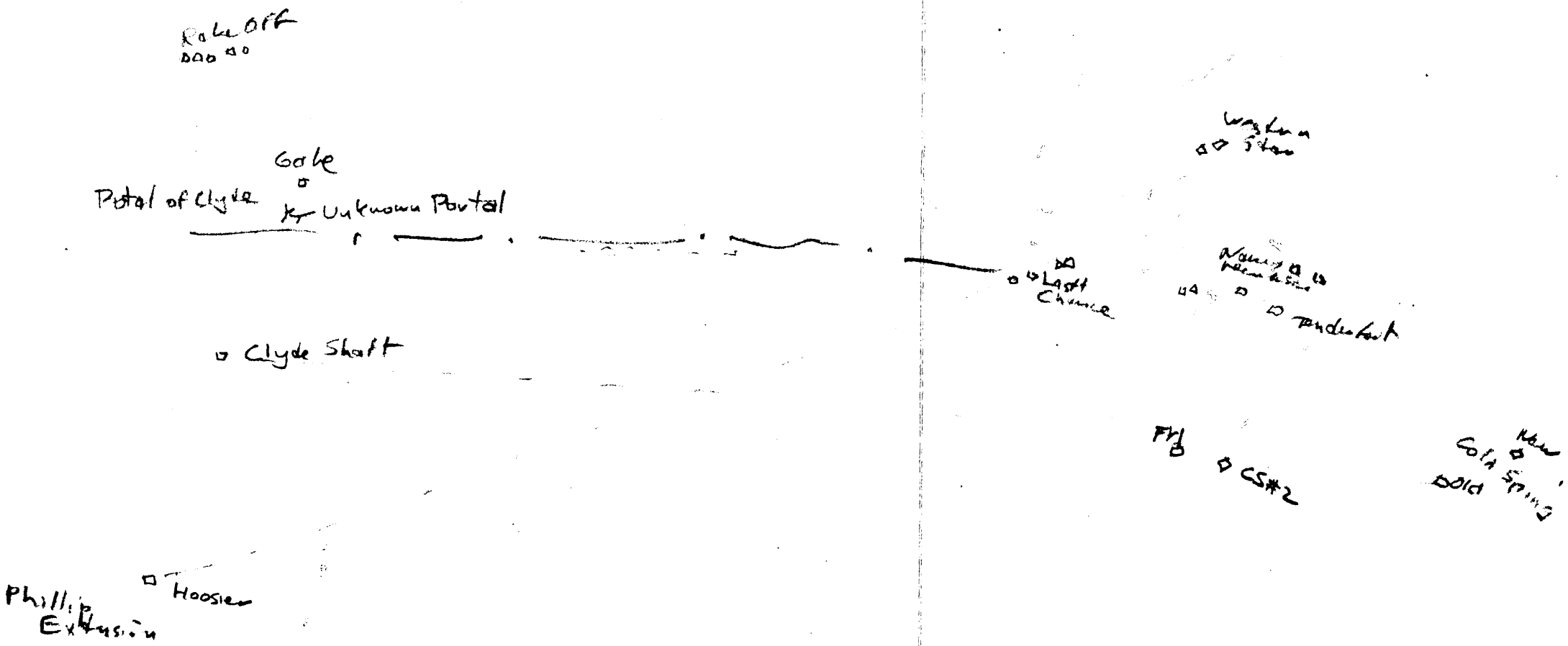
Maintenance of operating equipment:	
Hoist 4 mos. @ $15	$ 60
Compressors 24 mos. @ $40	960
Pump 3 mos. @ $15	45
Machines (drifters, etc.) 24 mos. @ $15	360
Mucking machine 24 mos. @ $20	480
	$1,905
Accounting 18 mos. @ $250	4,500
Workmen's compensation $75,099 @ .0337	2,530
Liability insurance 18 mos. @ $10.00	180
Payroll taxes $75,099 @ .02	1,502
Total Miscellaneous	$10,617

(h) Contingencies:

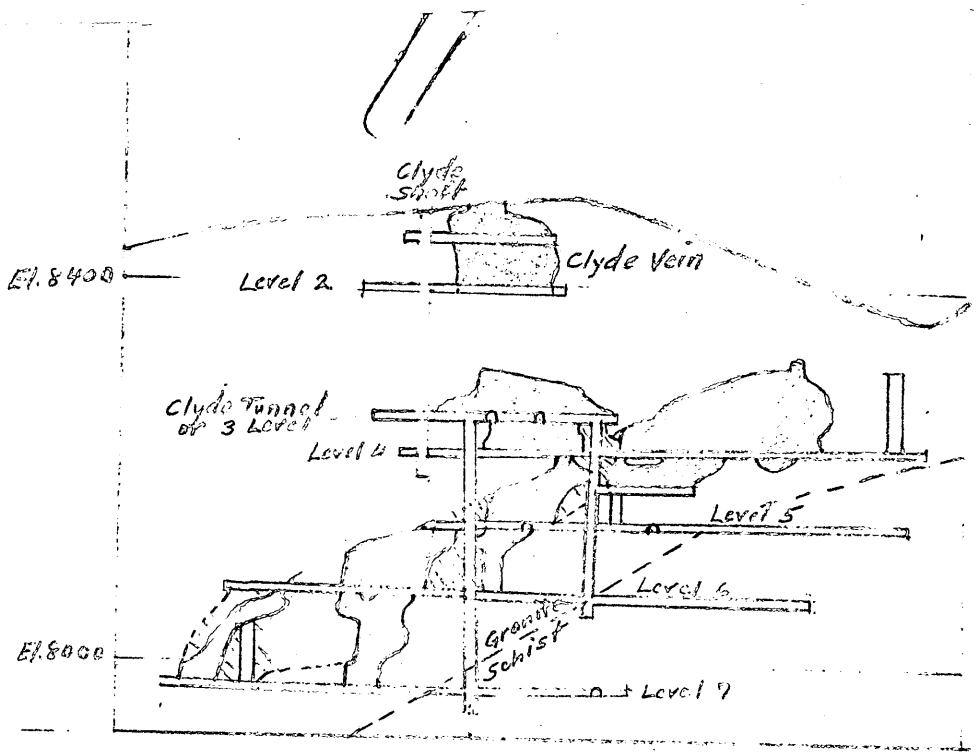
Five percent of $148,353	$7,418

7. (a) Applicant is prepared to furnish its share of the cost with

(b) Money



Docket 3807
Reynolds Tungsten



Docket #3807
Reynolds Tungsten

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

OFFICIAL BUSINESS

Mr. Kirkley S. Coulter
Chief Clerk
Senate Committee on Interior
and Insular Affairs
United States Senate
Washington 25, D. C.

Business Outlook

WASHINGTON POST 12-18-58

By J. A. Livingston

Worker Threatened With Abundance of Leisure

WALTER P. REUTHER and Jerry Callahan are pikers. Walter Reuther, as nearly everybody in working clothes and most persons in pine-paneled offices know, is the daring, controversial and forceful president of the United Auto Workers Union. Callahan, as not quite so many persons know, is a Philadelphia cartoonist—and a good one.

Livingston

A year or so back, Reuther clarion-called for a four-day work week. Detroit—not the city but the people in it—quivered. Executives starched their backs. Not from them would Reuther get three days per week of leisure. Pay raises, yes. Supplemental benefits, yes. Cost of living clauses, yes. Productivity allowances, yes. A four-day week, no.

Callahan, a tall, impressionistic Irishman, took it just as hard but in a different way. The Bible (Exodus) says man shall labor six days and rest on the seventh. Technology and reformers forced on the poor working man two days of leisure, and now Reuther proposes to raise that 50 per cent.

Sunday a Day for Music

Callahan wrestled with this grave social problem: What would the poor workingman do with this increased freedom. In due course, Callahan devised a schedule. Sunday would be the day for music, playing an instrument, barber-shop quartetting with the family, or concert-going—after church, of course. Monday would be a work day at the lathe, or on the assembly line, carpentering, etc. Tuesday, Wednesday and Thursday ditto. No problem: Work.

Then Friday. What to do? Golf? A sojourn at the seashore? A bout with the kids for the television set? Callahan decided Friday was the day for the birds, the bees, and the flowers—communing with a lawnmower and pruning shears in the garden. Then Saturday — another problem day.

A less talented man than Callahan would assign it to reading a book, writing letters, calling up the gang for poker, or riding up and down the highways counting the foreign cars. Not Callahan. What's good enough for Churchill and Eisenhower is none too good for the leisured workingman. Callahan puts him in an artist's smock and at an easel. Comes the four-day week and art for everyone's sake will become a cultural necessity.

20-Hour Week Forecast

Alas! Dr. Boris Pregel, a physicist born and educated in the Soviet Union, has split Callahan's atom. The wonders of nuclear power have yet to take the workingman in their embrace. A 20-hour work week—4½ days of leisure—is a mere matter of time and technology, predicts Pregel.

As president of the New York Academy of Sciences and president of the Canadian Radium and Uranium Corp., Pregel warns that 19th century thinking is not adequate to 20th century industrial progress. Technological achievement will outrun social adjustment. Resources of entertainment may well be "grievously insufficient" to accommodate the needs of the leisure-stricken society in the years to come.

How soon will all this leisure descend on Reuther, Callahan, you and me? If history is a guide, this catastrophe is not immediate. In the 1880s, the American workingman put in 60 hours of work—10 hours a day 6 days per week.

Depression Speeded Process

In 1910, just prior to World War I, many workers were still on a six-day week at nine hours a day. Not until the mid-20s did a work week below 50 hours become general. It usually allowed for a 1½ days of rest—eight or nine hours of work for five days and a half work day on Saturday. The 45-hour work week was a social achievement. Then the depression speeded the 40-hour week. There wasn't enough work to go around. Extra leisure was an economic visitation.

So it took from 1880 to 1940 to increase leisure from one to two days—to get the work week down from 60 to 40 hours.

If it takes another 60 years to cut the work week another 20 hours—to go from 40 to 20 hours a week—it will be at the turn of the 21st century before the poor American workingman is stricken with 4½ days of leisure.

What a boon it is that technology moves slowly! If people had the time to do all the things they don't have time for . . . think of the competition for writers, painters and cartoonists, musicians. Why people would have more free time for do-it-yourself than professionals would have time to do it! What do you think, Callahan?

Form 7
(2-56)

OFFICIAL FILE COPY

Date	Surname	Code
12-4	Holt	400
12-4	Martin	400
12-5	Chambers	800
12/5	Selfridge	120
"	J Thomson	110
12/8	C	225
		400

DEC 5 1958

Reynolds Tungsten Corporation
1036 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA-3807 - Tungsten
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Gentlemen:

Reference is made to your terminated exploration contract with the Government.

We sincerely regret that the work performed did not result in a certification of discovery or development under the provisions of the contract. In the absence of such certification, the Government retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this project. Your attention, however, is called to the provisions of the contract which require the operator to keep and preserve certain records for the period indicated.

We appreciate your interest and participation in the DMEA exploration program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

Frank E. Johnson
(a1)
Acting Director

SPHOLT:foc/esf
12/4/58
cc to: Code 400
Code 800
Director's Read. File
Operating Comm.
FT, REG. III
R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

Cold Spring Tungsten, Inc.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
12-4	Holt	400
12-4	Martin	400
12-5	Chambers	800
12/5	Selfridge	120
		~~110~~
		225
		400

DEC 5 1958

Gold Spring Tungsten, Inc.
1036 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Gentlemen:

Enclosed is a copy of a self-explanatory letter of today to the Operator under the above-cited contract.

This correspondence relates to the Owner's Consent to Lien signed by you on December 30, 1955, under the DMEA program which has now been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

Frank E. Johnson
(es/)
Acting Director

Enclosure

SPHOLT:foc
12-4-58
cc to: Code 400
800
Director's Read. File
Operating Comm.
FT. REG. III
R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
12-1	Holt	400
12-1	Martin	400
		800
		120
		110
		225

December 1, 1958

MEMORANDUM

To: Acting Director, OME

From: Division of Iron and Ferro-Alloys, OME

Subject: General Summary of Contract and Results Obtained
Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Operator: Reynolds Tungsten Corporation, 1036 First National Bank Building
Denver 2, Colorado.

Operator's Property Rights:

The operator controls, by lease from the owner, Cold Spring Tungsten, Inc., 1036 First National Bank Building, Denver 2, Colorado, successor in interest of Hetzer Mines, Inc., patented lode mining claims and fractions thereof, situated in sec. 7, T. 1 S., R. 72 W., Grand Island Mining District, Boulder County, Colorado, as follows:

Claim Name	U. S. Survey No.
Dozer	20684
Hurricane No. 1 (S.W. 1,100 ft.)	18340
Hurricane No. 2	18340
Hurricane No. 3 (N.W. 1,050 ft.)	18340
Hurricane No. 4	18340
Spencer (S.W. 750 ft.)	19949
Bertha (S.W. 440 ft.)	19204
May Raymond (S.W. 440 ft.)	19204
Lost Chance (S.W. 440 ft.)	19204
Gold Medal (S.W. 600 ft.)	19559
Silver Light (S.W. 1,200 feet, except portion in conflict with Forest Home)	19559
Expert (Except portion in conflict with Forest Home)	19559
Hill Top No. 4	19559
Hill Top No. 2	19559
McKeesport	18340
Hill Top (N.E. 300 ft.)	19559
Topsy (N. E. 200 ft.)	19559

8623

Also a rectangular tract of land 1500 feet long and 600 feet wide along the center line of the Prospect Tunnel, and more particularly described in Annex I of the contract.

Contract:

(a) Executed December 28, 1955, on Short Form, MF-200A (Revised June 1954).

(b) Completion period: Work to be commenced on or before April 1, 1956, and to be completed on or before March 31, 1957.

(c) Work authorized:

Fixed Unit Costs

Stage I

Crosscut 810 feet @ $29.65/ft.	$24,016.50	
Core drill 1,200 feet @ $5.54/ft.	6,648.00	
Assay 10 samples for WO_3 @ $5.00/each	50.00	
Estimated Total Stage I		$30,714.50

Stage II

Crosscut and drift 1,500 feet @ $29.65/ft.	$44,475.00	
Assay 20 samples for WO_3 @ $5.00/each	100.00	
Estimated Total Stage II		$44,575.00
Estimated Total Cost of the Project		$75,289.50
Government Participation @ 75%		$56,467.13

Amendment No. 1, executed March 20, 1957, extended the period for completion of the work from March 31, 1957, to September 28, 1958, and extended the royalty repayment period from 10 years to 12 years.

Amendment No. 2, executed March 14, 1957, authorized changing the bearing of a core drill hole (Stage I, Item 3) from S. 30° E. to S. 40° E.

Amendment No. 3, executed July 10, 1957, authorized the drilling of two diamond drill holes, aggregate total length not to exceed 400 feet, with a decrease in authorized footage of crosscutting and drifting, from 1,500 feet to 1,425.26 feet, so that the estimated total cost of the contract should not be increased.

(d) Work completed:

Fixed Unit Costs

Stages I and II

Crosscutting, 879 feet @ $29.65/ft.	$26,062.35	
Diamond core drilling, 1,586 feet @ $5.54/ft.	8,786.44	
Assaying, 70 samples for WO_3 @ $5.00 each	70.00	
Total Accepted Cost of the Contract		$34,918.79
Government Participation @ 75%		$26,189.09

Work under the contract commenced May 2, 1956, and was stopped October 8, 1957, upon denial by the Government of approval to proceed with work under Stage II. The contract was terminated by a Termination Agreement, effective October 8, 1958, executed January 3, 1958.

Audits:

A review in lieu of final audit dated April 7, 1958, was received April 10, 1958.

Reports: The Operator's Final Report, dated March 28, 1958, was received by the Field Team April 2, 1958, and in this office April 7, 1958. The Final Report of the Field Team, dated September 12, 1958, was received September 29, 1958.

Past Production: During the late 1930's the Wolf Tongue Mining Company started the Prospect tunnel and drove it about 1,420 feet. Later a pegmatite dike 1,100 feet from the portal was explored and 3,283 units of WO_3 were produced from 2,072 tons of ore averaging about 1.58 percent WO_3, from tungsten-bearing veins in pegmatite above the tunnel level. The Reynolds Tungsten Company, after leasing 70 acres of the property. including the Prospect tunnel, in 1955, drilled below the tunnel level to explore the possible downward extensions of the tungsten-bearing veins in the pegmatite. No ore grade material was discovered.

Present Production: No production of tungsten ore has been reported since the date of the contract, and no royalty has been paid to the Government.

Certification: This Division agrees with the conclusion of the Field Team that the exploration performed did not result in the discovery or development of significant quantities of tungsten ore, and that, therefore, certification is not recommended. The Bureau of Mines concurs in this recommendation.

Comments: The work performed under the contract was done to the satisfaction of the Government. The operator furnished adequate engineering and geological reports. The project was established to

explore for tungsten in the Dozer mine group of claims, where it occurs as ferberite in quartz stringers in ore shoots along fissures and fractures in Precambrian granite and granite pegmatite, on both the hanging and foot wall sides of the Hurricane Hill breccia reef.

Although 3,283 units of WO_3 have been produced from small lenses of ore along a pegmatite dike on the footwall side of the Hurricane Hill reef, results of exploration work under the contract were disappointing, and no measurable reserves of tungsten ore could be estimated on the basis of what was found.

This Division, therefore, recommends that no certification of discovery or development be issued, and that a letter of non-discovery, or "closing letter", be sent to the operator.

W S Martin
W. S. Martin, Chief
Division of Iron and Ferro-Alloys

SPHOLT:foc
12-1-58
cc to: Docket
Mr. Johnson
Code 400

OFFICIAL FILE COPY O. M. E. RECEIVED OCT 13 1958		
DATE	INITIALS	CODE
10/13	C	220
10/13	WSM	400

October 9, 1958

3807 (Tungsten)
Idm E 909
Tungsten
Reynolds Tungsten Corp.
Dozer Mine
Boulder County, Colo.
$ 34,918.79

W. S. Martin, Chief, Iron and Ferroalloys Division
Through: H. G. Iverson, Chief, Br. of Ferrous Metals and Ferroalloys
R. W. Holliday, Commodity Specialist
Br. of Ferrous Metals and Ferroalloys
Final Summary Report

Sept. 12, 1958 Oct. 1, 1958

x

x

x

x

Copy to: Div. of Minerals
Mr. Lamb - Rm. 3608
Ferrous Metals (2)
Files

I concur in the Field Team recommendation that no Certification of Discovery be issued.

Robert W Holliday

Docket 3807 – Reynolds Tungsten

Surface area in contact

See Fig. 2 attached to final

F.T. Report

Area 1 – $1680 \times \frac{2400}{2} = 2,016,000$ sf

" 2 – $2,300 \times \frac{750}{2} = 862,500$ "

" 3 – $600 \times \frac{630+480}{2} = 318,000$ "

$3,196,500$ "

$\frac{3,196,500}{43,560} = 73.38$ ac.

S.P.H.
10/7/58

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

CENTRAL FILE COPY
O. M. E.
RECEIVED OCT 8 1958

DATE	INITIALS	CODE
10/3	C	220
10/3	essay	400

October 2, 1958
Re: DMEA 3807 Idm-E909
Reynolds Tungsten Corp.
Dozer Mine
Boulder County, Colorado
Tungsten

Memorandum

To: W. S. Martin, Office Of Minerals Exploration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Final Report

If I read the map aright, the acreage figures, 70, at the top of Page 3, and in the first paragraph, Page 5 should be 700.

our review indicates that 70 is approximately correct.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
September 24, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 29 1958

DATE	INITIALS	CODE
9-29	C	220
9/29	es	130
"	[illegible]	110
10/3	[illegible]	130
10/3	C	220
10/7	WSM	400

Memorandum

To: Chairman, Operating Committee, OME

From: Acting Executive Officer, OME Field Team, Region ~~III~~

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado - FINAL SUMMARY REPORT

F.T. Final Report

Enclosed are the original and two copies of a Joint Final Engineering and Geologic Report, dated September 12, 1958, from E. N. Harshman and R. U. King, Geologists, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines, pertaining to the work performed under the subject contract.

The original and one copy of the Operator's final report were forwarded to you by memorandum of April 3, 1958.

The contract was terminated before completion of all work originally provided for by a TERMINATION AGREEMENT, dated January 3, 1958, which was made effective October 9, 1957.

Final payment to the Operator was processed by this office April 17, 1958 in conformance with the Report of Review of reported project costs by the Contract Administration and Audit Division, DMEA, dated April 7, 1958.

Exploration work consisted of 879 feet of crosscutting and the drilling of 4 holes aggregating 1,586 feet of core drilling. In conjunction with the exploration work, 14 samples were analyzed chemically for tungsten; all at a total accepted cost of $34,918.79, toward which the Government contributed 75 percent, or $26,189.09.

The exploration work performed did not result in the discovery or development of a significant quantity of tungsten ore; therefore, certification of the project as a discovery or development is not recommended.

E. N. Harshman
E. N. Harshman
Acting Executive Officer

Enclosures

Reviewed by
OME OPERATING COMMITTEE
10-3-58
(date)

OME, Reg. III
SEP 22 1958

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UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FINAL REPORT BY FIELD TEAM
REGION III

DMEA 3807

Contract Idm-E 909

Reynolds Tungsten Corporation

Dozer mine

Boulder County, Colorado

Tungsten

Joint Final Engineering and Geologic Report

by

E. N. Harshman, Geologist
R. U. King, Geologist
Geological Survey

W. W. Winkel, Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
10-3-58
(Date)

September 12, 1958

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ILLUSTRATIONS

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1.	Location map, Dozer mine, Reynolds Tungsten Corporation, Boulder County, Colo. DMEA 3807, Contract Idm-E 909.	2
2.	Composite geologic map of Hurricane Hill and plan of Prospect Tunnel showing completed exploration, Dozer mine, Boulder County, Colorado.	15
3.	Dozer mine composite geologic and progress map showing completed crosscutting and diamond drill core holes. DMEA 3807 (Tungsten), Contract Idm-E 909.	15

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DMEA 3807
Contract Idm-E 909

REYNOLDS TUNGSTEN CORPORATION
DOZER MINE
BOULDER COUNTY, COLORADO

SUMMARY AND INTRODUCTION

Reynolds Tungsten Corporation, 1036 First National Bank Building, Denver, Colorado, on May 9, 1955, made application for aid in an exploration project at the Dozer mine. The applicant proposed to explore an area in Hurricane Hill with a two-stage program at a total estimated cost of $202,536.00. The property was examined on August 17, 1955. A Field Team report, dated September 30, 1955, recommended a modified two-stage exploration project consisting of 2,310 feet of drifting and crosscutting, 1,200 feet of core drilling, and 30 chemical analyses at a total estimated cost of $75,289.50, Government participation 75 percent or $56,467.13. A contract was prepared for the recommended work and was signed on December 28, 1955.

Preparatory work at the property was started on April 24, 1956, and full scale crosscutting started on May 2, 1956. The final phase of exploration work under Stage II, amendment No. 3, was started on September 23, 1957, and completed on October 8, 1957. A termination agreement was executed on October 9, 1957.

Although several minor structures were exposed in the crosscut and cut by the drill holes, none contained visible tungsten minerals. Minor

amounts of galena and sphalerite were exposed in a silicified zone on the hanging wall of the Hurricane Hill breccia reef; this lead-zinc mineralization does not appear to be significant.

Additional exploration with Government assistance does not appear to be warranted; a Certification of Discovery is not recommended.

LOCATION AND ACCESSIBILITY

The property is located in the Boulder tungsten district about 3 miles north of Nederland, Colorado, on State Highway 160 (fig. 1). Boulder, Colorado, is 17 miles to the east. Altitudes at the property range from 8,100 feet to 8,771 feet. The portal of the Prospect tunnel is about 8,200 feet in altitude. The property consists of an irregular tract of patented claims and portions of patented claims containing about 70 acres and lies mostly in the N 1/2 sec. 7, T. 1 S., R. 72 W., 6th Principal Meridian, Boulder County, Colorado. A good dirt road, 300 yards in length, connects the portal of the Prospect tunnel with State Highway 160.

Labor can be obtained in Nederland or Boulder. Mine supplies can be purchased in Boulder. The nearest railhead is the Denver and Rio Grande Western Railroad at Rollinsville, 7 miles south of the mine. A custom tungsten mill, operated by Hetzer Mines, Inc., is located at Nederland.

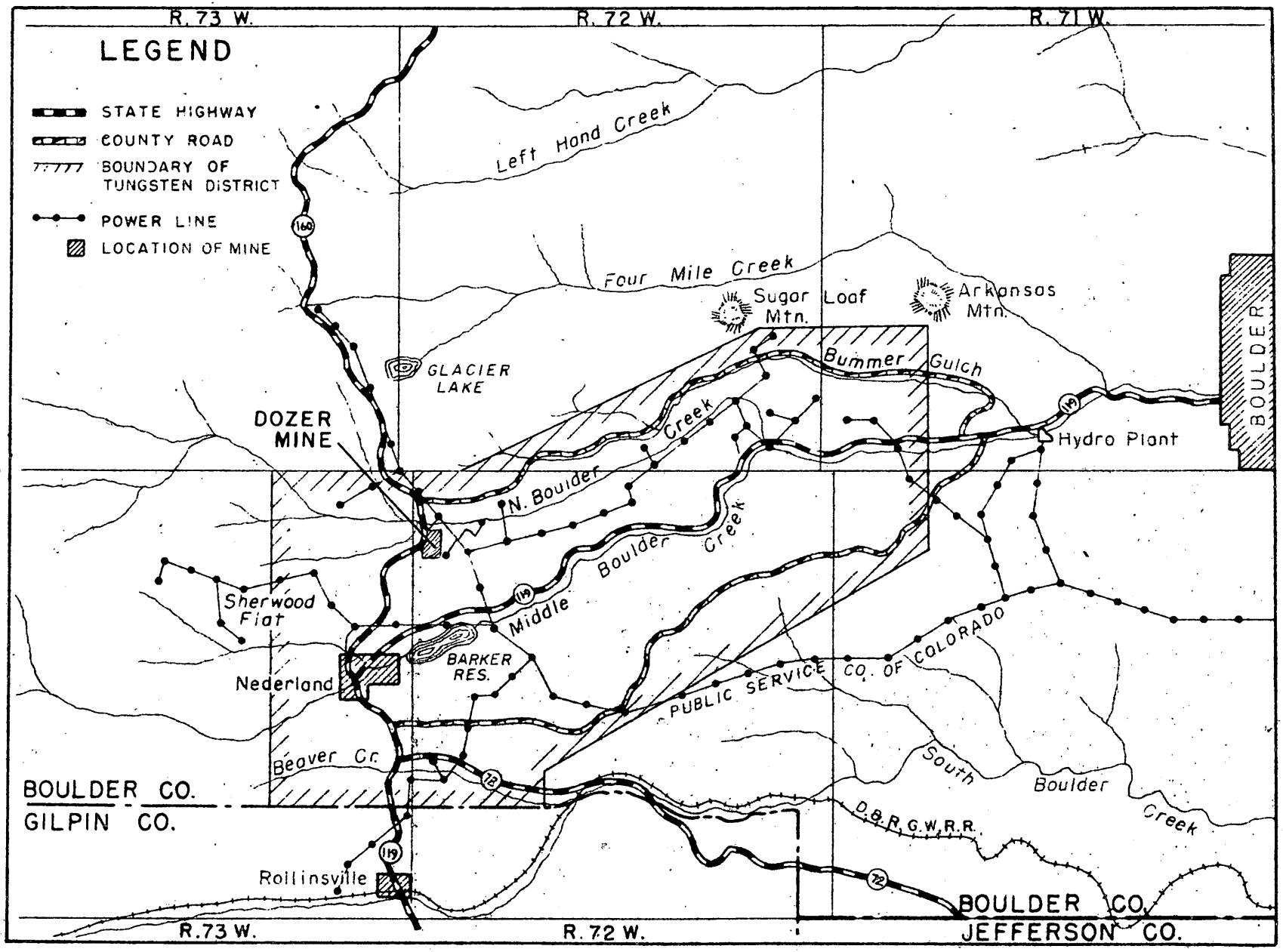

FIGURE I. - LOCATION MAP, DOZER MINE, REYNOLDS TUNGSTEN CORPORATION, BOULDER COUNTY, COLO. DMEA 3807
CONTRACT Idm-E909

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DATE	INITIALS	CODE

PROPERTY

A 10-year lease was given on April 7, 1955, to the Reynolds Tungsten Corporation by Hetzer Mines, Inc., on approximately 70 acres of land described as follows:

Claim	Survey No.
Dozer	20,684
S.W. 1,100 feet Hurricane No. 1	18,340
Hurricane No. 2	18,340
N.W. 1,050 feet Hurricane No. 3	18,340
Hurricane No. 4	18,340
S.W. 750 feet Spencer	19,949
S.W. 440 feet Bertha	19,204
S.W. 440 feet May Raymond	19,204
S.W. 440 feet Last Chance	19,204
S.W. 440 feet Only Chance	19,204
S.W. 600 feet Gold Medal	19,559
S.W. 1,200 feet Silver Light (Except portion in conflict with Forest Home)	19,559
Expert (Except portion in conflict with Forest Home)	19,559
Hill Top No. 4	19,559
Hill Top No. 2	19,559
McKeesport	18,340
NE 300 feet Hilltop	19,559
NE 200 feet Topsy	19,559

Also, a rectangular tract of land 1,500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line: beginning at the center line of the portal of the Prospect tunnel, which portal is situated on the Ash Pan Lode Mining claim, Survey No. 18,340, and running thence along the center line of the Prospect tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect tunnel for a distance of 1,500 feet, which point is the terminal end of said center line: but not including in the demised premises any part of the Lucky Bill lode mining claim, U. S. Survey Lot No. 19,952 or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde, or Lone Jack lode mining claims, all U. S. Survey Lot No. 18,340. All rights in the ground included in the lease to be limited to vertical side lines.

The lease, which has the usual mining provisions, appears to be in order, and all the included claims are assessed to Hetzer Mines, Inc.

HISTORY AND PRODUCTION

During the period 1899-1916 the area to the west and to the east of the applicant's lease was intensively prospected, and a number of tungsten mines were operated. The ground held by the operator was virtually unprospected because of a heavy soil cover and dense tree growth.

In the late 1930's the Wolf Tungue Mining Company started the Prospect tunnel and drove it a distance of 1,420 feet. Later a pegmatite dike, 1,100 feet from the portal of the tunnel was explored and 3,283 units of WO_3 were produced from tungsten veins in the pegmatite above the tunnel level. Mining operations were then suspended. On April 7, 1955, approximately 70 acres of this land, including the Prospect tunnel, was leased to the Reynolds Tungsten Corporation, who cleaned up the tunnel and drilled below the tunnel level to explore the downward extension of the tungsten veins in the pegmatite. This drilling did not result in a discovery of ore-grade material.

GEOLOGY AND ORE DEPOSITS

The geology and ore deposits of the Boulder County Tungsten district have been thoroughly studied by Lovering and Tweto and the following summary is taken largely from their report (USGS Professional Paper 245, 1953).

Hurricane Hill is underlain chiefly by Precambrian Boulder Creek granite and to a lesser extent by older schists and gneisses of the Idaho Springs formation (fig. 2). The Boulder Creek granite in this area is largely composed of gneissic quartz monzonite, aplite, pegmatite, and alaskite, which probably represent the border facies of a batholithic intrusive. The Idaho Springs formation consists of quartz-biotite and quartz-biotite-sillimanite schist, injection gneiss, and quartzite. Most of the minable tungsten deposits have been found in the granite and related rocks.

The major structures in the Hurricane Hill area are the Boulder Creek batholith and the Hurricane Hill breccia reef.

The Boulder Creek batholith occupies an area of about 100 square miles between Nederland and Boulder. Hurricane Hill is near the western border of the batholith. Primary flow structures in the granite of the Boulder Creek batholith indicate that the granite was intruded from the northeast. In the Hurricane Hill area granite overlies schist and the contact dips east, probably at a low angle. Foliation in the schist and gneiss of the Idaho Springs formation generally is parallel to the contact with the Boulder Creek granite.

The Hurricane Hill breccia reef trends northwest along the crest of Hurricane Hill, and dips steeply northeast. It is one of several persistent northwestward-trending fracture zones that are mineralized in places by quartz and hematite. Lovering and Tweto (USGS Prof. Paper 245, p. 31) state that the reef "ranges from a wide gougy unmineralized zone to a strongly silicified shear zone with or without hematite." The reefs are of Laramide age and are earlier than the fissures that contain the tungsten ore deposits.

Where exposed in the DMEA extension of the Prospect tunnel the Hurricane Hill breccia reef is a highly silicified fault zone about 50 feet wide. Although the strike of the reef (N 30 to 35° W) corresponds with its strike on the surface, its dip (55° E) is somewhat flatter than expected. The footwall of the reef is marked by a 2- to 6-inch wide dark gray gouge-filled fault, the walls of which are slickensided. The country

rocks are highly fractured for as much as 5 feet into the footwall of the fault. The hanging wall contact of the reef is gradational and can only be inferred from the exposures in the face of the crosscut(fig. 3).

The vein deposits of the Boulder County Tungsten district occupy fissures and fractures in the granitic rocks. Only in rare instances are ore bodies found in the schists and gneisses of the Idaho Springs formation. The tungsten-bearing veins strike from northeast to east-northeast and dip steeply northwest or southeast, and individual veins vary in strike as much as 30 degrees with corresponding variation in dip. The ores consist chiefly of ferberite and fine-grained quartz, but silver-bearing base metal sulfides and gold tellurides have been noted. Commonly ferberite forms the matrix of a granitic breccia 6 inches to 2 feet wide; ferberite also occurs in widely-spaced irregular veinlets in unaltered granite and granite-pegmatite in zones up to 20 feet wide. The ores contain from 1 to 20 percent tungsten trioxide, and ore shoots commonly contain from 1,000 to more than 50,000 units of WO_3. The ore shoots are irregularly spaced along veins, and the intervening parts contain only quartz or may be barren. Most of the ore deposits have bottomed within a few hundred feet of the surface, but some have been mined to depths of over 600 feet.

The Cold Spring mine is the major active mine within the district. It is about 1,000 feat east-southeast of the present face of the Prospect tunnel. Other nearby mines include the Forest Home, Nancy Henderson, and Last Chance that lie to the east of the Prospect tunnel. The tungsten

veins exploited by these mines are all in the hanging wall of the Hurricane Hill breccia reef zone, some were mined to within 700 feet of the reef.

On the footwall (west) side of the reef, the Clyde and Hoosier mines exploited tungsten vein deposits to within 1,000 feet of the reef.

