Dark Star Mining
pros & cons

Favorable	Unfavorable
1. Personnel to operate	1. Grade of ore expectancy - probably not over .2 to .25% $14.0 to $17.5/ton gross
2. Strong F.I. approval	2. Thin ore bed (2 to 3 ft ±)
3. Clean columbite mineral	3. Indications of possible tonnage not sufficient to justify a mill which is essential
4. Reasonably favorable showings.	4. Rare earths value doubtful
	5. Recommendations seems to weigh the "geological interest" rather than the possibilities of a "significant discovery"

Recommend denial

Ernest W. Ellis

Yellow pencil memo and one copy of proposed contract with map to be kept in the docket for reference purposes.

Government's copy

MF-200A
(Revised June 1954)

Docket No. DMEA-3884

Commodity Columbium and Rare Earths

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] Dark Star Mining Company, a partnership composed of William J. Van Matre and Victor E. Van Matre,

whose mailing address is 1708 Texas Avenue
Butte, Montana,

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 a map.

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 Montana, County of Ravalli, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the[4] lessee of[5] the entire interest 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, [7] recorded in Book Vol. 14 page 177, 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: None

(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: Owner's Consent to Lien dated May 16, 1955, of Louis Erickson.

[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 columbium and rare earths. The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before ..... (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work, except as otherwise provided in Exhibit "A" as to stages of 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 $21,380.00 The Government will contribute 75 percent of the fixed unit costs as work is performed, in a total sum not in excess of $16,035.00: *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

(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.*—

---

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.

Executed in sextuplicate the day and year first above written.

Dark Star Mining Company
(Operator)

By ..... (Partner)

..... (Partner)

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
DARK STAR MINING COMPANY
DOCKET NO. DMEA-3884

ANNEX I

The land referred to in Article 2 of the contract form consists of two unpatented lode mining claims situated in the Alta Mining District, described as follows:

Dark Star claim, recorded in Book 9, Page 23 of Lode Locations.

Determined claim, recorded in Book 9, Page 25 of Lode Locations.

All being duly recorded in the Lode Locations Records of Ravalli County, Montana.

EXPLORATION PROJECT CONTRACT
DARK STAR MINING COMPANY
DOCKET NO. DMEA-3884

EXHIBIT "A"

Description of the Work

The purpose of the work is to explore for columbium, and rare-earth minerals contained in narrow calcareous beds. The project work consists of bulldozer surface trenching and stripping, and underground drifting and/or crosscutting. Underground workings shall be timbered as necessary. It is expected that 150 feet of timbering will be required; any additional timbering shall be at the sole cost of the Operator without contribution by the Government. The location, direction, and extent of all work, and the method of sampling, are subject to the approval of the Government.

The project is divided into two successive stages, as indicated below. The Operator shall complete Stage I, and shall complete so much of Stage II as the Government approves in writing in advance, based upon the results of Stage I.

Stage I

A tent shall be purchased, center wall type, with dimensions 10 feet by 10 feet by 7 feet, or equivalent; access roads shall be constructed; and two trenches shall be excavated by bulldozer (D-6 or equivalent), each approximately 600 feet in length and trending generally south 15 degrees east, as shown on the attached contour map. It is expected that this bulldozing will result in stripping the overburden in the areas of indicated outcrops of ore; however, if the overburden extends to such a depth as to make the designated trenching impractical, then crosstrenching shall be done in said areas of indicated outcrops. Additional trenching and/or stripping may be undertaken in other areas in which favorable indications have been disclosed by any previous work.

Stage II

A frame bunkhouse, minimum 14 feet by 16 feet with composition roof, or equivalent, shall be constructed; and

a compressor and toolhouse, minimum 8 feet by 10 feet, with composition roof, or equivalent, shall be constructed. Prepare adit site with D-6 bulldozer or equivalent.

Not to exceed 500 feet of drifting and crosscutting shall be done, having a minimum of 5 feet by 7 feet in cross section in the clear, at locations, in directions, and to the extent approved by the Government.

While drifting or crosscutting in mineralized ground, car samples shall be taken of each round. These samples shall be crushed and split, and the split portions of four rounds shall be combined to make up a representative sample of the mineralized area. All samples shall be submitted to the Government for analysis.

Fixed Unit Costs

Stage I

Purchase and install a tent for living quarters	$ 100.00	
Construct access roads, 20 hours of bulldozing @ $10.00/hr.	200.00	
Trenching, 120 hours of bulldozing @ $10.00/hr.	1,200.00	
1 helper, 15 days @ $16.00/day	240.00	
Sampling, 25 samples @ $2.00/each sample	50.00	
Supervision, ½ month @ $600.00/mo.	300.00	$ 2,090.00

Stage II

Adit site excavation, 16 hours of bulldozing @ $10.00/hr.	160.00	
Snow removal, 8 hours of bulldozing @ $10.00/hr.	80.00	

Drifting and/or crosscutting 500 feet @ $35.00/ft.	$17,500.00	
Timbering, 150 feet @ $5.00/ft.	750.00	
Sampling, 50 samples @ $2.00/each sample	100.00	
Bunkhouse 1/	500.00	
Compressor house 1/	200.00	$19,290.00
Estimated total cost of project		$21,380.00
Government participation @ 75%		$16,035.00

1/ The completed work constitutes the unit.

MF-203
Revised March 24, 1955

RECEIVED
JUL - 1 1955

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

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Ravalli, State of Montana, described ~~as follows~~ 1/

in a lease dated August 25, 1954 and recorded in Vol. 14 page 177 offical records of said county.

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: Future production from this land may not be held for repayment of money used to explore other lands

Dated this 16th day of May, 1955.

Louis Erickson [Seal]

[Seal]

[Seal]

I, _____ certify that I am the _____ (Secretary, etc.) of the corporation named herein; that _____ who signed this agreement was then _____ (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.

[Corporate Seal]

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

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3884 (Columbium and rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Weissenborn:

Enclosed are the original and five copies of a proposed short-form contract between the Government and the Dark Star Mining Company, a partnership composed of William J. Van Matre and Victor E. Van Matre, which has been signed by the Administrator.

If the contract meets with your approval and that of the Operator, please obtain the proper signatures and distribute in the usual manner.

If any of the terms of the proposed contract do not have the approval of yourself or the Operator and cannot be amended within your delegated authority, the original and all copies of the contract are to be returned to this office with the proposed changes for consideration.

Sincerely yours,

Chairman, Operating Committee

Enclosures

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

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

Selfridge
Ellis
Kyman

OCT 18 1955

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3884
(Columbium & Rare Earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Weissenborn:

As requested in your letter of October 4, 1955, there are enclosed copies of memoranda dated July 27 and August 16, 1955, by N. E. Nelson, USGS, and August 3 and 15, 1955, by Horace T. Reno, USBM, relating to the above-named application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (HB)

APPROVED:

P. F. Yopes (HB)
Member, Bureau of Mines

/s/ Thor H. Kiilsgaard (HB)
Member, Geological Survey

Enclosures (4)

AGKeating/EWEllis/GCSelfridge/bih/esf
(10/18/55)
cc to: Docket
Admr. R. File
Operating Committee
Field Team - Region I
Messrs: RWGeehan - USBM
THKiilsgaard - USBS
Ellis
Keating
Selfridge

R.C.S.

FILE COPY
SURNAME:

Ellis

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

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3884
(Columbium & Rare Earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Weissenborn:

As requested in your letter of October 4, 1955, there are enclosed copies of memoranda dated July 27 and August 3, 1955, by M. E. Nelson, USGS, and Horace T. Reno, USBM, respectively, relating to the above named application.

You will note that Mr. Reno's memorandum states that "The market price for domestic columbium will probably be maintained at about $3.40 per pound of contained Cb_2O_5". That was the price the Government paid for 50 percent combined pentoxides (columbite-tantalite) in small lots. However, it is our understanding that the stockpile quota has been reached, or will have been reached when present contracts are completed, and no new purchase contracts are contemplated. Thus, these commodities will have to resort to the open market. The most recent E. & M. J. Market Report quotes the price for columbite at $1.75 to $2.00 per pound of pentoxide.

Sincerely yours,

APPROVED:

Chairman, Operating Committee

Member, Bureau of Mines

Member, Geological Survey

Enclosures (2)

AGKeating/EWEllis/bih - 10/14/55

cc to: Docket
Adm. Reading File
Operating Committee
Field Team - Region I
Messrs. Geehan - USBM
Kiilsgaard - USGS
Ellis
Keating

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

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3884
(Columbium & Rare Earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Weissenborn:

As requested in your letter of October 4, 1955, there are enclosed copies of memoranda dated July 27 and August 3, 1955, by N. E. Nelson, USGS, and Horace T. Reno, USBM, respectively, relating to the above named application.

You will note that Mr. Reno's memorandum states that "The market price for domestic columbium will probably be maintained at about $3.40 per pound of contained Cb_2O_5". That was the price the Government paid for 50 percent combined pentoxides (columbite-tantalite) in small lots. However, it is our understanding that the stockpile quota has been reached, or will have been reached when present contracts are completed, and no new purchase contracts are contemplated. Thus, these commodities will have to resort to the open market. The most recent E. & M. J. Market Report quotes the price for columbite at $1.75 to $2.00 per pound of pentoxide.

Sincerely yours,

APPROVED:

Chairman, Operating Committee

Noted Walter H. Kulsgaard
Member, Bureau of Mines

Member, Geological Survey

Enclosures (2)

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

Attach file with letter of Oct. 4 EWR

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3884
(Columbium & Rare Earths)
Dark Star Mine
Ravalli County, Montana

Dark Star Mining Company

Dear Mr. Weissenborn:

As requested in your letter of October 4, 1955, there are enclosed copies of memoranda dated July 27 and August 3, 1955, by N. E. Nelson, USGS, and Horace T. Reno, USBM, respectively, relating to the above named application.

~~As you know the President vetoed the extension of the domestic strategic minerals purchase bill, and the recent quotations on Columbite per pound of pentoxide ranges between $1.75 and $2.00.~~ l.c.

See yellow sheet EWR

Sincerely yours,

Chairman, Operating Committee

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

Enclosures (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 6 - 1955

October 4, 1955
Air Mail

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3884 (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

We have received a carbon copy of the Administrator's letter dated September 27, 1955, to the applicant denying the application for work at the Dark Star mine.

For our future guidance, we would appreciate having copies of the commodity reviews.

By Field Team, Region I, NW District

for Verne C. Funkhouser
A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew
Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USBM (2)
Nickelson

10/6/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 6 - 1955

October 4, 1955
Air Mail

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3894 (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

We have received a carbon copy of the Administrator's letter dated September 27, 1955, to the applicant denying the application for work at the Dark Star mine.

For our future guidance, we would appreciate having copies of the commodity reviews.

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Arnew, Member
U. S. Bureau of Mines

cc: USBM (2)
Nickelson

Surname copy

700

A. G. Keating
Ellis
Nelson
noted - Geehan
Selfridge
Bjornson

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

SEP 27 1955

Messrs. William J. Van Matre
and Victor E. Van Matre
Dark Star Mining Co.
1708 Texas Avenue
Butte, Montana

Re: Docket No. DMEA-3884
(Columbium and rare earths)
Dark Star Mine
Ravalli County, Montana

Gentlemen:

Your application for aid in an exploration project and other data available to us in Washington concerning the above-named property have been reviewed.

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, although noting a small amount of columbium and rare earth mineralization on your claims, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied. Such denial, however, is made without prejudice. In the event further work on your part discloses new and more favorable evidence of ore deposition on the property, we shall be pleased to consider a new application.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

AGKeating/gla
9-21-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. Horace T. Reno, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
Code 700
Mr. Keating
DMEA Field Team, Region I, Northwest District

R.C.B.

Docket copy

700

A.G. Keating
Ellis

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

September 21, 1955

Summary of Proposed Project

Subject: Denial of application for an exploration project.

Docket No. DMEA-3884

Commodity: Columbium and Rare Earths

Applicant: Dark Star Mining Co.
(a partnership composed of William J. and Victor E. Van Matre)
1708 Texas Avenue
Butte, Montana

Dark Star Mine
Ravalli County, Montana

Property: Two unpatented mining claims (lease with option to purchase) lying in Secs. 3 and 4, T. 4 S., R. 22 W., Bitterroot Base Line, Ravalli County, Montana. Dark Star claim recorded in Book 9, Page 23, and Determined claim recorded in Book 9, Page 25 of Lode Location, County of Ravalli, State of Montana

Date of Application: June 9, 1955

Amount of Application: $27,176.92

Work Proposed and Estimated Cost:

Bunk House	$500.00	
Compressor shed	200.00	
Bulldozing, 100 hrs.@$10.00 per hour	1,000.00	
Drifting, 500 feet at $38.95	19,475.00	
Supervision, 160 shifts @ $28.42 per shift	4,547.20	
Consultation, 16 shifts @ $28.42 per shift	454.72	
Temporary estimate for analytical work	1,000.00	
		$27,176.92

Field Team Report: Received July 19, 1955.

Field examination: July 6, 1955 - Howard B. Nickelson, USGS

"Outcrops of several occurrences in the area were examined and samples cut from these outcrops and the adit dump. Columbite is believed to occur in a narrow marble bed ranging in width from 1-1/2 to 4 feet which can be traced for approximately 700 feet ~~in~~ along the surface in hand pits, dozer trenches, and float. The columbite, which is almost free of tantalum, is associated with rare earth minerals. Portions of the bed may contain from 4 to 10 pounds of columbite per ton and 5 to 20 per cent rare earth oxides per ton. The columbite content of the deposit may average below 0.2 percent per ton but the deposit should be explored because it does have the potential to produce a relatively tantalum-free columbite product which would have special uses in industry."

"The need for domestic columbite seems to be great and we have no hesitancy in recommending a modest exploration project at the Dark Star property. There seems to be a good chance of finding a small tonnage of columbite that appears to contain almost no tantalum."