The Dozer mine has exploited a small tungsten vein zone in pegmatite above the Prospect tunnel level in the footwall of the reef. It is possible that this vein zone is a continuation of the Clyde vein zone. Production from this deposit is reported to be 3,283 units of WO_3 that has come from about 1,000 feet of drifting, 300 feet raising, and what appear to be several small open stopes. Recent exploration by the applicant below the tunnel level indicates that the ore in this vein zone does not continue downward.

Comparatively little tungsten has been found in a belt about a mile wide lying between the west flank of Hurricane Hill and the Conger Illinois group of mines and extending from Sherwood gulch southward 2-1/2 miles through Nederland. This belt includes the Hurricane Hill area explored from the Prospect tunnel under contract Idm-E 909. Among several possible explanations for this meager production from the Hurricane Hill area, the following are probably important: (1) The northeast slopes of Hurricane Hill are heavily forested and the soil-debris cover is thicker than in much of the surrounding area; (2) the soil cover on the southwest flank of Hurricane Hill is also deep, and this would make discovery difficult although considerable prospecting by pitting and

trenching has been done on this side of Hurricane Hill; (3) the known tungsten veins on either side of the Hurricane Hill breccia reef are barren under Hurricane Hill for physical-chemical reasons; (4) the known veins do not continue under Hurricane Hill; (5) veins that contain significant quantities of tungsten do exist under Hurricane Hill but do not reach the surface or they were barren at their outcrops.

As a result of exploration completed with DMEA assistance, it is concluded that explanations 3 and 4 are most appropriate to account for the lack of ore in the area. Where encountered in the crosscut the Hurricane Hill reef consists of severely fractured granite that has been highly silicified. The broken rock contains much sericite filling the fractures. Galena, sphalerite, and chalcopyrite are sparsely disseminated throughout the silicified zone in the end of the crosscut. Exploratory drilling in the hanging wall of the reef outlines a lens-shaped zone about 500 feet long and 100 feet wide paralleling the reef.

Results of drilling four core holes indicates that the Cold Springs, Forest Home, Nancy Henderson, and Last Chance veins and vein zones do not approach the hanging wall of the Hurricane Hill reef. Although quartz stringers up to 6 inches in width were cut by some of the holes, none of the veins contained measurable tungsten mineralization.

Analyses of 15 samples collected by the operator are shown in the following table.

Results of analyses of samples - Dozer mine

Description	Gold oz./t.	Silver oz./t.	Lead (percent)	Zinc (percent)	Copper (percent)	Tungsten (WO_3 percent)
Composite of chips from ave. wall rock last 100-ft., DMEA tunnel.	Tr	0.30	4.02	1.20	-- *	--
Hand specimen of concentrated sulphide mineralization, from DMEA tunnel walls, last 100 feet.	0.02	3.98	18.89	10.98	--	Nil
D.D.H. P-7, Sludge, 100' to 110'	--	--	1.44	--	--	Nil
Grab from muck from last feet round of DMEA tunnel, mineral visible	0.01	0.32	1.53	0.35	0.18	--
Same as 58, but all visible mineralization rejected.	0.01	0.38	0.60	0.07	0.26	--
D.D.H. P-7, Core, 105-108'	0.53	0.72	Nil	--	--	--
D.D.H. P-7, Core, 469.4-471.0	0.34	0.90	Nil	--	--	--
D.D.H. P-8, Sludge, 20-30'	0.02	0.46	1.08	0.07	--	--
D.D.H. P-8, Sludge, 70-80'	--	--	0.75	--	--	--
D.D.H. P-8, Sludge, 160-170'	Tr.	0.10	--	--	--	--
D.D.H. P-8, Core, 260-267'	0.03	0.12	--	--	--	--
D.D.H. P-8, Sludge, 270-291'	Tr.	0.14	--	--	--	--
D.D.H. P-8, Core, 291-298'	0.12	0.34	--	--	--	Nil
D.D.H. P-8, Sludge, 300-320'	Tr.	0.20	--	--	--	Nil
D.D.H. P-8, Core, 321-341'	0.02	0.48	--	--	--	Nil

* -- not determined

ORE RESERVES

Ferberite is visible in the old stopes of the Dozer mine, and it is possible that there are small quantities of ore-grade material that could be mined under very favorable conditions; however, no ore reserves are calculated for the mine.

ORIGINAL PROGRAM AND MODIFICATIONS

In an application dated May 9, 1955, the Reynolds Tungsten Corporation requested DMEA assistance to explore the Hurricane Hill area by a two-stage program of underground exploration. The proposal included 1,700 feet of drifting, 1,700 feet of crosscutting, 150 feet of sinking, 3,940 feet of core drilling, and an unspecified amount of raising. The total estimated cost of the proposed program was $202,536.00.

A modified program was recommended in a Field Team report dated September 30, 1955, and Contract Idm-E 909 was prepared on the basis of the recommendations in that report. The contract authorized 2,310 feet of drifting and crosscutting, 1,200 feet of core drilling, and 30 chemical analyses at a total cost of $75,289.50, Government participation 75 percent or $56,467.13.

On February 12, 1957, approval was granted to transfer 70 feet of crosscutting from Stage II to Stage I. On March 14, 1957, amendment No. 2 authorized the following: "In Exhibit 'A', caption '<u>Description</u> of the Work,' subheading 'Stage I,' item '3', the bearing 'S. 30° E,'" is changed to read "S. 40° E."

Amendment No. 3, dated July 10, 1957, and effective June 1, 1957, further amended Stage II work as follows: In Exhibit "A" under Description of the Work, Stage II is revised to read as follows:

"Crosscutting and drifting with dimensions 5 feet by 7 feet, the directions and amount of such work up to a maximum of 1,425.26 feet to be determined by the Government and approved in advance.

"Underground diamond core drilling in two holes, Nos. 3 and 4, maximum length of each hole 200 feet, total aggregate length not to exceed 400 feet ... The holes shall be approximately horizontal and have the following approximate courses: Hole No. 3, N. 30 E., Hole No. 4, due east. Neither hole shall be drilled more than 50 feet beyond the limit of silicified rock, nor within 100 feet of the boundary of the land covered by the contract."

2. In Exhibit "A", under Estimated Costs of Proposed Exploration, Stage II, change the first item from "1,500 feet of crosscutting and drifting at $29.65/ft. $44,475.00" to "1,425.26 feet of crosscutting and drifting at $29.65/ft. (rounded) $42,259.00" and add a new item to read "400 feet of core drilling at $5,54/ft. $2,216.00."

A termination agreement, effective October 9, 1957, was signed on January 3, 1958.

DESCRIPTION OF WORK COMPLETED

Preparatory work at the property was started on April 24, 1956, and actual crosscutting started on May 2, 1956, and advanced 879.0 feet by the end of the February 1957 reporting period. During March 1957 DMEA drill hole P-7 was started and bottomed at 600.7 feet. Drill hole P-8 was started during April 1957 and completed at a depth of 600 feet. With the completion of DMEA drill hole P-8 all authorized work under Stage I of this contract was completed(fig. 3).

Core drilling under Stage II, amendment No. 3 was started on September 23, 1957, and completed on October 8, 1957. Drill hole No. 4 was bottomed at 200 feet and drill hole No. 3 bottomed at 186 feet.

The operator, in a letter dated October 23, 1957, proposed to continue exploration under Stage II of the contract by drifting southward for a total of 1,425 feet along five "veins" encountered in the footwall (west side) of the Hurricane reef. A memorandum to the Chairman, Operating Committee, DMEA, dated November 8, 1957, stated that no further work under the contract appeared warranted, and recommended that the operator's request for approval of the Stage II drifting be denied. It also recommended that the contract be terminated in its present status and that the project not be certified as a discovery or development.

SUMMARY OF ACCEPTED PROJECT COSTS

Item of work	Stage I units	Amount	Stage II units	Amount	Totals Units	Totals Amount
Crosscutting	879 ft.	$26,062.35			879 ft.	$26,062.35
Core drilling	1200 ft.	6,648.00	386.0	$2,138.44	1,586 ft.	8,786.44
Assays	10 ea.	50.00	4 ea.	20.00	14 ea.	70.00
Totals		$32,760.35		$2,158.44		$34,918.79
Government participation at 75 percent						$26,189.09

SUMMARY OF FACTUAL DATA

The subject contract was signed December 28, 1955, authorizing a two-stage program for 2,310 feet of crosscutting and drifting, 1,200 feet of core drilling, and 30 chemical assays at a total authorized cost of $75,289.50. Government participation at 75 percent not to exceed $56,467.13.

Initial contract work started May 2, 1956, and was terminated October 8, 1957. An agreement was executed to terminate the contract on October 9, 1957, and was signed January 3, 1958.

During the active life of the contract a total of 879 feet of crosscutting, 1,586 feet of core drilling, and 14 assays were claimed. The total expenditures claimed was $34,918.79. The Government's share at 75 percent was $26,189.09.

The equipment used in the exploration program was the property of the operator, thereby leaving no salvage nor disposal problem.

CONCLUSIONS

The DMEA exploration program failed to disclose significant tungsten mineralization within the target area. The vein structures in the crosscut were examined on several occasions during progress of the contract and no tungsten mineralization of consequence was noted.

It is considered that further search in the footwall of the reef along any of the veins exposed in the crosscut would be in the nature of prospecting. Further exploration is not warranted due to lack of evidence indicating the presence of probable ore targets.

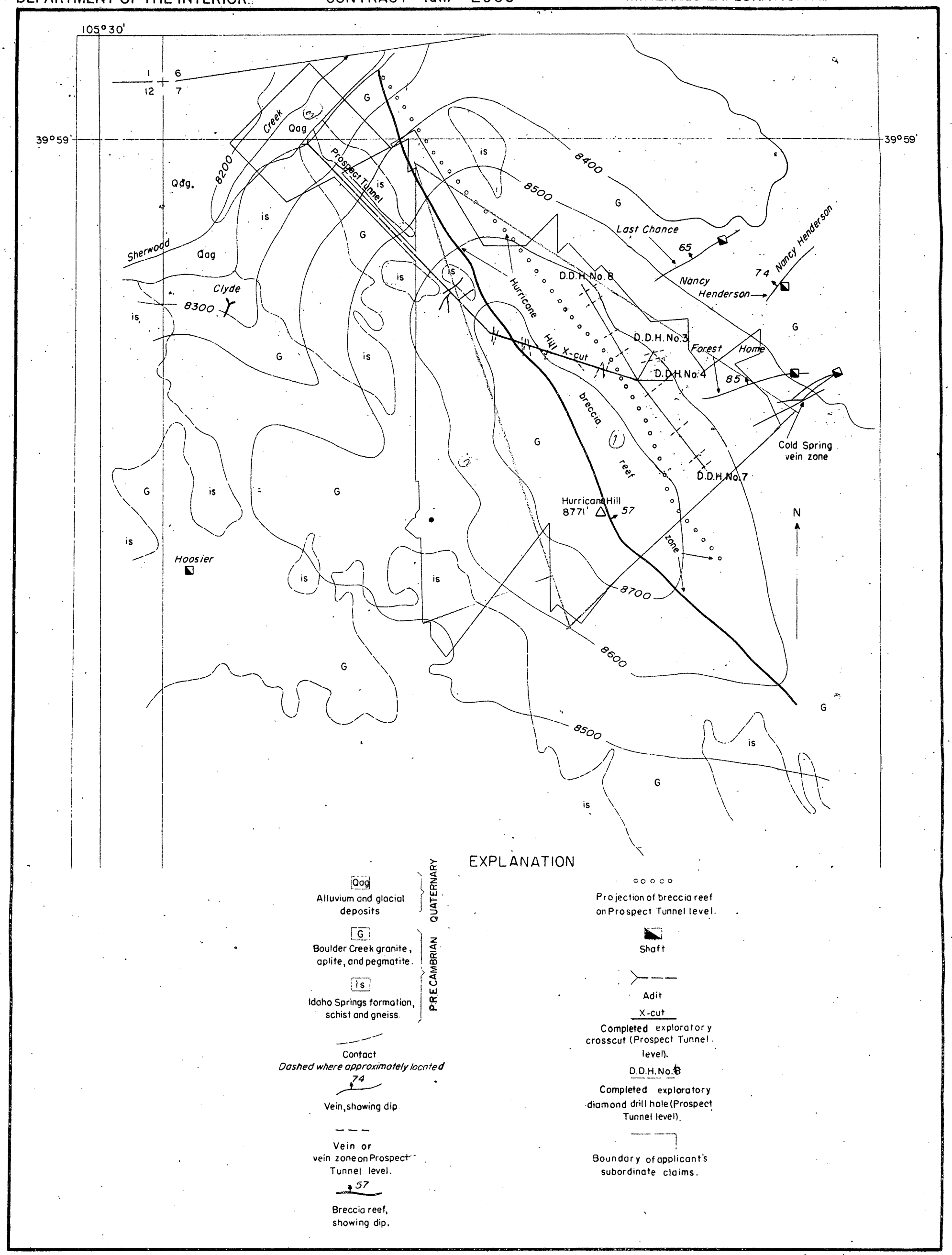
It is concluded that if the veins on the footwall side of the Hurricane Hill Breccia Reef were significantly mineralized, it would be improbable that the crosscut would have intersected such a number of veins entirely in barren segments, particularly since the host rocks--gneiss, aplite, and pegmatite--are considered favorable for tungsten mineralization. The tungsten potential in the area of this exploration contract appears to be insignificant.

Further work, with Government participation, cannot be justified and it is recommended that no certification of discovery be issued.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DMEA 3807
CONTRACT Idm - E909

PREPARED FOR DEFENSE
MINERALS EXPLORATION ADMINISTRATION



Modified from Plate 5, U.S. Geological Survey Boulder County Tungsten Report, Professional Paper 245.

R. U. King, Sept. 1958

FIGURE 2.- COMPOSITE GEOLOGIC MAP OF HURRICANE HILL AND PLAN OF PROSPECT TUNNEL SHOWING COMPLETED EXPLORATION, DOZER MINE, BOULDER COUNTY, COLORADO

500 0 500 Feet

Datum is mean sea level

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
April 23, 1958

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Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten) Contract Idm-E909, Reynolds Tungsten Corporation, (Dozer mine) Boulder County, Colorado - FINAL PAYMENT

Enclosed are two copies of a memorandum to T. A. Christensen, dated April 17, 1958, relative to final payment under the terms of the subject contract.

E. N. Harshman

E. N. Harshman

Enclosures

JDC:hmh

cc: Corres.file, Reg. III
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Chron

Latest address
Reynolds Tungsten Corp.

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224 New Customhouse
Denver 2, Colorado
April 17, 1958

Memorandum

To: T. A. Christensen

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten) Contract Idm-1909,
Reynolds Tungsten Corporation, (Dozer mine)
Boulder County, Colorado - FINAL PAYMENT

Reference is made to our memorandum of November 15, 1957, whereby we transmitted the final Form MF-104, Operator's Monthly Report and Voucher, for the month of October, 1957, and requested that you withhold an amount of $500.00 from reimbursement to the Operator, pending resolution of matters prerequisite to closing the account.

The Operator's final report has been received, therefore we recommend that final payment to the Operator be made on the following basis, which is in conformance with the Report of Review of reported project costs by the Contract Administration and Audit Division, dated April 7, 1958.

Basis for Final Payment

Total accepted cost----------	$34,918.79
Government participation at 75 percent--	26,189.09
Total prior payments----------	25,689.11
Balance due the Operator----------$	499.98

Original signed by
E. N. HARSHMAN
E. N. Harshman

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file, Reg.III
MF-104 file, Reg.III
Chron

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JS

DMEA 58-112 4/22/58

DMEA Form 7
(12-56)

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APR 14 1958

Mr. Donald T. Finch
DMEA Auditor
224 New Customhouse
Denver 2, Colorado

Re: Idm-E909, DMFA-3807
Reynolds Tungsten Corp.

Dear Mr. Finch:

Your report of review covering the above-cited project is acceptable. You are authorized to make normal distribution.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

AMAlley/ama
April 14, 1958

Copy to: Docket
Admr. Reading File
Mr. Chambers

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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
April 3, 1958

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Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed are the original and one copy of a Final Engineering and Geologic Report submitted by the Operator, under date of March 28, 1958, pertaining to work completed under the subject contract.

E. N. Harshman

E. N. Harshman

Enclosures

OPERS FINAL REPORT

Opers Final Report

REYNOLDS TUNGSTEN CORPORATION
222 First National Bank Building
Denver 2, Colorado

March 28, 1958

DMEA
DEPARTMENT OF THE INTERIOR
APR 2 - 1958
REGION III
DENVER, COLORADO

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Dozer mine)
Boulder County, Colorado

Dear Mr. King:

We herewith submit, for your approval, five copies of our final engineering and geological report pertaining to the work completed under contract with the D.M.E.A.

A map showing the work done and some geological interpretation accompanies the report.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

G. C. Ridland

GCR:jd

G. CARMAN RIDLAND
Geological Engineer

TELEPHONE: AMHERST 6-0321

FIRST NATIONAL BANK BUILDING

DENVER 2, COLORADO

Geological Report 65
March 28, 1958

D.M.E.A. EXPLORATION AT THE DOZER MINE

Final Report

Property - A program of exploration for tungsten was conducted by Reynolds Tungsten Corporation, with aid from the U. S. Defense Minerals Exploration Administration (D.M.E.A.) on the following mining claims:

Name	U. S. Survey Lot No.
Dozer	20,684
Hurricane No. 2	18,340
Hurricane No. 4	18,340
Spencer	19,949
Bertha	19,204
May Raymond	19,204
Last Chance	19,204
Only Chance	19,204
Gold Medal	19,559
Silver Light	19,559
Expert	19,559
Hill Top No. 4	19,559

The property is owned by Cold Spring Tungsten, Inc., and leased to Reynolds Tungsten Corporation.

Location - The property is in Section 7, T.1S., R. 72 W., in the Grand Island Mining District, Boulder County, Colorado, 2 miles north of the town of Nederland and 33 miles northwest of Denver, Colorado. The portal of the Prospect Tunnel, the entrance to the Dozer mine, is situated on a good, gravel road 2½ miles from Nederland.

Mine Workings - The Dozer workings consist of a 1,400-foot long, 9x9-foot drainage and transportation adit driven in a S. 45° E. direction and known as the Prospect Tunnel. Approximately at a point 1,100 feet in from the portal a system of tungsten-bearing veins crosses the tunnel. Drifts, raises and stopes have been driven on these veins extending above the tunnel to a maximum vertical height of 200 feet. The surface is approximately 450 feet above the breast of the tunnel, - the point of beginning of the D.M.E.A. work.

The D.M.E.A. Program was instituted for the purpose of exploring the region beyond the end of the Prospect Tunnel. It consisted of the following:

1. A 5x7-foot, cross-cut tunnel from the face of the Prospect Tunnel driven for 871 feet in a S. 72 E. direction.

2. Four horizontal diamond core holes, drilled from the end of the cross cut, as follows:

Hole No.	Bearing	Depth
P-7	S. 36 51 E.	600.7 ft.
P-8	N. 30 44 W.	600.0
II-3	N. 30 00 E.	186.0
II-4	N. 90 00 E.	200.0

Total drill hole footage. . . . . 1,586.7 ft.

The Prospect Tunnel was equipped with an 18-inch ventilation pipe, a 2-inch compressed air line and 30-pound, 18-inch gauge rail mounted on steel ties. The operator supplied a 600 c.f.m., Gardner-Denver air compressor with 125 H.P. electric motor, a 1½-ton Atlas battery trammer, an Eimco No. 12 mucking machine, 8 16-cu. ft. mine cars, a Joy Axi-vane Fan, water pump, rock drills and small tools for a 3-man tunnel and diamond drill crew. Two men worked 8-hour shifts at the breast while the third, a foreman, supervised the drilling and blasting, serviced the compressor and equipment and saw that adequate supplies were on hand for the job. Timber was required in only one 30-foot stretch of the tunnel beginning at 755 feet from the point of beginning. Five square sets were installed and lagged on back and sides.

The diamond drilling was performed with a Christensen IU, AX, pneumatic drill and Worthington Duplex, 3 1/2 x 2 3/4, water pump. AX core recovery was 93%.

Survey work and geological mapping was done by D. H. Jardine, engineer for the neighboring Cold Spring mining operation. The writer examined the veins encountered in the tunnel and logged and sampled all drill core in detail.

General Geology - The property is near the western extremity of the Boulder Tungsten Belt (U.S.G.S. Prof. Paper 245, Geology and Ore Deposits of the Boulder County Tungsten District, Colorado, by T. S. Lovering and Ogden Tweto). The country rock on the Dozer property is mainly pre-Cambrian medium to coarse-grained, slightly to strongly foliated biotite granite. Pegmatite in the form of dikes and irregular masses is commonly intruding, or is mixed with, the granite. Also, aplite occurs, but is less common than pegmatite. In places the granite is so foliated that it resembles schist and, in fact, commonly contains inclusions of quartz biotite schist.

A major structural feature known as the Hurricane Breccia Reef cuts across the rocks of the Dozer in a general N. 30 W. direction. It practically divides the property in two. The surface trace of this fracture passes almost

directly over the face of the Prospect Tunnel, but the structure dips about 40° NE so that its trace at the Prospect Tunnel horizon, approximately 450 feet below the surface, is some 500 feet northeast of the tunnel face (point of beginning of the D.M.E.A. tunnel). The D.M.E.A. tunnel passes through the Reef at a 45° angle to its strike beginning at the point where the timbering was required and continuing for approximately 30 feet. On the hanging wall (NE) side of the Reef the country rock is highly silicified for approximately 140 feet beyond the footwall. A series of prominent slickenside planes exist in the first 3 to 5 feet above the footwall and a soft, loose, clayey and silicified zone extends for approximately 15 feet into the hanging wall. Beyond this soft, zone, the altered rock is highly fractured, yet, so thoroughly silicified, that it is firm and stands without timber support. The silicified hanging wall carries disseminated lead and copper sulphides.

Economic Geology - A number of northeasterly-trending, steeply dipping, ferberite-bearing quartz veins cut the pre-Cambrian rocks of the Dozer and adjacent properties and many of them have yielded important quantities of tungsten ore. Two such veins, the Hoosier and Clyde, on the southwest side of the Hurricane Reef are notable. A number of prominent productive veins exist on the northeast side, that if continuous to the southwest, should extend into the region just south of the Prospect Tunnel face. It was mainly for the purpose of exploring for the westward and downward extensions of these veins, the Cold Spring, Forest Home, Nancy Henderson, Last Chance, Spencer and possible other blind, parallel structures, that the D.M.E.A. program was initiated. The first 755 feet of the tunnel was intended to explore the ground on the footwall side of the Reef into which the Hoosier, or related veins, might penetrate; the remainder of the tunnel and the drill holes were intended to seek the veins entering the property from the opposite side of the Reef.

Results

A. Footwall (or southwest) Side of the Hurricane Reef.

The D.M.E.A. tunnel began in a coarse, pink pegmatite mass that continues for 145 feet. A mixture of gray, granite gneiss and schist with small pegmatite dikes and masses was encountered in the next 300 feet, and the final 310 feet opened up reddish, fractured granitic rock characterized with abundant fractures seamed with specularite.

A number of fractures resembling the productive, quartz-filled, ferberite-bearing type were cut (see map) and three of these are singled out as possible hosts for tungsten ore although no such mineralization was detected at the point where they are exposed by the tunnel.

Vein No. 11 (see map) is considered the most promising. It is part of a system of veins that was encountered by the tunnel just before entering the Breccia Reef zone. It is 3 feet wide, contains hydrothermally altered walls and 1 to 1½ feet of massive, gray and dark-gray cherty quartz which is typical ferberite gangue material. Mineralization was not noted where it is exposed, but it could be found almost at any place in this vein.

Vein No. 9 is similar to No. 11, but not so uniformly wide. In its exposure in the tunnel, it varies from 1 to 4 feet and contains a cherty quartz filling from 1/2 to 2 feet wide. The walls are also well altered by hydrothermal action.

Vein No. 2 is a 2-foot wide fracture zone in a pink pegmatite. It contains little or no filling or alteration, but a common feature of ferberite-bearing veins is to be barren of quartz and wall rock alteration for short stretches. It is a prominent fracture, has the right strike, and it released a vast quantity of water when encountered by the tunnel.

B. Hanging Wall (or northeast) Side of the Hurricane Reef.

The 116 feet of tunnel that extends into the hanging wall of the Breccia Reef exposes a fractured and altered granitic rock. The rock is largely converted to silica. The fractures contain quartz veinlets with specks of gray sulphide minerals and a little chalcopyrite*. Northeast trending fractures of the ferberite-bearing variety were not recognized in the tunnel, but several such structures were tentatively identified in the cores of the drill holes. The location of these zones are shown on the accompanying map. Tungsten was not detected in either core or sludge samples.

The northeast border of the silicified hanging wall zone of the Hurricane Reef is gradational and, therefore, difficult to pin-point. Nevertheless, an approximate contact line has been drawn on the accompanying map from drill log information. Three of the four holes definitely penetrated into the unaltered granitic country rock. The fourth hole, P-8, appears to have passed in and out of, or closely paralleled, the contact. The location of this border can have geological significance. If the silicified zone is of uniform width, the footwall trace of the Breccia Reef on the tunnel horizon can be projected with fair accuracy.

Conclusions and Recommendations

The D.M.E.A. program resulted in discovering and gaining access to several promising veins of the ferberite-bearing type. Further exploration is believed warranted on these veins by drifting or drilling or by both methods. Exploration may be directed particularly to Veins No. 11, 9 and 2, and in the order named.

Reported G. C. Ridland
G. C. Ridland

* A number of samples were taken of this mineralized rock to determine the possible average grade. The assays (appended) indicate, however, that, at current prices for these metals, the mineralized silicified hanging wall rock is not of commercial value.

Appendix

DOZER ASSAYS

Sample No.	Description	Gold oz./t.	Silver oz./t.	Lead %	Zinc %	Copper %	Tungsten WO %
55	Composite of chips from ave. wall rock last 100-ft., D.M.E.A. tunnel	Tr.	0.30	4.02	1.20		
56	Hand specimen of concentrated sulphide mineralization, from D.M.E.A. tunnel walls, last 100 feet.	0.02	3.98	18.89	10.98		Nil
57	D.D.H. P-7, Sludge, 100' to 110'			1.44			Nil
58	Grab from muck from last few rounds of D.M.E.A. tunnel, mineral visible	0.01	0.32	1.53	0.35	0.18	
59	Same as 58, but all visible mineralization rejected	0.01	0.38	0.60	0.07	0.26	
60	D.D.H. P-7, Core, 105-108'	0.53	0.72	Nil			
63	D.D.H. P-7, Core, 469.4-471.0	0.34	0.90	Nil			
67	D.D.H. P-8, Sludge, 20-30'	0.02	0.46	1.08	0.07		
68	D.D.H. P-8, Sludge, 70-80'			0.75			
69	D.D.H. P-8, Sludge, 160-170'	Tr.	0.10				
70	D.D.H. P-8, Core, 260-267'	0.03	0.12				
71	D.D.H. P-8, Sludge, 270-291'	Tr.	0.14				
72	D.D.H. P-8, Core, 291-298'	0.12	0.34				Nil
73	D.D.H. P-8, Sludge, 300-320'	Tr.	0.20				Nil
74	D.D.H. P-8, Core, 321-341'	0.02	0.48				Nil

DMEA
RECEIVED APR 7

4/7 WSM

224 New Customhouse
Denver 2, Colorado
April 3, 1958

Memorandum

To: T. M. Brading, DMEA Auditor - w/enclosure

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-2909, Reynolds Tungsten Corporation (Bezer mine), Boulder County, Colorado

The subject contract was terminated by an Agreement, dated January 3, 1958, which was made effective October 9, 1957. A copy of the TERMINATION AGREEMENT is enclosed for your records.

The Operator has rendered a final accounting and a Final Engineering and Geologic Report as required by the contract. Therefore, final payment to the Operator is in order, contingent on release to this office of a Certificate and Report of Audit, or Report of Review of reported project costs, whichever the case indicates.

Acceptable units of work or service completed on a Fixed Unit Cost basis consist of:

Crosscutting	879 feet
Core drilling	1,586 feet
Chemical analysis of samples	14.

The sum of $500.00 was withheld from reimbursement to the Operator in processing the final accounting report, which was for the month of October, 1957.

Original signed by
E. N. HARSHMAN

E. N. Harshman

JWT:pvl

cc: Chem. Op. Comm. (2)
Harshman
Corres. file
Townsend
Chron.

GARMAN RIDLAND
Geological Engineer

TELEPHONE: AMHERST 6-0321

222
~~822~~ FIRST NATIONAL BANK BUILDING
DENVER 2, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR

MAR 4 - 1958
REGION III
DENVER, COLORADO

March 3, 1958

3-6
3/7
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WSM
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800
400

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Dozer mine)
Boulder County, Colorado

Dear Mr. King:

Your letter of February 26 has been received.

We will prepare the final report and submit it to you for approval as quickly as possible.

We are also desirous of closing this account at an early date so you can depend on us to cooperate.

Sincerely,

G. C. Ridland
jd

G. C. Ridland
For Reynolds Tungsten Corporation

GCR:jd

MAR 4 - 1958
Copies distributed to:
Chmn. Op. Comm. (2)
Hardman
DMEA / DFC
Townsend

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 28 1958

DATE		
2/28	C	220
2/28	[illegible]	800
	WSM	400

224 New Customhouse
Denver 2, Colorado

February 26, 1958

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Dozer mine)
Boulder County, Colorado

Dear Mr. Ridland:

Under the provisions of Article 6(c) of the Contract, the Operator is required to submit five copies of a final engineering and geologic report pertaining to the work completed under the subject Contract.

Also, item 3 of the TERMINATION AGREEMENT, dated January 3, 1958, which was executed to terminate the Contract, effective October 9, 1957, stipulates that the Operator shall promptly perform all winding up and settlement actions provided for in the Contract, including the rendering of a final report.

We are desirous of closing this account at an early date. Therefore, we will appreciate advice by return mail as to the date on or before which we can expect to receive the required final report.

Very truly yours,

Original signed by
W. H. KING

W. H. King
Executive Officer, DMEA
Field Team, Region III

JWT:prl

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Corres. file
Townsend
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 1958
1/24 C 220
WSM 400

January 22, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909
Reynolds Tungsten Corporation (Dozer mine)
Boulder County, Colorado

Enclosed are the Government's and Audit copies of the Termination Agreement executed to terminate the subject contract October 9, 1957, which was forwarded by your letter of January 6, 1958, for signature by the Operator.

Copies of the Termination Agreement have been distributed to the Operator, Finance Office, Region III, and to others concerned.

W H King
W. H. King

Encls.

Termination Agreement

DMEA
RECEIVED JAN 1958
1/17 C
1/17 uw
wsd
220
800
400

224 New Customhouse
Denver 2, Colorado

January 15, 1958

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Dozer mine)
Boulder County, Colorado

Dear Mr. Ridland:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of the proposed TERMINATION AGREEMENT, which was mentioned in the next to the last paragraph of Mr. Mittendorf's letter to you of January 6, 1958, which was prepared to terminate Contract No. Idm-E909, effective October 9, 1957.

If the proposed Termination Agreement is satisfactory, all copies are to be signed by an official of Reynolds Tungsten Corporation authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office; upon receipt of which, the "Operator's Copy" will be forwarded to you.

Very truly yours,

Original signed by
W. H. KING

W. H. King
Executive Officer
DMEA Field Team, Region III

JWT:prl

cc: Chmn. Op. Comm. (2)
Harshman)
DMEA/DFC (Winkel))
Corres. file)
w/copy of letter dated Jan. 6 from C. O. Mittendorf to Mr. Ridland denying Government participation in further work under the Contract.

Townsend
Chron.

OFFICIAL FILE COPY

Date	Surname	Code
12-30	Martin	400
12-30	Holt	400
12-30	Fisher	800
1/3	[illegible]	130
/	Absent	110
3	Pulendor	100
1/6	[illegible]	220
		400

JAN 6 1958

Mr. William H. King, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer mine
Boulder County, Colorado
Contract No. Idm-E909

Dear Mr. King:

In accordance with the recommendation of the Field Team of November 8, 1957, enclosed are the original and four copies of a proposed termination agreement to the above-referenced contract. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of this proposed agreement are satisfactory to you and the Operator, all five copies should be signed by the Operator and the usual distribution made.

If any part of the proposed agreement does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (HB)

APPROVED:

Frank D. Lamb

Member, Bureau of Mines (HB)

Thor H. Kiilsgaard

Member, Geological Survey (HB)

Enclosures

WSMARTIN/dlm 12-30-57
cc to: Code 400
Admr. R. File
Oper. Comm
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
1-3	Holt	400
1-3	Martin	400
1/3	Selfridge	130
1/3	Johnson	130
1/3	Bogard	130
	Abbott	110
3	Mitterdorf	100
		210
		220

JAN 6 1958

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer mine
Boulder County, Colorado
Contract No. Idm - E909

Dear Mr. Ridland:

Your letter of October 23, 1957, applying to Mr. W.H. King, Executive Officer, DMEA Field Team, Region III, for approval of your proposed Stage II drifting at the captioned property, has been reviewed with other data available to us in Washington.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, including that obtained by the DMEA exploration work previously completed at the property, indicates to us that the probability of disclosing significant tungsten ore reserves by your proposed work is not sufficiently promising to justify further Government participation. Under these circumstances we regret to advise you that your request for additional exploration assistance is denied.

On this same date we are sending to Mr. King, for your mutual approval, a proposed termination agreement for the subject contract.

We wish to thank you for your continued interest in the Defense Minerals Exploration Administration program.

Sincerely yours,

C. O. Mitterdorf (for)

Administrator

SPHOLT/ WS/MARTIN/ dlm 1-3-57
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
1/3	[illegible]	400
1/23	[illegible]	400
1/3	[illegible]	130
1/3	[illegible]	130
	[illegible]	1
1/3	[illegible]	130
3	[illegible]	100
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JAN 3 1958

INTERIOR

DMEA

xxxxxxxxxxxxxxxxxxxxxxxxxx

14X4401 (01 Revolving Fund, Defense Production Act, Interior(Transfer to Office of Secretary)

T E L E T Y P E

MR. WILLIAM H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

RE DOCKET DMEA - 3807, CONTRACT IDM-E909, REYNOLDS TUNGSTEN CORPORATION,

AS RECOMMENDED IN YOUR MEMORANDUM OF NOVEMBER 8, 1957, WE ARE MAILING

TERMINATION AGREEMENT TO YOU FOR PRESENTATION TO OPERATOR, AND ARE SENDING

LETTER TO MR. G. C. RIDLAND DENYING PROGRAM REQUESTED IN HIS LETTER TO

YOU OF OCTOBER 23, 1957.