"I believe that this property has unusual merit and that Government participation in a limited exploration program is justified."

Commodity Committee Members' Comments:

U. S. Geological Survey - N. E. Nelson - July 29, 1955 and August 16, 1955

"The Field Team has recommended the acceptance of a staged contract. Too few samples can as yet be cut to enable an estimate to be made of the average grade of the bed. Samples of the vein (bed) assayed from 0.01% Nb for 3.4 feet to 0.25% Nb for 2.2 feet. Very little if any tantalum is associated with the columbium. As estimated by the examiner there would be 1200 tons of inferred ore in the vein if it is continuous for 500 feet and maintains an average width of 2 feet. In view of the lack of information some work is warranted. I concur with the 2-stage program recommendation of the Field Team. The change to additional surface work and sampling as Stage I, before going underground at this prospect, is fitting since so little is known about the habits of these unusual veins."

U. S. Bureau of Mines - Horace T. Reno - August 3 and 15, 1955

"The exploration program as proposed by the applicant and recommended by the Field Team apparently will not determine the full potential of the property. Inasmuch as the one bed that is proposed to explore is small and relatively low grade there doesn't seem to be much chance that the property could be economically exploited for that bed alone. However, a parallel bed about 300 feet east of the bed on which the applicant has started an adit as shown on the examination report map, and mention made in the report of several columbite-bearing beds in the general area indicate that other columbium-bearing beds might be present. It is questionable that the deposit is extensive enough to warrant an expenditure as large as anticipated in the proposal. It is recommended that the Field Team be asked to review the project to determine if 2 or 3 trenches about 600 feet long and crosscutting the beds are appliable as the first stage of the project. If so, the second stage of the project could be the proposed 500 feet of underground work."

Rare and Miscellaneous Metals Division - September 19, 1955 -
Ernest Wm. Ellis

The grade of ore expectancy is probably not over 0.2 to 0.25 percent columbite, or approximately $14 to $17.50 per ton gross. The ore bed is thin (2 to 3 feet) and the indications of possible tonnage not sufficient to justify a mill which is essential. The rare earths value is doubtful. Recommendations seem to weigh the "geological interest" rather than a "significant discovery." Therefore, a denial of the application is recommended.

Ernest Wm. Ellis

Ernest Wm. Ellis

ocket copy 700

A.G. Keating
Ellis
Guhon
Nelson
Selfridge
Fishman
Hartendorf

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

SEP 16 1955

Department of the Interior

DMEA
14X66X1(01) Revolving Fund, Defense Production Act, Interior
(Allocated Working Fund to the office of the Secy.)

(Columbium and RareEarth)

TELETYPE

THOMAS E. HOWARD, ACTING EXECUTIVE OFFICER
REGION I, NORTHWEST DISTRICT
DMEA FIELD TEAM
SOUTH 157 HOWARD STREET
SPOKANE 4, WASHINGTON

REUTT SEPTEMBER 13 DMEA-3684 DARK STAR MINING COMPANY, EXPECT

FINAL ACTION NEXT WEEK.

George C. Selfridge (216)
GEORGE C. SELFRIDGE,
CHAIRMAN, OPERATING COMMITTEE

AGKeating/gla
9-16-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. HoraceT. Reno, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
Code 700
Mr. Keating
Confirmation to Region I, Northwest District

RECEIVED
SEP 14 1955

RECEIVED
SEP 13 5 01 PM '55
SECURITY DIVISION
PUBLIC BUILDINGS SERVICE
GWC - COMMUNICATIONS

XDXXXXXX-129K

YWA139 WAF SP 28 I- GS- G

SPOKANE WN 9-13-55 110P

GEO C SELFRIDGE CHAIRMAN OPERATING COMMITTEE DMEA DEPT OF INTERIOR WA

REDOCKET DMEA 3884/ COLUMBITE- MONAZITE/ DARK STAR MINING CO.

WM J. VAN MATRE TELEPHONED RE STATUS OF APPLICATION. PLEASE TELETYPE REPLY.

THOMAS E HOWARD ACTG EXEC OFCR DMEA FIELD TEAM REGION 1 NW DISTRICT SPOKANE

3884

MAH 115P

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

AUG 31 1955

Memorandum

To: The Administrator, DMEA
Attention: Mr. E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3884, Dark Star Mining Company (Columbium, and monzaite and rare earths)

As requested in Mr. Ellis' reference slip dated August 18 we have prepared the attached contract.

The Consent to Lien recites that it is limited to production from the land covered thereby and no other land. As there is no other land included in the contract, the limitation is of no effect and the Consent to Lien is acceptable.

Henry C. Sutrie
for J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments

P. S. Inasmuch as only three copies of the Consent to Lien were furnished, the additional copies should be made and attached to the copies of the contract.

Rubin

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

AUG 31 1955

Memorandum

To: The Administrator, DMEA
Attention: Mr. E. W. Ellis

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3884, Dark Star Mining Company (Columbium, and monazite and rare earths)

As requested in Mr. Ellis' reference slip dated August 18 we have prepared the attached contract.

The Consent to Lien recites that it is limited to production from the land covered thereby and no other land. As there is no other land included in the contract, the limitation is of no effect and the Consent to Lien is acceptable.

Henry C. Rubin
for J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments

HCRubin/emd

P. S. Inasmuch as only three copies of the Consent to Lien were furnished, the additional copies should be made and attached to the copies of the contract.

Copy to: Dmea Docket
Solicitor's Docket
E. W. Ellis (2)
J. L. Hofflund
H. C. Rubin
chron.

IN REPLY REFER TO:

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

August 16, 1955

Re: DMEA 3884
Dark Star Mining Co.
Dark Star Mine
Ravalli Co., Montana
$18,794.72 - Columbite,
monazite, rare earths

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of supplementary Field Team report and recommendation.

The change to additional surface work and sampling as Stage I, before going underground at this prospect, is fitting since so little is known about the habits of these unusual veins. Presumedly the loan will be increased to care for the additional work.

I concur with the recommendation of the Field Team.

N. E. Nelson

N. E. Nelson

RECEIVED
AUG 17 1955

IN REPLY REFER TO:

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

August 16, 1955

Re: DMEA 3054
Dark Star Mining Co.
Dark Star Mine
Ravalli Co., Montana
$18,794.72 - Columbite,
monazite, rare earths

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of supplementary Field Team report and recommendation.

The change to additional surface work and sampling as Stage I, before going underground at this prospect, is fitting since so little is known about the habits of these unusual veins. Presumably the loan will be increased to cover for the additional work.

I concur with the recommendation of the Field Team.

H. E. Nelson

H. E. Nelson

HENelson:iml
G-8/16/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. T. Reno, 3641

RECEIVED
AUG 17 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 15, 1955

RECEIVED
AUG 15 1955

Memorandum

To: E. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. DMEA Docket No. 3884 (columbite and rare earths)

Reference is made to Mr. Keating's memorandum and Region I, Field Team letter pertaining to subject application, both dated August 8, 1955.

Mr. Keating in a telephone conversation with the field requested that an additional program of surface work be outlined with particular reference to the ground intervening between the proposed exploration drift and the vein showing some 300 feet to the east if such work was pertinent to the development of a larger reserve.

Apparently there has been some misunderstanding as to directions, the work outlined on the map accompanying the Field Team letter is designed only to uncover known veins (beds) and will not explore the intervening ground. Surface work to uncover the known beds is not recommended. However, the Field Team letter states that the overburden is shallow over most of the outcrop except near the creek and that the "veins" are generally harder than the argillite and schist country rock, and Mr. Nickelson informed Mr. Keating over the telephone that trenching is applicable to increasing the potential reserve. It is suggested, therefore, that 2 trenches about 600 feet long trending S 15° E as shown in red on the Field Team map be the first stage of a 2-stage exploration project, and that the second stage be 500 lin. feet of underground work located from the results of the trenching.

Horace T. Reno

Horace T. Reno

P. S. The President vetoed the extension of the domestic strategic minerals purchase bill -- the commercial price will probably be less than $2 per pound pentoxide.

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 15, 1955

RECEIVED
AUG 15 1955

Memorandum

To: E. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. DMEA Docket No. 3884 (columbite and rare earths)

Reference is made to Mr. Keating's memorandum and Region I, Field Team letter pertaining to subject application, both dated August 8, 1955.

Mr. Keating in a telephone conversation with the field requested that an additional program of surface work be outlined with particular reference to the ground intervening between the proposed exploration drift and the vein showing some 300 feet to the east if such work was pertinent to the development of a larger reserve.

Apparently there has been some misunderstanding as to directions, the work outlined on the map accompanying the Field Team letter is designed only to uncover known veins (beds) and will not explore the intervening ground. Surface work to uncover the known beds is not recommended. However, the Field Team letter states that the overburden is shallow over most of the outcrop except near the creek and that the "veins" are generally harder than the argillite and schist country rock, and Mr. Nickelson informed Mr. Keating over the telephone that trenching is applicable to increasing the potential reserve. It is suggested, therefore, that 2 trenches about 600 feet long trending S 15° E as shown in red on the Field Team map be the first stage of a 2-stage exploration project, and that the second stage be 500 lin. feet of underground work located from the results of the trenching.

Horace T. Reno

P. S. The President vetoed the extension of the domestic strategic minerals purchase bill -- the commercial price will probably be less than $2 per pound pentoxide.

Enclosure

8/11/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
AUG 11 1955

August 8, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3884 (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

This letter is a reply to points discussed in a phone conversation between Mr. Keating and Mr. Nickelson on August 4.

Mr. Nickelson has outlined a dozing program as shown on the enclosed map. Inasmuch as much of the outcrop is under rather shallow overburden, it is suggested that the overburden be stripped from the outcrop wherever possible. If the overburden is too deep, the "vein," or more properly the ore-bed, should be exposed by cross trenches at least every 50 feet.

It is estimated that 100 hours of dozing and 10 days labor of an additional man will be sufficient to expose the "vein" for mapping and sampling. Supervisory time should be increased by 10 days to ensure that dozing is done to the best advantage; this time would also include mapping and sampling. The time required for each trench is estimated on the enclosed sketch; the total estimated time is 68 hours.

The overburden is shallow over most of the outcrop except near the creek, and the "veins" are generally harder than the argillite and schist country rock. Some trouble is expected in trenching from a point on the gneiss-schist contact to a point 200 to 300 feet east because the gneiss occurs in outcrops and large boulders. Hand pits may be the best method for exposing the "vein" in this area. The dozing should be started near the proposed drift and work eastward so that the field men can examine the first 400 feet of exposed "vein" in order to make their recommendation for the proposed drifting.

As Mr. Keating suggested, the dozing should be set up as Stage I. Stage II and Stage III will correspond to Stage I and Stage II of Mr. Nickelson's original recommendation.

We are in agreement with Mr. Keating as to the desirability of additional information before underground exploration is started. It would be especially desirable to take larger, even bulk, samples from the outcrop, as sample data to date are from chip samples across the "vein." Larger samples would certainly permit a better estimate of the overall columbium grade, as the columbite occurs as scattered disseminations in the "vein."

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

P. S. Enclosed are three copies of Assignment of Lease from William J. Van Matre to Dark Star Mining Company.

cc: USBM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
AUG 11 1955

August 8, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3884 (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

This letter is a reply to points discussed in a phone conversation between Mr. Keating and Mr. Nickelson on August 4.

Mr. Nickelson has outlined a dozing program as shown on the enclosed map. Inasmuch as much of the outcrop is under rather shallow overburden, it is suggested that the overburden be stripped from the outcrop wherever possible. If the overburden is too deep, the "vein," or more properly the ore-bed, should be exposed by cross trenches at least every 50 feet.

It is estimated that 100 hours of dozing and 10 days labor of an additional man will be sufficient to expose the "vein" for mapping and sampling. Supervisory time should be increased by 10 days to ensure that dozing is done to the best advantage; this time would also include mapping and sampling. The time required for each trench is estimated on the enclosed sketch; the total estimated time is 68 hours.

The overburden is shallow over most of the outcrop except near the creek, and the "veins" are generally harder than the argillite and schist country rock. Some trouble is expected in trenching from a point on the gneiss-schist contact to a point 200 to 300 feet east because the gneiss occurs in outcrops and large boulders. Hand pits may be the best method for exposing the "vein" in this area. The dozing should be started near the proposed drift and work eastward so that the field men can examine the first 400 feet of exposed "vein" in order to make their recommendation for the proposed drifting.

As Mr. Keating suggested, the dozing should be set up as Stage I. Stage II and Stage III will correspond to Stage I and Stage II of Mr. Nickelson's original recommendation.

We are in agreement with Mr. Keating as to the desirability of additional information before underground exploration is started. It would be especially desirable to take larger, even bulk, samples from the outcrop, as sample data to date are from chip samples across the "vein." Larger samples would certainly permit a better estimate of the overall columbium grade, as the columbite occurs as scattered disseminations in the "vein."

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

P. S. Enclosed are three copies of Assignment of Lease from William J. Van Matre to Dark Star Mining Company.

cc: USBM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
~~xxxxxxxxxxxxxxxxxx~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
AUG 11 1955

August 8, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3884 (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

This letter is a reply to points discussed in a phone conversation between Mr. Keating and Mr. Nickelson on August 4.

Mr. Nickelson has outlined a dozing program as shown on the enclosed map. Inasmuch as much of the outcrop is under rather shallow overburden, it is suggested that the overburden be stripped from the outcrop wherever possible. If the overburden is too deep, the "vein," or more properly the ore-bed, should be exposed by cross trenches at least every 50 feet.

It is estimated that 100 hours of dozing and 10 days labor of an additional man will be sufficient to expose the "vein" for mapping and sampling. Supervisory time should be increased by 10 days to ensure that dozing is done to the best advantage; this time would also include mapping and sampling. The time required for each trench is estimated on the enclosed sketch; the total estimated time is 68 hours.

The overburden is shallow over most of the outcrop except near the creek, and the "veins" are generally harder than the argillite and schist country rock. Some trouble is expected in trenching from a point on the gneiss-schist contact to a point 200 to 300 feet east because the gneiss occurs in outcrops and large boulders. Hand pits may be the best method for exposing the "vein" in this area. The dozing should be started near the proposed drift and work eastward so that the field man can examine the first 400 feet of exposed "vein" in order to make their recommendation for the proposed drifting.

As Mr. Keating suggested, the dozing should be set up as Stage I. Stage II and Stage III will correspond to Stage I and Stage II of Mr. Nickelson's original recommendation.

We are in agreement with Mr. Keating as to the desirability of additional information before underground exploration is started. It would be especially desirable to take larger, even bulk, samples from the outcrop, as sample data to date are from chip samples across the "vein." Larger samples would certainly permit a better estimate of the overall columbium grade, as the columbite occurs as scattered disseminations in the "vein."

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

P. S. Enclosed are three copies of Assignment of Lease from William J. Van Matre to Dark Star Mining Company.

cc: USGS (2)
Nicholson

Ellis

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

August 8, 1955

Memorandum

To: Files

From: A. G. Keating, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Telephone call to H. B. Nickelson, U.S.G.S.
(Region I, Spokane, Washington)
Docket No. DMEA-3884
Dark Star Mining Company
Ravalli County, Montana

Application for exploration assistance
(Columbite, monazite, rare earths)

It developed that there was a divergency of opinion regarding the work proposed in the application as between the Field Team and the Washington commodity members; thereupon the writer conferred with the Washington commodity members. We all agreed that more surface work was needed before even a limited amount of underground exploration was undertaken. A general program of surface work was outlined, but there was insufficient information regarding the terrain upon which to base conclusions. Reno, U.S.B.M., suggested that the writer telephone the field geologist who had examined the property and discuss the situation with him.

The writer called Nickelson and explained that as presented the surface indications and vein exposures were very limited, small and did not promise the possibility of successful operations. Nickelson was requested to work out an additional program of surface work with particular reference to the vein showing some 300 feet to the east of the proposed exploration drift and the intervening ground. To this proposal Nickelson at once agreed and stated that he would prepare the necessary maps and recommendations to be forwarded to Washington forthwith.

A G. Keating
A. G. Keating

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED

August 3, 1955

Memorandum

To: E. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid, DMEA Docket No. 3884 (columbite and rare earths)

The exploration program as proposed by the applicant and recommended by the Field Team apparently will not determine the full potential of the property. Inasmuch as the one bed that it is proposed to explore is small and relatively low grade there doesn't seem to be much chance that the property could be economically exploited for that one bed alone. However, a parallel bed (it may be the same bed displaced) about 300 feet east of the bed on which the applicant has started an adit as shown on the examination report map, and mention made in the report of several columbite bearing beds in the general area indicate that other columbium bearing beds might be present.

It is questionable that the deposit is extensive enough to warrant an expenditure as large as anticipated in the proposal. Only 12,000 tons of inferred ore, assaying less than 0.2 percent Cb_2O_5, is estimated by the examiner. The existance of rare-earth minerals in the deposit is of interest, but little or no value can be attached to these minerals under existing conditions. The data available concerning the rare-earths indicate that they are present as monazite, allanite, and bastnaesite and as such are not in great demand. Rare-earth minerals of the pyrochlore or euxenite type have not been identified in the deposit, and the monazite is reported to contain very little thorium. Thus the economic value of the deposit must be based entirely on the Cb_2O_5 content of the ore.

Although the deposit is low grade - probably below 0.2 percent Cb_2O_5 per ton - a reserve large enough to support installation of a simple mill could probably be worked profitably because gravity separation would produce a good grade of heavy-mineral concentrate that could be separated into the mineral components at a small cost, and the market price for domestic columbium will probably be maintained at about $3.40 per pound of contained Cb_2O_5.

It is recommended that the Field Team be asked to review the project to determine if 2 or 3 trenches about 600 feet long and crosscutting the beds are applicable as the first stage of a project to explore the property. If so, the second stage of the project could be the proposed 500 lin. feet of undergroud work but located from the results of the trenching. Diamond drilling is not applicable.

Horace T. Reno

Horace T. Reno

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 3, 1955

Memorandum

To: F. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid, DMEA Docket No. 3884 (columbite and rare earths)

The exploration program as proposed by the applicant and recommended by the Field Team apparently will not determine the full potential of the property. Inasmuch as the one bed that it is proposed to explore is small and relatively low grade there doesn't seem to be much chance that the property could be economically exploited for that one bed alone. However, a parallel bed (it may be the same bed displaced) about 300 feet east of the bed on which the applicant has started an adit as shown on the examination report map, and mention made in the report of several columbite bearing beds in the general area indicate that other columbium bearing beds might be present.

It is questionable that the deposit is extensive enough to warrant an expenditure as large as anticipated in the proposal. Only 12,000 tons of inferred ore, assaying less than 0.2 percent Cb_2O_5, is estimated by the examiner. The existance of rare-earth minerals in the deposit is of interest, but little or no value can be attached to these minerals under existing conditions. The data available concerning the rare-earths indicate that they are present as monazite, allanite, and bastnaesite and as such are not in great demand. Rare-earth minerals of the pyrochlore or euxenite type have not been identified in the deposit, and the monazite is reported to contain very little thorium. Thus the economic value of the deposit must be based entirely on the Cb_2O_5 content of the ore.

HTReno:jtmc

Copy to: Division of Minerals
Branch of Rare and Precious Metals
DMEA (3 copies)
H. T. Reno
FILES

Although the deposit is low grade - probably below 0.2 percent Cb_2O_5 per ton - a reserve large enough to support installation of a simple mill could probably be worked profitably because gravity separation would produce a good grade of heavy-mineral concentrate that could be separated into the mineral components at a small cost, and the market price for domestic columbium will probably be maintained at about $3.40 per pound of contained Cb_2O_5.

It is recommended that the Field Team be asked to review the project to determine if 2 or 3 trenches about 600 feet long and crosscutting the beds are applicable as the first stage of a project to explore the property. If so, the second stage of the project could be the proposed 500 lin. feet of underground work but located from the results of the trenching. Diamond drilling is not applicable.

Herman A. Meno

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 3, 1955

Memorandum

To: F. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMPA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid, DMPA Docket No. 3884 (columbite and rare earths)

The exploration program as proposed by the applicant and recommended by the Field Team apparently will not determine the full potential of the property. Inasmuch as the one bed that it is proposed to explore is small and relatively low grade there doesn't seem to be much chance that the property could be economically exploited for that one bed alone. However, a parallel bed (it may be the same bed displaced) about 300 feet east of the bed on which the applicant has started an adit as shown on the examination report map, and mention made in the report of several columbite bearing beds in the general area indicate that other columbite bearing beds might be present.

It is questionable that the deposit is extensive enough to warrant an expenditure as large as anticipated in the proposal. Only 12,000 tons of inferred ore, assaying less than 0.2 percent Cb_2O_5, is estimated by the examiner. The existence of rare-earth minerals in the deposit is of interest, but little or no value can be attached to these minerals under existing conditions. The data available concerning the rare-earths indicate that they are present as monazite, allanite, and bastnaesite and as such are not in great demand. Rare-earth minerals of the pyrochlore or euxenite type have not been identified in the deposit, and the monazite is reported to contain very little thorium. Thus the economic value of the deposit must be based entirely on the Cb_2O_5 content of the ore.

HTReno:jtmc

Copy to: Division of Minerals
Branch of Rare and Precious Metals
DMPA (3 copies)
H. T. Reno
FILES

Although the deposit is low grade - probably below 0.2 percent Cb_2O_5 per ton - a reserve large enough to support installation of a simple mill could probably be worked profitably because gravity separation would produce a good grade of heavy-mineral concentrate that could be separated into the mineral components at a small cost, and the market price for domestic columbium will probably be maintained at about $3.40 per pound of contained Cb_2O_5.

It is recommended that the Field Team be asked to review the project to determine if 2 or 3 trenches about 600 feet long and crosscutting the beds are applicable as the first stage of a project to explore the property. If so, the second stage of the project could be the proposed 500 lin. feet of underground work but located from the results of the trenching. Diamond drilling is not applicable.

Horace W. Lowe

Enclosure

7/29/55 gla

IN REPLY REFER TO:

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

RECEIVED
JUL 29 1955

July 27, 1955

Re: DMEA 3884
Dark Star Mining Co.
Dark Star Mine
Ravalli Co., Mont.
$18,794.72 - Columbite, monazite, rare earths

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report

The Field has recommended the acceptance of a staged contract calling for, principally, 500 feet of drifting on a narrow columbite-bearing marble bed, the work to be divided into Stage I, 300 feet and Stage II, 200 feet.

Perhaps justifiable curiosity as to the behavior of this unique deposit rather than its apparent probable worth prompted the recommendation. Too few samples can as yet be cut to enable an estimate to be made of the average grade of the bed. Samples of the vein (bed) assayed from 0.01% Nb for 3.4 feet, to 0.25% for 2.2 feet. Very little if any tantalum is associated with the columbium.

As estimated by the examiner there would be 12,000 tons or inferred ore in the vein if it is continuous for 500 feet and maintains an average width of 2 feet. Comparatively, such a reserve would be of little significance, but in view of the lack of information concerning that type of deposit, at least some work is warranted.

I concur with the 2-stage program recommendation of the Field Team. Perhaps the well qualified operators will find time to keep better than average progress notes especially where timbering is required.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JUL 2

July 27, 1955

Re: DMEA 3684
Dark Star Mining Co.
Dark Star Mine
Ravalli Co., Mont.
$15,754.72 - Columbite,
monazite, rare earths

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report

The Field has recommended the acceptance of a staged contract calling for, principally, 500 feet of drifting on a narrow columbite-bearing mobile bed, the work to be divided into Stage I, 300 feet and Stage II, 800 feet.

Perhaps justifiable curiosity as to the behavior of this unique deposit rather than its apparent probable worth prompted the recommendation. The few samples can as yet be cut to enable an estimate to be made of the average grade of the bed. Samples of the vein (bed) assayed from 0.01% Nb for 3.4 feet, to 0.25% for 2.2 feet. Very little if any tantalum is associated with the columbium.

As estimated by the examiner there would be 18,000 tons or inferred ore in the vein if it is continuous for 500 feet and maintains an average width of 2 feet. Comparatively, such a reserve would be of little significance, but in view of the lack of information concerning that type of deposit, at least some work is warranted.

I concur with the 2-stage program recommendation of the Field Team. Perhaps the well qualified operators will find time to keep better than average progress notes especially where timbering is required.

H. E. Nelson

H. E. Nelson

HENelson:iml
G-7/27/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. T. Reno, 3641

7/26/55-gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 1 0 1955

July 15, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3884 (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

Enclosed are four copies each of memoranda by H. B. Nickelson, Geological Survey, and A. L. Service, Bureau of Mines, recommending an exploration project at the Dark Star property.

As you will gather from the enclosed memoranda, this columbite occurrence is rather unusual. The only similar occurrence of columbite in carbonate rock rather than in a pegmatite is the deposit in the Fen district of Norway which is being mined, we believe, under a GSA contract. The Dark Star deposit is much smaller than the Norwegian deposit, although the Cb_2O_5 grade is similar.

The need for domestic columbite production seems to be great, and we have no hesitancy in recommending a modest exploration project at the Dark Star property. There seems to be a good chance of finding a small tonnage of columbite that appears to contain almost no tantalum, and this seems to be an excellent opportunity to evaluate one of several columbite-bearing beds in the general area.

Since Mr. Nickelson's report was written we have received semi-quantitative spectrographic analyses of his samples (copies are enclosed). These analyses are particularly interesting because of the rare earth determinations. The economic importance of these rare earths is not clear to us. These rare earths are not in monazite.

Reviewed by
DMEA OPERATING COMMITTEE
7-25-55
(Date)

By Field Team, Region I, NW District

Enclosures

Wing G. Agnew, Acting Exec. Officer
U.S. Bureau of Mines

Verne C. Fryklund, Jr., Member
U. S. Geological Survey

cc: USBM (2)
USGS (SRO)
Nickelson

P. S. The lease agreement dated August 25, 1954, is between Louis Erickson and William J. Van Matre. We are asking Mr. Van Matre for a copy of the assignment of the lease to Dark Star Mining Company, and as soon as it is received we shall send it to you.

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

1201 N. Division St.
Spokane 2, Washington
June 24, 1955

RECEIVED JUL 1 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: A. L. Service, Mining Engineer, Bureau of Mines

Subject: Cost analysis, Docket No. DMEA-3884 (columbite and rare earth minerals), Dark Star Mining Company, Dark Star and Determined Claims, Ravalli County, Montana

The applicant's request for an exploration program consisting of 500 feet of drifting at a cost of $27,176.92 is acceptable with a few modifications.

The following unit costs are recommended for consideration in the event that the application is approved.

Cost Evaluation

Stage I

Trenching and portal work		
D-6 bulldozer or equiv. @ $10/hr. for 50 hours		$ 500.00
Compressor house		200.00
Tent for living quarters		100.00
Drifting - 300 feet		
Labor	$13.71/ft.	
Insurance and tax - 10%	1.37	
Bits and steel	1.40	
Pipe and accessories	1.40	
Rails, ties & accessories	1.35	
Explosives	3.10	
Vent tube	1.00	
Misc. tools	0.20	
Repair parts	0.60	
Equipment use allowance	5.65	
Fuel and grease	1.35	
Misc. supplies	.35	
	$31.48/ft.	

Reviewed by
DMEA OPERATING COMMITTEE
7-25-55
(date)

Stage I - continued

Timber, 5 ft. x 7 ft. in the clear, shall be used where necessary.
300 feet @ $5.00/ft. $1,500.00

Technical Consultation - 16 shifts @ $28.42/shift 454.72

Stage II

The second stage will include 200 feet of drifting at the above unit cost, to be done with the approval of the Field Team.