George C. Selfridge

GEORGE C. SELFRIDGE
CHAIRMAN, OPERATING COMMITTEE

WSMARTIN/dlm 12-31-57
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

DMEA

SPECIAL

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 30 1957

DATE	INITIALS	CODE
12/30	C	220
	WSM	400

DN 235 BUR MINES 12-27-57 9-50

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA-3807, CONTRACT IDM-E909, RETXX REYNOLDS TUNGSTEN CORP., OUR MEMORANDUM NOVEMBER 8,1957. PLEASE TELETYPE ADVICE AS TO YOUR DECISION AND STATUS OF RECOMMENDED TERMINATION.

W H KING

Denver, Colorado

DEC 27 1 07 PM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
12/20	Holt	400
12/20	Martin	400
		140

December 20, 1957

MEMORANDUM

To: Associate Solicitor, Division of Mineral Resources

From: Division of Iron and Ferro-Alloys, DMEA

Subject: Preparation of Termination Agreement
Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Attached is a draft of a proposed Termination Agreement for the captioned project for your use in preparing the Termination in final form.

W. S. MARTIN

W. S. Martin, Director
Div. of Iron and Ferro-Alloys

Attachment

8623

TERMINATION AGREEMENT

It is agreed this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government", and Reynolds Tungsten Corporation, hereinafter called the "Operator", parties to that certain Exploration Project Contract No. Idm-E909 (Docket No. DMEA 3807), dated December 28, 1955, as amended, hereinafter called the "Contract", that:

1. Effective October 9, 1957, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

5. All rights of the Government with respect to audits, maintenance of records, certification of discovery or development, percentage royalty and liens for its payment, and recovery of any overpayment, are preserved.

IN WITNESS WHEREOF, the parties have executed this agreement as of the day and year first above written.

REYNOLDS TUNGSTEN CORPORATION

By_____

Title_____

THE UNITED STATES OF AMERICA

By_____
Administrator, Defense Minerals Exploration Administration

Mr. Selfridge -

Field Team and Nelson recommend termination. No evidence of WO_3.

Host rocks are unfavorable. Field Team memo - 5/10/57. Crosscut cut only minor fractures, none likely to contain significant tungsten deposits. DMEA exploration along footwall of the reef is not recommended.

The results to date have been so discouraging that further exploration appears inadvisable. Definite targets are lacking. There appears to be no support for desirability of diamond drilling.

FEJ.

Operating Committee expresses rejection of proposal by noting signature on letter to Field Team. MOD concurs in denial. FEJ

DMEA FORM 6 REFERENCE SLIP

REV. 12-56 DEFENSE MINERALS EXPLORATION ADMINISTRATION

TO:	INITIALS	DATE
1. OPERATING COMMITTEE		
2.		
3.		
4.		
5.		

FROM: W. S. MARTIN

FOR: Check items for action desired

____ Action ____ Reply for signature of _____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions ____ Your information

REMARKS: This Division believes additional drilling to explore the zone between face of adit and most westerly extensions of mine workings in Forest Home, etc. is necessary to take full advantage of DMEA work already completed, and would like to have formal action by Operating Committee, rather than informal denial.

Docket 3807
Reynolds Temp.

Amendment 4, and the essential letter of same to Hartman, are killed -

Keep copies for docket, destroy rest

S.P.H.
12/17/57

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
12/9	Holt	400
12/9	Martin	400
12-9	Chambers	800
12/13	SLS	130
		~~140~~ 362
		100
		220

Noted

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region II
224 New Customhouse,
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Doser Mine
Boulder County, Colorado
Contract No. Idm-E909

Dear Mr. Harshman:

In accordance with the suggestion of October 30, 1957, of the Field Team examiners, enclosed are the original and four copies of a proposed Amendment No. 4 to the above-referenced contract, signed by the Administrator for the Government. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of this proposed amendment are satisfactory to you and the Operator, all five copies should be signed by the Operator and the usual distribution made.

If any part of the proposed amendment does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

Noted by George C. Selfridge

Chairman, Operating Committee (GB)

APPROVED:

Noted by Frank D. Lamb (GB)
Member, Bureau of Mines

Noted by N. E. Nelson (GB)
Member, Geological Survey

SPHOLT/foc 12-9-57
cc to: Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. II
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

Enclosures

8623

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

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region II
224 New Customhouse,
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Dear Mr. Harshman:

In accordance with the suggestion of October 30, 1957, of the Field Team examiners, enclosed are the original and four copies of a proposed Amendment No. 4 to the above-referenced contract, signed by the Administrator for the Government. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of this proposed amendment are satisfactory to you and the Operator, all five copies should be signed by the Operator and the usual distribution made.

If any part of the proposed amendment does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Noted

APPROVED:

Noted: Frank D. Lamb
Member, Bureau of Mines

Noted: R. E. Nelson
Member, Geological Survey

Enclosures

Government's copy

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA-3807

AMENDMENT NO. 4

It is agreed this _____ day of _____, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Tungsten Corporation, that Exploration Project Contract No. Idm-E909 (Docket No. DMEA-3807), dated December 28, 1955, as amended, is further amended, effective December 1, 1957, as hereinafter specified:

1. Under Article 11 of the Contract, Changes and added provisions, there is inserted the following:

"The Operator shall pay to the Government a royalty as provided in Article 7 on any of its production that is transported through any workings to the cost of which the Government has contributed."

2. Under Exhibit "A," Description of the Work:

(a) In Stage II, as revised by Amendment No. 3, the figure "1,425.26" is deleted and there is substituted therefor the figure "1,145.00."

(b) The following is added as new Stage II work:

"As indicated on the attached map entitled 'Dozer Mine, "P" Level, Scale 1"-100', October 23, 1957,' diamond core drill three holes, Nos. 5, 6, and 7, each having a maximum length of 500 feet for a total aggregate length not in excess of 1,500 feet. The holes shall be drilled approximately horizontal, and shall have a bearing of South 30 degrees East. Hole No. 5 shall be drilled from the point which was the face of the Prospect tunnel prior to the beginning of the DMEA crosscut; Hole No. 6 shall be drilled from the face of the first turnout in the DMEA crosscut; and Hole No. 7 shall be drilled from the face of the second turnout in the DMEA crosscut."

3. In Exhibit "A," under Estimated Cost of Proposed Exploration, Stage II is revised as follows:

"Stage II

"1,145 feet of crosscutting and drifting @ $29.65/ft. (rounded) $33,949.00

Long
Hoff
Martin
Chambers

20 chemical assays @ $5.00/each assay.	$ 100.00
1,900 feet of diamond core drilling @ $5.54/ft.	$10,526.00
Total Stage II	$44,575.00"

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, or the fixed unit cost of any item of work.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

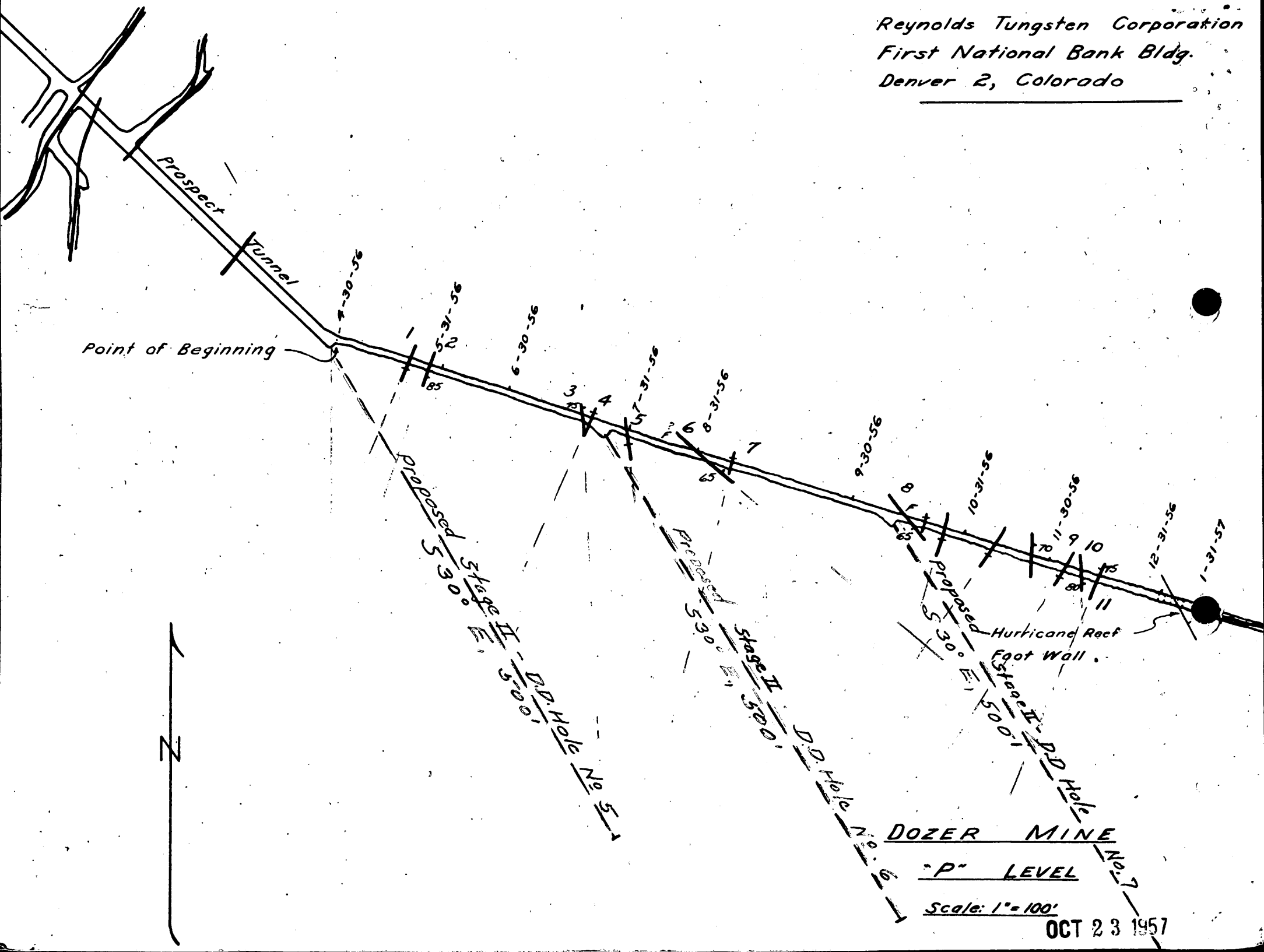
By_____
Administrator, Defense Minerals
Exploration Administration

REYNOLDS TUNGSTEN CORPORATION

By_____

Title_____

Reynolds Tungsten Corporation
First National Bank Bldg.
Denver 2, Colorado



DOZER MINE
"P" LEVEL
Scale: 1" = 100'

OCT 23 1957

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11-27	Holt	400
11-27	Martin	400
		140

November 27, 1957

MEMORANDUM

To: Associate Solicitor, Division of Mineral Resources

From: Division of Iron and Ferro-Alloys, DMEA

Subject: Preparation of Amendment No. 4
Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Attached is rough draft of a proposed Amendment No. 4 to the above-captioned contract for your use in preparing it in final form.

Eight copies of a map to accompany the amendment are being prepared.

W. S. MARTIN

W. S. Martin, Director
Division of Iron and Ferro-Alloys

Attachment

SPHOLT/dlm 11-27-57
cc to: Code 400

8623

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA -3807

Justification for Amendment No. 4

The Operator has requested approval of 1,425 feet of drifting under Stage II of the contract, to explore veins cut in the crosscut driven under Stage I.

Because of unfavorable results of the work performed to date, the Field Team examiners conclude that further work under the contract is not justified. However, they recommend that if additional exploration in the footwall of the (Hurricane) reef is deemed desirable, it be done by drilling three 500-foot flat holes each bearing S. 30° E. from three points in the DMEA crosscut on the Prospect tunnel level. These holes would be approximately 150 feet apart, roughly parallel to the reef, roughly normal to the strike of most of the veins, and sufficiently overlapping to test completely the area in question.

Careful review of the Operator's request of October 23, 1957, with the map attached thereto, and of the Field examiners' report of October 30, 1957, indicates that there is a fair chance of discovering mineralization on the footwall side of the Hurricane reef, and that drilling three diamond core drill holes in the pattern suggested by the examiners will serve to explore the footwall area thoroughly, with less expense to the Government, than the drifting requested by the Operator.

This amendment provides for the drilling suggested by the Field Team examiners, and also includes the provision, not previously made a part of the contract, that minerals mined or produced through DMEA workings shall be subject to the royalty provisions of the contract.

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA - 3807

AMENDMENT NO. 4

It is agreed this _____ day of _____, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Tungsten Corporation, that Exploration Project Contract No. Idm-E909 (Docket No. DMEA - 3807), dated December 28, 1955, as amended, is further amended, effective December 1, 1957, as follows:

1. In Article 7 of the contract, under Changes and added provisions. insert a paragraph reading:

"Whether or not a discovery or development is certified all minerals mined or produced through workings excavated under the provisions of this contract shall be subject to the payment of the percentage royalty as set forth in Article 7 above."

2. In Amendment No. 3 to the contract, under item 1, first paragraph, change the figure"1,425.26" to "1,145.00".

3. In the second paragraph of said item 1, add the following:

"Also, underground diamond core drilling in three holes, Nos. 5, 6 and 7, maximum length of each hole 500 feet, total aggregate length not to exceed 1,500 feet, as indicated on the attached map, titled 'Dozer Mine, "P" Level, Scale 1"- 100', October 23, 1957". The holes shall be approximately horizontal, and each have the bearing South 30 degrees East. Hole No. 5 shall be drilled from the face of the Prospect tunnel, the point of beginning of the DMEA crosscut; hole No. 6 shall be drilled from the face of the first turnout in the DMEA crosscut; and hole No. 7 shall be drilled from the face of the second turnout in the DMEA crosscut."

4. In Exhibit "A" under Estimated Costs of Proposed Exploration, Stage II, change the first item from "1,500 feet of crosscutting and drifting @ $29.65/ft - $44,475.00" to "1,145 feet of crosscutting and drifting @ $29.65/ft. (rounded) $33,949.00", and add a new item to read "1,900 feet of diamond core drilling @ $5.54/ft - $10,526.00". (This change replaces the second item of Amendment No. 3 to the contract.)

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, or the fixed unit cost of any item of work.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By_____
Administrator, Defense Minerals
Exploration Administration

REYNOLDS TUNGSTEN CORPORATION

BY_____

Title_____

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

November 20, 1957

Re: DMEA 3807, Idm-E909
Reynolds Tungsten Corp.
Dozer Mine
Boulder County, Colo.
Tungsten

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of request for approval of work under Stage II of contract and memorandum report of examiner

It appears evident there are not enough blind tungsten-bearing veins in the core of Hurricane Hill to warrant further search for them. Work on the surface and underground on the flank of the hill had clearly indicated such to be the case.

I concur with the recommendation of the Field Team that the contract be terminated and certification not be made.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 21 1957

DATE	INITIALS	CODE
11 21	C	220
11 21	WSM	400

SPH

12/12

We should give some thought to allowing extra drilling by an amendment that has an "ore through DMEA workings" proviso if that's not already in the contract.

WBM

Amendment and justification prepared

S.P.H.
11/26/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

November 8, 1957

RECEIVED NOV 12 1957		
DATE		CODE
11/12	C	220
11/12	[illegible]	130
11/12	WSM	400

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed is the following material pertaining to additional work under the subject contract:

1. The original and two copies of the Operator's request of October 23, 1957.

2. The original and two copies of a joint memorandum, dated October 30, 1957, from R. U. King, Geologist, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines.

The Operator requests approval for the performance of drifting under Stage II of the contract, aggregating 1,425 feet, to explore veins cut in the crosscut driven under Stage I of the contract.

Because of unfavorable results of the work performed to date and lack of mineralized targets for the drifting, the field examiners contend that further work under the contract is not warranted. However, they qualify their statement, that if additional exploration in the foot wall of the reef is deemed desirable that it be by drilling three 500-foot flat holes on a bearing of S 30° E; one from a point in the Prospect tunnel where the DMEA crosscutting started, and two from turnouts in the DMEA tunnel, which would make the holes about 150 feet apart.

This office concurs with the field examiners to the extent that no further work under the contract appears warranted, and recommends that the Operator's request for approval of the Stage II drifting be denied. It is further recommended that the contract be

11-12-57
Copies sent to:
[illegible]
fac

terminated in its present status and that the project not be certified as a discovery or development. It can be expected that the Operator will protest termination of the contract.

Our records indicate that the last work under the contract, the drilling of hole 2-3, was completed on October 8, 1957.

Ordinarily, action on the Operator's request for approval of the Stage II work would be handled by this office under delegated authority. However, in this particular case, since denial of the work is tied in with termination of the contract, the matter is forwarded for your review and appropriate action.

E. N. Harshman

E. N. Harshman

Enclosures

REYNOLDS TUNGSTEN CORPORATION
1038 First National Bank Building
Denver 2, Colorado

October 23, 1957

DMEA
DEPARTMENT OF THE INTERIOR
OCT 28 1957
REGION III
DENVER, COLORADO

Mr. W. H. King, Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. King:

Re: Docket No. DMEA 3807
Contract No. Idm-E909

DOZER MINE

We propose the following work with reference to the continuation of Stage II of our D.M.E.A. exploration program at the Dozer and ask for your approval.

1. At a point 675 feet from the point of beginning of the crosscut tunnel driven under Stage I, drift approximately due south on vein marked No. 10 on the map attached until it intersects Vein No. 11 at approximately 55 feet, thence, along Vein No. 11 in an approximate S.20°W. direction for 445 feet.

2. At a point 630 feet from the same point of beginning, drift (approximately) south on a fracture a distance of approximately 55 feet to its intersection with Vein No. 9, thence, S.28°W. along projected Vein No. 9 a distance of 445 feet.

3. At a point 83 feet in from the same point of beginning, drift (approximately) S.19°W. on Vein No. 2 a distance of 425 feet.

The above three veins, 2, 9 and 11, were intersected by the tunnel on the footwall side of the Hurricane Breccia Reef. All veins are prominent fractures that could be possible hosts for ferberite ore.

No. 11 appears to be the most promising. It is part of a system of veins that was encountered just before entering the breccia reef zone. It is 3 feet wide, contains hydrothermally altered walls and contains 1 to 1½ feet of massive, gray and dark-gray cherty quartz which is typical ferberite gangue material. Mineralization was not noted where it is exposed, but it could be found almost at any place in this vein.

No. 9 is similar to No. 11, but not so uniformly wide. In its exposure in the tunnel it varies from 1 to 4 feet and contains a cherty quartz filling from ½ to 2 feet wide. The walls are also well altered by hydrothermal action.

REYNOLDS TUNGSTEN CORPORATION
1038 First National Bank Building
Denver 2, Colorado

The country rock is mainly competent, coarse-grained, pink granitic rock. Little veinlets of specularite riddle the country rock.

No. 2 is a 2-foot wide fracture zone in a pink pegmatite. There is little or no filling or alteration, but it is not uncommon for ferberite-bearing veins to be barren of quartz and wall rock alteration for short stretches. It is a prominent fracture, has the right strike, and it released a vast quantity of water when encountered by the tunnel.

Veins 9 and 11 may correlate with the Hoosiere vein system on the surface, but projection is difficult. As the Breccia Reef surface trace lies some distance to the southwest of these veins in the tunnel, the surface directly above them is on the hanging wall side of the reef. Hence, correlation with near surface features is not possible.

Yours respectfully,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

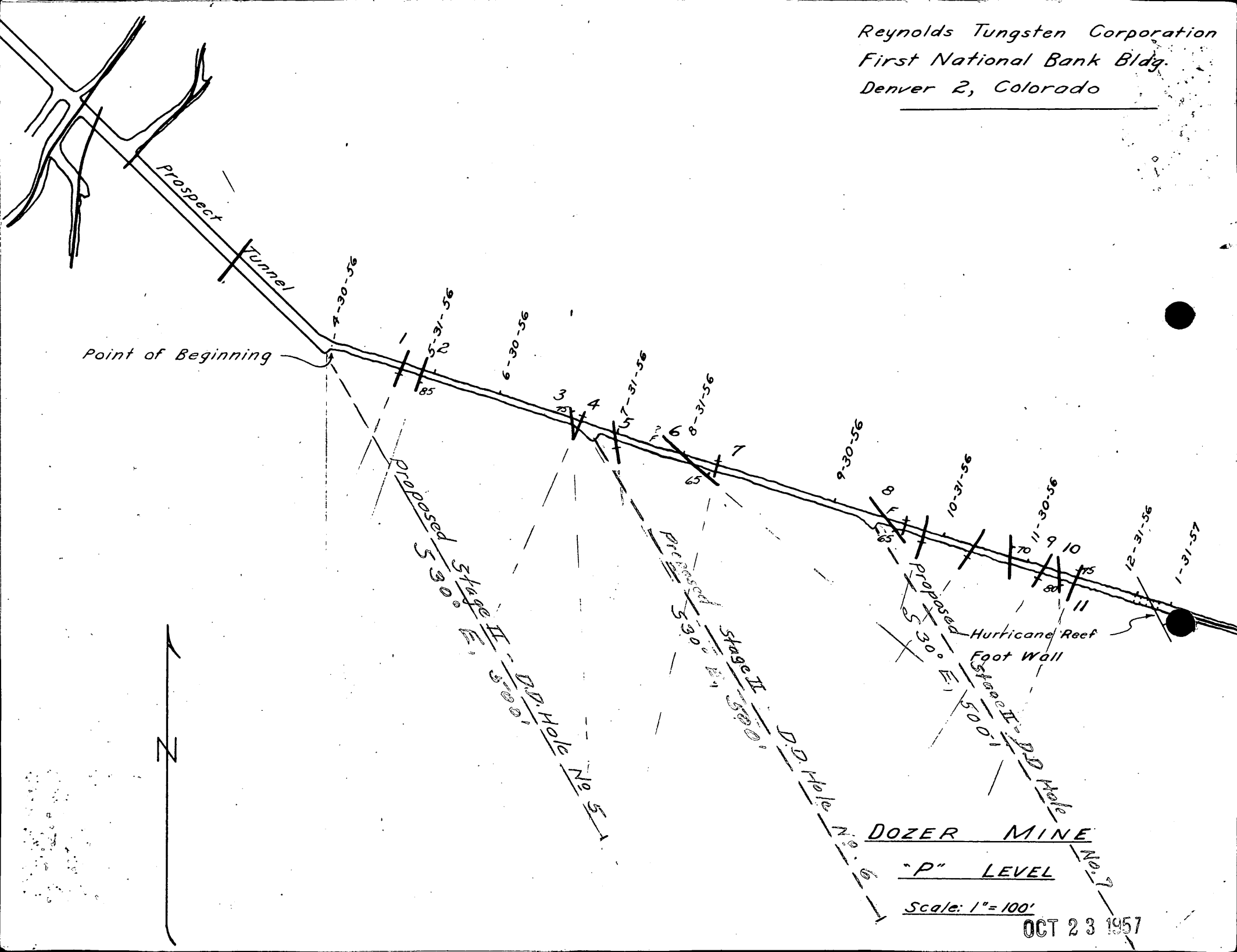
G. C. Ridland

GCR:jd

Enc.

cc: Mr. D. J. Luckhurst, President, R. T. Corp.
New York, New York

Reynolds Tungsten Corporation
First National Bank Bldg.
Denver 2, Colorado



OCT 23 1957

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 12 1957

DATE	INITIALS	CODE

DMEA
DEPARTMENT OF THE INTERIOR
NOV 4 - 1957
REGION III
DENVER, COLORADO

IN REPLY REFER TO:

RECEIVED NOV 12 1957

DATE	INITIALS	CODE

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

October 30, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
W. W. Winkel

Subject: Docket DMEA 3807 (Tungsten), Contract Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

The operator in a letter dated October 23, 1957, proposes to continue exploration under Stage II of the contract by drifting southward for a total of 1,425 feet along five veins encountered in the footwall (west side) of the Hurricane Hill reef, during the driving of the Stage I crosscut. He has mapped eleven fractures along the crosscut and numbered them in consecutive order.

The operator justifies the proposed drifting on the following geologic basis: (1) The selected veins are prominent fractures and could be possible hosts for ferberite ore; (2) No. 11 vein is part of a system of veins close to the reef; (3) The veins contain gray cherty quartz--the typical gangue of the tungsten-bearing veins; (4) the walls are hydrothermally altered; and (5) The veins exposed in the crosscut may correlate with the Hoosier vein system (though it is concluded that such correlation is doubtful).

The vein structures in the crosscut have been examined on several occasions during the progress of the contract project, and no tungsten minerals were observed. Also no assays are submitted by the operator to indicate any tungsten content in the veins. The Hoosier vein, one-half mile to the southwest, has been mined to its extremities, and is not known to approach even into the vicinity of the project area.

It is concluded that if the veins on the footwall side of the Hurricane Hill Breccia Reef were significantly mineralized it would be improbable that the crosscut would have intersected such a number of veins entirely in barren segments, particularly since the host rocks--gneiss, aplite, and pegmatite--are not considered unfavorable for tungsten.

Further exploration is not warranted due to the lack of evidence indicating the presence of probable ore targets. It is considered that exploration in the footwall of the reef particularly of veins Nos. 2, 9, 10, and 11, but also of any of the other veins exposed in the crosscut would be in the nature of prospecting.

Further exploration for tungsten under Hurricane Hill in the vicinity of the Breccia Reef therefore is not recommended.

If further investigation of the footwall zone is deemed advisable, the most feasible method would be by diamond core drilling. The ground southwest of the crosscut could be adequately prospected

by three flat holes, each about 500 feet in length, bearing S 30° E and collared one at the face of the Prospect Tunnel, and one each from existing turnouts in the crosscut. These holes would be approximately 150 feet apart, roughly parallel to the reef, roughly normal to the strike of most of the veins, and sufficiently overlapping as to test completely the area in question.

R. U. King, Geologist

W. W. Winkel, Mining Engineer

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 26 1957

DATE	INITIALS	CODE
9/27	C	220
9/30	[illegible]	800
9/30	WSOY	400

224 New Customhouse
Denver 2, Colorado

September 23, 1957

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket DMEA-3807 (Tungsten)
Contract Idm-E909
Reynolds Tungsten Corporation
(Doser mine)
Boulder County, Colorado

Dear Mr. Ridland:

Reference is made to our letter to you dated September 17, 1957, and to your reply dated September 20, 1957, relative to the completion period for Contract Idm-E909.

Our letter of September 20, 1957, is in error. As stated in your letter of September 20, 1957, the completion period for Contract Idm-E909 will expire September 28, 1958, therefore no action on your part is required at this time. We apologize for any inconvenience our letter may have caused you.

Yours very truly,

Original signed by
J. W. TOWNSEND
J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III

JDC:hmh

cc: Chmn. Op. Comm (2)
Harshman
DMEA, DFC
Townsend
Corres.file, Reg. III
Chron
} w/copy of Operator's ltr. of 9/20/57

NOLDS TUNGSTEN CORPORATION
1038 First National Bank Building
Denver 2, Colorado

September 20, 1957

DMEA
DEPARTMENT OF THE INTERIOR
SEP 23 1957
REGION III
DENVER, COLORADO

Mr. E. N. Harshman, Acting Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807
Contract No. Idm-E909

Dear Mr. Harshman:

Reference is made to your letter of September 17, 1957.

In accordance with Amendment No. 1 to the Exploration Project Contract, Reynolds Tungsten Corporation, Docket No. DMEA-3807, the period for completion has been extended from 15 months to 33 months or from March 31, 1957 to September 28, 1958.

Please check this and notify us relative to this apparent discrepancy in dates.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland
jd

G. C. Ridland

GCR:jd

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 23 1957

DATE	INITIALS	CODE
9/23	C	220
9/23	[illegible]	800
9/23	WSM	400

224 New Customhouse
Denver 2, Colorado
September 17, 1957

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket DMEA-3307 (Tungsten)
Contract Idm-[illegible]
Reynolds Tungsten Corporation
(Doser mine)
Boulder County, Colorado

Dear Mr. Ridland:

Reference is made to your letter of September 13, 1957, whereby you returned the executed copies of Amendment No. 3, and informed this office that you plan to begin work in the next week or two.

The completion period for the work provided for in the Contract will expire September 28, 1957, therefore, if you anticipate that all of the work cannot be completed by that date, you should forward to this office for consideration by the Government, the original and five copies of a request for extension of the completion period for such specific additional time as will be required.

Yours very truly,

J. W. Townsend
for
E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA, DFC
Townsend
Corres.file, Reg. III
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 19 1957

DATE	INITIALS	CODE
9-19	C	220
9/19	[illegible]	800
9/19	WSM	400

224 New Customhouse
Denver 2, Colorado

September 17, 1957

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Prospect Tunnel)
Boulder County, Colorado

Dear Mr. Ridland:

Reference is made to your telephone call of September 9, 1957, regarding the Government's action on your request for reconsideration of the Government's denial for the drilling of hole designated P-11.

We have been advised by the Washington Office, DMEA, that, based on information presently available, the denial of the drilling of hole P-11 under the provisions of the Contract must stand.

Very truly yours,

Original signed by
J. W. TOWNSEND

for E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

JWT:prl

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres. file
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY DMEA RECEIVED SEP 19 1957		
DATE	INITIALS	CODE
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September 17, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, ~~Region III~~

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Prospect Tunnel), Boulder County, Colorado

Enclosed are the Government's and Audit copies of Amendment No. 3 to Contract No. Idm-E909, which was forwarded by your letter of July 11, 1957 for signature by the Operator.

Copies of the executed amendment have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

In returning the Amendment, the Operator advised that work would be resumed within a week or so, and requested advice as to the Government's action on the third proposed hole. Advice as to the Government's action was relayed to the Operator by letter of September 17.

for E. N. Harshman

Enclosures

OFFICIAL FILE COPY

Date	Surname	Code
9-10	Holt	400
9-10	Martin	400
9/10	GCS	130
9/10	Gorman	110
9-11	C	220
		400

SEP 10 1957

INTERIOR

DMEA

XXXXXXXXXXXXXXXXXXXXXXXX

14X4401(01) REVOLVING FUND

DEFENSE PRODUCTION ACT, INTERIOR,
(TRANSFER TO OFFICE OF SECRETARY)

T E L E T Y P E

MR. WILLIAM H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

REURTT SEPTEMBER 9, 1957, DOCKET DMEA 3807, CONTRACT IDM-E909, REYNOLDS TUNGSTEN CORPORATION. BASED ON INFORMATION NOW AVAILABLE WE DENY HOLE P-11.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

SPHOLT:FOC
9-10-57
cc to: DOCKET
CODE 400
ADMR. R. FILE
OPER. COMM.
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

OFFICIAL FILE COPY DMEA RECEIVED SEP 9 1957		
DATE	INITIALS	CODE
9/9	Q	220
9/9	[illegible]	800
9/9	WSM	400

224 New Customhouse
Denver 2, Colorado

September 6, 1957

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA-3807 (Tungsten)
Contract No. Idm-K909
Reynolds Tungsten Corporation
(Prospect Tunnel)
Boulder County, Colorado

Dear Mr. Ridland:

Under date of July 25, 1957, we forwarded to you the Government's, Audit, Finance Office, and Field Team copies of proposed Amendment No. 3 to the contract, to provide for drilling of two holes under Stage II.

Since considerable time has elapsed and the amendment has not been returned, we would appreciate advice by return mail as to its status and as to whether or not you intend to perform the work provided for by the amendment.

If the amendment is not to be executed, please promptly return all copies, together with your reasons for not executing it.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman,
Acting Executive Officer
DMEA Field Team, Region III

JWT:bh
cc-Chairman, Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres. File
Chron.

DMEA

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 10 1957
INITIALS CODE
C 230
WGM 400

DN 235 BUR MINES 9-9-57 4-24

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DMEA DOCKET 3807, CONTRACT IDM-E909, REYNOLDS TUNGSTEN CORP. OPERATPR ADVISED TODAY THAT HIS DECISION ON AMENDMENT NO 3 AWAITS APPROVAL OR DENIAL OF THIRD HOLE /P-11/ REQUESTED INXXXX HIS LETTER TO ADMINISTRATOR, DATED JULY 5,1957,. AND RECOMMENDED FOR DENIAL IN FIELD MEMORANDUM OF JULY 16,1957, TRANSMITTED BY EXECUTIVE OFFICER S MEMORANDUM OF JULY 18,1957. PLEASE TELETYPE YOUR DECISION ON HOLE P-11.

E N HARSHAXXX HARSHMAN

Denver Colo.

SEP 10 8 42 AM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 29 1957

DATE	INITIALS	CODE
7/29	P.K.	220
7/29	[illegible]	800
7/30	WSM	400

224 New Customhouse
Denver 2, Colorado

July 25, 1957

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1038 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Prospect Tunnel)
Boulder County, Colorado

Dear Mr. Ridland:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of proposed Amendment No. 3 to Contract No. Idm-E909, which has been prepared to provide for two drill holes under Stage II of the Contract.

Resolution of matters covered by your telegram of July 1 and your letter of July 5, 1957, to the Administrator, DMEA, Washington, is pending in that office. However, we have been instructed to present the proposed Amendment to you for signature.

If you desire to perform the work provided for in the Amendment, all copies of the Amendment should be signed by an official of Reynolds Tungsten Corporation authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office; upon receipt of which the "Operator's Copy" will be forwarded to you.

Very truly yours,

Original signed by
W. H. KING

W. H. King
Executive Officer, DMEA
Field Team, Region III

JWT:prl

cc: Chmn. Op. Comm. - 2
Harshman
DMEA/DFC
Townsend
Corres. file
Chron.

OFFICIAL FILE COPY

Date	Surname	Code
7-24	Holt	400
7-24	Martin	400
7/24	Martin	130
7/24	Reno	130
7/24	Kilsgaard	130
"	Johnson	110
"	Stattenberg	109
7/25	P.K.	220
		400

JUL 25 1957

INTERIOR

DMEA

TELETYPE

1[illegible]4401 (01) REVOLVING

FUND, DEFENSE PRODUCTION ACT, INTERIOR,
(TRANSFER TO OFFICE OF SECRETARY)

MR. WILLIAM H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

REURLET JULY 18 DOCKET NO. DMEA 3807 REYNOLDS TUNGSTEN WE HAVE

REVIEWED DIDLAND'S LETTER OF JULY 5. STILL BELIEVE YOU SHOULD

PRESENT AGREEMENT TO OPERATOR.