The Field Team has been informed that the Naval Gun Factory, Washington, D.C. will run analyses on rare earth samples at no charge to DMEA; therefore, an allowance of $300.00 to cover handling and freight of samples is recommended.

Sampling (sacks, handling, freight) $ 300.00

Recommended Unit Costs

Bulldozing, 50 hrs. @ $10.00/hr.	$ 500.00
Compressor house	200.00
Living quarters (tent)	100.00
Drifting, Stage I, 300 feet @ $31.48/ft.	9,444.00
Drifting, Stage II, 200 feet @ $31.48/ft.	6,296.00
Timber, 300 feet @ $5.00/ft.	1,500.00
Sampling (sacks, handling, freight)	300.00
Technical Services, 16 shifts @ $28.42/shift	454.72
Total	$18,794.72
Government participation @ 75%	$14,096.04

Orig. & 3 cys - Wash.
USGS (2)
DMEA
Engr.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED JULY 1 1955

Report No. TWS-2342 For Howard Nickelson Date June 29, 1955

Requested by W. F. Weissenborn

Lot No. 1685
Spec. Tal. No. 1905
Plate No. III-1732

Semi-Quantitative Spectrographic Analysis of Samples of Ores from Van Matre Property in Alta District, Ravalli County, Montana

Sample No.	426-A	427-A	430-A	431-A
Lab. No.	143370	143371	143372	143373
Over 10 %	Ca	Ca	Ca	Ca
5-10 %	—	—	—	—
1-5 %	Si Mg Fe	Fe Sr	Ce Si Sr La	Sr Ce La
.5-1 %	Ba	Mg	Ba Fe Nd Mg	Nd Si Ba
.1-.5 %	Sr Al Mn	Ba Si Mn	Pr Mn	Pr Fe Mg
.05-.1 %	—	La Al Ce	Al	Mn
.01-.05 %	Na Ce Nd Mn Ti	Nd Na Ti	Na Rb Nb	Na Al B
.005-.01 %	P Cu La	B Pb Y	Sc V B Ti	Sc V Nb Ti
.001-.005 %	V Sc Y	V Cu Sc	Y	Y Cu
.0005-.001 %	Cr	Cr Yb	—	—
.0001-.0005 %	Yb	—	Yb	Yb

Continued on next page

By

Geochemistry and Petrology Branch

☆ U. S. GOVERNMENT PRINTING OFFICE 1955-331960

RECEIVED
JUL 19 1955

UNITED STATES
Department of the Interior
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

July 6, 1955

Memorandum

To: DMEA Field Team, Region I, Northwest District

From: Howard B. Nickelson, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3884 (columbite, monazite, rare earths), Field examination, Dark Star property, Dark Star Mining Company, Ravalli County, Montana, (William J. and Victor E. Van Matre, 1708 Texas Avenue, Butte, Montana).

Summary

The property was examined on May 21, 1955, by the writer, accompanied by Mr. William Van Matre. The outcrops of several occurrences in the area were examined, and samples were cut from these outcrops and the adit dump.

The columbite is believed to occur in a narrow marble bed. The bed ranges in width from 1½ to 4 feet and can be traced for approximately 700 feet along the surface in hand pits, dozer trenches, and float. The columbite, which is almost free of tantalum, is associated with rare earth carbonate minerals, calcite, barite, and quartz; this deposit seems to be unique.

Portions of the bed may contain from 4 to 10 pounds of columbite per ton and 5 to 20 percent rare earth oxides per ton, as estimated both by the applicant and the examiner. Samples cut across the bed from various pits are lower than this estimate, but the scattered and irregular grains and blebs of columbite make channel sampling unreliable; bulk samples would no doubt be more reliable. It is apparent that the columbite content of the deposit may average below 0.2 percent per ton, but it is believed that the deposit should be explored because it does have the potential to produce a relatively tantalum-free columbite product that would have special uses in industry. It is also a deposit which merits exploration to obtain geological information concerning its origin and occurrence.

Reviewed by
DMEA OPERATING COMMITTEE
7-25-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Report No. TWS-2342 For: Howard Nickelson Date: June 29, 1955

Requested by: A.E. Weissenborn

Loi No. 1685 (page 2)
Spec. Lab. No. 1905
Plate No. IEI-1732

Sample No.	432-A	433-A	434-A	[illegible]-2
Lab. No.	[illegible]	[illegible]	[illegible]	[illegible]
Over 10 %	Ca	Ca	Ca	Ca
5-10 %	—	—	Mg	—
1-5 %	Sr Ce La	Mg Fe	Fe	Si Ce La Sr
.5-1 %	Ba Fe Mg Nd Si	Si Ce La P	La Si Ce P	Ba Fe Nd Mg
.1-.5 %	Pr P Al Mn	Mn Nd Al Sr	Al Mn Nd Sr Ba	Al Mn P Pr
.05-.1 %	—	Ba Pr	Pr	—
.01-.05 %	Na Pb Nb	Na Ti Nb	Na Nb Ti V	Na V Cu Pb Ti
.005-.01 %	Sc B V Ti	B Y V Pb	B Pb Y	B Sc Y
.001-.005 %	Y Cu	Sc Cu	Sc Cu	Nb
.0005-.001 %	—	Cr	Cr	Cr
.0001-.0005 %	Yb	Yb	Yb	Yb

Col. W. G. Schlecht B 1052

By Spectrographic Methods for AEC (Washington)
Katherine E. Valentine
Project Leader: Glenn L. Waring

Geochemistry and Petrology Branch

Nelson
Atomic Energy Commission Program
Geochemistry and Petrology Branch

U.S. GOVERNMENT PRINTING OFFICE 1955-931700

Recommendation

It is recommended that the application be approved to allow 500 feet of drifting on the bed from the present portal; bulldozing to improve the portal site; trenching the bed in several places to make certain of its surface continuity above the proposed drift; and construction of a temporary bunkhouse and a compressor house.

Location and accessibility

The Dark Star prospect is in secs. 3 and 4, T. 4 S., R. 22 W., Bitterroot Base Line, Ravalli County, Montana, in the unorganized Alta mining district.

No steep hills are encountered in traveling to the property, as the road is all at water grade, but since the deposit is in mountainous country, some snow removal will be necessary during winter and early spring months. The route to the property is as follows:

1. Travel south from Darby, Montana, on U. S. Highway No. 93 to the junction of the road leading to Grangeville, Idaho.

2. From this junction travel to a point approximately 1 mile beyond the West Fork Ranger Station to a junction leading to Alta, Montana, a distance of approximately 18 miles, on improved gravel road.

3. From this junction follow a Forest Service access road which passes through Alta, Montana, and continues to the prospect, located at the junction of Sheep Creek and the West Fork of the Bitterroot River, a distance of approximately 24 miles.

Competency of the applicant

William Van Matre is a graduate geological engineer, and his partner and brother, Victor, is a graduate mining engineer. Both partners have had considerable mining experience and are capable of performing the project exploration and of submitting geologic and engineering data obtained from the proposed exploration.

William Van Matre stated that the partners have sufficient funds for their share of the proposed exploration and they have almost all of the equipment necessary to begin the proposed drifting.

Applicant's property rights

The Dark Star and the Determined unpatented claims are owned by Louis Erickson, Corvallis, Montana, who leased with option to purchase to William J. Van Matre, one of the partners. Copies of the lease and option to purchase are enclosed with the application.

The claims are recorded in the Lode Locations Records in the County Courthouse of Ravalli County, Montana, as follows:

The Dark Star in Lode Locations, Book 9, page 23
The Determined in Lode Locations, Book 9, page 25

On Consent to Lien, Louis Erickson included the following statement under paragraph 5: "Future production from this land may not be held for repayment of money used to explore other lands." Just before the Consent to Lien was signed, William Van Matre leased adjoining claims from Ernest Shook and at that time Van Matre believed all the claims he controlled were to be included as land in any DMEA contract that might be entered into with the Government. Louis Erickson had the above statement added to the Consent to Lien to avoid having any royalty payments from his property used as payment of any DMEA exploration that might take place on the Shook claims. The above statement is irrelevant, as no Shook claims will be included in the proposed contract.

The Dark Star claim is shown on the applicant's map, and the Determined claim adjoins the south side line of the Dark Star claim. Only the Dark Star claim will be benefitted by the proposed exploration.

Description of the property

The underground workings at the property consist of a 32-foot drift on the ted, as shown on the applicant's map. The road to the portal site is narrow, and considerable slough has fallen on it during the spring thaw. The portal site area is limited in size and should be enlarged.

The 32 feet of drift has been timbered, but the ground is becoming hard and timber may not be needed at the beginning of the proposed project. No surface facilities exist on the property.

The applicant's map has been copied and the locations and assays of the samples cut have been added.

Geology

The occurrence has been described in two publications: Howard W. Jaffe and E. P. Kaiser, Unpublished report to this office; and Agatin T. Abbott, Idaho State Bureau of Mines and Geology, Pamphlet 99, Monazite deposits in calcareous rocks, northern Lemhi County, Idaho.

The narrow calcareous bed lies in an argillaceous rock of Precambrian age which grades, going east, into a hornblende-mica schist and then into coarsely crystalline rock composed of large feldspar porphyroblasts and quartz in a hornblende-mica matrix with a gneissic structure. These schists and gneisses are believed to have been originally Belt argillites that have been metamorphosed during the introduction of the Idaho batholith. The results of this type of metamorphism are evident over large areas to the south along the Salmon River in Idaho.

The origin of this type of rare earth and columbite occurrence is controversial, but the geologists who have examined the area suggest that the occurrence is a narrow bed of limestone that has undergone an intense metamorphism which changed the original argillites to a granitic gneiss; during this process of metamorphism the rare earth and columbite minerals replaced portions of the limestone bed.

Howard W. Jaffe and E. P. Kaiser describe the ore minerals on the Van Matre property in a report submitted to this office as follows:

> "The samples containing rare-earth carbonates came from the dump near the portal of the tunnel. They also contain columbite, monazite, allanite, and barite, in medium or fine grained buff-weathering white marble. The various minerals occur in the marble as massive aggregates and patches without any vein relationship. Monazite was seen only as small anhedral inclusions in the columbite. Its low radioactivity indicates that it is a low-thorium variety like the monazite in the Mineral Hill district. The columbite forms anhedral masses several inches in diameter; its occurrence here in marble of probable sedimentary origin is apparently unique."

The applicant has identified the following minerals in the deposit: calcite, ancylite, barite, quartz, bastnaesite, monazite, and columbite. Iron sulfide, molybdenite, oxidized

copper minerals, and magnetite have been observed in minor amounts. Vermiculite and various lime silicates have also been observed.

The bed, 1.9 feet in width, is exposed in a trench at sample location 426A (see enclosed map). This sample assayed 0.14 percent niobium chemically. (This sample, as well as other samples collected by the writer, has been analyzed for niobium by the U. S. Geological Survey Chemistry and Petrology Branch. Assays for rare earths have been requested.) Just above this location the bed, as exposed by a hand trench, is 3.4 feet wide, and a sample from this location, No. 427A, assayed 0.01 percent niobium. Very little columbite was observed, and that seen was as small crystals.

Just above this exposure the dozer trench exposed a flat fault, possibly a thrust fault, which offset the bed approximately 100 feet to the south. Fragments of bed were dragged along this fault. The applicant started a tunnel on the hanging wall of the bed at this fault and drifted along the bed for 32 feet; the bed averaged 3 feet wide for this distance. The ore was piled at the portal, and Sample No. 430A was chipped from this pile with no attempt made to include any nodules of columbite from the pile. The resulting assay of 0.12 percent niobium is believed to be lower than the ore pile would actually assay; it is estimated that the ore pile would run approximately 0.5 percent columbite. +

Columbite was cobbed from the ore that had been partly cobbed at an earlier date. The resulting 12-pound sample, No. 428A, which is estimated to contain about 4 pounds of columbite, was obtained from the material in approximately 15 minutes. The photograph of it below shows the size of the crystals in the material.

This sample will be sent to the Geochemistry and Petrology Branch to be assayed for tantalum and niobium to check assay results received by the applicant from the General Services Administration (see applicant's assay results accompanying the application). These results will be forwarded as soon as they are received.

Another trench just above the portal exposed the bed which appeared to be mainly rare earth minerals. Channel Sample No. 431A across 3.4 feet of bed assayed 0.07 percent niobium. The next exposure in a hand pit showed a bed width of 2 feet. No sample was cut at this exposure. Beyond this last exposure of the bed the applicant did not prospect the bed for approximately 300 feet because the overburden was deeper, but some float was observed within this area. The bed should be exposed by either hand trenching or bulldozing between these hand pits.

The bed was exposed in two hand pits near the top of the hill, and Sample No. 432A was cut as shown on the enclosed map. This channel sample across 2.2 feet of bed assayed 0.25 percent niobium. The columbite was concentrated along the hanging wall of the bed and could be observed as crystals up to one-half inch in diameter. The bed in the next pit to the east was about 1½ feet in width, and no sample was cut here. Some bulldozing should be done to the east of this pit to determine the extent of the bed in this direction.

The bed to the south was examined and Sample No. 433A was taken from the dump. This sample assayed 0.21 percent niobium. Scant rare earth minerals were observed here, but the columbite was evident in small crystals about one-eighth inch in diameter. The rock had the appearance of marble. The niobium assays just quoted were determined by chemical methods. The following ozalid copy shows the Nb_2O_5 and Ta_2O_5 percentages of the same samples by x-ray fluormetric method.

The east end of the bed appears to be offset to the south; this may be caused by faults or may be an apparent offset due to local magnetic attraction resulting from concentration of magnetite in the country rock.

The bed was observed to thicken and thin, and this may be expected because of the metamorphism undergone in the area. The walls of the bed on all the exposures were sharp.

During 1954 the applicant hand cobbed 250 to 300 pounds of columbite assaying over 50 percent. From this material, a sample was sent to General Services Administration for preliminary

9-011

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

IWF-28

Report No. IWF-28 For A. E. Weissenborn Date June 27, 1955

Requested by H. B. Nickelson

Lot No. 1685 Misc.