W. S. Martin

ACTING CHAIRMAN OPERATING COMMITTEE

SPHolt/dlm 7-24-57
cc to: Code 400
Admr. R. File
Oper. Comm.
REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 23 1957

DATE	INITIAL	CODE
7/23	C	220
		130
7/23	WSM	400

July 18, 1957

AIR MAIL

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA-3807 (Tungsten), Contract No. Idm-E909
Reynolds Tungsten Corporation (Dozer mine)
Boulder County, Colorado

In compliance with the instructions in the postscript to your letter of July 11, 1957, enclosed are the original and two copies of a joint memorandum dated July 16, 1957, from R. U. King, Geologist, Geological Survey, and D. E. Redmon, Mining Engineer, Bureau of Mines, pertaining to the Operator's proposed drill hole P-11.

The statements of the Field Examiners have the concurrence of this office. After you have reviewed the matter please teletype advice as to whether or not we should present proposed Amendment No. 3 to the Operator, in view of his telegram of July 1 and letter of July 5, 1957.

W H King
W. H. King

Enc.

IN REPLY REFER TO:
DMEA

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

DEPARTMENT OF THE INTERIOR
JUL 17 1957
REGION III
DENVER, COLORADO

July 16, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 23 1957

DATE	INITIAL

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
D. E. Redmon

Subject: Docket DMEA 3807 (Tungsten), Contract Idm-E 909, Reynolds Tungsten Corp. (Dozer mine), Boulder County, Colorado

In a letter dated July 5, the operator of the above docketed contract strongly objects to an amendment to the contract in which two drill holes were substituted for three holes proposed by the operator, and reemphasizes his case for wishing to drill the third hole of his original proposal (see letter, May 3, 1957).

In paragraph 2 (letter July 5) the operator states that "our objective with regard to P-11 is to cut various known productive vein systems, specifically the Tenderfoot, Forest Home, and Cold Spring." Neither the map accompanying the operator's letter of May 3, nor the map accompanying the application (they are not alike) indicates that hole P-11 would be likely to intersect any vein other than the Cold Spring. The Cold Spring is last known in the vicinity of the mine shaft, and had either died out entirely east of DDH P-7 (drilled under the contract) or was not recognized in the core from that hole. DDH P-7 was drilled to sufficient depth to have crossed all possible westerly projections of the Cold Spring vein, and there remains little to support the operator's reasoning that the interval remaining contains any tungsten ore targets.

The insertion of Plate 16 of U.S.G.S. Prof. Paper 245 is irrevalent because it is a composite map of the Cold Spring mine and indicates nothing in respect to any extensive westerly projections of the Cold Spring or Forest Home veins.

Again the operator's plotting of the Forest Home vein indicates that it projects directly toward the drill station at the end of the DMEA crosscut.

DDH P-7, according to the operator's reports, went out of the highly silicified zone at 170 feet and was in relatively unaltered granite and gneiss for the remainder of its depth. It does not appear that "it was too close to the silicified area of the reef" for the major part of the hole. The bearing of this hole (P-7) was changed, at the operator's request, from S. 30° E. to S. 40° E., for the express purpose of staying in the clear of the reef structure.

Thus there remains an interval of less than 600 feet of the Cold Spring vein to explore and, on the basis of the negative information resulting from hole P-7, there is no reason to expect better mineralization between the two known points.

R. U. King, Geologist

D. E. Redmon, Mining Engineer

Form 7
2-56)

OFFICIAL FILE COPY

Date	Surname	Code
7-8	Holt	400
7-8	Martin	400
7-9	Chambers	800
7/10	[illegible]	130
		130
		130
7/10	Johnson	110
"	Bartenstein	100
7/11	[illegible]	220
		400

JUL 11 1957

Mr. William H. King, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dewar mine
Boulder County, Colorado
Contract No. Idm-E909

Dear Mr. King:

In accordance with the recommendation of the Field Team of May 10, 1957, enclosed are the original and four copies of a proposed Amendment No. 3 to the above-referenced contract, signed by the Administrator for the Government. Two extra copies are enclosed for use of the Field Team.

If the terms and conditions of this proposed amendment are satisfactory to you and the Operator, all five copies should be signed by the Operator and the usual distribution made.

If any part of the proposed amendment does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (S/B)

Enclosures

APPROVED:

O. M. Bishop (S/B)
Member, Bureau of Mines

Thor H. Kiilsgaard (S/B)
Member, Geological Survey

SPMOLT:Foc 7-8-57
cc to: Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. II
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

P.S. Please let us have your comments air mail regarding hole P-11 in the light of Mr. Ridland's letter of July 5, 1957.

8623

REYNOLDS TUNGSTEN, CORP.
1034 First National Bank Building
Denver 2, Colorado

July 5, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 8 1957

DATE	INITIALS	CODE
7/8	C	220
7/8	WSM	400

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Department of the Interior
Interior Building
Washington 25, D. C.

Re: Docket No. DMEA 3807
Contract No. Idr-E909

Dear Mr. Mittendorf:

Mr. King, your executive officer here in Denver, has just advised us that we may proceed with D.D.H. P-9 and 10 in accordance with our request of May 3, but that P-11 has been denied. In a telephone conversation with Mr. Johnson of your office, we learned that the apparent reasons for the denial were:

1. Lack of an objective.
2. Unfavorable horizon.
3. Relationship of the objective with the Hurricane Reef.

Regarding No. 1 above, our objective with regard to P-11 is to cut various, known productive vein systems, specifically the Tenderfoot, Forest Home and Cold Spring. We have evidence, both on the surface and underground in the Forest Home mine, that the Forest Home and Cold Spring vein systems extend westerly and at least to the point where P-11 will intercept their westerly extensions. Plate 16 of U.S.G.S. Prof. Paper, shows both the Forest Home and Cold Spring veins extending westerly and no evidence is given that they are petering out. On the "Surface Detail" Dozer Mine map, (filed with our application, and a copy of which is attached showing the relationship of P-11 with the surface outcrops of the veins) surface pits, trenches and shafts mark the possible westerly extensions of these veins. Hence, we also have surface evidence that they are likely to extend westerly.

Regarding No. 2 above, and the horizon at which P-11 is proposed to be drilled, the elevation of this horizontal hole is approximately 8,230 feet (above sea level). The elevation of the bottom level of the Forest Home mine is 8,282 feet, or 52 feet above the hole. The elevation of the proposed hole is 90 feet above the 4th level (8,140 feet) of the Cold Spring mine. Some of the richest and largest Cold Spring ore bodies were found between the 4th and 2nd levels of the mine, and this has been particularly true with regard to the 517 and 410 Cold Spring ore bodies. Hence, the horizon of the Prospect Tunnel and the proposed hole, P-11, could not be at a more advantageous elevation to explore the westerly extension of the Cold Spring, Forest Home and Tenderfoot vein systems.

Regarding the relationship of P-11 with the Hurricane Reef, No. 3 above, the reef strikes approximately S. 30 E. beyond the end of the Prospect Tunnel.

REYNOLDS TUNGSTEN CORP.
1038 First National Bank Building
Denver 2, Colorado

P-11 is proposed with a bearing of S. 73 E. It will be pointed away from the reef by 43 degrees. It begins at a point 125 feet into the hangwall from the footwall of the structure and is estimated to bottom at a distance 850 feet into the hangwall from the structure. It will not cross the reef and enter the footwall area.

D.D.H. P-7 almost paralleled the reef, and we now believe that it was too close to the silicified area of the reef. A test away from the zone of alteration of the reef is believed to be a much more favorable area to explore these veins.

The original objective of the exploration program, which has resulted in the extension of the Prospect Tunnel for 879 feet at a cost of $26,000., was mainly to test the westerly extension of the productive Gold Spring, Forest Home and the numerous veins just north of the area containing these veins. If P-11 is not approved, then the main purpose of the program is lost.

We urgently request that you reconsider our proposed hole, P-11. With your permission we will delay the drilling of the approved holes, P-9 and 10, until we hear further from you.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

G. C. Ridland

GCR:jd

Encls: Map

cc: Mr. D. J. Luckhurst, President, R.T. Corp.
New York, New York

Mr. W. H. King, D.M.E.A. Executive Officer
Denver, Colorado

Mr. Robert W. King, U.S. Geological Survey
Denver, Colorado

Mr. John F. Shaw, U. S. Bureau of Mines
Denver, Colorado

Telefax WESTERN UNION Telefax

K DVC105 PD=DENVER COLO 3 956AMM=

C O MITTENDORF=

DEPT OF INTERIOR INTERIOR BLDG WASHDC=

REYNOLDS TUNGSTEN CORPORATION, DOCKET 3607, CONTRACT IDM-E000. PLEASE DEFER ACTION ON AMENDMENT. WILL TELEPHONE YOU AT FOUR YOUR TIME TO DISCUSS MATTER. ALSO WRITING=

1957 JUL 3 PM 12 58

G C RIDLAND=

FAX

1270 (1-51)

Jul[illegible], 1957

3

Mr. Selfridge -

Mr. Ridland wanted to include the long hole from the end of the Prospect tunnel in the amendment. I told him our objections. He said he would resubmit a request for this work and try and substantiate with more information his reason for doing this. I also told him that the amendment for the two other holes was in the mill and possibly would be mailed out next week. He said that would be fine and he would go ahead but hoped we could help him with the long hole as he thought that would reach the most favorable remaining area. It was to cut the extensions of the Forest Home and Cold Spring veins. I explained that we thought these veins would not extend west of the present workings, and also possibly the Prospect tunnel was too low for any favorable ore horizon.

Mr. Ridland said he would see what he could dig up and include it in his letter.

FEJohnson

FEJ

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6-24	Holt	400
6-24	Chapman	400
6/24	[illegible]	130
6/24	Yopp	130
6/24	Nelson	130
"	Johnson	110
"	Hartlieb	100
6/25	C	[illegible]
		400

JUN 24 1957

INTERIOR

DMEA

XXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXX

14X1401(01) REVOLVING FUND
DEFENSE PRODUCTION ACT, INTERIOR,
(TRANSFER TO OFFICE OF SECRETARY)

T E L E T Y P E

MR. W. H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT JUNE 21 DOCKET DMEA 3807, CONTRACT IDM-E909, REYNOLDS TUNGSTEN CORPORATION.

AMENDMENT BEING PREPARED AS RECOMMENDED BY FIELD TEAM. OPERATOR CAN PROCEED AT OWN RISK.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

SPHOLT:foc
6-24-57
cc to: Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

8623

Mr. George Selfridge

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 21 1957

DATE	INITIALS	CODE
6/21	JWS	220
	WSM	400

DN 235 BUR MINES 6-21-57 10-38

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA 3807, CONTRACT IDM-E909, REYNOLDS TUNGSTEN CORP., OUR MEMORANDUM OF MAY 14,1957. PLEASE TELETYPE ADVICE AS TO YOUR DECISION REGARDING PROPOSED AMENDMENT. OPERATOR ANXIOUS TO LEARN GOVERNMENT S DECISION.

W H KING

Denver Cab.

JUN 21 1 51 PM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6-12	Holt	400
6-12	Martin	400
		140

June 12, 1957

MEMORANDUM:

INTERIOR DEPT.
JUN 12 1957
SOLICITOR

To: Associate Solicitor, Division of Mineral Resources

From: Division of Iron and Ferro-Alloys, DMEA

Subject: Preparation of Amendment No. 3
Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Attached is a rough draft of a proposed Amendment No. 3 to the above-captioned contract for your use in preparing it in final form. Eight copies of a map to accompany the amendment are also attached.

W. S. Martin

W. S. Martin, Director
Division of Iron and Ferro-Alloys

Attachment

8623

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA 3807
CONTRACT NO. IDM-E909

AMENDMENT NO. 3

It is agreed this 28 day of _____, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Tungsten Corporation, that Exploration Project Contract No. Idm-E909 (Docket No. DMEA 3807), executed December 28, 1955, as amended, is further amended, effective June 1, 1957, as follows:

1. In Exhibit "A", Description of the Work, Stage II, change Crosscutting and drifting - - - -, up to a maximum of 1,500 feet", to a maximum of 1,425.26 feet, and add sentences to read "Underground diamond core drilling in two holes, Nos. 3 and 4, maximum length of each hole 200 feet, total aggregate length not to exceed 400 feet, as indicated on the attached map, titled "DMEA 3807 (Tungsten), Idm-E909, Prospect Tunnel - Doser Mine, Scale 1" = 100', May 1957." Holes are to be approximately horizontal and to have the following approximate courses: Hole No. 3, 30° E., Hole No. 4, due East. In no case is either hole to be drilled more than 50 feet beyond the limit of silicified rock, nor within 100 feet of the boundary of the land covered by the contract."

2. In Exhibit "A", Costs of Proposed Exploration, under Stage II, first item, change "1,500 feet of crosscutting and drifting @ $29.65/ft., $44,475.00" to "1,425.26 feet of crosscutting and drifting @ $29.65/ft. (rounded) $42,259.00", and add a new item, to read "400 feet of core drilling @ $5.54/ft., $2,216.00."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to

contrbute, nor the agreed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

REYNOLDS TUNGSTEN CORPORATION

By _____

UNITED STATES OF AMERICA

By _____
Administrator, Defense Minerals
Exploration Administration

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA 3807
CONTRACT NO. Idm-E909

Justification for Amendment No. 3.

On May 3, 1957, the Operator requested authorization for drilling three flat diamond drill holes from an underground station , aggregate length 1150 feet, to replace part of the authorized drifting and crosscutting.

Examiners for the Field Team, by memorandum of May 10, 1957, recommended to the Field Team that the Operator's request to explore the footwall of the reef by a long (650') drill hole be denied, but that two diamond drill holes, aggregate length 400 feet, be authorized to further explore the hanging wall side of the reef.

The Field Team, concurring with the findings of its examiners, recommended, in memo of May 14, 1957, that Stage II of the contract be amended to provide for 400 feet of diamond drilling at $5.54 per foot and that funds for crosscutting and drifting under Stage II be reduced by amounts sufficient to provide for the drilling.

Amendment No. 3 provides for the 400 feet of diamond drilling recommended, and reduction of the amount authorized for crosscutting to provide sufficient funds for the drilling without increasing the over-all cost of the contract.

See letter of justification

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA 3807

Amendment 3 is correct.

Justification for Amendment No. 3

On May 3, 1957, the Operator requested authorization for drilling three flat diamond drill holes from an underground station, aggregate length 1150 feet, to replace part of the authorized drifting and crosscutting.

Examiners for the Field Team, by memorandum of May 10, 1957, recommended to the Field Team that the Operator's request to explore the footwall of the reef by a long (650') drill hole be denied, but that two diamond drill holes, aggregate length 400 feet, be authorized to further explore the hanging wall side of the reef.

The Field Team, concurring with the findings of its examiners, recommended, in memo of May 14, 1957, that Stage II of the Contract be amended to provide for 400 feet of diamond drilling at $5.54 per foot and that funds for crosscutting and drifting under Stage II be reduced by amounts sufficient to provide for the drilling.

Amendment No. 3 provides for the 400 feet of diamond drilling recommended, and reduction of the amount authorized for crosscutting to provide sufficient funds for the drilling without increasing the over-all cost of the Contract.

No [illegible] given numbers for [illegible] Geology, Engineering, etc.

not used

See re writers copy - with Amendment

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

May 23, 1957
Re: DMEA 3807, Idm-E909
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Tungsten

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of request for an amendment.

The operator has requested an amendment to the contract approving the drilling of 3 holes from the face of the long Prospect adit to determine the width and explore a zone of highly silicified granite that contains a small quantity of irregularly disseminated galena.

Parts of Stage I drill holes, P-7 and P-8, and the inner 40 or 50 feet of the adit are in the silicified zone, which is tentatively believed to parallel the breccia reef. Its northeasterly margin has not been determined and 2 of the holes recommended will be drilled diagonally across the inferred zone, but the 200-foot holes may not go through, that is pierce, the zone. Their lengths are limited by the property line.

I concur with the recommendation of the examiners and the drill team that the two 200-foot holes be drilled as part of Stage II work.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 23 1957

DATE	INITIALS	CODE
5/23	JWD	220
5/23	WSM	400

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 20 1957

DATE	INITIALS	CODE
5/20	C	220
5/21	WSM	400

Date May 20, 1957

DMEA Docket No. 3807
DMEA Contract No. Idm-E909
Commodity Tungsten
Name of exp. Contr. Reynolds Tung. Corp.
Name of property (Dozer Mine)
Location of property Boulder County, Colorado
Estimated cost of project

To: W. S. Martin, Chief, Iron and Ferroalloys Division-DMEA
Through: Acting Chief, Br. of Ferrous Metals and Ferroalloys JCOH
From: R. W. Holliday, Commodity Specialist, Branch of Ferrous Metals & Ferroalloys

Subject: Amendment to contract
(Application for Field Team Report, etc.)

1. Date of subject document: 5/14/57 2. Date received by applicant: 5/20/57
3. Have reports on the property been to reviewers: Yes [ ] No [x]
4. Have reports on the exploration been to reviewers: Yes [ ] No [x]
5. Information available on post production: Yes [ ] No [x]
6. Other pertinent factors been to reviewers: Yes [ ] No [x]
7. Explain what makes you above:

8. Checkers regarding special considerations:
a. Location [ ]
b. Commodity [ ]
c. Evidence of mineralization [ ]
d. Geology [ ]
e. Proposed exploration method [ ]
f. Alternate exploration method [ ]
g. Costs [ ]
h. _____ [ ]

9. Action advised:
a. Obtain information from applicant [ ]
b. Refer to Field Team [ ]
c. Denial [ ]
d. Agree with Fld. Team [x]
e. Disagree with Field Team [ ]
f. Suggest alternate plan [ ]
g. Request another examination [ ]
h. Approval [ ]
i. Consult w/ Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary) I agree with the Field Team recomendation that the contract be amended to permit 400 feet of drilling.

R. W. Holliday

R. W. Holliday

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

May 14, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 17 1957

DATE	INITIALS	CODE
5/17	C	220
		130
5/20	WSM	400

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA-3807 (Tungsten), Contract Idm-E909
Reynolds Tungsten Corporation (Dozer Mine)
Boulder County, Colorado

Enclosed is the following material pertaining to a proposed amendment to the subject contract: -

1. Original and one copy of the Operator's letter of May 3, 1957, with attached map.

2. Original and three copies of a joint memorandum dated May 10, 1957, from D. E. Redmon, Mining Engineer, Bureau of Mines, and R. U. King, Geologist, Geological Survey.

3. Nine copies of a map for use with the proposed amendment.

The Operator requests an amendment to the contract to provide for the drilling of three holes under Stage II by deleting a part of the crosscutting provided for under that stage.

The Field Examiners recommend that the Operator's request to explore the footwall of the reef by drilling a long diamond drill hole be denied, but that two diamond drill holes be authorized to further explore in the hanging wall of the reef, in which this office concurs.

It is recommended that Stage II of the contract be amended to provide for 400 feet of drilling at $5.54 per foot and that crosscutting footage and funds under Stage II be reduced appropriate amounts to provide for the drilling.

The approval by the DMEA Field Team, Region III, dated February 12, 1957, for the transfer of crosscutting footage and funds from Stage II to Stage I, item 1, involves 69 feet, leaving a balance of crosscutting under Stage II of 1,431 feet and applicable funds.

Preparation of an amendment of the nature involved is deemed not within the authority delegated to this office; therefore, the matter is forwarded for your consideration and appropriate action.

E. N. Harshman

E. N. Harshman

Encls.

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 17 1957

DATE	INITIALS	COMMENTS

IN REPLY REFER TO:
DMEA
DEPARTMENT OF THE INTERIOR
MAY 13 1957
REGION III
DENVER, COLORADO

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

May 10, 1957

Memorandum

To: Acting Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman
A. S. Konselman

From: D. E. Redmon
R. U. King

Subject: Docket DMEA 3807 (Tungsten), Contract Idm-E 909, Reynolds Tungsten Corp. (Dozer mine) Boulder County, Colorado
REQUEST FOR AMENDMENT TO STAGE II

The operator in a letter of May 3, 1957, requests that Stage II of the subject contract be amended to permit substitution of three core drill holes, totalling 1,150 feet, for part of the "authorized" (sic) Stage II drifting and crosscutting.

The operator reports that "promising" veins were encountered in the Stage I crosscut on the west (footwall) side of the Hurricane Hill reef at points 75, 224, 232, and 535 feet from the point of beginning, and a group of "promising fractures and veins" in the interval between 630 and 690 feet. Subsequent examination of the crosscut revealed only minor fractures in unaltered gneiss and pegmatite and leads to the conclusion that none of these veins are likely to contain significant tungsten deposits; therefore, DMEA participation in further exploration along the foot wall of the reef is not recommended. On the east or hangingwall side of the reef the crosscut was in highly

silicified granite that contains a small quantity of irregularly disseminated galena. The two Stage I core holes drilled from the face of the crosscut indicate that the lead-bearing silicified zone is at least 450 feet long and that it probably trends roughly parallel to the reef.

Since no other veins nor mineralized structures were encountered in the two Stage I holes, it is concluded that the Cold Springs, Forest Home, Nancy Henderson, Last Chance, and Spencer veins do not persist southwestward into the hangingwall zone of the reef. However, since the highly silicified lead-bearing zone encountered in the crosscut and Stage I holes, does represent intense hydrothermal alteration of the country rock, it is very possible that tungsten mineralization might occur in significant quantities in places along the margins of such a zone. The eastern margin of this zone is as yet not adequately explored, and it is therefore recommended that the operator's request to explore the area be approved but with the following modifications:

It is recommended that two holes be drilled northeasterly and easterly from the drill station at the present face of the crosscut. The maximum length of each hole is to be 200 feet, but in no case is a hole to be drilled more than 50 feet beyond the limit of silicified rock nor within 100 feet of the property boundary. The holes are to be horizontal and have the following bearings: Hole no. 3, N. 30° E., Hole no. 4, due east.

D. E. Redmon

D. E. Redmon

R. U. King

R. U. King

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 17 1957
DATE | INITIALS | COL.

REYNOLDS TUNGSTEN CORPORATION
1938 First National Bank Building
Denver 2, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
MAY 6 - 1957
REGION III
DENVER, COLORADO

May 3, 1957

Mr. E. N. Harshman, Acting Executive Officer
~~Defense Minerals Exploration Administration~~
~~Field Team, Region III~~
224 New Customhouse
Denver 2, Colorado

Dear Mr. Harshman:

Re: Docket No. DMEA 3607
Contract No. Idm-E909

DOZER MINE

Results of Stage I

Stage I of the contract has been completed. The 879-foot crosscut intercepted a number of zones of fracturing, containing some promising veins. These veins are believed to warrant further exploration in the form of drifting and particularly in drilling into them at points above the tunnel.

The first, at 75 feet in from the point of beginning (point at which the tunnel changes its course), is a 2-foot fracture containing quartz and some gray sulphides. Much water drained from this break immediately after it was intersected. Strike N. 15 E.; dip vertical.

The second, at 224 feet, contained 2 to 5 inches of brownish-gray, vuggy vein quartz with a little hematite. Strike N. 5 E.; dip 75 SE.

The third, at 232 feet, contained up to 6 inches of gray, vuggy vein quartz in a slightly-altered zone. Strike N. 15 E.; dip, vertical.

A fourth, at 535 feet, a narrow vuggy quartz vein was encountered striking N. 40 W. and dipping 75° southwest.

A group of fractures and veins were encountered between 630 and 690 feet. They range from 1 to 4 feet and contain from 1/2 to 2 feet of gray, cherty quartz, and, associated with the quartz are stringers and globs of earthy-red hematite, an earthy black mineral (possibly a manganese mineral), black quartz, and hydrothermally altered wall rock. This group of structures are considered the most promising of the veins encountered under the Hurricane Breccia Reef.

On the hanging wall side of the reef, that is, in the final 100 feet of the tunnel, a highly fractured and silicified granitic rock was encountered

REYNOLDS TUNGSTEN CORPORATION
1038 First National Bank Building
Denver 2, Colorado

The fractures are seamed and coated with galena and other metallic minerals. The tunnel did not extend far enough to go through the altered and mineralized zone. The diamond drill holes to the southeast did not get out of this zone for 170 feet, and the hole in the opposite direction, for 270 feet. It is to be noted that these holes paralleled, and are relatively close to the reef. The southeasterly hole, after passing out of the mineralized zone, passed through zones of alteration typical of those containing veins which carry ferberite.

As there are known ferberite veins (noteably the Cold Spring, Forest Home and Nancy Henderson) which, upon projection, would pass close to the position of the face of the crosscut, it is believed that further exploration is warranted of this area at a greater distance from the breccia reef.

The sulphide mineralization is also to be noted. Two bulk samples of the material removed to make the drill station at the end of the tunnel returned the following assays. Also shown, for comparison are the assays of sludge samples from the drill holes penetrating this zone:

Sample No.	Type	Location	Au. oz/t.	Ag. oz/t.	Pb. %
58	bulk	Station	.01	0.32	1.53
59	bulk	Station	.01	0.38	0.60
57	sludge	P-7, 100-110			1.44
67	sludge	P-8, 20-30	.02	0.46	1.08
68	sludge	P-8, 70-80			0.75

To further explore this area the following AX flat drill holes are recommended as an amendment to Stage II of the contract to replace part of the authorized drifting and crosscutting.

D.D.H. No.	Bearing	Depth (ft.)
P-9	N.5E.	250
P-10	N.50E.	250
P-11	S.73E.	650

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

G. C. Ridland

GCR:jd

cc: Mr. D. J. Luckhurst

2 2-0

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

April 3, 1957

Memorandum

To: Catherine Curtin, Statistics and Control Division

From: Hazel Berry, Operating Committee
(ES7)

Subject: Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the commodity division and the Contract Administration and Audit Division. No clearance by Legal appears necessary.

Reynolds Tungsten Corporation, DMEA-3807, Idm-E909, Amendment No. 2, with attachments.

Attachment-1

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE
4/1	C	220
4/2	WSG	400

March 27, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed are the Government's, Division, and Audit copies of Amendment No. 1 to Contract No. Idm-E909, which were forwarded by your letter of March 21, 1957, for signature by the Operator.

Copies of the Amendment have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

E. N. Harshman

E. N. Harshman

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 29 1957

DATE	INITIALS	CODE
4/1	C	220
4/1		800
		400

224 New Customhouse
Denver 2, Colorado

March 26, 1957

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Dexer mine)
Boulder County, Colorado

Dear Mr. Ridland:

Enclosed are the Government's, Division, Audit, Finance Office, and Field Team copies of proposed Amendment No. 1 to Contract No. Idm-E909, which has been prepared in reference to your request of March 6, 1956, to extend the date fixed for completion of the project work from fifteen months to thirty-three months from the date of the Contract, or to September 28, 1958. The Amendment also increases the maximum period for royalty payments and lien to secure them, from ten years to twelve years from the date of the Contract.

If the Amendment is satisfactory, all copies are to be signed by an official of Reynolds Tungsten Corporation authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office; upon receipt of which the "Operator's Copy" will be forwarded to you.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

JWT:prl
cc: Chairman, Op. Comm. (2)
Harshman
Shaw
Townsend
Corres. file
Chron.

Form 7
56)

OFFICIAL FILE COPY

Date	Surname	Code
3/19	Chapman	400
3/19	Martin	400
3-20	Chambers	800
3/20	Selfridge	130
"	Johnson	110
"	Rottenberg	100
3/21	C	220
		225

MAR 21 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-E909

Dear Mr. Harshman:

In accordance with your memorandum of March 8, 1957, and the Operator's letter of March 6, 1957, enclosed are the original and five copies of a proposed Amendment No. 1 to the above referenced contract. Two extra copies are enclosed for the use of the Field Team.

If the conditions and terms of the proposed amendment are satisfactory to you and the Operator, all six copies are to be signed by the Operator and the usual distribution made.

If any part of the proposed amendment does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

APPROVED:

Frank D. Lamb (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

TLChapman:am 3/19/57
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.
FT REG III
Messrs. R. Holliday, USBM
T. Kiilsgaard, USGS

Enclosure

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 22 1957

DATE	INITIALS	CODE
3/23	C	220
		130
		220

March 20, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed are three copies of Amendment No. 2 to Contract No. Idm-E909, which has been executed to change the direction of the hole to be drilled under Item 3 of Stage I.

Also enclosed are four sets of data relative to the Amendment.

No. 1 has been held for the number of the amendment now pending in your office for extension of the date fixed for completion of the project work.

Copies of Amendment No. 2 have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

E. N. Harshman

E. N. Harshman

Enclosures

224 New Customhouse
Denver 2, Colorado

March 14, 1957

3/18 C 220
800
225

Mr. G. C. Ridland
Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 5807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Boxer mine)
Boulder County, Colorado

Dear Mr. Ridland:

Enclosed are the original and five copies of proposed Amendment No. 2 to Contract No. Idm-E909, which we have prepared in reference to your letter of March 6, 1957 to change the direction of the drill hole to be drilled under Item "3", Stage I, of Exhibit "A" attached to the Contract, from "S. 30° E." to "S. 40° E."

If the Amendment is satisfactory, all copies are to be signed by an official of Reynolds Tungsten Corporation authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office. Upon return of all copies of the Amendment properly signed, and after signature by the Acting Executive Officer, DMEA Field Team, Region III, for the Government, an executed copy will be returned to you.

The enclosed Amendment is numbered No. 2 because No. 1 has been held for the number of the Amendment now pending in the Washington Office, DMEA, to provide for an extension of the date fixed for completion of the project work.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

JWT:prl

cc: Chairman, Op. Comm. (2)
Harshman
Shaw
Townsend
Corres. file
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/13	Chapman	400
3/13	Martin	400

March 13, 1957

MEMORANDUM

To: Associate Solicitor, Division of Mineral Resources

From: Iron and Ferro-Alloys Division, DMEA

Subject: Preparation of Amendment No. 1
Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozier Mine
Boulder County, Colorado
Contract No. Idm-E909

Attached is a rough draft of a proposed Amendment No. 1 to the above-captioned contract for your use in preparing in final form.

W. S. Martin

W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

TLChapman:foc
3/13/57
cc to: Docket
Code 400

RECEIVED
MAR 14 1957
ASSOC. SOLICITOR
MINERAL RESOURCES

8623

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA 3807

HCG

AMENDMENT NO. 1

It is agreed this _____ day of _____, 1957, between the United States of America, through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Tungsten Corporation that Exploration Project Contract No. Idm-E909 (Docket No. DMEA 3807), dated December 28, 1955, ~~hereinafter referred to as the "Contract"~~ is amended as follows:

1. In Article ~~No.~~ 3 ~~of the Contract,~~ the period for completion is extended from 15 months to 33 months or from March 31, 1956, to September 28, 1958.

2. In Article 9, The maximum period for royalty payments and liens to accrue thereon ~~for the payment thereof~~ is extended to twelve (12) years from the date of the contract.

This amendment shall not be construed to increase the ~~total~~ estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the ~~agreed~~ total unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By _____
Administrator, Defense Minerals
Exploration Administration

REYNOLDS TUNGSTEN CORPORATION

By _____

Title _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 11 1957

DATE	INITIALS	CODE
3/11	C	220
		225

March 8, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed are the original and three copies of the Operator's letter of March 6, 1957 wherein it is requested that the Contract be amended to extend the date fixed for completion of the work from March 31, 1957 to September 30, 1958.

The Contract is dated December 28, 1955. Therefore, extension of the date fixed for completion of the work as requested is not within the authority delegated to this office.

We concur in the estimated time required to complete the balance of the work provided for in the Contract; therefore, recommend that a suitable amendment be prepared to extend the completion date of the Contract as requested.

E. N. Harshman

E. N. Harshman

Enclosures

REYNOLDS TUNGSTEN CORPORATION
1038 First National Bank Building
Denver 2, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
MAR 8 1957
REGION III
DENVER, COLORADO

March 6, 1957

Mr. E. N. Harshman, Acting Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807
Contract No. Idm-E909

Dear Mr. Harshman:

Thank you for reminding us that the date to complete the exploration work under our contract is March 31, 1957.

It will be impossible for us to complete the program by this date. We have just completed the first part of the program involved in driving a long crosscut and the first diamond drill station is now being excavated. We hope to have the second part, that is the diamond drilling program, begin before the end of March.

We estimate that we will require two months to complete the drilling program. The second stage of the program involves 1500 feet of crosscutting and drifting and on a one-shift operation we estimate this would require sixteen months, making a total of eighteen months. The reason we are estimating on the basis of a one-shift operation is because the workings are now so far from the surface, approximately 2300 feet, that we find it difficult to ventilate the headings at such a depth. We will place the operation on two shifts if at all possible. Eighteen months from March 31, 1957 would be September 30, 1958.

Therefore, we request that the date established for completion of the exploration work be changed from March 31, 1957 to September 30, 1958.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 11 1957

DATE	INITIALS	CODE

GCR:jd

224 New Customhouse
Denver 2, Colorado

March 5, 1957

3/8
3/11

C 220 800 225

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket DMEA-3807 (Tungsten)
Contract No. Idm-E909
Reynolds Tungsten Corporation
(Dozer Mine) Boulder Co., Colo.

Dear Mr. Ridland:

The date established for completion of exploration work under Contract Idm-E909 is March 31, 1957. If, for reasons beyond your control, you will be unable to complete all of the work outlined in the contract by March 31, 1957, you should immediately submit for consideration by the Government the original and five copies of a request for extension of the completion date for such specific additional time as you estimate will be required.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer,
DMEA Field Team, Region III

JDC:bh
cc-Chmn. Op. Comm. (2)
Harshman (2)
Shaw (2)
Townsend
Corres. File E-909
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 18 1957

DATE	INITIALS	CODE
2/18	C	220
		225

February 12, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3807 (Tungsten), Contract No. Idm-E909, Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed are four copies of approval from this office for transfer of sufficient footage and funds from Stage II to Stage I to permit completion of the crosscutting under Stage I to its objective, in conformance with instructions in your teletype of February 1, 1957.

Also enclosed are four sets of data relative to the matter.

Copies of the approval for transfer of footage and funds have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

W. M. Traver

W. M. Traver

Enclosures

OFFICIAL FILE COPY DMEA RECEIVED FEB 15 1957		
DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

February 12, 1957

Mr. G. C. Ridland
Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Dm-2909
Reynolds Tungsten Corporation
(Deser mine)
Boulder County, Colorado

Dear Mr. Ridland:

In reference to your letter of January 25, 1957 concerning transfer of crosscutting footage and applicable funds from Stage II to Stage I of the Contract, this constitutes Government approval as follows:

> Sufficient crosscutting footage and applicable funds will be transferred from Stage II to Stage I to permit the crosscut under Stage I, Item 1, of the Contract, to be driven to its objective of a point 50 feet in the hanging wall of the Hurricane Hill breccia reef, including excavation for a drill station at the end of the completed crosscut.
>
> Instead of varying the direction of the crosscut from S. 72° E. to N. 60° E. as requested by you, the crosscut is to be continued on a course of approximately S. 72° E.

Nothing in this approval for transfer of footage and funds from Stage II to Stage I shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver
Executive Officer

JWT:prl
cc: Chairman, Op. Comm. (4)
Finance Office, Reg. III
Amendment file, Reg. III
Harshman
Shaw
Townsend
Corres. file
Chron.

IN REPLY REFER TO:

DMEA
DEPARTMENT OF THE INTERIOR
FEB 11 1957
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

February 7, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman
J. F. Shaw

From: Robert U. King
Carl Belser

Subject: Docket DMEA 3007 (Tungsten), Contract Idm-E909, Reynolds Tungsten Corporation, Dezer mine, Boulder County, Colorado
Request for amendment

The operator of the subject contract applied in a letter dated January 25, 1957, for an amendment to stage I No. 1 of the contract that would allow 70 feet of additional crosscutting for the purpose of penetrating the Hurricane reef structure prior to excavating a diamond drill station at the face of the crosscut; and that would permit the operator to vary the direction of the crosscut from its present direction to N. 60° E. The operator's estimated cost of the 70 feet of additional crosscut is $2,075.50, which footage if transferred from Stage II exploration would not increase the total cost of Government participation under the existing contract.

Geologic examination of the project February 5, 1957, indicates that the reef was encountered at 770 feet rather than

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DMEA
RECEIVED FEB 15 1957

DATE	INITIALS	CODE

at 700 feet - the position projected from geologic data on the surface 500 feet distant. The crosscut was 797 feet long on February 6, 1957.

On February 5, 1957, the crosscut had penetrated 34 feet of the reef, that consists of a breccia of silicified granite, with clay gouge seams. A prominent 2"-6" dark gray gouge-filled seam with slickensided walls that strikes N. 30° W. and dips 55° E., marks the footwall of the reef. The wall rock is severely fractured for as much as 5 feet into the footwall.

In his monthly report, the operator indicates that the Hurricane Reef has a true thickness of only 15 feet, and that the present face is in the shattered hangingwall of the reef.

The contract specifies a maximum length of 810 feet including the drill station at the face, and presumes that the station would be 50 feet in the hangingwall of the reef.

Inasmuch as the crosscut is 797 feet long as of date, and the face is in highly shattered ground it is recommended that the operator's request for 70 additional feet of crosscutting be approved - but that the crosscut be continued along its present bearing - S. 72° E.

Robert U. King
Geologist

Carl Belser
Mining Engineer

RUKing:mp

REYNOLDS TUNGSTEN CORPORATION
822 First National Bank Building
Denver 2, Colorado

January 25, 1957

DMEA
DEPARTMENT OF THE INTERIOR
JAN 28 1957
REGION III
DENVER, COLORADO
OFFICIAL FILE COPY
DMEA
RECEIVED FEB 15 1957

DATE	INITIALS	CODE

Mr. W. M. Traver, Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807
Contract No. Idm-E908

Dear Mr. Traver:

Request for an Amendment to Contract

With regard to Stage I, No. 1, of the above contract, we request that it be amended to read as follows:

"Drive 5 feet by 7 feet crosscut S. 72° E. from present face of Prospect Tunnel 880 feet, including excavation for a diamond drill station at the end of the completed crosscut. The Operator may, at his discretion, vary the direction of the tunnel from S. 72° E. to N. 60° E., 800 feet, or any point beyond 800 feet, from the point of beginning of the crosscut to be driven."

Then the "Estimated Costs of Proposed Exploration, Stage I," will be increased by 70 x $29.65 or $2,075.50. But if the amount of allowable crosscutting and drifting in Stage II is reduced by 70 feet, then the total estimated cost of the program will remain the same, and the above amendment will not increase the total Government participation of $56,467.13.

Reason for the Requested Amendment

The Hurricane reef was cut at a point 770 feet from point of beginning instead of at 700 feet, as shown on Figure 2 of the contract. The drill station was intended to be at a certain distance from the reef so as to be away from the soft, altered rock adjacent to the reef. In order to accomplish this objective, it will now be necessary to extend the tunnel the additional 70 feet.

If the Operator finds the altered zone to be wider than expected, then, in order to remove the drill station from the zone of alteration, he may deem it necessary to change the direction of the tunnel to N. 60° E. (at right angles to the strike of the reef) in order to complete the tunnel in the distance allotted in unaltered country rock suitable for the drill station and drilling program.

The Operator believes it was not the intent of the contracting parties to establish the station and to drill holes through the highly altered, soft, hanging wall of the Hurricane reef zone. Core recovery in such rock would be expected to be extremely low if not impossible.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

GCR:jd

DMEA Form 7
(12-56)

INTER[illegible]R

DMEA

XXXXXXXXXXXXXXXXXXXXXXXX

14X4401(01) Revolving Fund, Defense Production Act, Interior
(Allocated Working Fund to the Office of the Secy.)

COPY

Date	Acct.	Code
1/31	Chapman	400
1/31	Martin	400
2/1	Selfridge	130
"	Johnson	110
"	Matheney	100
2-4	C	220
2/1	Talbot	800
		225

T E L E T Y P E

MR. W. H. TRAVER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT JANUARY 31, DOCKET DMEA 3807, REYNOLDS TUNGSTEN CORPORATION.

YOU ARE HEREBY AUTHORIZED TO TRANSFER 70 FEET OF DRIFTING AND THE APPLICABLE FUNDS NECESSARY FOR THE WORK FROM STAGE II OF THE REFERENCED PROJECT TO STAGE I, ITEM 1. YOUR WRITTEN NOTIFICATION TO OPERATOR WILL BE SUFFICIENT WITHOUT NECESSITY TO PREPARE AMENDMENT FOR ITS SIGNATURE.

Nelson
Lamb

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

TLCHAPMAN:foc
1/31/57
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.
FT. REG. III
Messrs. R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

RCS.

8623

MEA 3807

TLC

Your written notification to operator will be sufficient without necessity to prepare amendment for its signature

→ suggested addition to our telegram. Now we'll have to see how this suits GCS

Mr.

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 31 1957

DATE	INITIALS	CODE
1/31	C	220
		225

DN 235 BUR MINES 1-31-57 10-52

CHAIRMAN OPEAXX OPERATING COMMITTEE, DMEA

RE DOCKET DMEA 3807 CONTRACT IDM-909 REYNOLDS TUNGSTEN CORPORATION. BECAUSE OF CONDITIONS ENCOUNTERED, 70 FEET OF ADDITIONAL DRIFTING WILL BE NEEDED TO REACH OBJECTIVE OF DRIFT UNDER STAGE I ITEM 1. DO YOU DEEM IT WITHIN OUR AUTHORITY TO EXECUTE AMENDMENT TO TRANSFER 70 FEET OF DRIFTING AND APPLICABLE FUNDS FROM STAGE II TO STAGE I. PLEASE TELETYPE ADVICE.

W M TRAVER

Denver Colo.

JAN 31 1 41 PM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

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

RECEIVED
JUL 25 1956

224 New Customhouse
Denver 2, Colorado

July 23, 1956

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket DMEA-3807 (Tungsten)
Contract Idm-E909
Reynolds Tungsten Corporation
Dozer Mine, Prospect Tunnel
Boulder County, Colorado

Dear Mr. Ridland:

Your Monthly Progress Report and Voucher for June, 1956 does not contain a map showing progress for the month. We are processing this voucher for payment. However, subsequent vouchers will not be processed for payment unless accompanied by the necessary maps.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JDC:jy
cc: Corresp. E909
Sec. Op. Comm. (2)
Shaw (2)
Chron.

Selfridge

July 11, 1956

Memorandum

To: Administrator

From: George C. Selfridge, Special Assistant

Subject: Examination Trip
Docket No. DMEA-3007 (Tungsten)
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado
Contract No. Idm-2909

The Dozer mine was visited on May 21, 1956, with Messrs. Traver, Barnhusen, and Banda, the last a "roaming" boss for the company who supervises all of the company projects in the Boulder district.

The mine was entered through the 1400-foot Dozer adit, which is 8 x 8 in cross section and ventilated by a fan with 16" vent pipe. Little or no timber is required. The miners were carrying coarse pegmatite in the upper left-hand corner of the adit. The rest of the face consisted of gneiss on the footwall side which carried a 1/2" stringer with a little ferberite and galena. The cross vein on which the company had recently reported high grade tungsten samples from diamond drill holes was also examined. One hundred sixty-eight tons of ore was mined, completely depleting the ore showing. Diamond drilling below the level indicated that the ore did not go down. The company had been able to enter a raise on this vein and had found that approximately a 500-foot drift had been driven over to the west under Harrisons Hill.

The project is supplied with air from an Ingersoll-Rand upright compressor which is rated at 680 cubic feet per minute but delivers possibly 600. It cost $5,500 second hand, is electric driven, and operating expenses on a one-shift basis average $30 daily. A Thor No. 180 with jackleg machine is used at the face with 6-foot Gopco steel. The machine has been used to drive 1400 feet of advance without any trouble. Twenty-four holes aggregating approximately 120 feet per round and using a modified V-cut pull from 5 to 5.5 feet of the minimum sized 5 x 7 DMEA drift. Eighteen-cubic-foot cars are used for tramming and usually 18 cars are filled for each round. The two miners are paid $9.50 a foot for everything and they average

from $23 to $25 a day. The company is trying to find men for two shifts.

At another property the company is paying the same footage rate and the men are making up to $30 a day although tramming 4000 feet.

The unit cost under the contract for crosscutting and drifting is $29.65 a foot.

George C. Selfridge

George C. Selfridge

GCSelfridge/esf
(9/12/56)
cc to: Docket
Admr. R. File
Messrs: Johnson
Martin
Selfridge

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

406

RECEIVED
MAY 14 1956

224 New Customhouse
Denver 2, Colorado

May 11, 1956

WSM

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3807 (Tungsten) Contract Idm-E909, Reynolds Tungsten Corporation (Dozer Mine) Boulder County, Colorado

Enclosed are two copies of a narrative report from the subject operator which summarizes preliminary work performed in connection with Contract Idm-E909 during the month of April, 1956.

No actual crosscutting or drilling was completed, therefore no Forms MF-104 and MF-104A were submitted with the operator's narrative.

W. M. Traver

W. M. Traver

Enclosures

DMEA
Date Rec'd.

MAY 10 1956

BUREAU OF MINES
Denver, Colorado

RECEIVED
MAY 14 1956

REYNOLDS TUNGSTEN CORPORATION
822 First National Bank Bldg.
Denver 2, Colorado

May 7, 1956

Mr. W. M. Traver, Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909

Gentlemen:

DOZER MINE

Report for April, 1956

Two men who had promised to begin work for us at the Dozer mine failed to show up. Two other men were found and said they would begin in a few days. Several days after they were to appear, we learned they had gone to work at another operation. As a result, we were unable to get a crew actually at work until April 23, although we did some preliminary surface mechanical work and brought in supplies with the aid of some of our crew from our other operation.

Started work

From the 23rd to the 30th, loose rock in the Prospect Tunnel was barred down, mucked up, and trammed to the surface. 400 feet of air and water lines and 100 feet of track were laid to the breast.

Two slab rounds were taken in preparation for beginning the extensions of the tunnel. As no advance was made in April the MF-104 and 104A reports will not accompany this narrative report.

Yours respectfully,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

G. C. Ridland

GCR:jd

cc: Mr. D. J. Luckhurst, President
Reynolds Tungsten Corp.
New York, New York

Sec. Op. Comm

R. L. Bolaue

REYNOLDS TUNGSTEN CORPORATION
822 First National Bank Building
Denver 2, Colorado

DMEA
Date Rec'd.
MAR 30 1956
BUREAU OF MINES
Denver, Colorado

March 29, 1956

Mr. W. M. Traver, Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909

Dear Mr. Traver:

We want to inform you that work will begin at the Dozer Mine on April 2, 1956, in accordance with the contract.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

GCR:bh

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

RECEIVED
FEB 20 1956

224 New Customhouse
Denver 2, Colorado

February 16, 1956

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3887 (Tungsten) Contract Idm-E909, Reynolds Tungsten Corporation, Dozer Mine, Boulder County, Colorado - Change of Address

Attached is a copy of a letter from the subject operator whereby he submits a change of address as follows:

Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

W. M. TRAVER

W. M. Traver

Enclosures
JDC:jy
cc: Corresp. E909)
Sec. Op. Comm. (3))
Shaw)
Harshman) w/copy operator's letter
Cont. Adm. & Audit Div., DMEA)
Townsend)
Chron.

REYNOLDS TUNGSTEN CORPORATION
822 First National Bank Building
Denver 2, Colorado

DMEA
Date Rec'd.
FEB 16 1956
BUREAU OF MINES
Denver, Colorado

RECEIVED
FEB 20 1956

February 15, 1956

Mr. W. M. Traver, Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909

Dear Mr. Traver:

Please note that we have moved from Room 1036 to Room 822 in the First National Bank Building. We would appreciate your making this change of address and sending all future correspondence as follows:

Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

GCR:bh

W.O.

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

RECEIVED
FEB 16 1956

224 New Customhouse
Denver 2, Colorado

February 13, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3807 (Tungsten), Contract Idm-E909, Reynolds Tungsten Corporation, Boulder County, Colorado

Enclosed are the Government's, Division, and Docket copies of Exploration Project Contract Idm-E909, which was forwarded by your letter of December 28, 1955, for signature by the applicant.

Also enclosed is the following material:

1. One copy of a Certificate of Merger of Hetzer Mines, Incorporated, into Cold Spring Tungsten, Inc., as the surviving corporation. to 400 to be sent to m & f

2. Three copies of the Operator's letter of February 10, 1956, by which he returned the executed copies of the contract to this office and advised of the date the operations would be commenced.

3. Two copies of a letter from this office to the Operator, dated February 13, 1956, forwarding the Operator's copy of the contract and forms and instructions relative to reporting on work performed under the contract.

Form MF-203, Consent to Lien, executed by Cold Spring Tungsten, Inc., has been attached to each copy of the contract, and the appropriate change made under Article 2(c) of the contract in conformance with your teletype of December 28, 1955.

W. M. Traver

W. M. Traver

Enclosures

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

RECEIVED
FEB 16 1956

224 New Customhouse
Denver 2, Colorado

February 13, 1956

Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket DMEA 3807 (Tungsten)
Contract Idm-E909

Gentlemen:

Enclosed herewith is your copy of Exploration Project Contract No. Idm-E909, Docket DMEA 3807.

Also enclosed are six copies of form MF-104, "Operator's Monthly Report and Voucher," and six copies of form MF-104A, "Operator's Unit Cost and Progress Report." At the completion of the first calendar month of operation and monthly thereafter, you are required to submit five copies of the forms to Mr. John F. Shaw, U. S. Bureau of Mines, Room 137, Building 20, Denver Federal Center, Denver 2, Colorado. The sixth form is for your records.

Please note that the monthly accounting report requires a narrative report which should be accompanied by maps or sketches showing the work performed. The narrative report must be signed by the operator. The monthly report will not be processed for payment unless accompanied by a narrative report. Additional copies of forms MF-104 and MF-104A will be forwarded to you each month on receipt of your completed report for the prior month.

For your information and in reply to many questions that have been asked, after forms MF-104 and MF-104A are received an engineer will check progress and approve your accounts, after which they will be sent to the Regional Office, Region III, U. S. Bureau of Mines, 224 New Customhouse, Denver 2, Colorado, for auditing and vouchering. If the report is in order, a check will be issued by the Treasury Department for the Government's portion of the costs. If you have any difficulty in completing these forms and the reports, please call on Mr. Shaw or this office for assistance.

The contract is prepared on form MF-200A and under the provisions of Exhibit "A" which is a part of the contract. the work is to be performed at fixed unit costs which are the basis of reimbursement to you as units of work are completed and reported on forms MF-104 and MF-104A

Your requests to this office for work approval, changes in the contract, or any other communication pertaining to operations under the contract, must be in writing, of which please supply the original and five copies, each copy complete with maps or other pertinent data.

Your attention is directed to the provision that Stage II work is contingent on the results obtained from Stage I, and performance of the work under Stage II is subject to the prior written approval of the Government.

When Stage I has been completed, you should request approval from this office for the work you propose to perform under the next stage. Your request for the work approval must be in sextuplet, each copy complete with a map showing the work performed under Stage I and the location of the work you are proposing for Stage II. The map should show the location of any samples taken and you should include assay returns on the samples and any other pertinent data which will be of value to the Government in evaluating the work performed under Stage I.

You should anticipate a suspension of operation between stages of work to enable the Government geologist and engineer to evaluate the results of the work performed and make their recommendations to this office relative to the additional work you propose.

To eliminate as much delay to operations as possible, if that is of serious consideration, you should expedite forwarding of the results of the work completed and your request for the Government's approval of the additional work you propose.

No oral statement of any person shall be construed to modify or change the terms of the contract. Field representatives of the Government are not authorized to approve any changes in the work program or contract provisions. Such approval can only be given by the Washington office, DMEA, or by the DMEA Field Team, Region III

It is a regulation that reimbursement for the cost of work accomplished prior to the date of the contract will not be allowed. It is a requirement and imperative that you notify this office in writing the date work actually commences under the contract, with a copy of your letter to Mr. Shaw.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JWT:prl
cc: Chairman, Oper. Comm. (2)
Amendment file
Harshman
Shaw
Townsend Corres. file Chron.
Enclosures

REYNOLDS TUNGSTEN CORPORATION
822 First National Bank Building
Denver 2, Colorado

February 10, 1956

RECEIVED
FEB 13 1956

Mr. W. M. Traver, Executive Officer
Defense Minerals Exploration Administration
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3807 (Tungsten)
Contract No. Idm-E909

Dear Mr. Traver:

We wish to thank you for the contract. All five copies have been executed and are enclosed.

Due to weather and other conditions we propose to begin the program on April 1, 1956 and trust this will be satisfactory with you.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

GCR:bh

Encl.

Docket

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

RECEIVED
JAN 12 1956

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

January 9, 1956

Reynolds Tungsten Corporation
1035 First National Bank Building
Denver 2, Colorado

Copy retained 400

WSM

Re: Docket DMEA 3807 (Tungsten)
Reynolds Tungsten Corporation
Boulder County, Colorado
Proposed Exploration Project
Contract Idm-E909

Gentlemen:

Enclosed are the Government's, Division, Docket, Finance Office, and Field Team copies of proposed Exploration Project Contract Idm-E909, which was prepared in Washington and has been signed by the Administrator, DMEA, for the Government, to authorize certain exploration work pursuant to your application for Government assistance under the Defense Minerals Exploration Program.

If the Contract is satisfactory to you, all copies are to be signed by an authorized official of Reynolds Tungsten Corporation, signature attested to by the Secretary of the Corporation, and the corporate seal affixed. Upon return to this office of all copies of the Contract properly executed, the "Operator's Copy" will be forwarded to you, together with forms and instructions relative to reporting on work performed under the Contract.

When the copies of the Contract are returned, please advise the date on or before which work will be commenced, for our insertion under Article 3 of the Contract form.

You are cautioned that the Government will not contribute to the cost of any work performed prior to the date of the Contract. Also, the start of work under Stage I of the Contract will be established by the Government.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Shaw
Townsend
Docket file
Chron.

Copy retained 400

DOCKET
Surname:
Martin
Kilsgaard
Geehan
Selfridge
Johnson
Mitchell

Interior Department
Defense Minerals Exploration
Administration
14X4401(01) Revolving Fund, Defense
Production Act, Interior
(Allocated Working Fund to the
Office of the Secretary)

T E L E T Y P E

DEC 28 1955

W. M. Traver, Executive Officer
DMEA Field Team, Region 3
224 New Custom House
Denver 2, Colorado

Reurtel December 27, Reynolds Tungsten, Docket DMEA-3007. We are mailing contract to you. Before delivering to Operator, please have same reviewed by Regional Solicitor's office at Denver with special attention to Owner's Consent to Lien and evidence of statutory merger. If Cold Spring is surviving corporation, appropriate change should be made in Article 2(c) of contract.

George C. Selfridge
Chairman, Operating Committee (GB)

cc: Field Team, Reg. 3 - confirmation
Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kilsgaard, USGS
R. W. Holliday, USBM

WSMartin/ls 12/28/55

R.C.G.

Save this:

~~Contract as initialed this date.~~

Signed contract as initialed this date. Prior to delivery to purchaser have same reviewed by Regional Solicitor's Office at Denver with special attention to Owner's Consent to Lien & evidence of statutory merger. If Coldspring Co is its surviving corp. appropriate change should be made at bottom of page 1 of contract

Note: Mr. Dwyer made this draft for Mr. Martin's guidance.

fw

Save

DOCKET
Surname:
McMahon
Martin
Nelson
Selfridge
Fergusson
Fisher
Mathewson

400

DEC 28 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado

Dear Mr. Traver:

Enclosed are the original and five copies of a proposed contract for an exploration program at the above-referenced property, signed by the Administrator for the Government, together with Annex (2 pages), Exhibit "A" (2 pages), and three maps. Two extra copies of Exhibit "A", Annex I, and the maps are enclosed for the use of the Field Team.

If the terms and conditions of this proposed contract are satisfactory to you and the operator, all six copies should be signed and the usual distribution made.

If any part of this proposed contract does not have either your approval or that of the operator and cannot be amended within your delegated authority, the original and all copies of the proposed contract are to be returned to this office, together with the proposed changes for consideration.

Under Article 3, the starting date has been left blank and is to be filled in when the contract is signed by the operator.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

cc: Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
R. W. Holliday, USBM
FT, Reg. 3

ADMcMahon/ls 12/19/55

(b) a tract of land 600 feet wide which is bounded on the north by a line at right angles to the center line of the Prospect Tunnel, and on the south by the north boundary of the Slide Claim (Survey 18340), and which is 300 feet in width on each side of the following described center line:

Beginning at the center line of the portal of the Prospect Tunnel, which portal is situated on the Ash Pan Lode Mining Claim (Survey No. 18340) and running thence along the center line of the Prospect Tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect Tunnel to the north boundary of the Slide Claim (Survey 18340), plus a right of way through the Prospect Tunnel to the Dozer claim (Survey 20684), including also rail, air line, water line and ventilation line now installed in said Prospect Tunnel. All rights in the ground described above are limited to within the vertical planes of the side lines or end lines.

The property lies mainly in the N.½ sec. 7, T. 1 S., R. 72 W., 6th Principal Meridian, Boulder County, Colorado; and is about 3½ miles north of Nederland, Colorado, as shown on the attached map, Figure I.

Docket

3807

Extract from "THE MINING RECORD" for Thursday, December 22, 1955
Page 1, Column 1

REYNOLDS U GETS
GOOD TUNGSTEN IN
NEDERLAND MINE

Nederland, Colo. -- On the Dozer tungsten mines near here, which is one of the mines being developed in Colorado by the Reynolds Uranium Corp., operators driving a crosscut to intercept a rich tungsten vein which has been located by core drilling, reported that they have entered the ore and already have followed a body of ferberite which is at least four feet in width for a distance of 15 feet, with the breast still in ore. The total width of the ore is not known. Values as indicated by sampling are estimated to average 2.25% WO_3 or better, but will be determined by the assays from the broken rock being taken out for shipment. Shipments will begin next week to the custom mill operated by Cold Springs Tungsten, Inc.

1

Chairman, Opr. Comm., D. M.E.

RECEIVED
DEC 28 1955

BUR MINES DN 235 12-27-55 4-33 PM

WSM

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE MARTIN S PHONE CALL 12-21, DMEA 3807, REYNOLDS TUNGSTEN, RIDLAND STATES COLD SPRING WILL SIGN OWNER'S CONSENT AND A EXXX CERTIFIED COPY OF EVIDENCE OF MERGER FROM THE EXXX SECRETARY OF STATE OF THE STATE OF COLORADO WILL BE FURNISHED.

J W TOWNSEND, ACTING EXECUTIVE OFFICER, FIELD TEAM, REGION IIII

Denver, Colo.

Silverman

DEC 28 8 21 AM '55
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

Chairman, Operating Comm. D.M.E.A.

9.

RECEIVED
DEC 22 1955

BUR MINES DN 235 12-21-55 1 -56 PM

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE MARTIN S PHONE CALL TODAY, DMEA 3807, REYNOLDS TUNGSTEN, RIDLAND OUT OF CITY, EXPECTED BACK FRIDAY. WILL CONTACT HIM THEN.

E N HARSHMAN, ACTING EXECUTIVE OFFICER, FIELD TEAM

Denver, Colo.

DEC 21 4 00 PM '55
BUREAU OF MINES
MAIL ROOM
WASHINGTON D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

December 19, 1955

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Acting Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Contract Transmittal
Docket No. DMEA-3807
Dozer Mine
Reynolds Tungsten Corporation
Boulder County, Colorado
Application for exploration assistance
Field Team Report
$202,536.00-Tungsten

Subject contract as drawn appears to be in substantial agreement with field team recommendation with which I concurred in my memorandum of November 18, 1955.

R. W. Holliday

Copy to: Ferrous Metals
Mr. Holliday
Mr. Geehan
Files

Copy retained 400

DOCK
Sur
McMahon
Martin
Selfridge
Fehrman
Mattendorf

DEC - 7 1955

3807

TELETYPE

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver, Colorado

Please request from Reynolds Tungsten owner's Consent to Lien for lands covered by application docket DMEA 3807, Dozer mine.

George C. Selfridge
Chairman, Operating Committee

cc: Docket
Code 400
Adm. Read. File
Oper. Committee
T. Kiilsgaard, USGS
R. W. Holliday, USBM
FT, Reg. 3

ADMcMahon/ls
12/7/55

R.C.G.

Docket

400 McMahon Martin

December 6, 1955

MEMORANDUM

To: Associate Solicitor, Div. of Mineral Resources

From: Iron and Ferro-Alloys Division, DMEA

Subject: Preparation of contract
Docket No. DMEA-3807, Tungsten
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado

Transmitted herewith is a draft of a proposed contract for the captioned project for your use in preparing the contract in final form.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

cc: Docket
Code 400

ADMcMahon/ls

MF-200A
(Revised June 1954)

Docket No. DMEA 3807

Commodity Tungsten

Contract No. Idm-E

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT[1]
(Short Form)

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Reynolds Tungsten Corporation, incorporated in the State of Colorado,

whose mailing address is 1036 First National Bank Building, Denver 2, Colorado,
hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Exhibit "A," Annex I, and .....

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Boulder, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] ~~lease and option to~~ purchase [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: those portions of the Silver Light and Expert claims in conflict with Forest Home.

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.), are attached, as follows: Obtainable upon request by applicant as provided for in the Lease and Option Agreement.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 7, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 7(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of tungsten The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before March 31, 1957 (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—A fixed cost for each unit of work to be performed (per foot of drifting, per foot of drilling, per hour of operations, etc.) is hereby agreed upon, and is set forth in Exhibit "A" in connection with the estimated total cost of the project in the sum of $75,289.50 The Government will contribute 75 percent of the fixed unit costs as work is performed, in a total sum not in excess of $56,467.13: *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 6(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work

performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records or accounts.

ARTICLE 7. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 6) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 8. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 8 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 9. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 10. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 11. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

REYNOLDS TUNGSTEN CORPORATION
(Operator)

By .....

.....

THE UNITED STATES OF AMERICA

By .....
Administrator, Defense Minerals
Exploration Administration

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—70618-1

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN COROPORATION
DOCKET NO. DMEA-3807

ANNEX I

The land referred to in Article 2, consisting of an irregular tract of patented claims and portions of patented claims containing approximately 70 acres, is described as follows:

Claim	Survey No.
Dozer	20,684
S.W. 1,100 feet Hurricane No. 1	18,340
Hurricane No. 2	18,340
N.W. 1,050 feet Hurricane No. 3	18,340
Hurricane No. 4	18,340
S.W. 750 feet Spencer	19,949
S.W. 440 feet Bertha	19,204
S.W. 440 feet May Raymond	19,204
S.W. 440 feet Lost Chance	19,204
S.W. 440 feet Only Chance	19,204
S.W. 600 feet Gold Medal	19,559
S.W. 1,200 feet Silver Light (Except portion in conflict with Forest Home)	19,559
Expert (Except portion in conflict with Forest Home)	19,559
Hill Top No. 4	19,559
Hill Top No. 2	19,559

Also a rectangular tract of land 1,500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line:

Beginning at the center line of the portal of the Prospect tunnel, which portal is situated on the Ash Pan Lode Mining Claim, Survey No. 18,340, and running thence along the center line of the Prospect tunnel extended northwesterly for a distance of 300 feet to the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect tunnel for a distance of 1,500 feet, which point is the terminal end of said center line: <u>but not including</u> in the demised premises

any part of the Luck Bill, Survey No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde, or Lone Jack mining claims, all Survey No. 18,340. All rights in the ground included in the lease to be limited to vertical planes through the side lines or end lines.

The property lies mainly in the N.½ sec. 7; T. 1 S., R. 72 W.; 6th Principal Meridian; Boulder County, Colorado; 3½ miles north of Nederland, Colorado, as shown on the attached map, Fig. I.

DRAFT

EXPLORATION PROJECT CONTRACT
REYNOLDS TUNGSTEN CORPORATION
DOCKET NO. DMEA-3807

Exhibit "A"

Description of the Work

The maps attached to and made part of this contract are as follows:

Fig. 1. Location Map, Dozer Mine, Reynolds Tungsten Corporation, Boulder County, Colorado, DMEA 3807.

Fig. 2. Composite Geologic Map of Hurricane Hill and Plan of Prospect Tunnel showing recommended exploration, Dozer Mine, Boulder County, Colorado.

Fig. 3. Map showing the boundary of land referred to in Annex I, claim boundaries, and names and survey numbers of the patented claims.

Proposed Work

The project shall be accomplished in a 2 stage exploration program outlined as follows:

1. Drive 5' X 7' crosscut S. 72° E. from present face of Prospect Tunnel 810 feet, including excavation for a diamond drill station at the end of the completed crosscut.
2. Core drill minimum AX size No. 30° W., 600 feet horizontal.
3. Core drill minimum AX size S. 39° E, 600 feet horizontal (Fig. 2).

The 810-foot crosscut will explore the ground in the footwall of the Hurricane Hill breccia reef zone for a distance of about 700 feet beyond the present face of the Prospect tunnel and is expected to penetrate and continue through the reef zone for approximately 50 feet. The two horizontal drill holes will explore for projections of known veins in the hanging wall of the reef and are expected to reach 50 feet beyond the projected positions of the known veins.

STAGE II

An unspecified footage of crosscutting and drifting to be determined upon completion of Stage I but limited to a maximum of 1500 feet. Stage II exploration shall not be started without Government approval.

Estimated Costs of Proposed Exploration

STAGE I	
810 feet of crosscutting @ $29.65/ft.	$24,016.50
1,200 feet of core drilling @ $5.54/ft.	6,648.00
10 chemical assays @ $5.00 each	50.00
TOTAL STAGE I	$30,714.50
STAGE II	
1,500 feet of crosscutting and drifting @ $29.65/ft.	$44,475.00
20 chemical assays @ $5.00 each	100.00
TOTAL STAGE II	$44,575.00
TOTAL STAGE I AND STAGE II	$75,289.50
Government participation @ 75%	$56,467.13

Docket

RECEIVED

DEC - 1 1955

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

November 28, 1955

224 New Customhouse
Denver 2, Colorado

Copy retained

Memorandum

To: J. F. Shaw

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3807 (Tungsten), Doser Mine, Boulder County, Colorado

Enclosed for your information are the following:

1. Copy of a letter to Mr. G. C. Ridland from Frank E. Johnson dated November 22, 1955

2. Copy of Mr. Ridland's letter to the Administrator dated November 17, 1955

3. Copy of the map furnished by the applicant.

No action required
JF Shaw Comment
LS
12/2

W. M. Traver

By J. W. Townsend
J. W. Townsend

That's OK - It was not addressed to us
WSM

Enclosures

HMC:ab

cc: Sec. Op. Comm. (2)

Copy retained

Docket

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

RECEIVED
DEC - 1 1955

November 28, 1955

224 New Customhouse
Denver 2, Colorado

Copy retained 400

WBay

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3807 (Tungsten), Reynolds Tungsten Corporation, Dozer Mine, Boulder County, Colorado

In accordance with your request of November 18, 1955 enclosed are four copies of a memorandum by Ogden Tweto on the subject docket.

Also enclosed are nine extra copies of Figure 2 which accompanied the Report of Examination transmitted your office October 5, 1955.

W. M. Traver

By J W Townsend
J. W. Townsend

Enclosures

Copy retained 400

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Mineral Deposits Branch
Building 25, Denver Federal Center
Denver, Colorado

DMEA
Rec'd.
NOV 23 1955

November 23, 1955

Memorandum

To: DMEA Field Team, Region III EMH.

From: Ogden Tweto, USGS

Subject: DMEA Docket 3807, Dozer mine, Boulder County, Colo.

In a letter to Mr. Traver dated November 18, 1955, Mr. Selfridge requested comments from me on this docket.

As I have already discussed this application with Messrs. Harshman and King on several occasions, I feel sure that my general philosophy on this matter is incorporated in the report and recommendation of the examining team, but I can add a few points and perhaps emphasize some others.

In the first place, the analysis in Mr. Selfridge's letter of productive vs. unproductive areas is the correct one. Hurricane Hill itself, meaning by that the slopes that rise above the general level of the high-level benchland on each side, has been essentially unproductive, and this is the area that is proposed for exploration. At the base of these slopes, on both sides, are highly productive areas. On the west side, beyond the rather narrow productive belt, is a relatively unproductive area that extends westward to the productive area near the Conger mine.

Although Hurricane Hill itself has been unproductive, it has long been considered a prime exploration target because it lies athwart the trend of the group of productive veins, including the Cold Spring, Western Star, Forest Home, etc., on the east side of the hill, and the Phillip, Hoosier, Clyde, etc., on the west side. The ore deposits seem to be related to the reef, and the pattern is repeated several times across the length of the district. The question is: First, is there a barren zone, for some reason, running along the reef, with the ore deposits all grouped out beyond this barren zone? And second, do veins actually enter or cross the essentially unexplored and so far unproductive area that is bisected by the reef, and which is proposed for exploration?