Niobium and Tantalum in Ores, Van Matre Property, Alta District, Ravalli County, Montana.

Lab. No.	Sample No.	% Nb_2O_5	% Ta_2O_5
143370	426-A	0.26	None
143371	427-A	.04	"
143372	430-A	.23	"
143373	431-A	.12	"
143374	432-A	.40	"
143375	433-A	.42	"
143376	434-A	.19	"
143377	HBN-2	.07	"

Nb_2O_5 accurate to ± .01%

Ta_2O_5 sensitivity is about 0.1% so there may be 0.1% not detected.

By X-ray fluormetric method.

RECEIVED
JUN 30 1955
U.S. MAIL
U.S.G.S.
SPOKANE, WASH.

By J. M. Axelrod
J. M. Axelrod

Job No. B-1052

William F. Selbert
Geochemistry and Petrology Branch

jmc

☆ U. S. GOVERNMENT PRINTING OFFICE: 1951 - 974763

purchase tests. GSA requested an assay of this material, as it was an entirely different type of columbite than they were accustomed to from pegmatites. The assays resulting, which are enclosed with the application, show 52.29 percent Nb_2O_5, very little tantalum (0.3 percent), some titanium (1.64 percent), some manganese oxide (1.06 percent), and 12.48 percent iron oxide.

Ore reserves

It is estimated that 12,000 tons of material may be inferred above the proposed adit. It is difficult to estimate the amount of columbite and rare earth minerals that may be encountered in the exploration because at the present time a limited amount of sample data is available and also because the minerals are disseminated irregularly in the bed.

Availability of manpower and supplies

Manpower is available in the local area, and supplies will be obtained from Butte and Missoula. Gasoline or diesel engines will provide the necessary power. Water is available from Sheep Creek.

The proposal

The examiner recommends exploration essentially as proposed by the applicant. The first phase of work should consist of bulldozing 3 or 4 trenches across the bed, as shown on the attached map. It is estimated that 20 hours of dozing should complete this work. The portal area requires enlarging to provide space for a compressor shed, storage room, and the turning of vehicles. It is estimated that 12 hours of dozing would provide this necessary space at the portal and improve the access road from the creek to the portal. Some dozing may also be necessary for an access road to the camp site and an access road to the proposed ore chute and storage bin. It is estimated that 50 hours of dozing will be sufficient to complete all the above work. The applicant will build a simple chute down the hill to load the ore for stockpiling.

The second phase of work should consist of 500 feet of drifting from the present adit along the bed. Some crosscutting may be necessary to find offset portions of the bed if faulting is encountered. It is estimated that 300 feet of timbering should be allowed to support any bad ground.

The applicant requests that the additional cost of double blasting necessary to keep the ore free of wall rock be allowed. As stated by the applicant, magnetite and other minerals in the wall rock would hinder beneficiation, and would also dilute the ore from the narrow vein to such an extent as to render it uneconomic.

In addition, bulk samples or car samples would not be representative of the bed if wall rock materials were intermixed. It is doubtful if this can be considered in a DMEA contract.

As shown by the letter from Ledoux and Company enclosed in the application, commercial assaying is very expensive, so the Field Team has inquired if this type of assaying can be done by the Geochemistry and Petrology Branch at Denver, Colorado. Mr. Hubert W. Lakin has agreed to assay chemically for niobium and to determine spectrographically the rare earth content of a limited number of samples. It is recommended that the applicant sample each round by car sampling, crush and split each sample, and combine split portions from 3 or 4 rounds to make a sample that the Field Team can have assayed by the Geochemistry and Petrology Branch. Because of the large size and number of the samples it is suggested that the Government participate in the cost of a small laboratory crusher and a Jones splitter for the purpose of preparing these samples.

Some bulldozing for snow removal may be necessary before the contract is completed, and it is recommended that this be allowed. No buildings are on the property, and it is recommended that some funds be allotted for construction of a temporary compressor shed and a temporary bunkhouse.

The applicant is ready to start work as soon as he receives a contract. It is recommended that the time to complete the contract be 1 year. If snow conditions are severe the applicant may have to recess the work several months, but these conditions are not expected until February or March.

The Bureau of Mines DMEA field engineer will submit a cost estimate of the proposed exploration.

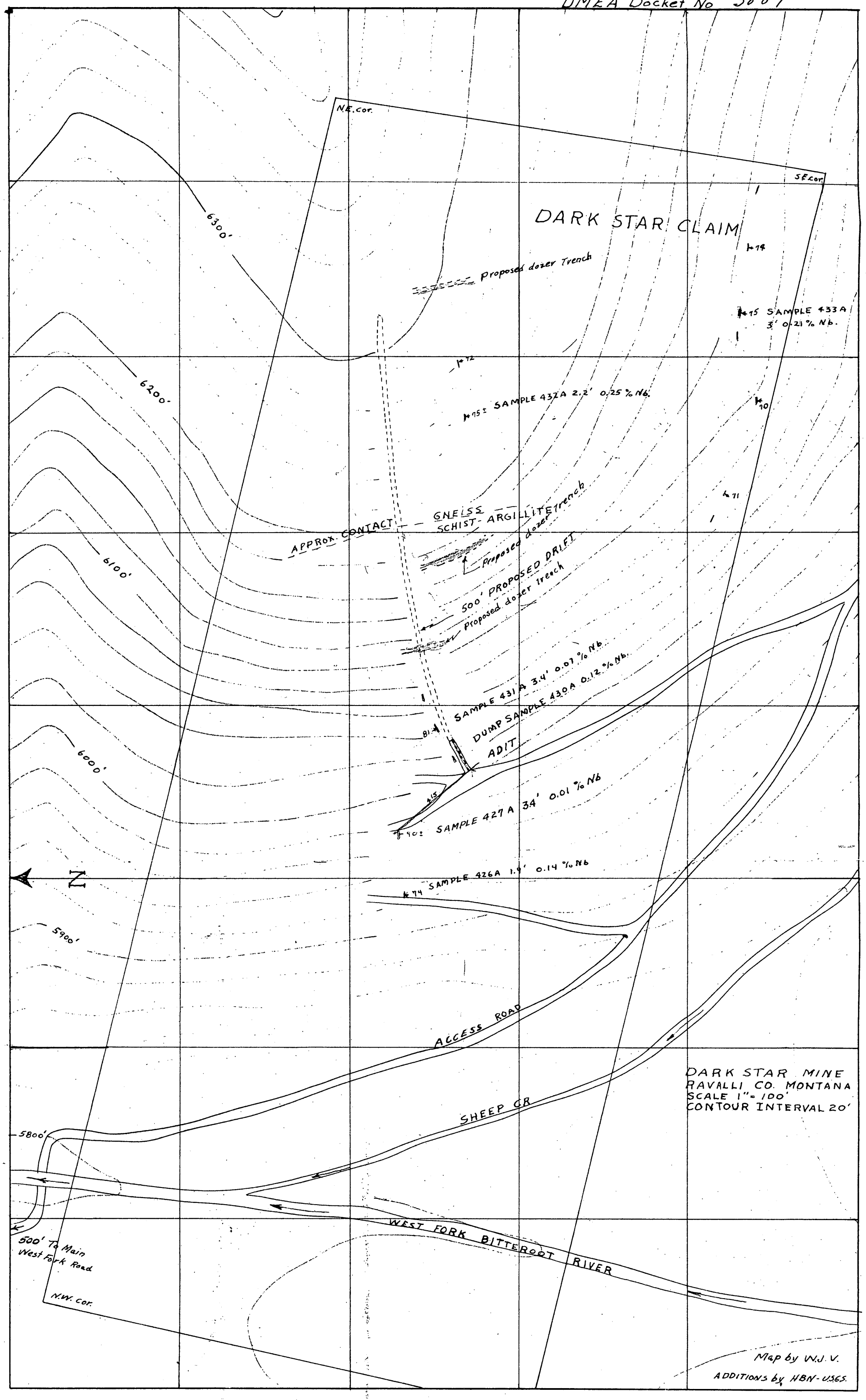
Conclusion

I believe that this property has unusual merit and interest and that Government participation in a limited exploration program is justified.

Attachment (1)

Distribution:
- DMEA (4)
- USBM (2)
- USGS (SRO)
- AEC, SIC
- Nickelson

DMEA Docket No 3884



UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

JU

July 15, 1955

Mr. William J. Van Matre
1708 Texas Avenue
Butte, Montana

Re: Docket No. DMEA-3884 (columbite, monazite, rare earths)
Dark Star Mining Company
Ravalli County, Montana

Dear Mr. Van Matre:

We note that the lease submitted with your application is between only Louis Erickson and yourself. Because you are operating as the Dark Star Mining Company, this lease agreement will have to be assigned to your company.

Please send us a copy of such assignment showing signatures; we will prepare enough copies to send on to our Washington office.

Sincerely yours,

Verne C. Fryklund, Jr.
for A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, N.W. Dist.

cc: DMEA (2)
USBM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 25 1955

July 15, 1955

Mr. William J. Van Matre
1708 Texas Avenue
Butte, Montana

Re: Docket No. DMA-384 (columbite, monazite, rare earths)
Dark Star Mining Company
Ravalli County, Montana

Dear Mr. Van Matre:

We note that the lease submitted with your application is between only Louis Erickson and yourself. Because you are operating as the Dark Star Mining Company, this lease agreement will have to be assigned to your company.

Please send us a copy of such assignment showing signatures; we will prepare enough copies to send on to our Washington office.

Sincerely yours,

Verne C. Fryklund, Jr.
for A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, N.W. Dist.

cc: DMEA (2)
USBM (2)
Nickelson

7/20/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 15 1955

July 15, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. [illegible] (columbite, monazite, rare earths)
Dark Star Mining Company
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

Enclosed are four copies each of memoranda by R. B. Nicholson, Geological Survey, and A. L. Service, Bureau of Mines, recommending an exploration project at the Dark Star property.

As you will gather from the enclosed memoranda, this columbite occurrence is rather unusual. The only similar occurrence of columbite in carbonate rock rather than in a pegmatite is the deposit in the Fen district of Norway which is being mined, we believe, under a GSA contract. The Dark Star deposit is much smaller than the Norwegian deposit, although the Cb_2O_5 grade is similar. Not true

The need for domestic columbite production seems to be great, and we have no hesitancy in recommending a modest exploration project at the Dark Star property. There seems to be a good chance of finding a small tonnage of columbite that appears to contain almost no tantalum, and this seems to be an excellent opportunity to evaluate one of several columbite-bearing beds in the general area.

Since Mr. Nicholson's report was written we have received semi-quantitative spectrographic analyses of his samples (copies are enclosed). These analyses are particularly interesting because of the rare earth determinations. The economic importance of these rare earths is not clear to us. These rare earths are not in monazite.

By Field Team, Region I, MN District

Enclosures

cc: DEM (2)
DEDS (SMC)
Nicholson

[illegible]ing D. [illegible]grew, Acting Dec. [illegible]
U.S. Bureau of Mines

[illegible]erne C. Fryklund, Jr., Mark[illegible]

P. S. The lease agreement dated August 25, 1954, is between Louis Erickson and William J. Van Meter. We are asking Mr. Van Meter for a copy of the assignment of the lease to Dark Star Mining Company, and as soon as it is received we shall send it to you.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED JUL 19 1955

Report No. TWS-232 For Howard Nicholson Date June 29, 1955

Requested by A.L. Weissenborn

Loi No. 1685 (page 2)
Spec. Lab. No. 1905
Field No. III-1732

Sample No.	432-A	433-A	434-A	BHF-2
Lab. No.	173374	173375	173376	173377
Over 10 %	Ca	Ca	Ca	Ca
5-10 %	—	—	Mg	—
1-5 %	Sr Ce La	Mg Fe	Fe	Si Ce La Sr
.5-1 %	Ba Fe Mg Nd Si	Si Ce La P	La Si Ce P	Ba Fe Nd Mg
.1-.5 %	Pr P Al Mn	Mn Nd Al Sr	Al Mn Nd Sr Ba	Al Mn P Pr
.05-.1 %	—	Ba Pr	Pr	—
.01-.05 %	Na Pb Nb	Na Ti Nb	Na Nb Ti V	Na V Cu Pb Ti
.005-.01 %	Sc B V Ti	B Y V Pb	B Pb Y	B Sc Y
.001-.005 %	Y Cu	Sc Cu	Sc Cu	Nb
.0005-.001 %	—	Cr	Cr	Cr
.0001-.0005 %	Yb	Yb	Yb	Yb

DMEH

cc: W.G. Schlecht

P 1052

By Spectrographic Methods for IEC (Washington)
Katherine E. Valentine
Project Leader: Claude L. Waring

Geochemistry and Petrology Branch

Liaison
Atomic Energy Commission Program
Geochemistry and Petrology Branch

U.S. GOVERNMENT PRINTING OFFICE 1958-931760

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

1201 N. Division St.
Spokane 2, Washington
June 24, 1955

RECEIVED
JUL 19 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: A. L. Service, Mining Engineer, Bureau of Mines

Subject: Cost analysis, Docket No. DMEA- 3884 (columbite and rare earth minerals), Dark Star Mining Company, Dark Star and Determined Claims, Ravalli County, Montana

The applicant's request for an exploration program consisting of 500 feet of drifting at a cost of $27,176.92 is acceptable with a few modifications.

The following unit costs are recommended for consideration in the event that the application is approved.

Cost Evaluation

Stage I

Trenching and portal work		
D-6 bulldozer or equiv. @ $10/hr. for 50 hours		$ 500.00
Compressor house		200.00
Tent for living quarters		100.00
Drifting - 300 feet		
Labor	$13.71/ft.	
Insurance and tax - 10%	1.37	
Bits and steel	1.40	
Pipe and accessories	1.40	
Rails, ties & accessories	1.35	
Explosives	3.10	
Vent tube	1.00	
Misc. tools	0.20	
Repair parts	0.60	
Equipment use allowance	5.65	
Fuel and grease	1.35	
Misc. supplies	.35	
	$31.48/ft.	