These questions cannot be answered directly. Considering the first, however, I think it is significant that in the vicinity of the Vasco No. 6 mine and Clark Tunnel, a half mile or so southeast of the area under consideration, major ore shoots were found very close to the reef, and some ore was even mined from within the reef. Similar examples could be cited for other reefs throughout the district. The rich Illinois mine lies at the intersection of a weak reef zone with the Illinois vein; the Rogers No. 1 ore body lay against the Rogers reef; the Ohio mine is on a reef. I conclude that there is no evidence known to me of barren belts following the course of the reefs as a matter of consistent behavior, although it is always possible that such belts might exist locally, either by chance or as a consequence of other factors.

Considering the second question, the continuity of the veins, reasoning by analogy is probably less acceptable, because what fissures do in one area is not necessarily a measure of what other fissures may do in another area. However, I do think it is safe to reason geologically, or even mechanically, from the pattern of fracturing in the district as a whole. The district is literally sliced by fractures or fissures of the NE-ENE family, and this pattern extends far beyond the borders of the tungsten district. Although not all the fractures are veins, or are veins along their full lengths, I think it is safe to assume the continuity of fracturing in this general direction, although not necessarily of individual fractures. Indeed, I believe that a break in the continuity of the NE-ENE fracture system, corresponding to the area of Hurricane Hill, would be far more unexpected, and much harder to explain, than would the continuity of the system.

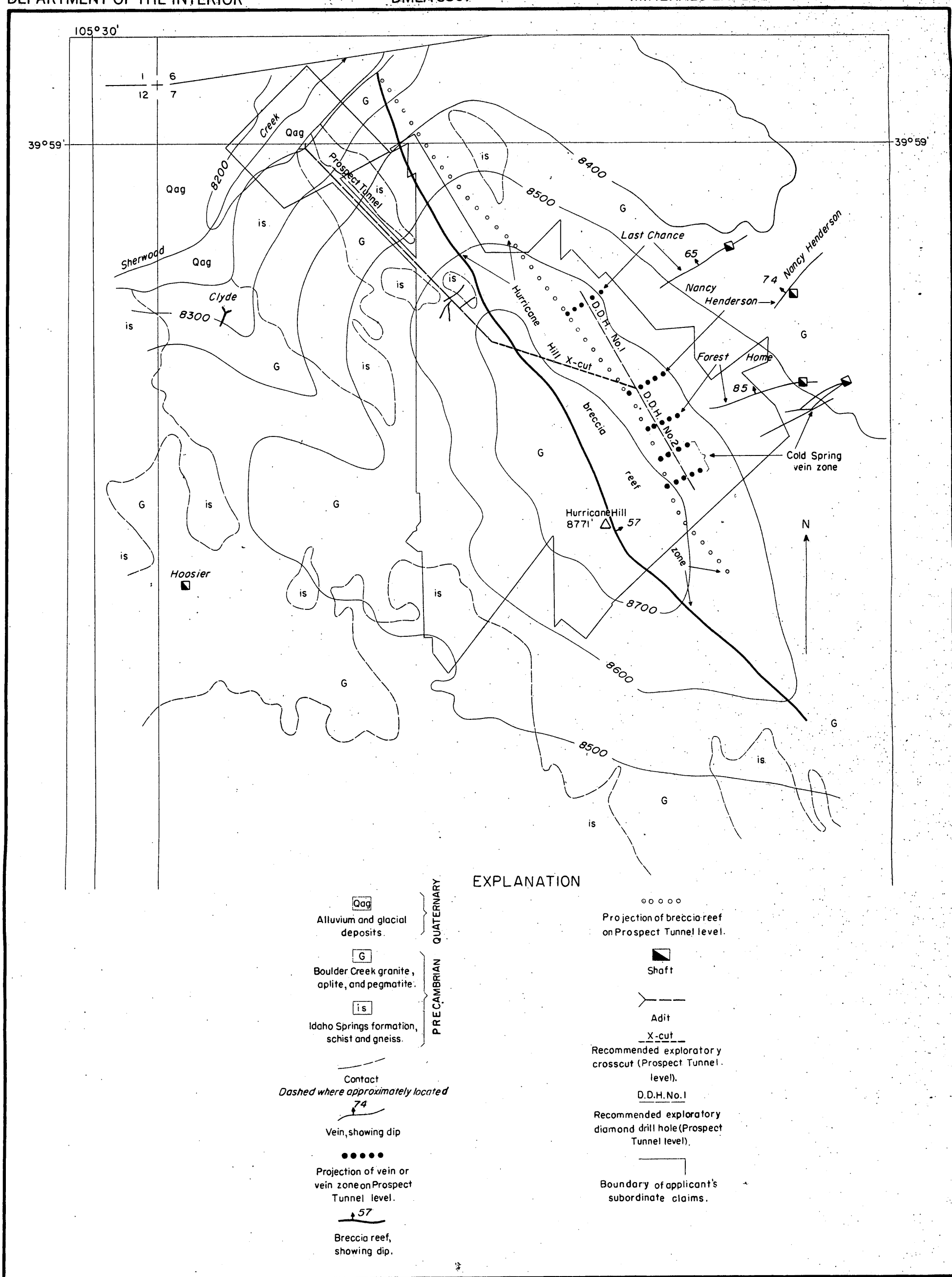
I conclude, then, that fractures or fissures of the tungsten vein system are likely to exist in the area under consideration, even though I might have reservations as to the continuity of any given fracture or vein. If the fractures are present, they may be veins, or they may not; if they are veins, they may contain ore bodies, or they may not. The proposal is to explore these possibilities. Such exploration might be done anywhere, of course, and would be pure wildcatting, but this area has the added attraction that a great deal of tungsten has been produced on either side of it, and along the reef to the southeast of it.

My personal feeling remains now, as it has been for some time, that this is an area worthy of exploration and that it ranks high in attractiveness among the unexplored areas that hold some promise of constituting a really significant discovery, if one is made at all. This was the philosophy also of the Wolf Tongue Mining Co., which must be credited with having been the longest-lived and most successful operator in the district. The Prospect Tunnel

was left in an unfinished state, not abandoned, by this company. The tunnel was started about 1944 and operations were recessed when the whole district closed down in 1945. Shortly after that, Wolf Tongue sold out, and the tunnel remains uncompleted to this day. The objective is no less attractive now than when the tunnel was started, and the chances for reward or repayment, in terms of tungsten price, are better.

Ogden Tweto

OTweto:arh



Modified from Plate 5, U.S. Geological Survey Boulder County Tungsten Report, Professional Paper 245.

R. U. King, Sept. 1955

FIGURE 2.- COMPOSITE GEOLOGIC MAP OF HURRICANE HILL AND PLAN OF PROSPECT TUNNEL SHOWING RECOMMENDED EXPLORATION, DOZER MINE, BOULDER COUNTY, COLORADO

500 0 500 Feet

Datum is mean sea level

Docket

Extract from "The Mining Record" for Thursday, November 24, 1955, page 8, column 2.

12/8/55
3807

Mining Tungsten, Also

During recent months Reynolds Uranium acquired a lease on the Dozer tungsten mines near Nederland, Colo., about 30 miles from the Joe Reynolds mine, and has been exploring it by diamond drilling. It reports encountering high-grade ferberite tungsten ores about 8 feet in thickness, assaying 2.25% WO_3 with a market value of $42.75 per ton, present metal prices. A crosscut has been started to reach this ore from an old lateral in the mine and has an estimated distance of only about 30 feet to go. This known ore zone is at a depth of 450 feet. The operators plan to develop and block the ore and then to make shipments as weather conditions permit.

DOCKET
SURNAME
Martin

NOV 23 1955

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
822 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMRA 3807 - Tungsten
Denver Mine
Boulder County, Colorado

Dear Mr. Ridland:

This will acknowledge receipt of your letter of November 17, 1955, and the five copies of the map mentioned therein that you sent us under separate cover.

We thank you for this information.

Sincerely yours,

Frank E. Johnson

ACTING Administrator

WSMartin:foc
11-22-55
cc to: Docket
Code 400
Adm. Read. File
FT. REG. III
Messrs. Holliday, USBM
Kilsgaard, USGS

DOCKET
Surname:
Martin
McMahon
Nelson
Selfridge
Jefferson

Mr. W. M. Traver, Executive Officer NOV 1 3 1955
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA-3507, Tungsten
Reynolds Tungsten Corporation
Dexter Mine
Boulder County, Colorado

Dear Mr. Traver:

The attached photostat, "Sketch Section through Hurricane Hill from Clyde Shaft to Cold Spring New Shaft," was prepared from maps and information contained in the subject docket and in U. S. Geological Survey Professional Paper 245. We selected this particular section to compare the elevation of the adit at the Dexter mine to the known productive horizons in mines on adjoining claims to the east and west. We hoped to clarify some of the relationships that must be considered in judging the importance of the target of the proposed exploration project. Exactly where to draw the dividing line between prospecting and exploration depends, to some extent, on the degree of probability of finding ore by the work contemplated.

It had been our intention to supplement the above-mentioned section with another running approximately through the shafts of the Gale, Last Chance, Nancy Henderson, and Tenderfoot mines. A later suggestion, however, is that a more natural alignment would be to run the section from the Clyde (or possibly the Hoosier) through the Last Chance and the Western Star shafts.

Our chief problem is to determine whether the proposed Hurricane Hill area is well enough explored so that we can conclude it is, like the areas of schist and gneiss, inherently unfavorable to tungsten deposition; or whether the undifferentiated area of pegmatite shown on Plate 5 as forming the eastern slope of that hill might not be found by further work to consist of a more complex and perhaps more favorable structure.

We note on page 9 of the Field Team's report of September 30, 1955, a quotation from page 33 of the above-cited Professional Paper dealing with "a belt about a mile wide lying between the west flank of Hurricane Hill and the Conger-Illinois group of mines." We also note on the same page of that Professional Paper references to "zones (which) converge south-westward toward the north end of Hurricane Hill"; "a narrow zone which extends west-southwestward along Sherwood Gulch from the north end of Hurricane Hill"; and a zone "eastward from Hurricane Hill through the so-called Dry Lake district." The underlining in the four preceding quotations is ours. The first refers to an unfavorable area; the other three are favorable. It does not seem to us, however, that the Hurricane Hill area falls within any of the zones mentioned.

Because of Mr. Tweto's familiarity with the Boulder District, it would be appreciated if you would obtain from him a short supplementary commentary on the subject.

Sincerely yours,

George C. Selfridge By EST

Chairman, Operating Committee

Enclosure

APPROVED:

/s/ Robert W. Geehan By EST

Member, Bureau of Mines

N. E. Nelson By EST

Member, Geological Survey

Copy to: Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
R. Holliday, USBM
FT, Reg. 3

WSMartin/ls
11/17/55

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
NOV 18 1955

November 18, 1955

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Acting Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Docket No. DMEA 3807
Dozer Mine
Reynolds Tungsten Corporation
Boulder County, Colorado
Application for exploration assistance
Field Team Report
$202,536.00-Tungsten

The application is based on the expectation that a significant discovery may be made on the projections of veins as these veins approach the Hurricane Hill breccia reef.

Production has been made from the veins in question and according to Geological Survey Professional Paper, Plate 12, mineralization has not been continuous along the vein. The values apparantly disappeared and reappeared erratically. Therefore, it seems entirely possible that new ore shoots may be found in the vein extensions.

Since the veins themselves are apparantly not in ore at the present working faces and since there is apparantly no inclination to drift further on the known veins it seems that a diamond drill hole cross cutting the vein extensions would risk missing any mineralized areas.

It is recommended that the application as proposed by the applicants ($202,536.00) be denied.

The alternate proposal recommended by the field team in the amount of $30,714.50, for stage I, is recommended and contingent

on definite encouragement from stage I, stage II in the amount of $44,575.00 is recommended. Although this alternate proposal calls for only one diamond drill hole in each direction, the cross-cut will provide much better accessability for future exploration whether financed privately or with DMEA assistance.

R W Holliday

R. W. Holliday

Docket

REYNOLDS TUNGSTEN CORPORATION
822 First National Bank Building
Denver 2, Colorado

RECEIVED
NOV 18 1955

November 17, 1955

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
United States Department of The Interior
Washington 25, D. C.

WBM

Re: Docket No. DMEA 3807 - Tungsten
Dozer Mine
Boulder County, Colorado

Dear Mr. Mittendorf:

Under separate cover I am mailing to you five copies of a surface geological map to supplement the additional information presented in our application.

map in pocket [illegible]

The map shows various veins extending into the area of the Hurricane Reef Zone. In the lower center part, which is as yet not surveyed, there are various pits which indicate the easterly extension of the Hummer, Hoosier and Phillips veins at least to the immediate vicinity of the Hurricane Reef Zone, similar to the vein occurrences on the east side of the Breccia Reef Zone.

According to Dr. Tweto, in U.S.G.S. P.P. 245, some of the largest ore shoots of the district are in the close proximity of the Hurricane Reef (Pages 31, 129, 131). This is why we wish to explore our veins in the vicinity of the Reef.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

G. C. Ridland

GCR:bh

11/21/55
Conference [illegible]
[illegible]
[illegible] Rec. 3
[illegible]

Copy [illegible]

IN REPLY REFER TO:

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

November 1, 1955

Re: DMEA 3807
Reynolds Tungsten Corp.
Dozer Mine
Boulder County, Colorado
$72,289.50 - Tungsten

WSM

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Supplemental memorandum re a geologic target.

The work proposed by the examiners and conditionally recommended by them would explore (prospect?) for possible veins in the core of Hurricane Hill. The Field Team considered the work prospecting and recommended denial of the application.

According to "Geology and Ore Deposits of Boulder County Tungsten District, Colorado," Prof. Paper 245, Hurricane Hill, a prominent mile long nearly elliptical mass, stands 600 feet above the valleys at its northwest and southeast ends, and 300 feet above the ridges which flank it on the northeast and southwest.

The rocks of that part of the Hill with which the application is concerned, are in the wide irregular contact zone between the Precambrian Idaho Springs schist and the intrusive Boulder Creek granitic batholith. The Hill, as mapped, is composed largely of granite, and pegmatite and aplite, rocks related to the granite of the batholith, and has as a midrib the northeasterly-dipping Hurricane Hill breccia reef zone.

The schist belt to the southwest, is actually a complex of irregular plugs of granite and masses of pegmatitic and aplitic rocks in a matrix of Idaho Springs schist, a schist of sedimentary origin. Pendant in the batholith are many undigested masses of schist.

With an odd exception the tungsten veins are peculiar to the granite and related rocks. By far the larger part of them are in the batholith, thus northeast of Hurricane Hill which marks part of the contact. Very good veins, the Condor, Illinois and

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the Tungsten Hill veins are in relatively small masses of granite and pegmatite in the schist belt and considerable tungsten has been mined in veins with aplite walls.

There would seem therefore to be no apparent reason for the several good tungsten veins in the granite batholith northeast of the Hill not to continue into the contact zone rocks of the core of the hill so far as the general natures of the predominate rocks are concerned, nor a reason for other veins not to 'make' in the rocks of the contact zone. In the same way the few veins in the smaller granitic and related rock masses of the complex southwest of the contact might make northeasterly into the zone.

Quartz veins, barren of tungsten, extend to and into the contact zone, but no tungsten-bearing vein is known to have continued into the zone of pegmatite and aplite in that part of the Hill with which the application is concerned. A blind vein, from which 3,283 units of WO_3 were mined, was cut in the 1400-foot Prospect Tunnel which the applicant proposes to lengthen. The vein, in the southwestern margin of the contact zone and in the footwall of the Hurricane Hill breccia reef has a length of 200 feet.

Quartz veins, in places tungsten-bearing, in the granite northeast of the Hill have been traced into and prospected in the pegmatite and aplite. The work under way with DMEA assistance at the Big Cameron shaft (DMEA 3546) is being done in such an extension of a long vein which dies out in the gneissic aplite (schist) a short distance southwest of the Big Cameron shaft. Probably this is the only case where work done with DMEA assistance has been in the contact zone rocks, but a number of such prospects are mentioned in and shown on the maps of Professional Paper 245. At the Vasco No. 1 mine, a good producer, 600 feet southeast of Big Cameron shaft "considerable ore was found between walls of schist in both sides of the shaft. This occurrence is unusual, but as the fissure is strong and cuts the schistosity at a high angle, it evidently remained open enough to be filled by ore." Prof. Paper 245, pg. 141.

The known highly productive Cold Spring veins, the small veins at the Forest Home mine and the Last Chance vein all pinched out or became barren of tungsten minerals 800 to 1,000 feet short of the center of the Hill and their improbable extensions hardly constitute targets for work in the core.

There remain as targets the possible blind veins of the type encountered in the Prospect Tunnel, and the wide and long pegmatite-aplite zone in which, at surface, there are no known tungsten-bearing veins, and of which nothing is known at the depth it would be investigated by the proposed crosscut and drill holes.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
OCT 13 1955

October 13, 1955

Re: DMEA 3807
Reynolds Tungsten Corp.
Dozer Mine
Boulder Co., Colorado
$202,536 - Tungsten

Memorandum

WSM

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The work program of the applicant was estimated to cost $202,536.00, a large expenditure, lack of a defined exploratory target considered.

The alternate plan of the examiners, estimated to cost $75,289.50 is more realistic. Perhaps the reason for lack of mines on Hurricane Hill are those advanced by the examiners, but such reasons would not have caused work to stop in the mines to the east of the Hill had the veins continued westward into the core of the Hill. Unfavorable surface conditions would tend to deter thorough prospecting for new veins, but I assume that Hurricane Hill had a "good going over."

If the ground in the hanging wall of the Hurricane Hill Reef is worth prospecting, a line of angle diamond drill holes, drilled from surface, would serve to prospect the area between the ends of the east side veins and the reef and perhaps furnish a clue as to why the vein system as now known does not go through. Such prospecting might furnish a target for exploratory work as outlined by the examiners.

I agree with the reasoning and concur with the recommendation of the Field Team that the application be denied.

N. E. Nelson

N. E. Nelson

Copy retained 400

Docket

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

RECEIVED
OCT 6 - 1955

October 5, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, DMEA Docket 3807 (Tungsten), Reynolds Tungsten Corporation, Dozer Mine, Boulder County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

The target area is based merely on vein projections and lacks elements of proof to place it in the exploration category.

The proposed work is of a prospecting nature, and we recommend that the application be denied.

W. M. Traver

W. M. Traver

H. M. Longnos

for E. N. Harshman

Enclosures

ON-SITE EXAM.

Reviewed by
DMEA OPERATING COMMITTEE
10-10-55

RECEIVED

OCT 6 - 1955

Building 20
Denver Federal Center
Denver 2, Colorado
October 3, 1955

REGION III

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman
John F. Shaw

TRANSMITTED

OCT 5 - 1955

Subject: Docket No. DMEA 3807, Dozer Mine,
Reynolds Tungsten Corporation
Boulder County, Colorado

Enclosed are the original and 7 copies of a Joint Geologic and Engineering Report by Robert U. King and Carl Belser covering Docket No. DMEA 3807.

The Reynolds Tungsten Corporation applied for exploration assistance in the amount of $202,536.00 to explore their property on Hurricane Hill by 3,940 feet of core drilling, 1,700 feet of crosscutting, 1,700 feet of drifting, 150 feet of sinking and an unspecified amount of raising.

The property was examined on August 17, 1955. The examining team recommends a modified two-stage exploration project consisting of 2,310 feet of drifting and crosscutting, and 1,200 feet of core drilling at a total estimated cost of $75,209.50.

The proposed exploration project is based on the premise that the Last Chance, Nancy Henderson, Forest Home and Gold Spring veins may continue on their known courses.

It is concluded that the revised project is prospecting rather than exploration and it is recommended that the application be denied.

E. N. Harshman

E. N. Harshman
Member Field Team

John F. Shaw

John F. Shaw
Supervising Mining Engineer

JFS:ph

cc 7
E. N. Harshman
DMEA 3807
Chron.

10-10-55

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
OCT 6 - 1955

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

DMEA 3807

DOZER MINE

Reynolds Tungsten Corporation

Boulder County, Colorado

Tungsten

Joint Engineering and Geologic Report

By

Robert U. King, Geologist
Geological Survey

Carl Belser, Mining Engineer
Bureau of Mines

September 30, 1955

Reviewed by
DMEA CL[illegible] COMMITTEE
10-10-55
(Date)

DMEA 3807

DOZER MINE
REYNOLDS TUNGSTEN CORPORATION
BOULDER COUNTY, COLORADO

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    Mining and milling equipment and other facilities 5
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Estimated cost of modified program 14
Conclusions and recommendations 17

ILLUSTRATIONS

Figure — Follows page

1. Location map, Dozer mine, Reynolds Tungsten Corporation, Boulder County, Colorado, DMEA 3807 2
2. Composite geologic map of Hurricane Hill and plan of Prospect tunnel showing recommended exploration, Dozer mine, Boulder County, Colorado, DMEA 3807 2

DMEA 3807

DOZER MINE
REYNOLDS TUNGSTEN CORPORATION
BOULDER COUNTY, COLORADO

RECEIVED
OCT 6 - 1955

INTRODUCTION AND SUMMARY

Reynolds Tungsten Corporation, 1036 First National Bank Building, Denver, Colorado, on May 9, 1955, made application for aid in an exploration project at the Dozer mine. The application proposed to explore an area in Hurricane Hill with a two-stage program consisting of 3,940 feet of core drilling; 1,700 feet of crosscutting; 1,700 feet of drifting; 150 feet of sinking; and an unspecified amount of raising at a total estimated cost of $202,536.00. The work would be carried on through the Prospect tunnel from which 3,283 units of WO_3 were produced from 3 thick, short lenses in granite pegmatite at a point 1,100 feet from the portal. The property was examined by an examining team on August 17, 1955.

The tungsten deposits of the Boulder tungsten district occur in fissure veins and in breccia zones in granite and related rocks. Veins from which considerable tungsten has been produced may extend under Hurricane Hill. These veins may contain significant quantities of tungsten proximate to the Hurricane Hill breccia reef, a major pre-ore structure that trends northwestward across the property.

The examining team recommends a modified two-stage exploration project consisting of 2,310 feet of drifting and crosscutting, and 1,200 feet of core drilling at a total estimated cost of $75,289.50. The Government's participation is 75 percent, or $56,467.13.

ACKNOWLEDGMENTS

The examining team was accompanied by G. C. Ridland, vice president, Alex Baldo, mine superintendent, and Donald Jardine, geologist, of the Reynolds Tungsten Corporation.

LOCATION, TOPOGRAPHY, AND CLIMATE

The property, consisting of an irregular tract of patented claims and portions of patented claims containing approximately 70 acres, lies, mostly, in the N 1/2 sec. 7, T. 1 S., R. 72 W., 6th Principal Meridian, Boulder County, Colorado (figs. 1 and 2).

Altitudes on the property range from a low of about 8,100 feet to a high of 8,771 feet. The altitude of the portal of the Prospect tunnel is about 8,200 feet and the top of Hurricane Hill is approximately where the north line of the Expert claim intersects the center line of Hurricane No. 3 claim. The summers are delightful and the winters, although somewhat severe, do not hinder year round operation.

Fir and spruce timber, suitable for most mining use, abound on the property. Water, for mining purposes, can be obtained from Sherwood Gulch near the portal of the Prospect tunnel. Machinery, at the portal of the Prospect tunnel is connected with the service lines of the Public Service Company of Colorado.

A good dirt road 300 yards in length connects the portal of the Prospect tunnel with State Highway 160 from whence Nederland is 3 miles to the south. Boulder, on State Highway 160, is 17 miles east of Nederland.

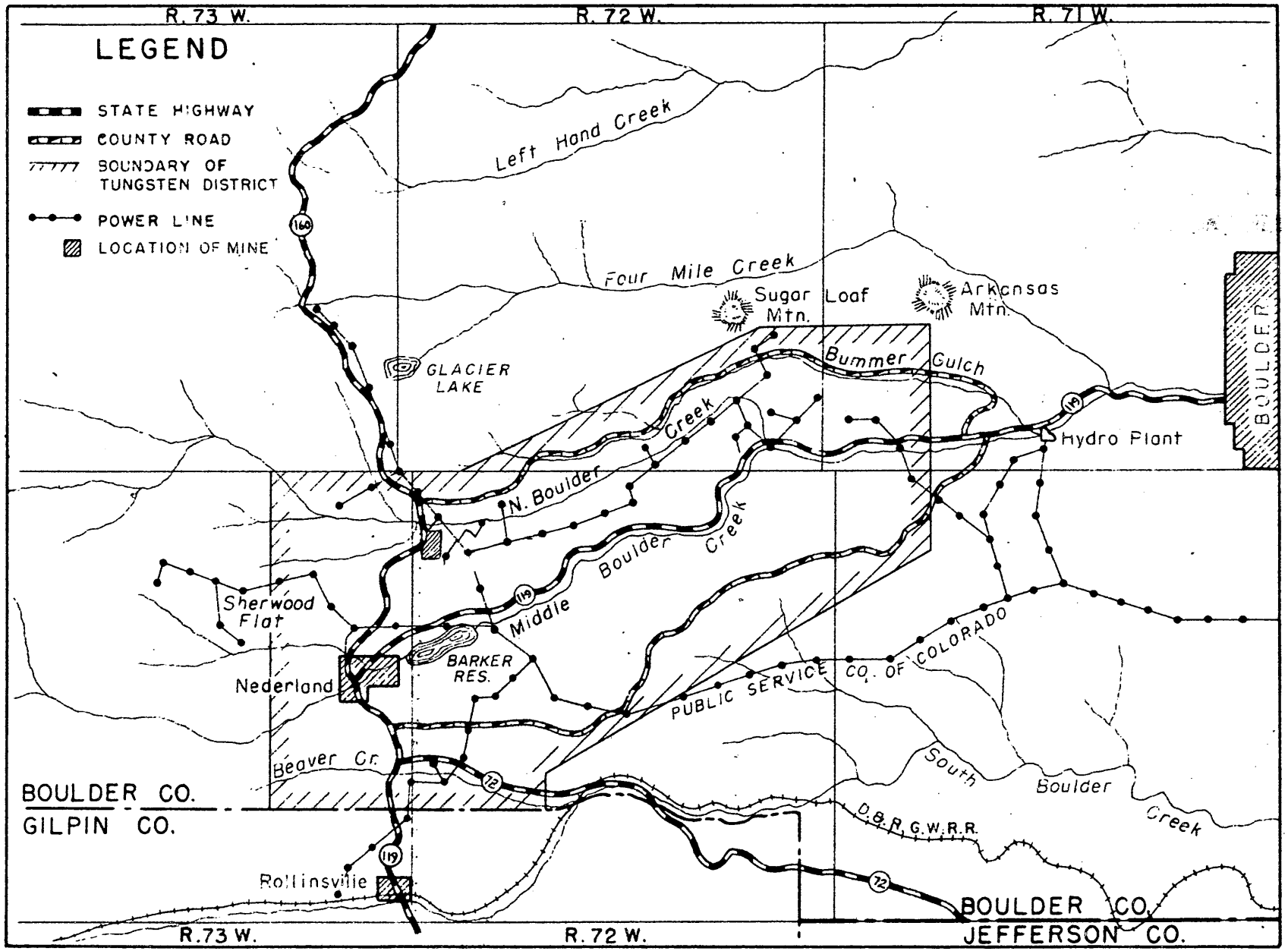
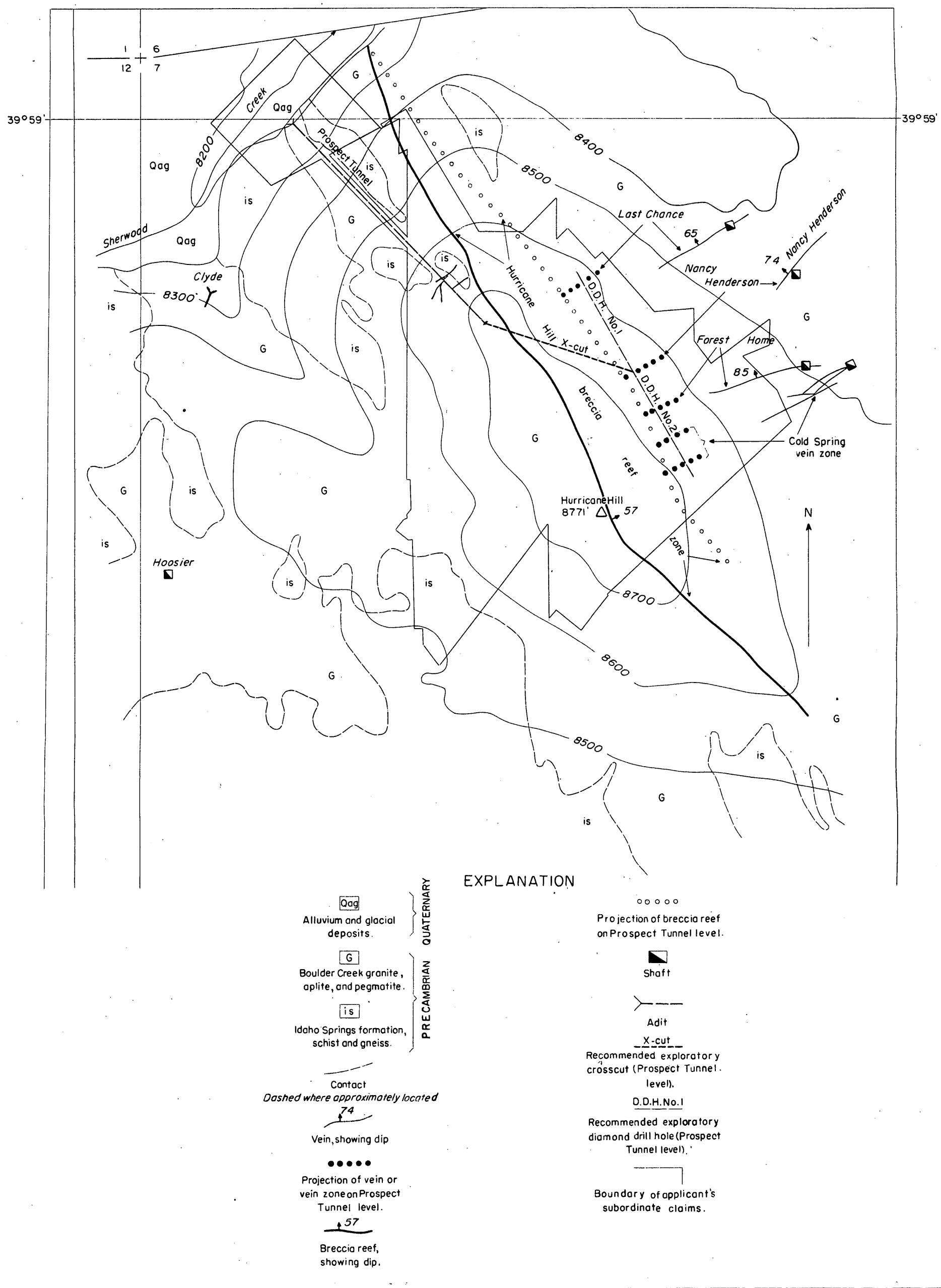


FIGURE I. - LOCATION MAP, DOZER MINE, REYNOLDS TUNGSTEN CORPORATION, BOULDER COUNTY, COLO. DMEA 3807



Modified from Plate 5, U.S. Geological Survey Boulder County Tungsten Report, Professional Paper 245.

R. U. King, Sept. 1955

FIGURE 2.- COMPOSITE GEOLOGIC MAP OF HURRICANE HILL AND PLAN OF PROSPECT TUNNEL SHOWING RECOMMENDED EXPLORATION, DOZER MINE, BOULDER COUNTY, COLORADO

500 0 500 Feet

Datum is mean sea level

Labor can be obtained in Nederland or Boulder. Mine supplies can be purchased in Boulder. The nearest rail head is the Denver and Rio Grande Western Railroad at Rollinsville, 7 miles south of the mine on State Highway 160. A custom mill is being operated in Nederland by Hetzer Mines, Inc.

HISTORY AND PRODUCTION

In the early seventies a small hole was dug on a lead showing on the Hurricane No. 3. During the period 1899-1916, the area to the west and to the east of the applicant's lease was extensively prospected and a number of tungsten mines were operated.

The ground, now held by the applicant, was virtually unprospected due to the heavy wash and dense tree growth. In the late 1930's, the Wolf Tongue Mining Company started the Prospect tunnel and drove it a distance of 1,420 feet. Later a pegmatite dike, 1,100 feet from the portal of the tunnel was explored and 3,283 units of WO_3 were produced from tungsten veins in the pegmatite above the tunnel level. During the past few years mining operations have been suspended. On April 7, 1955, approximately 70 acres of this land, including the Prospect tunnel, was leased to the Reynolds Tungsten Corporation, who have cleaned up the tunnel and are now diamond drilling below the tunnel level to explore the downward extension of tungsten veins in the pegmatite.

The names of the more important tungsten mines to the east and west and the approximate elevation of the collars of their shafts or

adits above the Prospect tunnel are given below:

West		East	
Gale shaft	50 feet	Last Chance tunnel	225 feet
Clyde tunnel	50 feet	Spencer tunnel	150 feet
Hoosier shaft	200 feet	Nancy Henderson shaft	200 feet
Phillip shaft	200 feet	Forest Home shaft	200 feet
		Cold Spring shaft	120 feet

OWNERSHIP AND EXTENT

A 10 year lease was given on April 7, 1955, to the Reynolds Tungsten Corporation by Hetzer Mines, Inc., on approximately 70 acres of land described as follows:

Claim	Survey No.
Dozer	20,684
S.W. 1,100 feet Hurricane No. 1	18,340
Hurricane No. 2	18,340
N.W. 1,050 feet Hurricane No. 3	18,340
Hurricane No. 4	18,340
S.W. 750 feet Spencer	19,949
S.W. 440 feet Bertha	19,204
S.W. 440 feet May Raymond	19,204
S.W. 440 feet Last Chance	19,204
S.W. 440 feet Only Chance	19,204
S.W. 600 feet Gold Medal	19,559
S.W. 1,200 feet Silver Light (Except portion in conflict with Forest Home)	19,559
Expert (Except portion in conflict with Forest Home)	19,559
Hill Top No. 4	19,559
Hill Top No. 2	19,559

Also, a rectangular tract of land 1,500 feet long and 600 feet wide, being 300 feet in width on each side of the following described center line: beginning at the center line of the portal of the Prospect tunnel, which portal is situated on the Ash Pan Lode Mining claim, Survey No. 18,340, and running thence along the center line of the Prospect tunnel extended northwesterly for a distance of 300 feet to

the true point of beginning of said center line, thence running southeasterly along the course of the center line of said Prospect tunnel for a distance of 1,500 feet, which point is the terminal end of said center line: but not including in the demised premises any part of the Luck Bill, Survey No. 19,952, or any part of the Slide, Gale, Red Spruce, Red Pine, Occidental, Gulch, Clyde, or Lone Jack mining claims all Survey No. 18,340. All rights in the ground included in the lease to be limited to vertical side lines.