Stage I - continued

Timber, 5 ft. x 7 ft. in the clear, shall be used where necessary.
300 feet @ $5.00/ft. $1,500.00

Technical Consultation - 16 shifts @ $28.42/shift 454.72

Stage II

The second stage will include 200 feet of drifting at the above unit cost, to be done with the approval of the Field Team.

The Field Team has been informed that the Naval Gun Factory, Washington, D.C. will run analyses on rare earth samples at no charge to DMEA; therefore, an allowance of $300.00 to cover handling and freight of samples is recommended.

Sampling (sacks, handling, freight) $ 300.00

Recommended Unit Costs

Bulldozing, 50 hrs. @ $10.00/hr.	$ 500.00
Compressor house	200.00
Living quarters (tent)	100.00
Drifting, Stage I, 300 feet @ $31.48/ft.	9,444.00
Drifting, Stage II, 200 feet @ $31.48/ft.	6,296.00
Timber, 300 feet @ $5.00/ft.	1,500.00
Sampling (sacks, handling, freight)	300.00
Technical Services, 16 shifts @ $28.42/shift	454.72
Total	$18,794.72
Government participation @ 75%	$14,096.04

Orig. & 3 cys - Wash.
USGS (2)
DMEA
Engr.

S-011

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Report No. TWS-2342 For Howard Wickelson Date June 29, 1955

Requested by A. E. Weissenborn

Lot No. 1635
Spec. Lab. No. 1905
Plate No. III-1732

Semi-Quantitative Spectrographic Analysis of Samples of Ores from Van Metre Property in Alta District, Ravalli County, Montana

Sample No.	426-A	427-A	430-A	431-A
Lab. No.	143370	143371	143372	143373
Over 10 %	Ca	Ca	Ca	Ca
5-10 %	—	—	—	—
1-5 %	Si Mg Fe	Fe Sr	Ce Si Sr La	Sr Ce La
.5-1 %	Ba	Mg	Ba Fe Nd Mg	Nd Si Ba
.1-.5 %	Sr Al Mn	Ba Si Mn	Pr Mn	Pr Fe Mg
.05-.1 %	—	La Al Ce	Al	Mn
.01-.05 %	Na Ce Nd Nb Ti	Nd Na Ti	Na Pb Nb	Pb Al B
.005-.01 %	B Cu La	B Pb Y	Sc V B Ti	Sc V Nb Ti
.001-.005 %	V Sc Y	V Cu Sc	Y	Y Cu
.0005-.001 %	Cr	Cr Yb	—	—
.0001-.0005 %	Yb	—	Yb	Yb

By

Continued on next page

Geochemistry and Petrology Branch

☆ U.S. GOVERNMENT PRINTING OFFICE 1955-931768

RECEIVED
JUL 19 1955

UNITED STATES
Department of the Interior
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

July 6, 1955

Memorandum

To: DMEA Field Team, Region I, Northwest District

From: Howard B. Nickelson, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3884 (columbite, monazite, rare earths), Field examination, Dark Star property, Dark Star Mining Company, Ravalli County, Montana, (William J. and Victor E. Van Matre, 1708 Texas Avenue, Butte, Montana).

DMEA

Summary

The property was examined on May 21, 1955, by the writer, accompanied by Mr. William Van Matre. The outcrops of several occurrences in the area were examined, and samples were cut from these outcrops and the adit dump.

The columbite is believed to occur in a narrow marble bed. The bed ranges in width from 1½ to 4 feet and can be traced for approximately 700 feet along the surface in hand pits, dozer trenches, and float. The columbite, which is almost free of tantalum, is associated with rare earth carbonate minerals, calcite, barite, and quartz; this deposit seems to be unique. ?

Portions of the bed may contain from 4 to 10 pounds of columbite per ton and 5 to 20 percent rare earth oxides per ton, as estimated both by the applicant and the examiner. Samples cut across the bed from various pits are lower than this estimate, but the scattered and irregular grains and blebs of columbite make channel sampling unreliable; bulk samples would no doubt be more reliable. It is apparent that the columbite content of the deposit may average below 0.2 percent per ton, but it is believed that the deposit should be explored because it does have the potential to produce a relatively tantalum-free columbite product that would have special uses in industry. It is also a deposit which merits exploration to obtain geological information concerning its origin and occurrence. USGS job?

Recommendation

It is recommended that the application be approved to allow 500 feet of drifting on the bed from the present portal; bulldozing to improve the portal site; trenching the bed in several places to make certain of its surface continuity above the proposed drift; and construction of a temporary bunkhouse and a compressor house.

Location and accessibility

The Dark Star prospect is in secs. 3 and 4, T. 4 S., R. 22 W., Bitterroot Base Line, Ravalli County, Montana, in the unorganized Alta mining district.

No steep hills are encountered in traveling to the property, as the road is all at water grade, but since the deposit is in mountainous country, some snow removal will be necessary during winter and early spring months. The route to the property is as follows:

1. Travel south from Darby, Montana, on U. S. Highway No. 93 to the junction of the road leading to Grangeville, Idaho.

2. From this junction travel to a point approximately 1 mile beyond the West Fork Ranger Station to a junction leading to Alta, Montana, a distance of approximately 18 miles, on improved gravel road.

3. From this junction follow a Forest Service access road which passes through Alta, Montana, and continues to the prospect, located at the junction of Sheep Creek and the West Fork of the Bitterroot River, a distance of approximately 24 miles.

Competency of the applicant

William Van Matre is a graduate geological engineer, and his partner and brother, Victor, is a graduate mining engineer. Both partners have had considerable mining experience and are capable of performing the project exploration and of submitting geologic and engineering data obtained from the proposed exploration.

William Van Matre stated that the partners have sufficient funds for their share of the proposed exploration and they have almost all of the equipment necessary to begin the proposed drifting.

Applicant's property rights

The Dark Star and the Determined unpatented claims are owned by Louis Erickson, Corvallis, Montana, who leased with option to purchase to William J. Van Matre, one of the partners. Copies of the lease and option to purchase are enclosed with the application.

The claims are recorded in the Lode Locations Records in the County Courthouse of Ravalli County, Montana, as follows:

The Dark Star in Lode Locations, Book 9, page 23
The Determined in Lode Locations, Book 9, page 25

On Consent to Lien, Louis Erickson included the following statement under paragraph 5: "Future production from this land may not be held for repayment of money used to explore other lands." Just before the Consent to Lien was signed, William Van Matre leased adjoining claims from Ernest Shook and at that time Van Matre believed all the claims he controlled were to be included as land in any DMEA contract that might be entered into with the Government. Louis Erickson had the above statement added to the Consent to Lien to avoid having any royalty payments from his property used as payment of any DMEA exploration that might take place on the Shook claims. The above statement is irrelevant, as no Shook claims will be included in the proposed contract.

The Dark Star claim is shown on the applicant's map, and the Determined claim adjoins the south side line of the Dark Star claim. Only the Dark Star claim will be benefitted by the proposed exploration.

Description of the property

The underground workings at the property consist of a 32-foot drift on the bed, as shown on the applicant's map. The road to the portal site is narrow, and considerable slough has fallen on it during the spring thaw. The portal site area is limited in size and should be enlarged.

The 32 feet of drift has been timbered, but the ground is becoming hard and timber may not be needed at the beginning of the proposed project. No surface facilities exist on the property.

The applicant's map has been copied and the locations and assays of the samples cut have been added.

Geology

The occurrence has been described in two publications: Howard W. Jaffe and E. P. Kaiser, Unpublished report to this office; and Agatin T. Abbott, Idaho State Bureau of Mines and Geology, Pamphlet 99, Monazite deposits in calcareous rocks, northern Lemhi County, Idaho.

The narrow calcareous bed lies in an argillaceous rock of Precambrian age which grades, going east, into a hornblende-mica schist and then into coarsely crystalline rock composed of large feldspar porphyroblasts and quartz in a hornblende-mica matrix with a gneissic structure. These schists and gneisses are believed to have been originally Belt argillites that have been metamorphosed during the introduction of the Idaho batholith. The results of this type of metamorphism are evident over large areas to the south along the Salmon River in Idaho.

The origin of this type of rare earth and columbite occurrence is controversial, but the geologists who have examined the area suggest that the occurrence is a narrow bed of limestone that has undergone an intense metamorphism which changed the original argillites to a granitic gneiss; during this process of metamorphism the rare earth and columbite minerals replaced portions of the limestone bed.

Howard W. Jaffe and E. P. Kaiser describe the ore minerals on the Van Matre property in a report submitted to this office as follows:

> "The samples containing rare-earth carbonates came from the dump near the portal of the tunnel. They also contain columbite, monazite, allanite, and barite, in medium or fine grained buff-weathering white marble. The various minerals occur in the marble as massive aggregates and patches without any vein relationship. Monazite was seen only as small anhedral inclusions in the columbite. Its low radioactivity indicates that it is a low-thorium variety like the monazite in the Mineral Hill district. The columbite forms anhedral masses several inches in diameter; its occurrence here in marble of probable sedimentary origin is apparently unique."

The applicant has identified the following minerals in the deposit: calcite, ancylite, barite, quartz, bastnaesite, monazite, and columbite. Iron sulfide, molybdenite, oxidized

copper minerals, and magnetite have been observed in minor amounts. Vermiculite and various lime silicates have also been observed.

The bed, 1.9 feet in width, is exposed in a trench at sample location 426A (see enclosed map). This sample assayed 0.14 percent niobium chemically. (This sample, as well as other samples collected by the writer, has been analyzed for niobium by the U. S. Geological Survey Chemistry and Petrology Branch. Assays for rare earths have been requested.) Just above this location the bed, as exposed by a hand trench, is 3.4 feet wide, and a sample from this location, No. 427A, assayed 0.01 percent niobium. Very little columbite was observed, and that seen was as small crystals.

Just above this exposure the dozer trench exposed a flat fault, possibly a thrust fault, which offset the bed approximately 100 feet to the south. Fragments of bed were dragged along this fault. The applicant started a tunnel on the hanging wall of the bed at this fault and drifted along the bed for 32 feet; the bed averaged 3 feet wide for this distance. The ore was piled at the portal, and Sample No. 430A was chipped from this pile with no attempt made to include any nodules of columbite from the pile. The resulting assay of 0.12 percent niobium is believed to be lower than the ore pile would actually assay; it is estimated that the ore pile would run approximately 0.5 percent columbite.

Columbite was cobbed from the ore that had been partly cobbed at an earlier date. The resulting 12-pound sample, No. 428A, which is estimated to contain about 4 pounds of columbite, was obtained from the material in approximately 15 minutes. The photograph of it below shows the size of the crystals in the material.

This sample will be sent to the Geochemistry and Petrology Branch to be assayed for tantalum and niobium to check assay results received by the applicant from the General Services Administration (see applicant's assay results accompanying the application). These results will be forwarded as soon as they are received.

Another trench just above the portal exposed the bed which appeared to be mainly rare earth minerals. Channel Sample No. 431A across 3.4 feet of bed assayed 0.07 percent niobium. The next exposure in a hand pit showed a bed width of 2 feet. No sample was cut at this exposure. Beyond this last exposure of the bed the applicant did not prospect the bed for approximately 300 feet because the overburden was deeper, but some float was observed within this area. The bed should be exposed by either hand trenching or bulldozing between these hand pits.

The bed was exposed in two hand pits near the top of the hill, and Sample No. 432A was cut as shown on the enclosed map. This channel sample across 2.2 feet of bed assayed 0.25 percent niobium. The columbite was concentrated along the hanging wall of the bed and could be observed as crystals up to one-half inch in diameter. The bed in the next pit to the east was about 1½ feet in width, and no sample was cut here. Some bulldozing should be done to the east of this pit to determine the extent of the bed in this direction.

The bed to the south was examined and Sample No. 433A was taken from the dump. This sample assayed 0.21 percent niobium. Scant rare earth minerals were observed here, but the columbite was evident in small crystals about one-eighth inch in diameter. The rock had the appearance of marble. The niobium assays just quoted were determined by chemical methods. The following ozalid copy shows the Nb_2O_5 and Ta_2O_5 percentages of the same samples by x-ray fluormetric method.

The east end of the bed appears to be offset to the south; this may be caused by faults or may be an apparent offset due to local magnetic attraction resulting from concentration of magnetite in the country rock.

The bed was observed to thicken and thin, and this may be expected because of the metamorphism undergone in the area. The walls of the bed on all the exposures were sharp.

During 1954 the applicant hand cobbed 250 to 300 pounds of columbite assaying over 50 percent. From this material, a sample was sent to General Services Administration for preliminary

9-011

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

IWF-28

Report No. IWF-28 For A. E. Weissenborn Date June 27, 1955

Requested by H. B. Nickelson

Lot No. 1685 Misc.

Niobium and Tantalum in Cres, Van Matre Property, Alta District, Ravalli County, Montana.

Lab. No.	Sample No.	% Nb_2O_5	% Ta_2O_5
143370	426-A	0.26	None
143371	427-A	.04	"
143372	430-A	.23	"
143373	431-A	.12	"
143374	432-A	.40	"
143375	433-A	.42	"
143376	434-A	.19	"
143377	HBN-2	.07	"

Nb_2O_5 accurate to ± .01%

Ta_2O_5 sensitivity is about 0.1% so there may be 0.1% not detected.

By X-ray fluormetric method.

RECEIVED
JUN 30 1955
U.S.G.S.
SPOKANE, WASH.

By J. M. Axelrod
J. M. Axelrod

William G. Schlecht
Geochemistry and Petrology Branch

Job No. B-1052

jmc

☆ U. S. GOVERNMENT PRINTING OFFICE: 1951 - 974763

purchase tests. GSA requested an assay of this material, as it was an entirely different type of columbite than they were accustomed to from pegmatites. The assays resulting, which are enclosed with the application, show 52.29 percent Nb_2O_5, very little tantalum (0.3 percent), some titanium (1.64 percent), some manganese oxide (1.06 percent), and 12.48 percent iron oxide.

Ore reserves

It is estimated that 12,000 tons of material may be inferred above the proposed adit. It is difficult to estimate the amount of columbite and rare earth minerals that may be encountered in the exploration because at the present time a limited amount of sample data is available and also because the minerals are disseminated irregularly in the bed.

Availability of manpower and supplies

Manpower is available in the local area, and supplies will be obtained from Butte and Missoula. Gasoline or diesel engines will provide the necessary power. Water is available from Sheep Creek.

The proposal

The examiner recommends exploration essentially as proposed by the applicant. The first phase of work should consist of bulldozing 3 or 4 trenches across the bed, as shown on the attached map. It is estimated that 20 hours of dozing should complete this work. The portal area requires enlarging to provide space for a compressor shed, storage room, and the turning of vehicles. It is estimated that 12 hours of dozing would provide this necessary space at the portal and improve the access road from the creek to the portal. Some dozing may also be necessary for an access road to the camp site and an access road to the proposed ore chute and storage bin. It is estimated that 50 hours of dozing will be sufficient to complete all the above work. The applicant will build a simple chute down the hill to load the ore for stockpiling.

The second phase of work should consist of 500 feet of drifting from the present adit along the bed. Some crosscutting may be necessary to find offset portions of the bed if faulting is encountered. It is estimated that 300 feet of timbering should be allowed to support any bad ground.

The applicant requests that the additional cost of double blasting necessary to keep the ore free of wall rock be allowed. As stated by the applicant, magnetite and other minerals in the wall rock would hinder beneficiation, and would also dilute the ore from the narrow vein to such an extent as to render it uneconomic.

In addition, bulk samples or car samples would not be representative of the bed if wall rock materials were intermixed. It is doubtful if this can be considered in a DMEA contract.

As shown by the letter from Ledoux and Company enclosed in the application, commercial assaying is very expensive, so the Field Team has inquired if this type of assaying can be done by the Geochemistry and Petrology Branch at Denver, Colorado. Mr. Hubert W. Lakin has agreed to assay chemically for niobium and to determine spectrographically the rare earth content of a limited number of samples. It is recommended that the applicant sample each round by car sampling, crush and split each sample, and combine split portions from 3 or 4 rounds to make a sample that the Field Team can have assayed by the Geochemistry and Petrology Branch. Because of the large size and number of the samples it is suggested that the Government participate in the cost of a small laboratory crusher and a Jones splitter for the purpose of preparing these samples.

Some bulldozing for snow removal may be necessary before the contract is completed, and it is recommended that this be allowed. No buildings are on the property, and it is recommended that some funds be allotted for construction of a temporary compressor shed and a temporary bunkhouse.

The applicant is ready to start work as soon as he receives a contract. It is recommended that the time to complete the contract be 1 year. If snow conditions are severe the applicant may have to recess the work several months, but these conditions are not expected until February or March.

The Bureau of Mines DMEA field engineer will submit a cost estimate of the proposed exploration.

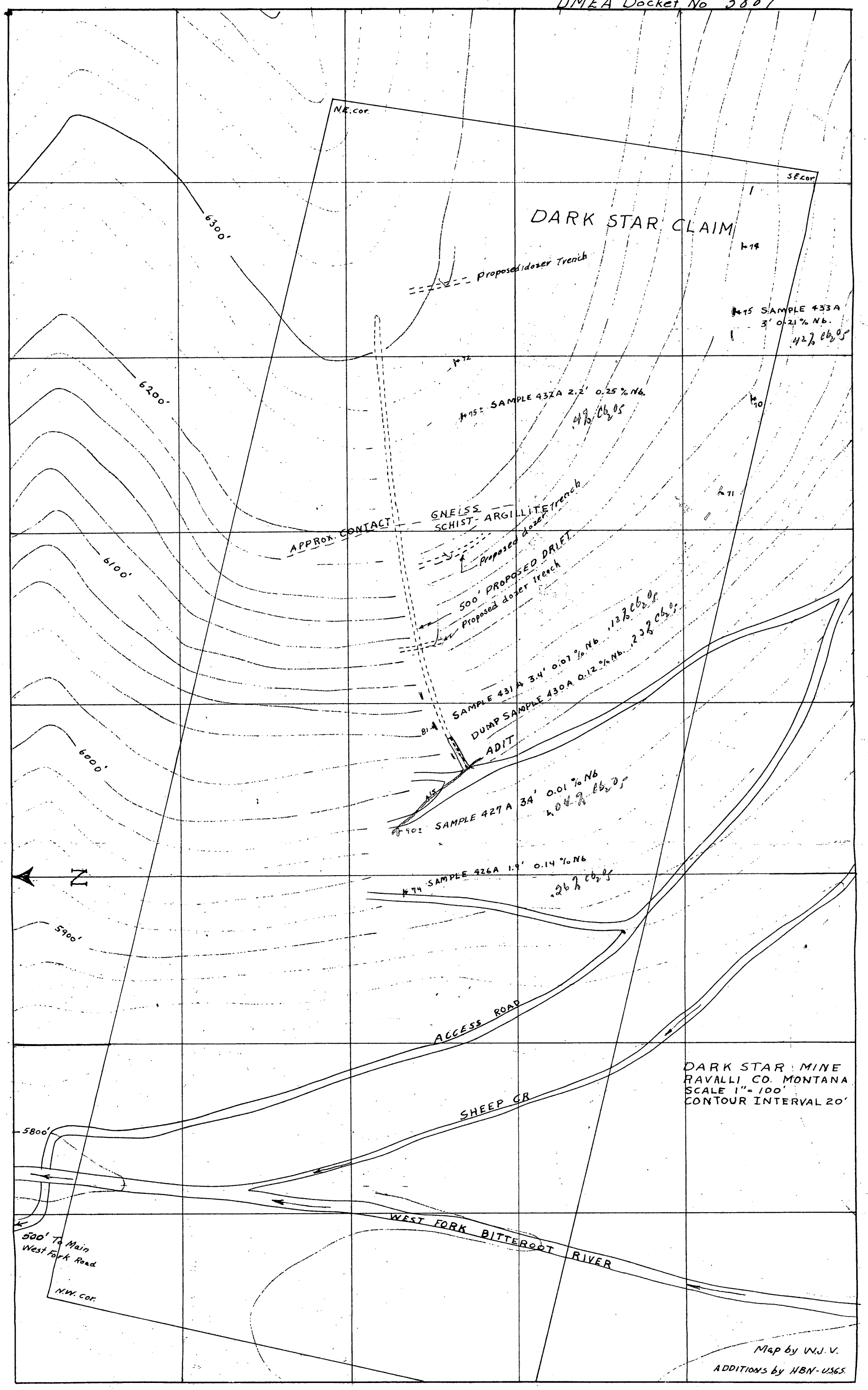
Conclusion

I believe that this property has unusual merit and interest and that Government participation in a limited exploration program is justified.

Attachment (1)

Distribution:
DMEA (4)
USBM (2)
USGS (SRO)
AEC, SLC
Nickelson

DMEA Docket No 3884



7/14/55 gfa

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Re: DMEA 3884
Dark Star Mining Co.
Dark Star Claim
Ravalli Co., Montana
$27,176.92 - Columbite
and Rare Earth

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Application.

We have no information on this uncommon deposit.

The apparent competence of the partners suggests the proposal has merit and investigation, probably an examination, is warranted.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Re: DMEA 3984
Dark Star Mining Co.
Dark Star Claim
Ravalli Co., Montana
$27,176.94 - Columbite
and Rare Earth

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Application.

We have no information on this uncommon deposit.

The apparent competence of the partners suggests the proposal has merit and investigation, probably an examination, is warranted.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/13/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
M. T. Reno, 3641

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Re: DMEA 3004
Dark Star Mining Co.
Dark Star Claim
Ravalli Co., Montana
$87,176.92 - Columbite
and Rare Earth

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Application.

We have no information on this unusual deposit.

The apparent competence of the partners suggests the proposal has merit and investigation, probably on examination, is warranted.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/13/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
N. T. Reno, 3641

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Re: DMEA 3984
Dark Star Mining Co.
Dark Star Claim
Ravalli Co., Montana
$27,176.92 - Columbite
and Rare Earth

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Application.

We have no information on this uncommon deposit.

The apparent competence of the partners suggests the proposal has merit and investigation, probably an examination, is warranted.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/13/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. T. Reno, 3641

7/7/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL - 7 1955

July 6, 1955

Memorandum

To: E. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. DMEA Docket No. 3884 (columbite and rare earths)

I have discussed subject application with Mr. Frank Lamb, Rare Earth Specialist, Branch of Rare and Precious Metals. It is recommended that action on the application be deferred until the report by Howard B. Nickelson (mentioned in the Field Team, Region I letter of June 28, 1955) is received.

Horace T. Reno

Horace T. Reno

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL - 7 1955

July 6, 1955

Memorandum

To: E. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. DMEA Docket No. 3884 (columbite and rare earths)

I have discussed subject application with Mr. Frank Lamb, Rare Earth Specialist, Branch of Rare and Precious Metals. It is recommended that action on the application be deferred until the report by Howard B. Nickelson (mentioned in the Field Team, Region I letter of June 28, 1955) is received.

Horace T. Reno

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL - 7 1955

July 6, 1955

Memorandum

To: T. A. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. DMEA Docket No. 3304 (columbite and rare earths)

I have discussed subject application with Mr. Frank Lark, Rare Earth Specialist, Branch of Rare and Precious Metals. It is recommended that action on the application be deferred until the report by Howard C. Nickelson (mentioned in the Field Team, Region V letter of June 28, 1955) is received.

Horace T. Reno

Enclosure

HTReno:jtmc

Copy to: Division of Minerals
Branch of Rare and Precious Metals
H. T. Reno
DMEA (3 copies)
RVLTS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL - 7 1955

July 6, 1955

Memorandum

To: W. W. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. [illegible] Docket No. 3304 (columbite and rare earths)

I have discussed subject application with Mr. Frank Hart, Rare Earth Specialist, Branch of Rare and Precious Metals. It is recommended that action on the application be deferred until the report by Howard E. Nickelson (mentioned in the Field Team, Region I letter of May 26, 1955) is received.

Horace T. Reno

Enclosure

HTReno:jtmc

Copy to: Division of Minerals
Branch of Rare and Precious Metals
H. T. Reno
DMEA (3 copies)
FSLPS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL - 7 1955

July 6, 1955

Memorandum

To: E. A. Ellis, Director, Rare and Miscellaneous Metals Division, DMEA

From: Commodity-Industry Analyst, Branch of Rare and Precious Metals

Subject: Application for Exploration Aid. [illegible] Docket No. 3[illegible] (columbite and rare earths)

I have discussed subject application with Mr. Frank [illegible], Rare Earth Specialist, Branch of Rare and Precious Metals. It is recommended that action on the application be deferred until the report by Howard E. Nickelson (mentioned in the Field Team, Region [illegible] letter of June 28, 1955) is received.

Horace T. Reno

Enclosure

HTReno:jtmc

Copy to: Division of Minerals
Branch of Rare and Precious Metals
H. T. Reno
DMEA (3 copies)
RTIES

Remo

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL - 1 1955

June 28, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Transmittal of Application for Aid
Dark Star Mining Co.
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by William J. and Victor S. Van Matre, partners, together with supporting material from the General Services Administration and report of analysis from Ledoux & Company, Inc.

Also enclosed are three copies of a lease dated August 25, 1954, between Louis Erickson and William J. Van Matre and Consent to Lien dated May 16, 1955, and signed by Louis Erickson.

This property was examined by Howard B. Nickelson, geologist, when he was in the vicinity several weeks ago. The report is in preparation and will be mailed soon.

Sincerely yours,

John S. Vhay
For: A. S. Weissenborn
Executive Officer, DMEA
Field Team, Region 1
Northwest District

Enclosures
cc: DMEA(Orig.&2)
USGS(2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL - 1 1955

June 28, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Transmittal of Application for Aid
Dark Star Mining Co.
Dark Star Mine
Ravalli County, Montana

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by William J. and Victor E. Van Matre, partners, together with supporting material from the General Services Administration and report of analysis from Ledoux & Company, Inc.

Also enclosed are three copies of a lease dated August 25, 1954, between Louis Erickson and William J. Van Matre and Consent to Lien dated May 16, 1955, and signed by Louis Erickson.

This property was examined by Howard B. Nickelson, geologist, when he was in the vicinity several weeks ago. The report is in preparation and will be mailed soon.

Sincerely yours,

John S. Vhay

John S. Vhay
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures
cc: DMEA(Orig.&2)
USBM(2)
Nickelson

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
JUL - 1 1955

RECEIVED
JUN 10 1955
U. S. G. S.
SPOKANE, WASH.

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. 3884
Metal or Mineral Columbite & Rare earth
Date Received 7-1-55
Estimated Cost $ 27,176.92
Participation (Government %)

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: Dark Star Mining Co.
1708 Texas Avenue
Butte, Montana

Mining Partnership
William J. & Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

(*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 Dark Star Claim recorded in Book 9, Page 23 of Lode Locations, and Determined Claim recorded in Book 9, Page 25 of Lode Locations, Ravalli County, State of Montana.

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

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

(*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 Columbite and Rare Earth Minerals

(*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 10 days and be completed within 12 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 [x] 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 June 9, 1955

William J. Van Matre

Victor E. Van Matre
(Applicant)

By

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

RECEIVED
JUL - 1 1955

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

4.(a) Preliminary exploration work consisted of test-pitting, bulldozing, chemical and mineral analyses and geological mapping of the veins. Most of this work was executed by Louis Erickson with technical work by William J, Van Matre. 40 feet of drifting was done by William J. Van Matre in September 1954. Work on the claim will be resumed before June 15, 1955 by William J. Van Matre and Victor E. Van Matre. The property and workings thereon are accessable for examination.