The lease, which has the usual mining provisions, seems to be in order, and all the included claims are assessed to Hetzer Mines, Inc.

PRESENT STATUS

Exploration and Development

Outside of location holes, assessment work, and prospect holes, the only exploration work on the property consists of the Prospect tunnel, which is 1,420 feet long and contains about 300 feet of raises and about 1,000 feet of drifting.

Mining and Milling Equipment and other Facilities

Mining and metallurgical equipment on the property at the time of the examination consisted of the following:

1	Gardner-Denver 686 c.f.m. W.D.J. Compressor powered by a 125 hp., 440-volt electric motor
1	Emico No. 12 mucker
8	18 cubic foot, roller-bearing mine cars
1	Atlas type J 1-1/2 ton, exide cell battery locomotive
1	3 hp. Electric Products battery charger
1,500	feet 15-inch vent pipe
1,500	feet 3-inch air pipe
1,500	feet 1-inch water pipe
1,500	feet 25 pound track
1	40" by 8' air receiver
1	36" by 7' air receiver
1	20" by 6' air receiver

Eimco

1 5 hp. Worthington motor-driven centrifugal pump
1 Gardner-Denver air-driven pump
Numerous small tools
1 20' by 30' frame compressor house with cement floor
1 9' by 8' frame shed
1 18' by 12' change house with cement floor
1 Frame ore sorting house, containing:
  1 40" x 8' trommel with 1" holes, electrically driven
  1 Electrically driven picking belt
  1 10-ton bin
  2 20-ton bins

A fair dirt road connects the portal of the Prospect tunnel with State Highway 160.

GEOLOGY AND ORE DEPOSITS

The geology and ore deposits of the Boulder County Tungsten district have been thoroughly studied by Lovering and Tweto and the following summary is taken largely from their report (USGS Professional Paper 245, 1953).

The Dozer mine exploits a tungsten vein under Hurricane Hill near the southwestern part of the Boulder County Tungsten district. Hurricane Hill is underlain chiefly by pre-Cambrian Boulder Creek granite and to a lesser extent by older schists and gneisses of the Idaho Springs formation (fig. 2). The Boulder Creek granite in this area is largely composed of gneissic quartz monzonite, aplite, pegmatite, and alaskite, which probably represent the border facies of a batholithic intrusive. The Idaho Springs formation consists of quartz-biotite and quartz-biotite-sillimanite schist, injection gneiss, and quartzite. Most of the minable tungsten deposits have been found in the granite and related rocks.

The major structures in the Hurricane Hill area are the Boulder Creek batholith and the Hurricane Hill breccia reef.

The Boulder Creek batholith occupies an area of about 100 square miles between Nederland and Boulder. Hurricane Hill is near the western border of the batholith. Primary flow structures in the granite of the Boulder Creek batholith indicate that the granite was intruded from the northeast. In the Hurricane Hill area granite overlies schist and the contact dips east probably at a low angle. Foliation in the schist and gneiss of the Idaho Springs formation generally is parallel to the contact with the Boulder Creek granite.

The Hurricane Hill breccia reef trends northwest along the crest of Hurricane Hill, and dips steeply northeast. It is one of several persistent northwestward-trending fracture zones that are mineralized in places by quartz and hematite. Lovering and Tweto (USGS Prof. Paper 245, p. 31) state that the reef "ranges from a wide gougy unmineralized zone to a strongly silicified shear zone with or without hematite." The reefs are of Laramide age and are earlier than the fissures that contain the tungsten ore deposits.

The vein deposits of the Boulder County Tungsten district occupy fissures and fractures in the granitic rocks. Only in rare instances are ore bodies found in the schists and gneisses of the Idaho Springs formation. The Tungsten veins strike from northeast to east-northeast and dip steeply northwest or southeast, and individual veins vary in strike as much as 30 degrees with corresponding variation in dip. The ores consist chiefly of ferberite and fine-grained quartz, but silver-bearing base metal sulfides and gold tellurides are occasionally present. Commonly ferberite forms the matrix of a breccia of the

granitic wall rocks 6 inches to 2 feet wide; ferberite also occurs in widely-spaced irregular veinlets in unaltered granite and granite pegmatite in zones up to 20 feet wide. The ores may contain from 1 to 20 percent tungsten trioxide, and ore shoots commonly contain from 1,000 to more than 50,000 units of WO_3. The ore shoots are irregularly spaced along veins, and the intervening parts may contain only quartz or even be barren. Most of the ore deposits have bottomed within a few hundred feet of the surface, but some have been mined to depths of over 600 feet.

The Cold Spring mine is the major active mine within the district. It is about 2,000 feet east-southeast of the present face of the Prospect tunnel. Other nearby mines include the Forest Home, Nancy Henderson, and Last Chance that lie to the east of the Prospect tunnel. The tungsten veins exploited by these mines are all in the hangingwall of the Hurricane Hill breccia reef zone and some were mined to within 700 feet of the reef.

On the footwall (west) side of the reef, the Clyde and Hoosier mines exploited tungsten vein deposits to within 1,000 feet of the reef.

The Dozer mine has exploited a small tungsten vein zone in pegmatite above the Prospect tunnel level in the footwall of the reef. It is possible that this vein zone is a continuation of the Clyde vein zone. Production from this deposit is reported to be 3,283 units of WO_3 that has come from about 1,000 feet of drifting, 300 feet raising, and what appear to be several small open stopes.

Recent exploration by the applicant below the tunnel level indicates that the vein zone does not continue downward.

According to Lovering and Twento (Prof. Paper 245, p. 33), "comparatively little tungsten has been found in a belt about a mile wide lying between the west flank of Hurricane Hill and the Conger Illinois group of mines and extending from Sherwood gulch southward 2-1/2 miles through Nederland..." Among several possible explanations for this meager production from the Hurricane Hill area, the following are probably important: (1) The northeast slopes of Hurricane Hill are heavily forested and the soil-debris cover is thicker than in much of the surrounding area; (2) the soil cover on the southwest flank of Hurricane Hill is also deep, and this would make discovery difficult although considerable prospecting by pitting and trenching has been done on this side of Hurricane Hill; (3) the known tungsten veins on either side of the Hurricane Hill breccia reef are barren under Hurricane Hill for physical-chemical reasons; (4) the known veins do not continue under Hurricane Hill; (5) veins that contain significant quantities of tungsten do exist under Hurricane Hill but do not reach the surface or they were barren at their outcrops.

ORE RESERVES

Ferberite is visible in the open stopes of the Dozer mine and it is probable that there are small quantities that could be mined profitably under present conditions. However, no reserves are calculated for this mine.

According to U. S. Bureau of Mines statistics (Belser, Bureau Mines, Inf. Circ. 7721, 1955) the Boulder Tungsten district still has moderate reserves of tungsten amounting to 492,435 tons of ore containing 0.426 percent WO_3, or 210,017 units.

PROJECT PROPOSALS

The applicant has proposed to explore for tungsten by core drilling, crosscutting, and drifting (1) in the vein or veins below existing workings in the Prospect tunnel; and (2) in the foot- and hangingwalls of the Hurricane breccia reef along projections of the Last Chance, Nancy Henderson, Forest Home, and Cold Springs veins, and other veins beyond the face of the Prospect tunnel. The exploration program consisted of two stages: Stage A consisting of (1) three horizontal drill holes 1,000 to 1,150 feet long from the present face of the Prospect tunnel and from a proposed drift, (2) a drift 550 feet northeasterly from present tunnel face, and (3) three 45 degree drill holes fanned out in a plane from the tunnel level; Stage B (depending on results of Stage A) consisting of (1) 150-foot winze and 250-foot drift below tunnel level, (2) 1,150 feet of crosscutting and 1,450 feet of drifting, and (3) unspecified footage of raising on any veins encountered.

The examining team considers the applicant's proposal excessive for the objectives named and recommends the following two-stage exploration program that will adequately explore the ground in question: Stage I --- (1) Crosscut from present face of Prospect tunnel S. 72° E. for 800 feet; (2) Core-drill N. 30° W. 600 feet horizontal, and

(3) Core-drill S. 30° E., 600 feet, horizontal (fig. 2). The 800-foot crosscut will prospect the ground in the footwall of the Hurricane Hill reef for a distance of about 700 feet beyond the present face of the Prospect tunnel; and is expected to intersect the reef and continue through the reef for 50 feet. The two horizontal drill holes will explore for the projections of the known veins in the hangingwall of the reef and are expected to reach 50 feet beyond the projected positions of the known veins. A diamond drill station will be excavated at the southeast end of the 800-foot crosscut.

The Second Stage exploration is to consist of an unspecified footage of crosscutting and drifting to intersect and explore veins penetrated during the Stage I exploration, but with a maximum footage not to exceed 1,500 feet and with the provision that Stage II exploration shall not be started without Government approval.

ESTIMATED COSTS OF PROPOSED EXPLORATION

The applicant proposed a two-stage program as follows:

STAGE I

Independent contracts		
3,940 feet of core drilling at $5.00/foot	$19,700.00	
Total independent contracts		$19,700.00
Labor and supervision		
Labor		
10 miners, muckers, and trammers		
4,400 hours at $1.75/hour	7,700.00	
2 surface men		
880 hours at $1.65/hour	1,452.00	
Supervision		
1 shift boss-1,000 hours at $2.00/hour	2,000.00	
1 superintendent-4 months at $500/month	2,000.00	
1 consulting engineer-4 months at $200/month	800.00	
Total labor and supervision		$13,952.00

Operating materials and supplies

Hand tools	$ 100.00	
Pipe, 2" water 1,000 ft. at $0.65/ft.	650.00	
Pipe, 4" air 1,000 ft. at $1.00/ft.	1,000.00	
Pipe, 18" vent 550 ft. at $2.25/ft.	1,237.00	
Fittings, etc.	100.00	
Power, 7,200 KWH at $0.033	2,376.00	
Timber $1.00/ft. off vein	550.00	
Track 20 lb. 550 ft. at $2.00/ft.	1,100.00	
Powder 15 lb. 2.125 tons at $452/ton	968.00	
Fuse and caps	200.00	
Steel and bits $0.90/ft.	495.00	
Total operating materials and supplies		$8,776.00

Operating equipment (furnished by applicant)

		Value	Per month use allowance	
1	compressor	$4,000.00	$ 100.00	67
2	drifters	1,500.00	50.00	25
1	battery locomotive	5,000.00	120.00	83
1	mucking machine	3,100.00	75.00	52
6	mine cars	1,200.00	50.00	20
	Per month		$ 395.00	247
Total operating equipment for 4 months				$1,580.00 988.

Rehabilitation and repairs

None

New buildings, improvements, etc.

None

Miscellaneous

Maintenance of equipment $100/mo.	$ 400.00	
Accounting $150/mo.	600.00	
Compensation and liability insurance and payroll taxes	757.00	
Total miscellaneous		$1,757.00

Contingencies

Estimated	$1,000.00
Total estimated cost of Stage I	$46,765.00

STAGE II

Independent contracts

None

Labor and supervision

Labor		
Miners, muckers, trammers		
25,303 hrs. at $1.75/hr.	$44,280.00	
Surface labor		
7,280 hrs. at $1.65/hr.	11,979.00	
Supervision		
Shift boss 3,120 hrs. at $2.00/hr.	6,240.00	
Superintendent 18 mo. at $500/mo.	9,000.00	
Consultant 18 mo. at $200/mo.	3,600.00	
Total labor and supervision		$75,099.00

Operating materials and supplies

Small tools	$ 100.00	
2" pipe 3,400 ft. at $0.65/ft.	2,201.00	
1" pipe 2,100 ft. at $0.50/ft.	1,050.00	
4" pipe 1,450 ft. at $1.00/ft.	1,450.00	
15" vent pipe 1,300 ft. at $1.75/ft.	2,274.00	
12" vent pipe 1,700 ft. at $1.00/ft.	1,700.00	
Fittings and miscellaneous	250.00	
Electric power 530,648.88 KWH	17,512.00	
Track	4,799.00	
Timber	1,110.00	
Powder	9,551.00	
Fuse and caps	1,067.00	
Drill steel	1,428.00	
Hoisting rope	250.00	
Ladders	245.00	
Total operating materials and supplies		$44,997.00

Operating equipment

	Value	Per month use allowance	
2 compressors (750 and 500 c.f.m.)	$ 7,500.00	$ 175.00	125
2 locomotives (battery)	10,000.00	240.00	167
2 mucking machines	6,200.00	150.00	104
12 mine cars	2,400.00	100.00	40
4 drifters	3,000.00	100.00	50
1 pump (10 hp.)	2,500.00	100.00	42
			528

	Value	Per month use allowance	
2 sinkers	$ 1,400.00	$ 50.00	
1 stoper	500.00	20.00	
1 hoist (20 hp.)	1,000.00	25.00	
1 skip or bucket	50.00	5.00	
Operating equipment per month		$ 980.00	
Total operating equipment for 18 months			$17,640.00

Rehabilitation and repairs

None

New buildings, improvements, etc.

None

Miscellaneous

Maintenance of operating equipment	$1,905.00	
Accounting 18 months at $250/mo.	4,500.00	
Compensation and liability insurance and payroll taxes	4,230.00	
Total miscellaneous		$10,617.00

Contingencies

Five percent of $148,353.00	7,418.00
Total estimated cost of Stage II	$155,771.00
Total estimated cost of project	$202,536.00

The examining team believes that the exploration program should be limited at this time to a modified program described above. The cost of the project is estimated as follows:

ESTIMATED COST OF MODIFIED PROGRAM

Stage I

Crosscutting

Independent contracts

Breaking and loading 810 feet at $10/ft.	$8,100.00	
Total independent contracts		$8,100.00

Labor and supervision

Labor		
2 trammers 1,300 hrs. at $1.75/hr.	$2,275.00	
2 surface men 1,300 hrs. at $1.65/hr.	2,145.00	
Supervision		
1 superintendent-engineer		
1/2 time 5 months at $250/mo.	1,250.00	
Total labor and supervision		$5,670.00

Operating materials and supplies

Small tools, shovels, picks	$ 100.00	
Pipe 2" air 800 feet at $0.65/ft.	520.00	
Pipe 1" water 800 feet at $0.50/ft.	400.00	
Pipe 12" vent 800 feet at $1.00/ft.	1,200.00	3120
Power 6,500 KWH at $0.033	2,145.00	
Timber $0.75/ft. 800 feet	600.00	
Track 20 lb./yd. at $2.00/ft. 800 ft.	1,600.00	
Powder 12 lb./ft. 4.8 tons at $452/ton	2,169.60	
Fuse and caps (26,200 ft. and 3,300)	500.00	
Steel and bits $0.90/ft. (810 feet)	728.00	
Total operating materials and supplies		$9,962.60

Operating equipment (furnished by applicant)

	Value	
Rental		
1 500 c.f.m. compressor	$3,500.00	
1 battery locomotive	5,000.00	
1 mucking machine	3,100.00	
6 mine cars	1,200.00	
2 drifter type drills	1,500.00	
Total operating equipment	$14,300.00	
Rental for 5 months at $238.00/month		$1,190.00

Rehabilitation and repairs

None

New buildings, improvements, etc.

None

Miscellaneous

Bookkeeping and reports		
5 months at $50/mo.	$ 250.00	
Compensation and liability insurance and payroll taxes, 5 percent of $14,020.00	701.00	
Total miscellaneous		$ 951.00
Total cost for 810 feet of crosscutting		$25,873.60

Cost per foot		$ 31.94
Less non-expendible supplies (1/2 of $3,160.00)		$24,193.60
Cost per foot		$ 29.65

This must be a typo because the 29.65 comes out right for the correct total

25,873.60
1860
24,013.60

3720

Diamond drilling

Independent contracts		
core		
1,200 feet of drilling at $5.00/ft.	$6,000.00	
Total independent contracts		$ 6,000.00
Labor and supervision		
Labor		
1 compressor man 160 hrs. at $1.65/hr.	264.00	
Supervision		
None allowed	--	
Total labor and supervision		$ 264.00
Operating materials and supplies		
Power 800 KWH at $0.033	264.00	
Total operating material and supplies		$ 264.00
Operating equipment (furnished by applicant)		
1 500 c.f.m. compressor worth $3,500.00		
1 month's rental at $58.33	58.33	
Total operating equipment		$ 58.33
Rehabilitation and repairs		
None		
New buildings, improvements, etc.		
None		
Miscellaneous		
Bookkeeping and reports		
1 month at $50.00	50.00	
Compensation, liability insurance, and payroll taxes, 5 percent of $314.00	15.70	
Total miscellaneous		$ 65.70

Total cost for 1,200 feet of core drilling	$6,652.03
Cost per foot	$ 5.54

Stage II

If the crosscutting and core drilling in Stage I penetrate ore or favorable veins, a maximum of not over 1,500 feet of crosscutting and drifting should be done to intersect and explore the veins penetrated in the Stage I exploration. 10 mos.

Summary of Costs

Stage I		
810 feet of crosscutting at $29.65/ft.	$24,016.50	
1,200 feet of core drilling at $5.54/ft.	6,648.00	
10 chemical assays at $5.00 each	50.00	
Total Stage I	$30,714.50	5 mos.
Stage II		
1,500 feet of crosscutting and drifting at $29.65/ft.	$44,475.00	
20 chemical assays at $5.00 each	100.00	
Total Stage II	$44,575.00	10 mos.
Total Stage I and Stage II	$75,289.50	15 mos.
Government participation, 75 percent	$56,467.13	

CONCLUSIONS AND RECOMMENDATIONS

The examining team concludes that the Last Chance, Nancy Henderson, Forest Home, and Cold Spring veins may continue on their known courses up to the hangingwall of the reef and that these veins may contain valuable deposits of tungsten ore; also that tungsten-bearing veins may occur on the footwall side of the reef. The ore bodies probably will be small and probably will be irregularly spaced along the veins,

and therefore the position of any ore body cannot be predicted.

The examining team recommends that if the ore targets based on vein projections are sufficiently definite so that the DMEA classes the proposed work as exploration rather than prospecting, the two-stage exploration program be approved to reach the objectives outlined and that a short-form contract be prepared for a two-stage program consisting of:

Stage I

Driving a 5-foot by 7-foot crosscut S. 72° E. a distance of 800 feet from the southeast breast of the Prospect tunnel as shown in figure 2. The recommended cost is $29.65 a foot or	$23,720.00
Driving a 5-foot by 7-foot crosscut 10 feet in length for a drill station. The recommended cost is $29.65 a foot or	$ 296.50
Core drilling a minumum of AX size to the northwest and to the southeast, parallel to the Hurricane Hill reef, from the end of the proposed crosscut a distance of 600 feet in each direction. The recommended cost for core drilling is $5.54 a foot or	$ 6,648.00
Chemical assaying a maximum of 10 samples. The recommended cost is $5.00 each or	50.00
Total recommended cost of Stage I	$30,714.50

Stage II

Stage II is dependent upon the results obtained from Stage I and prior approval of the Field Team is recommended.

Driving a maximum of 1,500 feet of 5-foot by 7-foot drifts and crosscuts. The recommended cost is $29.65/foot or	$44,475.00
Chemical assaying a maximum of 20 samples. The recommended cost is $5.00 each or	100.00
Total recommended cost of Stage II	$44,575.00
Total recommended cost of Stage I and Stage II	$75,289.50
Government participation, 75 percent or	$56,467.13

400

September 28, 1955

Memorandum

To: The Files

From: George C. Selfridge
Special Assistant

Copy retained 100

Subject: Docket No. DMEA-3807 (Tungsten)
Reynolds Tungsten Corporation
Dozer Mine
Boulder County, Colorado

During a telephone conversation today with Mr. Traver, the writer asked when DMEA could expect the field report on the subject application. Mr. Traver stated that he would mail it early next week.

George C. Selfridge

GCSelfridge/esf

cc to: Docket
Admr. R. File
Mr. Selfridge

9/20/55 File

Mr. Mittendorf:

Mr. Luckhurst called re DMEA-3807, Reynolds Tungsten.

I gave him your message re your 9/13/55 conversation with Mr. Traver, in which Mr. Traver said it would probably be the end of the month before the field report reached Washington because the engineer had been sent to make other inspections before having time to write up his report on the Reynolds exam. (Shortage of engineers and inability to hire them.)

Mr. Luckhurst is leaving for Denver tomorrow.*

Says last week (Wednesday, he thinks) his geologist in Denver told him the field team report had been forwarded to Washington. I said it had not been received yet, but that if the F.T. had been able to finish it since you talked with Mr. Traver and it should come tomorrow, we would call him.

Says they have been doing core drilling in a tungsten property there and have come up with a 5-foot vein. Have a nice core from it--8 to 15%. Have not gotten assays yet. Probably will have them when he gets out to Denver.

They did get some sludge, which ran as high as 2%. Can multiply that by 10.

Have drilling crews there; would like to keep them on job in event application is looked upon favorably.

Going into mining now. Preparing for it.

Looks like wonderful property.

fw

*Phone: Boulevard 3-4657, NYC, until 3 p.m. tomorrow.
Will stop at Brown Palace in Denver.

Excerpt from Mr. [illegible]ittendorf's diary: 9/13/55

In the case of DMEA 3807, Reynolds Tungsten, Traver said the report would not reach us until the end of the month. He said the engineer who made the examination is now in New Mexico making monthly project inspections.

I evidenced my regret for the delay, which seems inevitable. Traver said both he and the Survey were short-handed and it seemed impossible to hire engineers and geologists, and he felt that the condition would get worse later on.

Docket
DLC.

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

224 New Customhouse
Denver, Colorado

August 11, 1955

Memorandum

To: Administrator, DMEA, Washington

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA 3807 (Tungsten), Reynolds Tungsten Corporation (Dozer Mine), Boulder County, Colorado

After our telephone conversation of yesterday regarding an examination under the subject docket I called John F. Shaw, U.S.B.M. Supervising Mining Engineer, and E. N. Harshman, U.S.G.S., member, Region III Field Team.

They advised me joint examination of the property is scheduled for Wednesday, August 17. This is only one day later than I guessed.

W. M. Traver

W. M. Traver

RECEIVED
AUG 15 1955

400

C. O. Mittendorf, Administrator,

Defense Minerals Exploration
Administration
1[illegible]01(01) Revolving Fund,
Defense Production Act, Interior (Allocated
Working Fund to the Office of the Sec'y)

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TELETYPE

August 4, 1955

Mr. W. M. Trower
Executive Officer
DMEA Field Team, Region III
22d New Customhouse Bldg.
Denver, Colorado

Lockhart of New York inquires status Reynolds Tungsten, docket DMEA-3007. Will contact me again Tuesday. Kindly advise date your recommendation may be expected.

C. O. Mittendorf

C. O. Mittendorf, Administrator

COMittendorf/fw

cc: Mails & Files
Admr. Reading File
Mr. Martin
Mr. Mittendorf

P.S.B.

1

Mr. C.O. Mittendorf

RECEIVED
AUG - 5 1955

BUR MINES DN 235 8-4-55 4-27 PM

C O MITE
C O MITTENDORF

REURTT RE STATUS DOCKET DMEA 3807, REYNOLDS TUNGSTEN COPXXX CORP. EXAMINATION SCHEDULED EARLY AUGUST. REFER MY MEMORANUXXX MEMORANDUM MAY 13 TRANSMITTING APPLIAXXX APPLIAXXXX APPLICATION AND ONE OF AUGUST 3 ON CONTRACT IDM-E54, COLD SPRING TUNGSTEN FINAL OPERATOR S REPORT. INFORMATION AVAILABLE INDICATES LITTLE LIKELIHOOD OF APPROVAL OF THIS APPLICATION IN ITS ENTIRETY.

W M TRAVER

Denver, Colo.

AUG 5 8 19 AM '55
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

Docket

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

RECEIVED
JUN - 3 1955

224 New Customhouse
Denver 2, Colorado

May 26, 1955

Memorandum

Copy retained 400

W3M

To: J. F. Shaw W/Brochure
E. N. Harshman

From: DMEA Field Team, Region III

Subject: DMEA-3807 (Tungsten), Reynolds Tungsten Corporation (Dozer mine), Boulder County, Colorado

Enclosed are copies of the subject loan application for $258,795.00, its transmittal from the Chairman of the Operating Committee, a review by N. E. Nelson, USGS, and two other memoranda relevant to the application.

This application is referred for field examination and reports without comment. The applicant states that he will accept all or any part of his proposed program.

W. M. Traver
W. M. Traver

E. N. Harshman
E. N. Harshman

Enclosures

WMT:sr

cc Sec. Op. Comm. (2)
Subject
Chron

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

400

DOCKET SURNAME
Chapman
Martin
Davis
Kulsgaard
Hedges
Selfridge
Johnson

MAY 23 1955

Reynolds Tungsten Corporation
1036 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Doser Mine
Boulder County, Colorado

Gentlemen:

The above docketed application for exploration assistance for tungsten ores has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Custom House Building, Denver 2, Colorado, for a field examination of the property.

Any assistance that you can give the members of the Field Team will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

TLChapman:foc
5-20-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. III
Messrs: Holliday, USBM
Kiilsgaard, USGS

R.C.S.

DOCKET
SURNAME
Chapman
400
Martin
Davis
Selfridge
Hedges

MAY 23 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House Building
Denver 2, Colorado

Re: Docket No. DMEA 3807 - Tungsten
Reynolds Tungsten Corporation
Domer Mine
Boulder County, Colorado

Dear Mr. Traver:

The above docketed application for exploration assistance is being referred to your office for a field examination of the property.

Two copies of a relevant memorandum by N. E. Nelson, Geological Survey, dated May 18, 1955, are enclosed for your information.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (24B)

Enclosure

TLChapman:foc
5-20-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. III
Messrs. Holliday, USBM
Kiilsgaard, USGS

APPROVED:

J. H. Hedges (24B)
Member, Bureau of Mines

Thor H. Kiilsgaard (24B)
Member, Geological Survey

R.C.4.

Docket

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

DMEA 3807

224 New Customhouse
Denver 2, Colorado

May 18, 1955

WJM

Memorandum

To: Robert E. Adams, Chief, Operation's Control and Statistics Division

From: Executive Officer, DMEA Field Team, Region III

Subject: Assignment of Docket Number - Reynolds Tungsten Corporation

Attached is a copy of your memorandum dated May 16, 1955 on which the DMEA number is not shown.

Will you please advise the docket number assigned to this application.

W. M. Traver

W. M. Traver

Enclosure

answered 5-23 REW

Docket

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

May 18, 1955

Re: DMEA-3807
Reynolds Tungsten Corp.
Dozer Mine
Nederland, Colorado
$258,795.00 - Tungsten

Copy retained 400

WSM

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application

The ambitious program of this application would prospect a large block of heretofore little tested ground on the top and the northeast and northwest slopes of Hurricane Hill. The block of ground composing the Hill is flanked by properties credited with low to fair production records, but the block itself has been singularly unproductive.

The 1400 foot Prospect Tunnel and the proposed work from it would prospect the core of the Hill. Workings on and above the Tunnel level produced 65,667.50 pounds of WO_3 (3,283 units), according to the application, a production quite disproportionate to the work done. The productive area of the Tunnel is 1000 feet east of the Clyde mine which is credited with a production of 28,000 units of WO_3.

Hurricane Hill is underlain in large part by pegmatite, aplite, Boulder Creek granite, and Idaho Springs schist and is traversed from northwest to southeast by the Hurricane Hill breccia reef zone. Of itself such an assemblage should not constitute an unfavorable locality, but the records tend to condemn it. The Tunnel (El. 8200 feet), if extended as proposed, would attain a depth beneath the crest of the hill of about 570 feet, and would afford an opportunity for study of conditions at a depth below surface afforded by few of the mines, but the horizon to be explored would not be below that of some of the large producers. The Conger mine, 8,500' to the west, the largest producer of the District was productive over 560 feet 8,690 to 8,130 feet, and the essentially barren vein was followed to 7,700 feet elevation.

Curiosity concerning the Hurricane Hill area is justified, but there may be a question as to how much money should be spent to satisfy the curiosity. The Field Team and geologists intimately acquainted with the District should review the application. Referral to them is recommended.

N. E. Nelson

N. E. Nelson

May 16, 1955

Subject: DMEA-3807
Re: Exploration Assistance
Dozer Mine

Reynolds Tungsten Corporation
1036 First Nat'l Bank Bldg.,
Denver 2, Colorado.

Gentlemen:

The receipt of your application dated May 9, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3807 and referred to the Iron & Ferro-Alloys Division

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

May 16, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region III

DMEA-Reynolds Tungsten Corporation

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

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

224 New Customhouse
Denver 2, Colorado

May 13, 1955

Memorandum

dmea 3807

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA assistance (Tungsten), Reynolds Tungsten Corporation, Dozer mine, Grand Island Mining District, Boulder County, Colorado

Enclosed are the original and two copies of the subject application for Government assistance to explore the Dozer mine for tungsten at an estimated cost of $258,795.00.

The applicant has been requested to furnish a signed copy of the Lease and Option to Purchase agreement which will be forwarded to the Washington Office as soon as received.

We have retained a copy of the application in this office.

The Vice-President of the subject corporation, G. C. Ridland, was the Engineer-Manager responsible for operations under DMEA Docket-1447X, Contract Idm-E54, Cold Springs Tungsten, Inc. To date, even though we have repeatedly requested it, the operator has not rendered his final report relative to operations under Contract Idm-E54.

W. M. Traver

Enclosures

W. M. Traver

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

RECEIVED
MAY 1 3 1955

224 New Customhouse
Denver 2, Colorado

May 12, 1955

Mr. G. C. Ridland, Vice President
Reynolds Tungsten Corporation
1036 First National Bank Bldg.
Denver 2, Colorado

Re: Application for DMEA assistance (Tungsten), Reynolds ~~Uranium~~ Tungsten Corporation, Dozer mine, Grand Island Mining District, Boulder County, Colorado

Dear Mr. Ridland:

As the Washington Office legal department will require a signed copy of the operating lease under which the Reynolds Tungsten Corporation proposes to explore the Dozer mine, please furnish either a signed copy or photostat of a signed copy of this document to this office. We will forward it to the Washington Office, DMEA, to be attached to the original copy of the subject application.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

RDB:pw

cc: Subject
Chron
Harshman
Sec.Op.Comm. (2)

DMEA
Date Rec'd.
MAY 1 1955
BUREAU OF MINES
Denver, Colorado

REYNOLDS TUNGSTEN CORPORATION

1036 First National Bank Bldg.
Denver 2, Colorado

DEPT. OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 1 3 1955

May 10, 1955

Mr. W. M. Traver, Chief
Colorado Branch Mining Division
Region IV
Building 20, Room 137
Denver Federal Center
Denver 14, Colorado

Dear Mr. Traver:

Herewith enclosed are five copies of an application for aid to explore for tungsten deposits at the Dozer Mine, Nederland, Colorado. A copy of the lease and option agreement is also enclosed.

We will appreciate it if you will consider all, or any portion, of the proposed program and, if a contract is in the offing, we would prefer to have it written on a unit-cost basis.

Thank you for your consideration.

Yours very truly,

REYNOLDS TUNGSTEN CORPORATION

G. C. Ridland

G. C. Ridland

G. C. R.: br
Enc.

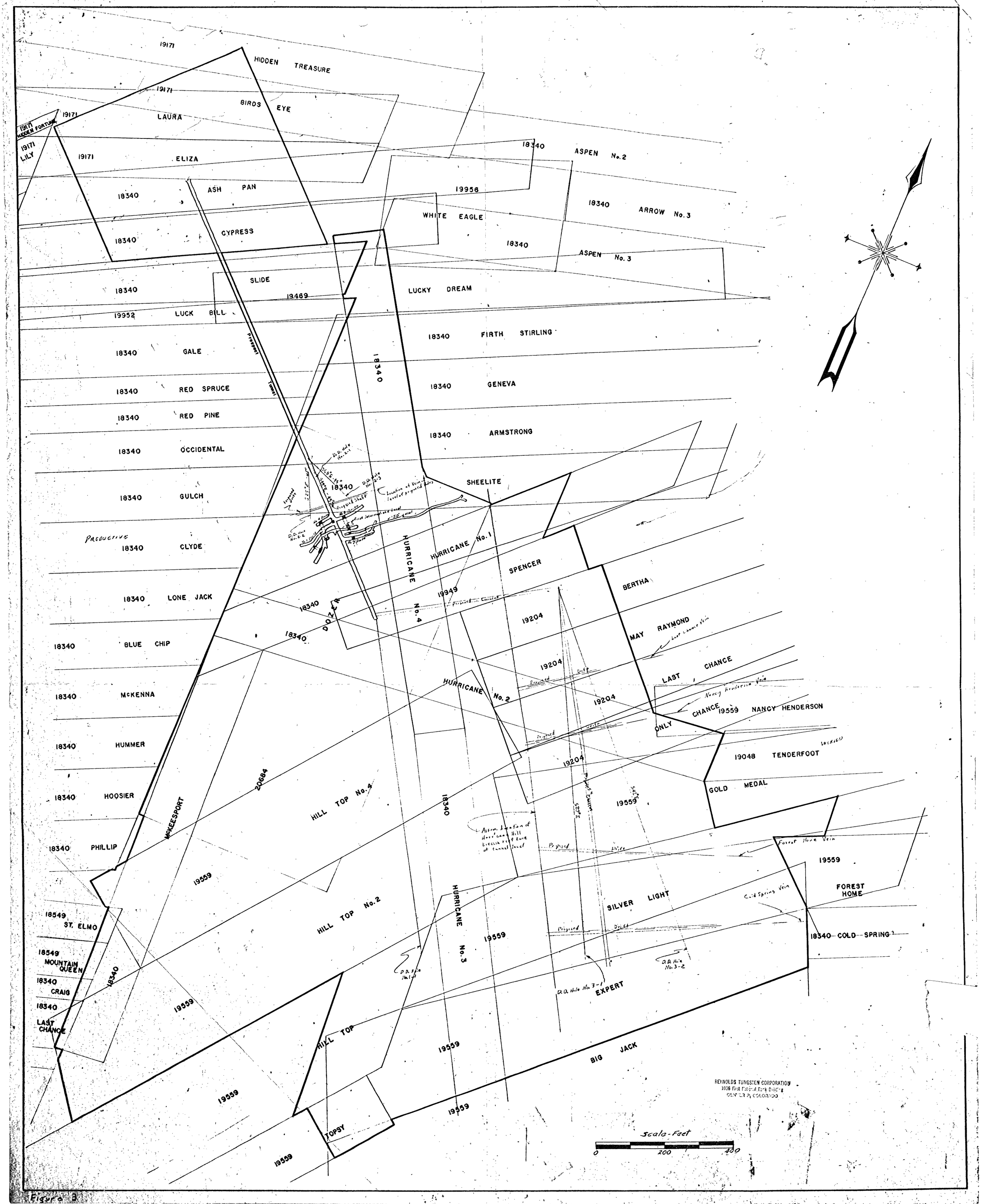
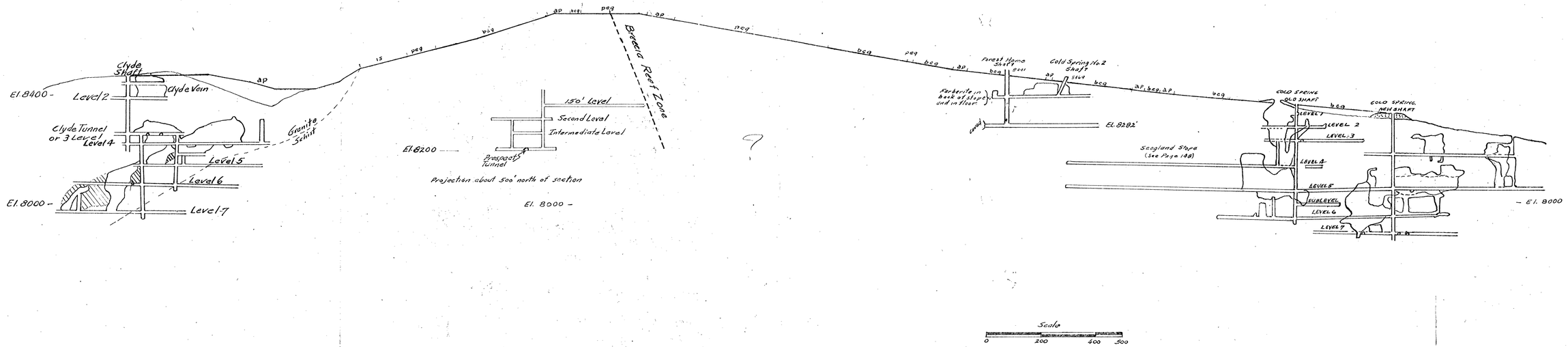
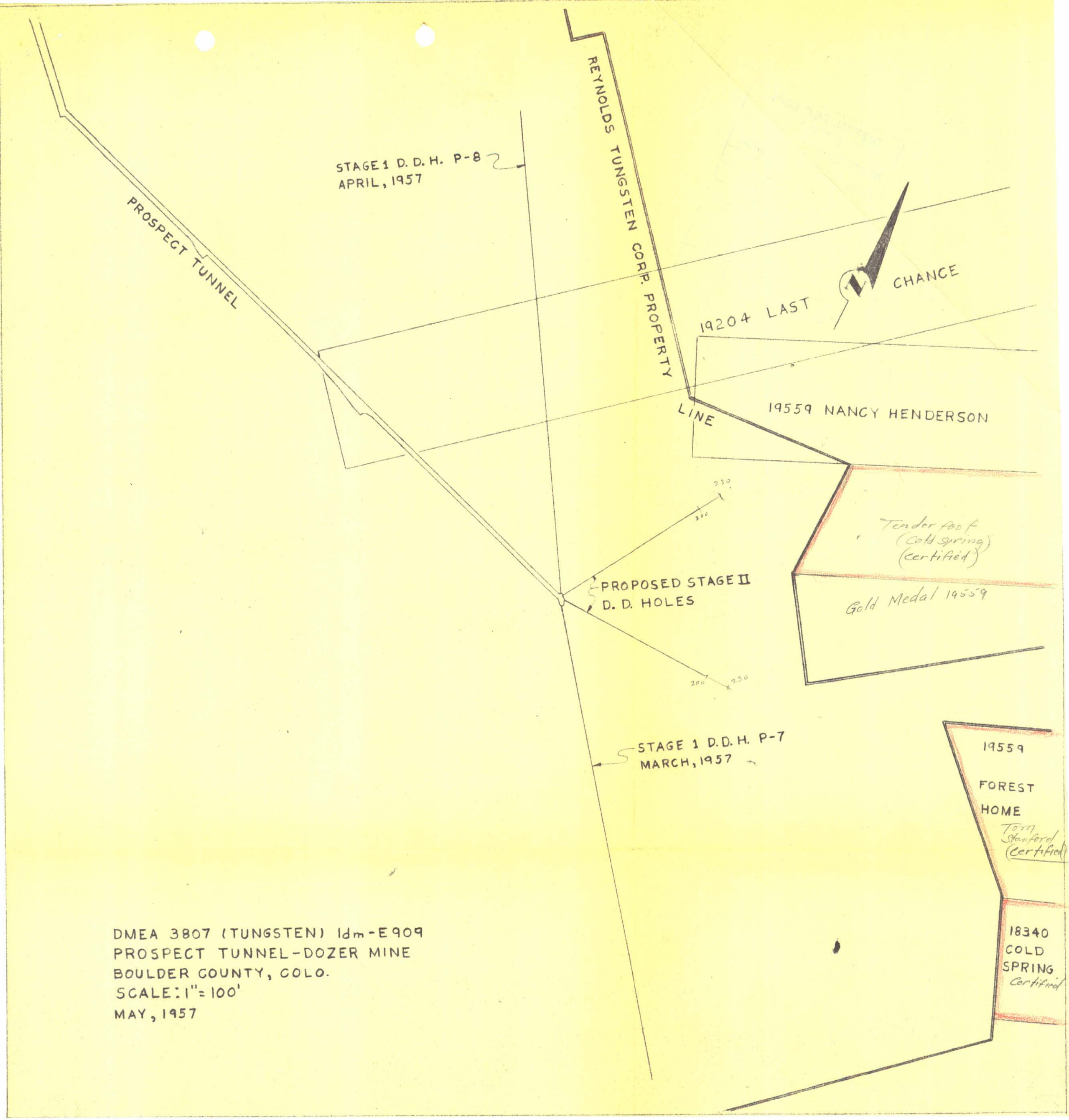

19171
HIDDEN TREASURE
19171
BIRDS EYE
19171
LAURA
19171
HIDDEN FORTUNE
19171
LILY
19171
ELIZA
18340
ASPEN No. 2
18340
ASH PAN
19956
18340
ARROW No. 3
WHITE EAGLE
18340
CYPRESS
18340
ASPEN No. 3
18340
SLIDE
19469
LUCKY DREAM
19952
LUCK BILL
18340
FIRTH STIRLING
18340
GALE
Prospect Tunnel
18340
18340
GENEVA
18340
RED SPRUCE
18340
RED PINE
18340
ARMSTRONG
18340
OCCIDENTAL
SHEELITE
18340
GULCH
PRODUCTIVE
18340
CLYDE
HURRICANE No. 1
SPENCER
HURRICANE No. 4
19949
18340
LONE JACK
18340
DOVER
BERTHA
19204
18340
BLUE CHIP
MAY RAYMOND
Last Chance Vein
19204
LAST CHANCE
18340
McKENNA
HURRICANE No. 2
19204
Nancy Henderson Vein
CHANCE
19559
NANCY HENDERSON
ONLY
18340
HUMMER
19048
TENDERFOOT
19204
20684
GOLD MEDAL
18340
HOOSIER
McKEESPORT
HILL TOP No. 4
18340
19559
Approx. Location of Hurricane Hill breccia reef zone at tunnel level
18340
PHILLIP
Forest Home Vein
19559
19559
FOREST HOME
HILL TOP No. 2
HURRICANE No. 3
SILVER LIGHT
Cold Spring Vein
18549
ST. ELMO
19559
18340 COLD SPRING?
18549
MOUNTAIN QUEEN
18340
D.D. Hole No. 3-2
18340
CRAIG
D.D. Hole No. 3-1
EXPERT
19559
18340
LAST CHANCE
HILL TOP
19559
BIG JACK
19559
19559
TOPSY
19559
REYNOLDS TUNGSTEN CORPORATION
1036 First National Bank Building
DENVER 2, COLORADO
Scale-Feet
0
200
400

Figure 3

SKETCH SECTION THROUGH HURRICANE HILL FROM CLYDE SHAFT TO COLD SPRING NEW SHAFT

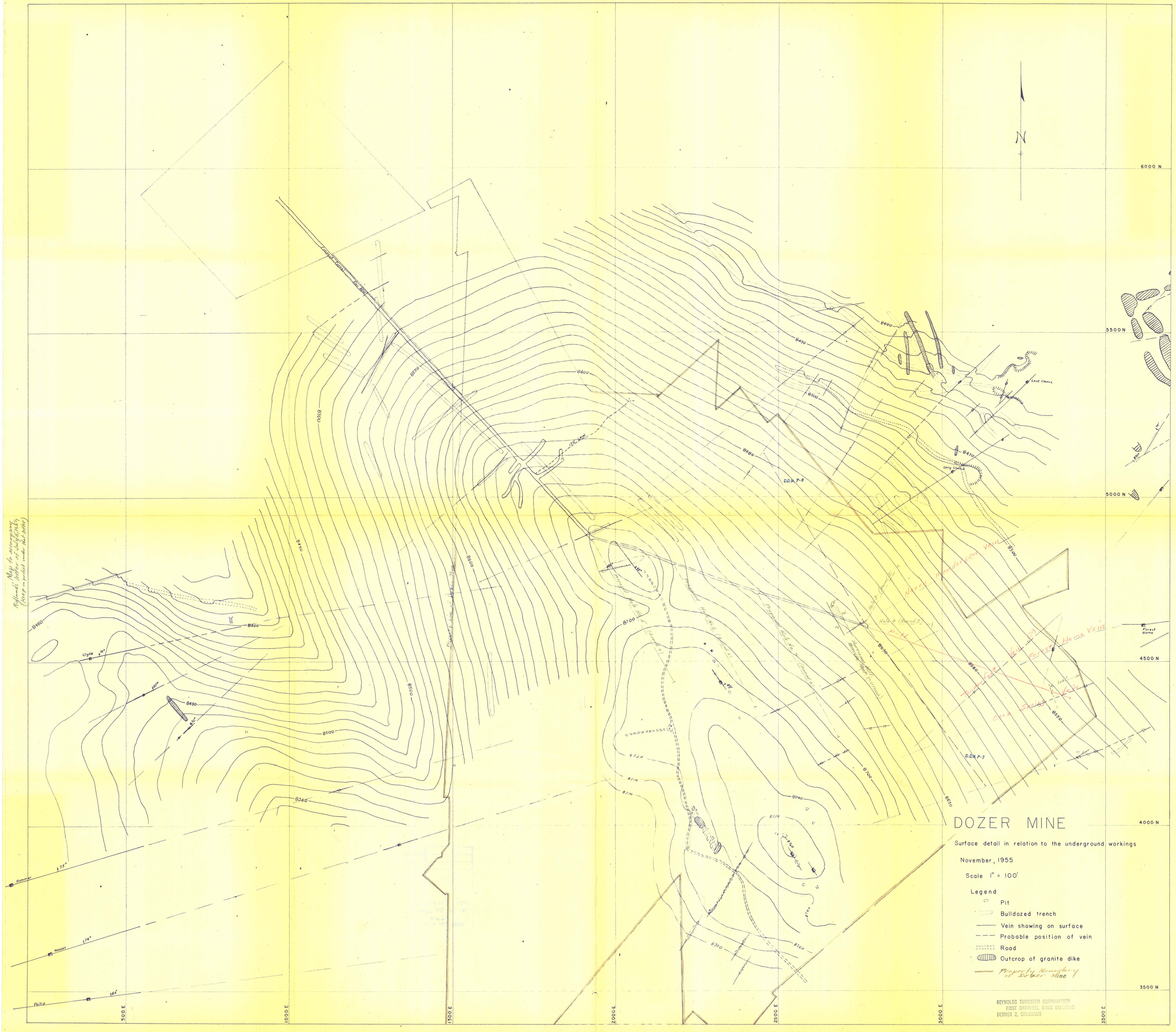


19171
HIDDEN TREASURE
19171
BIRDS EYE
19171
LAURA
19171
HIDDEN FORTUNE
19171
LILY
19171
ELIZA
18340
ASPEN No. 2
18340
ASH PAN
19956
18340
ARROW No. 3
WHITE EAGLE
18340
CYPRESS
18340
ASPEN No. 3
18340
SLIDE
19469
LUCKY DREAM
19952
LUCK BILL
18340
FIRTH STIRLING
18340
GALE
Prospect Tunnel
18340
18340
RED SPRUCE
18340
GENEVA
18340
RED PINE
18340
ARMSTRONG
18340
OCCIDENTAL
SHEELITE
18340
18340
GULCH
30' Level
50' Level
No. 4 Drift
No. 1 Drift
No. 2 Drift
18340
CLYDE
HURRICANE No. 1
HURRICANE No. 4
SPENCER
19949
18340
LONE JACK
DOZER
BERTHA
19204
18340
MAY RAYMOND
18340
BLUE CHIP
D.D.H. P-8
19204
LAST CHANCE
18340
McKENNA
HURRICANE No. 2
19204
ONLY CHANCE
19559
NANCY HENDERSON
18340
HUMMER
19204
19048
TENDERFOOT
Nancy Henderson Vein
Dip 0° N 51° E 250' Deep DDH. P-9
Dip 0° N 51° E 250' Deep DDH. P-10
GOLD MEDAL
18340
HOOSIER
20684
HILL TOP No. 4
18340
19559
Barren Reef Zone
Dip 0°
18340
PHILLIP
McKEESPORT
19559
Dip 0° S 72° E DDH. 650' Deep P-11
19559
Fourth Home Vein
FOREST HOME
D.D.H. P-7
18549
ST. ELMO
HILL TOP No. 2
HURRICANE No. 3
19559
SILVER LIGHT
18340 COLD SPRING
Cold Spring Vein
18549
MOUNTAIN QUEEN
18340
18340
CRAIG
EXPERT
19559
18340
LAST CHANCE
HILL TOP
19559
BIG JACK
19559
19559
TOPSY
19559
REYNOLDS TUNGSTEN CORP.
DOZER MINE AND CLAIM MAP
DATE – 1/23/56
D. H. JARDINE
FEET 200 0 200 400 600
1" = 100'



DMEA 3807 (TUNGSTEN) Idm-E909
PROSPECT TUNNEL-DOZER MINE
BOULDER COUNTY, COLO.
SCALE: 1" = 100'
MAY, 1957

Hollands' Map to accompany letter of July 15, 1957 (Keep in pocket under that letter)



DOZER MINE

Surface detail in relation to the underground workings

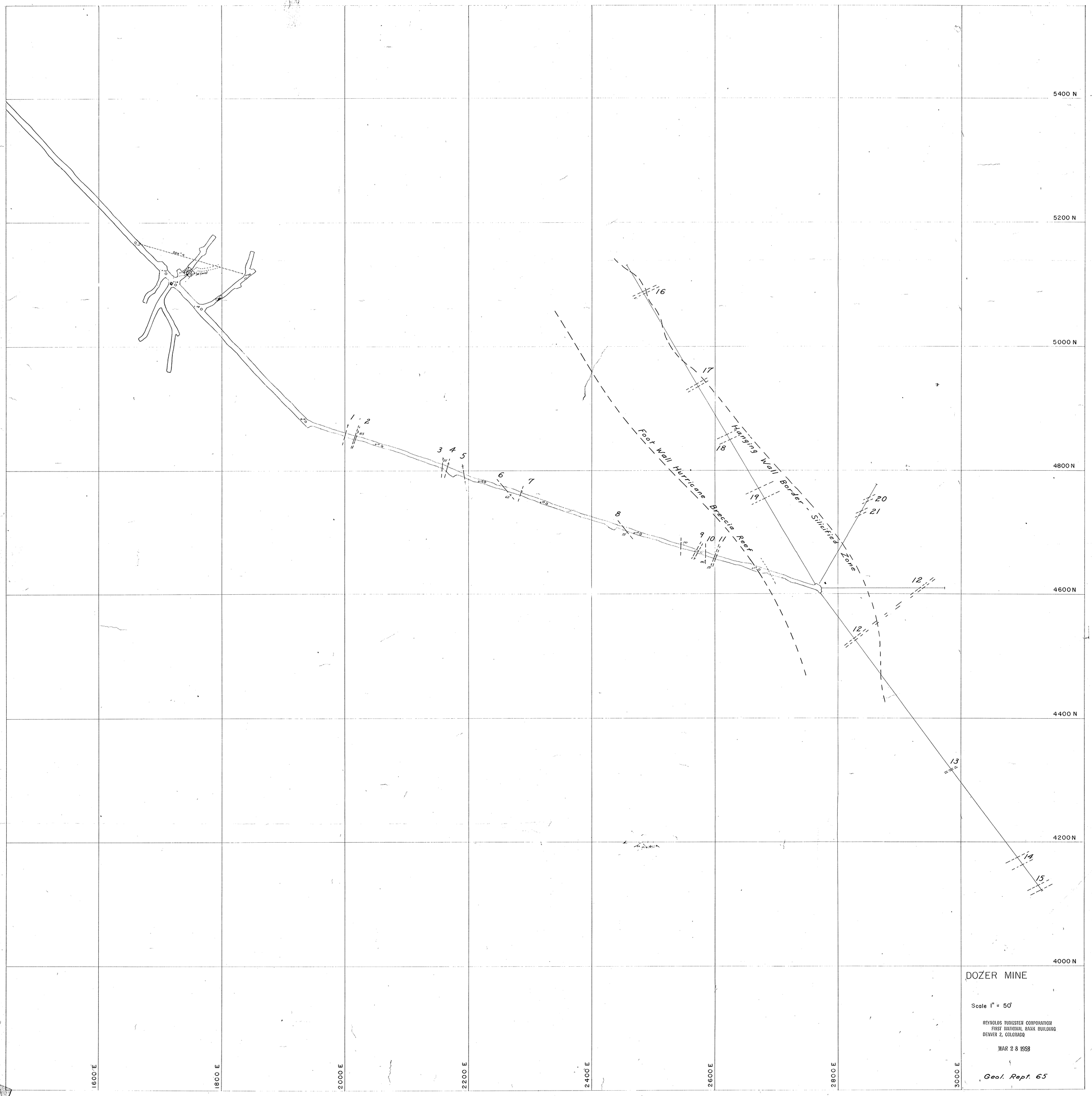
November, 1955

Scale 1" = 100'

Legend

- Pit
- Bulldozed trench
- Vein showing on surface
- Probable position of vein
- Road
- Outcrop of granite dike
- Property Boundary of Dozer Mine

REYNOLDS TUNGSTEN CORPORATION
FIRST NATIONAL BANK BUILDING
DENVER 2, COLORADO


5400 N
5200 N
5000 N
4800 N
4600 N
4400 N
4200 N
4000 N
1600 E
1800 E
2000 E
2200 E
2400 E
2600 E
2800 E
3000 E
Sea Level
Foot Wall Hurricane Breccia Reef
Hanging Wall Border - Silicified Zone
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
DOZER MINE
Scale 1" = 50'
REYNOLDS TUNGSTEN CORPORATION
FIRST NATIONAL BANK BUILDING
DENVER 2, COLORADO
MAR 23 1958
Geol. Rept. 65

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

FINAL REPORT

PREPARED FOR DMEA

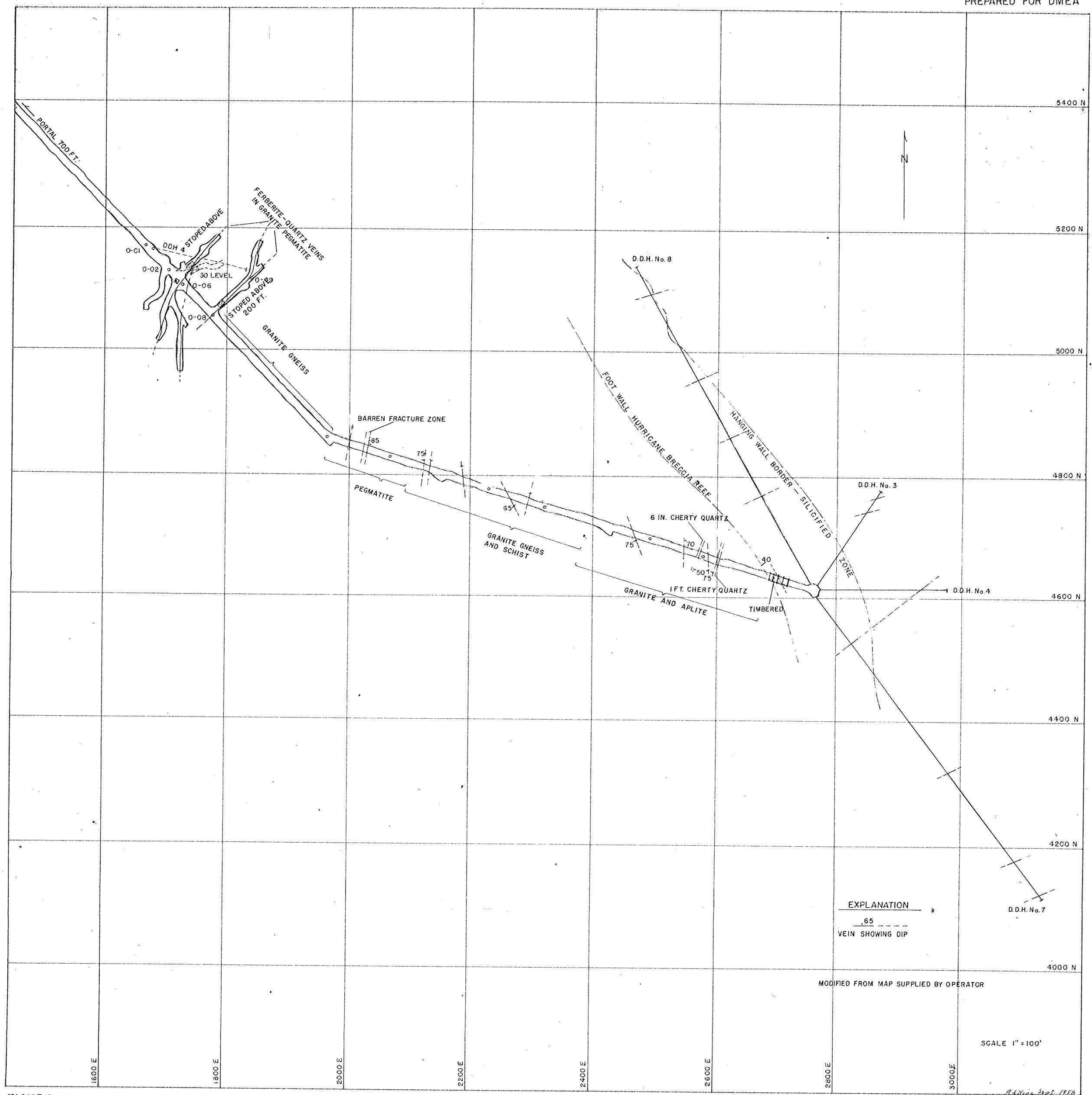
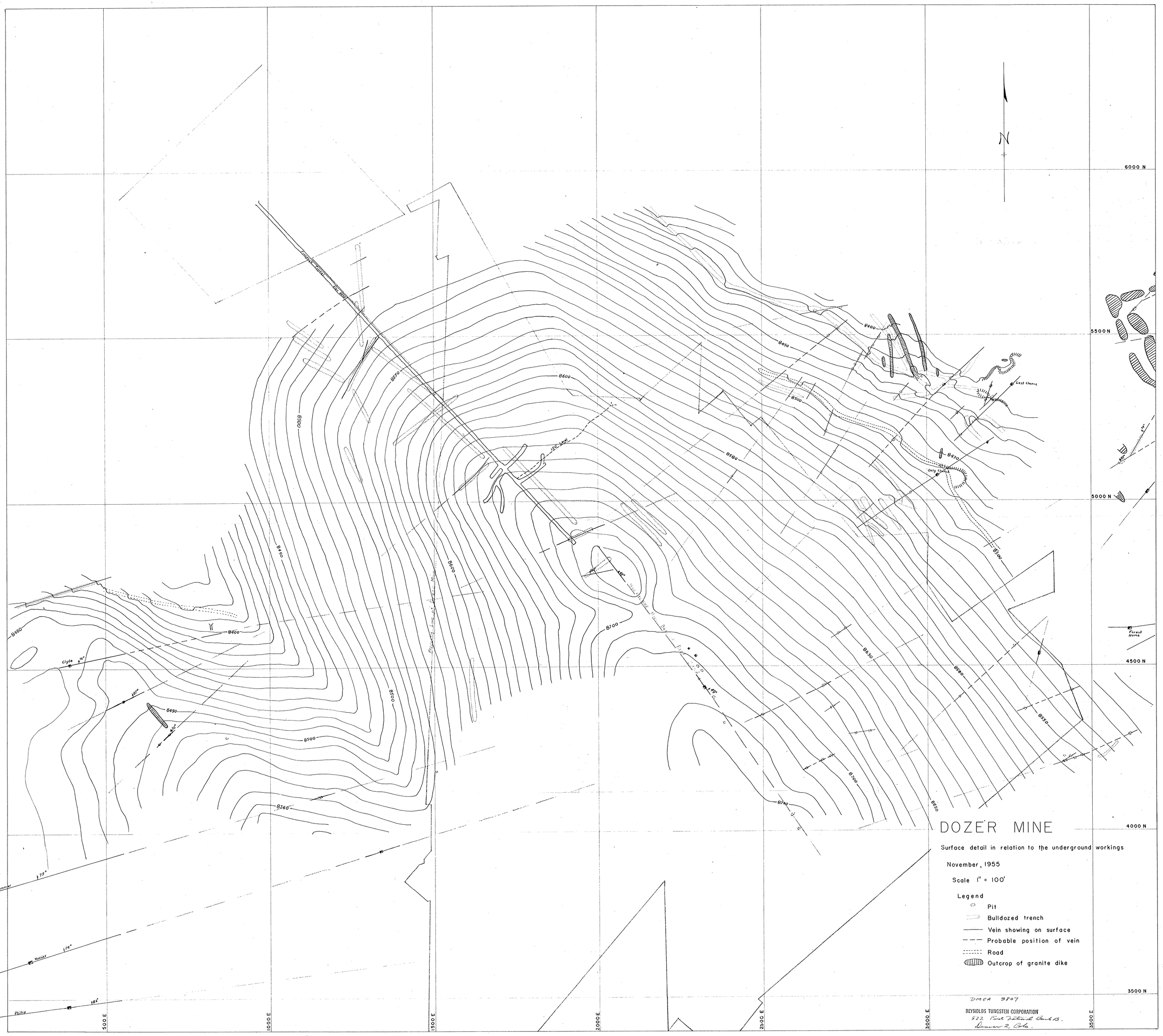
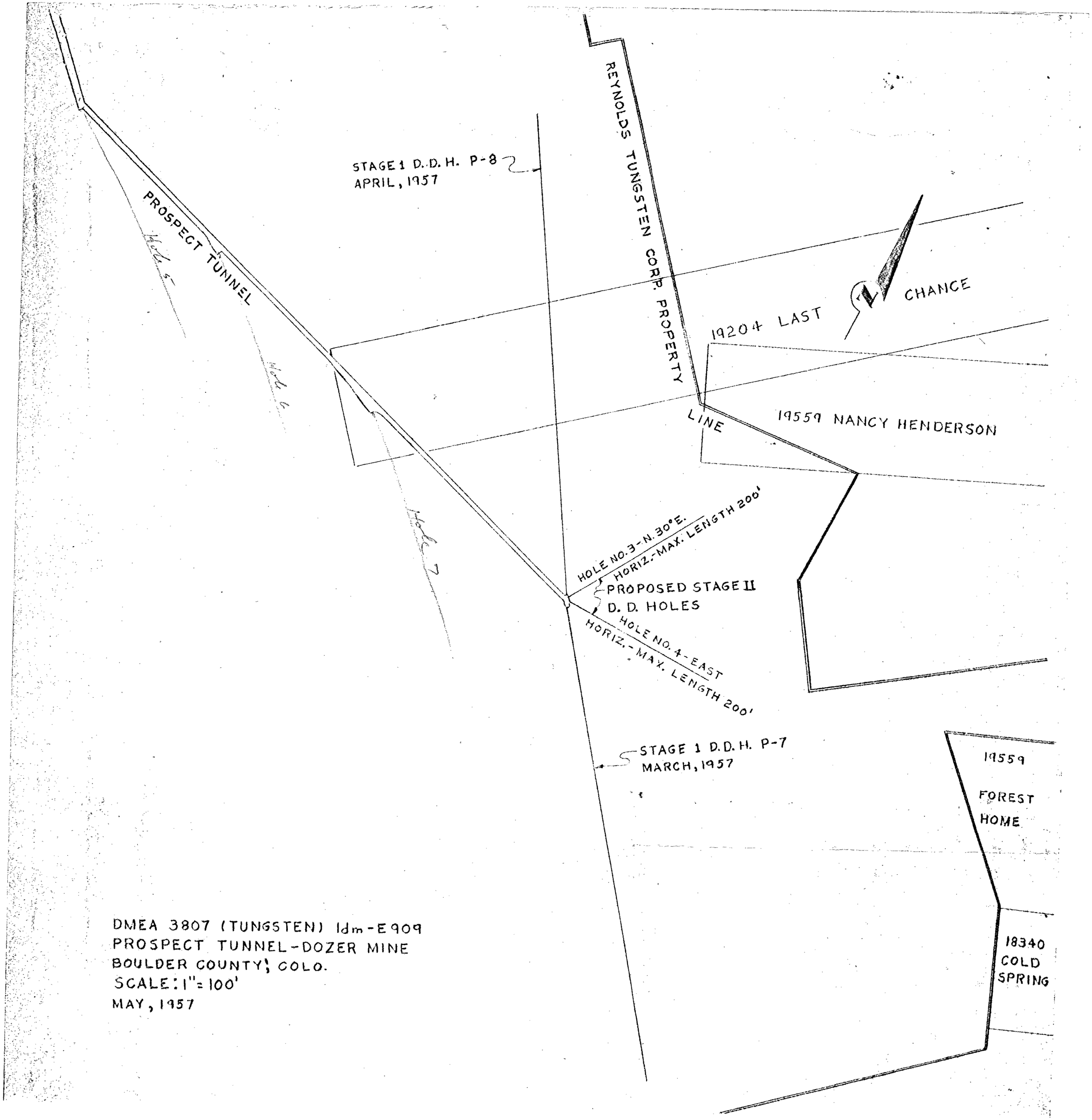


FIGURE 3 - DOZER MINE COMPOSITE GEOLOGIC AND PROGRESS MAP SHOWING COMPLETED CROSSCUTTING AND DIAMOND DRILL CORE HOLES
DMEA 3807 (TUNGSTEN) CONTRACT Idm-E909

19171
HIDDEN TREASURE
19171
BIRDS EYE
19171
LAURA
19171
HIDDEN FORTUNE
19171
LILY
19171
ELIZA
18340
ASPEN No. 2
18340
ASH PAN
19956
18340
ARROW No. 3
WHITE EAGLE
18340
CYPRESS
18340
ASPEN No. 3
18340
SLIDE
19469
LUCKY DREAM
19952
LUCK BILL
18340
FIRTH STIRLING
18340
GALE
Prospect Tunnel
18340
18340
RED SPRUCE
18340
GENEVA
18340
RED PINE
18340
ARMSTRONG
18340
OCCIDENTAL
D.D. Hole No. 2-1
D.D. Hole No. 2-3
Location of Vein at level of proposed Raises
Proposed Shaft
Proposed Drift
No. 4 Drift
No. 2 Drift
First Intermediate Level
150' Level
D.D. Hole No. 2-2
No. 1 Drift
No. 3 Drift
18340
SHEELITE
18340
GULCH
PRODUCTIVE
18340
CLYDE
HURRICANE No. 1
SPENCER
BERTHA
18340
LONE JACK
18340
DOZER
HURRICANE No. 4
19949
Proposed Crosscut
19204
18340
BLUE CHIP
MAY RAYMOND
Last Chance Vein
19204
Proposed Drift
LAST CHANCE
18340
McKENNA
HURRICANE No. 2
19204
Nancy Henderson Vein
CHANCE
19559
NANCY HENDERSON
ONLY
18340
HUMMER
Proposed Drift
WORKED
19048
TENDERFOOT
19204
20684
18340
HOOSIER
HILL TOP No. 4
18340
19559
GOLD MEDAL
McKEESPORT
Approx. Location of Hurricane Hill breccia reef zone at tunnel level
Proposed Crosscut
S 22° E
Proposed Drift
Forest Home Vein
18340
PHILLIP
19559
19559
FOREST HOME
HILL TOP No. 2
HURRICANE No. 3
SILVER LIGHT
Cold Spring Vein
18549
ST. ELMO
Proposed Drift
18340
COLD SPRING
18549
MOUNTAIN QUEEN
18340
D.D. Hole No. 1-1
D.D. Hole No. 3-2
18340
CRAIG
D.D. Hole No. 3-1
EXPERT
18340
19559
LAST CHANCE
HILL TOP
19559
BIG JACK
19559
19559
TOPSY
19559
REYNOLDS TUNGSTEN CORPORATION
1036 First National Bank Building
DENVER 2, COLORADO
Scale-Feet
0
200
400

Figure 3


DOZER MINE
Surface detail in relation to the underground workings
November, 1955
Scale 1" = 100'
Legend
Pit
Bulldozed trench
Vein showing on surface
Probable position of vein
Road
Outcrop of granite dike
DMEA 3807
REYNOLDS TUNGSTEN CORPORATION
822 First National Bank B.
Denver 2, Colo.
N
6000 N
5500 N
5000 N
4500 N
4000 N
3500 N
500 E
1000 E
1500 E
2000 E
2500 E
3000 E
3500 E
Clyde
Hummer
Hoosier
Phillip
Only Chance
East Chance
Forest Home
152' Level
8400
8450
8500
8550
8600
8650
8700
8750
8800
8850
8900
8950
8460
8490
8360
8580
8630
8680
8740
8470



DMEA 3807 (TUNGSTEN) Idm-E909
PROSPECT TUNNEL-DOZER MINE
BOULDER COUNTY, COLO.
SCALE: 1" = 100'
MAY, 1957