(b) Between 50 and 60 tons of vein material has been mined to date. Of this, about 20 tons of vein material has been "hand cobbed" for coarse columbite yeilding 250 to 300 pounds of material that will assay over 50% Cb_2O_5.

A test shipment of 35 pounds of this "cobbed" material was sent to the Government Services Administration Purchasing Station at Custer, South Dakota. The analysis of this test shipment is enclosed.

It is estimated that the grade of the material that has been mined will run from 0.30% to 0.70% Cb_2O_5 as columbite and from 5.0% to 10.0% in rare-earth oxides chiefly as ancylite with some bastnaesite and monazite. The ore reserve that has been developed is approximately 200 tons of probable ore.

William J Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

(c) The country rocks are believed to be impure argillites containing lenses of altered chlorite shist of Beltian age and hard granitic gneisses of greater pre-Cambrain age. The valuable mineralization occurs in thin, well-defined beds or veins of chiefly carbonate material. The particular "lead" that work is to be done on is considered to be a vein because it is unreasonable to assume that a single lime bed may have argillite walls in one outcrop and walls of gneiss that is probably of Archeozoic age in another outcrop.

The particular vein that has been and is to be mined has been found over that portion of the Dark Star claim where bedrock is near the surface of the ground. It is believed to extend the entire length of the claim. This vein varies in width from 18 inches to nearly four feet. Surface exposures average over 24 inches in width. In no exposure has the vein been found to have a dip of less than 70 degrees.

This vein is composed chiefly of calcite with ancylite, barite, quartz, bastnaesite, monazite and columbite in lesser amounts. The occurance of sulfides is rare, but an unidentified iron sulfide and molybdenite have been observed as well as minor amounts of oxidized copper in small vugs of limonite which may indicate copper sulfide at greater depth. Very minor magnetite is also present. Local inclusions of vermiculite and various lime silicates have also been observed.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

The country rock is also host to many quartz veins ranging in width from a few inches to more than 20 feet. Pegmatite dikes are also a relatively common accurance. Granite which is presumed to be of the age of the Idaho Batholith has been observed within 20 miles of the project and it may occur much closer than that. The general geology that is available on the area does not differentiate between the granite of Tertiary age and the foliated granite of pre-Cambrian age. Future work may show the above types of structures to be of importance in the control of valuable mineralization within the lime veins. To date no columbium or rare-earth minerals have been detected in either the pegmatites or the quartz veins.

Faulting of two types has been observed on the Dark Star claim. A low-angle thrust fault dipping 15 degrees to the northeast and striking 25 degrees NW-SE gives the overthrust portion of the vein an apparent horizontal offset of approximately 100 feet to the southeast. The portal of the adit is located at the junction of this fault and the overthrust portion of the vein. Minor, near-vertical, normal faulting has been observed to occur mostly parallel to the vein.

Mr. E. P. Kaiser of the U.S. Geological Survey in

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte Montana

Denver, Colorado visited the project in September of 1954 and collected specimens of vein material. Mineral identifications of this material are being made by Mr. Howard Joffe in Washington D. C. Mr. Howard Nickelson of the U. S. Geological Survey in Spokane, Washington visited the project in May of 1955 and cut samples of many of the outcrops and the dumps. The analytical results of these examinations are not available at this writing.

We desire to further explore for columbite and rare-earth minerals because they are of strategic importance to our country's defense program. Because of the absence of production of these minerals in our country, adequate metallurgical facilities do not exist; therefore, we have no market for the product we can mine. If, in the course of an exploration project, we were to develop a reasonable large tonnage of probable ore that would indicate a much larger tonnage of possible ore, then suitable metallurgical facilities could be arranged. We intend to continue with our exploration project until our resources are exhausted. If we are able to obtain help through an exploration contract, we will be able to complete much more work than if we were to carry the entire burden ourselves.

(d) The project is located at the foot of the high mountain

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

range dividing the Salmon River drainage of Idaho and the Bitterroot River drainage of Montana. The portal of the adit is approximately 500 feet east of the junction of Sheep Creek and the West Fork of the Bitterroot River in the extreme southern portion of the Bitterroot National Forest, Ravalli County, Montana.

The project is accessible from Darby, Montana, a railhead on the Northern Pacific Railway and the nearest town, over four miles of paved highway, 18 miles of improved gravel roads, and 24 miles of forest service access roads. No steep grades are encountered over this entire distance.

(e) Because of the recent mechanization of the farming and lumber industries in the Bitterroot Valley, there is a surplus of manpower available.

Sufficient timber is available on the claim.

Materials, supplies and equipment may be obtained in Missoula, Montana, a distance of 110 miles.

Abundant water and future water power is available several hundred feet below the adit.

Electrical power lines would have to be extened 25 miles to reach the project.

5.(a) The minerals for which we wish to explore are columbite, ancylite, bastnaesite and monazite.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

(b) It is planned to continue drifting on the vein for a distance of 500 feet from the face as of the date of the contract, if a contract is approved. If, in the course of drifting, the vein is faulted off, a portion of the 500 feet may be used to go thru the fault and cross-cut to pick up the vein. It is best to plan on timbering when the walls are argillite, but it may not be needed. Drifting done in gneiss will probably need no timber as these walls show very little or no alteration and are as hard as tombstone granite. About 250 feet of work will be in argillite and 250 feet of work in gneiss.

About 100 hours of bulldozing is necessary to improve existing roads, provide additional cuts below the adit for rock storage, to look for the vein in case it is faulted off, and for snow removal if necessary. Only bulldozing of an absolute necessity to the project will be performed.

As no buildings are available to the project, it is recommended that a compressor shack and a bunk house be allowed in the contract.

(c) The work will start within 10 days and be completed within 12 months from the date of an exploration project contract.

(d) William J. Van Matre has been in charge of this project from inception. He will continue to manage the project

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

and act as technical consultant. His background follows:

Nearly three years in the U. S. Navy during World War II, Graduate of Navy Radio Material School, discharged as Radio Technician first class.

1950 graduate of Montana School of Mines in Geological Engineering. Four summers experience as a miner in Butte, Montana and Shullsburg, Wisconsin.

Supervisor of ballast contract including a quarry operation on highway construction in 1950.

Mining Engineer, Anaconda Copper Mining Company, Butte, Montana 1951-1953.

Geologist, Anaconda Copper Mining Company, 1953 to date. Currently in charge of geological work at Kelley Mine, Butte, Montana.

Victor E. Van Matre will be resident supervisor of the project. His background follows:

1950 Graduate of Missouri School of Mines in Mining Engineering, four summers experience as a miner at Butte, Montana and construction worker at Platteville, Wisconsin.

Six months experience as Mining Engineer, Anaconda Copper Mining Company, Butte Montana.

Two years in the U. S. Army Engineers during Korean War. Gained wide range of engineering experience.

One year as supervisor of building construction, home

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

development project at Baraboo, Wisconsin.

1954-1955, Mining Engineer in charge of mine surveying, White Pine Copper Company, White Pine, Michigan.

As a silent partner we have our father, Mr. Joseph M. Van Matre of Platteville, Wisconsin. He is a 1922 graduate of the Wisconsin Institute of Technology in Mining Engineering. His experience includes a number of positions as a mine manager and as a superintendent of several beneficiation plants. He is now a partner in the V. & E. Construction Company.

6. Estimate of costs-

By far the greater expenditure on this project will be drifting on the vein. To eliminate the inconvenience and cost of keeping certified records on purchases and inventories of the many items that will be needed to complete the proposed project, and as we intend to use our own mining equipment, it would be very desirable on our part to receive reimbursement for work completed on the Unit Cost Plan.

Our drifting operation calls for a three-man set-up, two miners and a utility man to attend to work that is necessary other than drilling, blasting, mucking, timbering and standing rail. We will drill a four foot round and hope to pull three and one-half feet. Mucking and tramming will be done by hand. Unit cost calculations are based on advancing

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

three and one-half feet per shift or 70 feet per month.

We intend to make the cross-section of our drifting seven feet high by five feet wide. As the vein is narrow in respect to the width of the drift, we propose to double blast the face in order to keep the vein material separate from the wallrock. This proceedure is nearly a must as we would need to bulldoze over twice the storage space if it were not done. Also, the wallrock contains magnetite and possibly ilmenite which would complicate a future scheme of beneficiation.

Following is an itemized list of expenses, calculated on a unit cost basis for one blast per round in argillite walls that will not need timber. Included in this listing are labor, operating materials and supplies, suggested use-allowance on operating equipment, tools and tool maintenance, workmen's compensation and employers' liability insurance, and payroll taxes. Costs that are excluded from this listing include bulldozing, cost of erecting buildings, supervision, technical consultants, and analytical work, any of which may be calculated on a unit cost basis if it is thought to be appropriate. We do not expect rehabilitation and repairs or accounting to be an expense in this project.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

Labor-

The rate for hard, semi-skilled labor in this vicinity is $2.00 per hour or $16.00 for an eight hour shift.

$$\frac{3 \text{ men} \times \$16.00 \text{ per day}}{3.5 \text{ feet per day}} = \$13.71 \text{ per foot}$$

Operating materials and supplies-

Powder	$3.00	per foot
Fuse	0.60	" "
Caps	0.09	" "
Track Spikes	0.06	" "
Track Bolts	0.01	" "
Fish Plates	0.05	" "
Oil and Grease	0.20	" "
Gasoline	2.00	" "
Miscellaneous (includes chain, rope, sample sacks and carbide). . .	0.15	" "
Total . . .	$6.16	per foot

Suggested use-allowance on operating equipment-

Compressor	$1.43	per foot
Jackleg	0.93	" "
Hoses	0.30	" "
2" Pipe (difference between new and salvage value).	0.11	" "
Submarine	0.14	" "
10 cu. ft. mine cars	0.36	" "
12 lb. track (difference between new and salvage value)	0.44	" "
1½ ton truck (includes servicing). .	0.71	" "
Pickup truck (includes servicing). .	1.43	" "
Ventilation blower	0.36	" "
Fanbag (difference between new and salvage value).	0.40	" "
Miscellaneous (includes pipe fittings and valves, steel and bits, muck sheets, wheelbarrow, blowpipe, oiler, lamps, vessels and containers, jim crow, and first-aid equipment	0.60	" "
Total . . .	$7.61	per foot

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

Tools and tool maintenance-

Includes cap crimper, shovels, saws, axes, picks, sample picks, rock hammers, rock bars, wrenches and other small tools, track spike puller and loading sticks.

Total . . . $2.00 per foot

Workmen's compensation and employers' liability insurance-

Approximately 9% of payroll . . . . . $1.23 per foot

Payroll taxes-

F. I. C. (2% of payroll) . . . . . $0.27 per foot
Unemployment compensation
(2.7% of payroll) . . . . . 0.37 " "

Total . . . $0.64 per foot

SUMMARY OF COSTS PER FOOT OF DRIFTING

Labor	$13.71	per foot
Operating materials and supplies	6.16	" "
Suggested use-allowance on operating equipment	7.21	" "
Tools and tool maintenance	2.00	" "
Workmen's compensation and employers' liability insurance	1.23	" "
Payroll taxes	0.64	" "
Total base price per foot . . .	$30.95	per foot
Allowance for double blast if appropriate	$3.00	per foot
Allowance for timber if needed	$5.00	per foot
Allowance for extra time and materials consumed when walls are gneiss	$5.00	per foot

Drifting, 500 feet @ $38.95 per foot . . $19,475.00

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

6.(a) The only contract work to be let will be bulldozing. We have in the past been able to obtain this work at the rate of $10.00 per hour. The cat we used is an old 12-ton Cletrac. The operator is very skilful and for the small amount of work we have, he is highly satisfactory.

Bulldozing, 100 hours @ $10.00 per hour . . . $1000.00

(b) Labor is included in the unit cost of drifting.

Supervision, 160 shifts @ $28.42 per shift $4547.20

Technical consultation, 16 shifts @ $28.42 per shift $454.72
(includes $3.42 per shift payroll tax and insurance)

(c) Operating materials and supplies are included in the cost of drifting.

(d) Suggested use-allowance of operating equipment is included in the cost of drifting.

(e) No rehabilitation or repairs are needed.

(f) Bunkhouse, one @ $500.00 . . . . . $500.00

Compressor shack, one @ $200.00 . . . . . $200.00

(g) Requests for bids on analytical work were sent to several analytical chemists. The only answer that was received was from Ledoux & Company. The degree of accuracy of their analyses are of shipment grade. A lesser degree of accuracy would be adequate for development analyses. Their price quotations are enclosed. The minimum price per analysis of Cb_2O_5 and Rare Earth Oxide would be $75.00 in lots of ten.

William J. Van Matre
Victor E. Van Matre
1703 Texas Avenue
Butte, Montana

This cost would be prohibitive unless a sample was cut every 50 or 100 feet and estimates of grade were made for each round between samples. Perhaps Government facilities could be utilized to handled the assaying. If this is possible, we are willing to pay our share of any reasonable cost. We submit a temporary estimate for analytical work of $2.00 per foot. We realize that this may vary a great deal depending on the number of analyses needed and the cost per analysis.

Analytical work, 500 feet @ $2.00 per foot $1000.00

The cost of repairs to and maintenance of operating equipment is distributed throughout the costs of drifting.

Accounting will be handled by the supervisor.

Workmen's compensation and employers' liability insurance have been accounted for.

(h) Contingencies will be absorbed by the operator.

ESTIMATED TOTAL COST OF PROJECT

Drifting, 500 feet @ $36.95 per foot	$19,475.00
Supervision, 160 shifts @ $28.42 per shift . .	4,547.20
Consultation, 16 shifts @ $28.42 per shift . .	454.72
Bulldozing, 100 hours @ $10.00 per hour	1,000.00
Bunkhouse, one @ $500.00	500.00
Compressor shack, one @ $200.00	200.00
Total (less analytical work)	$26,176.92
Temporary estimate for analytical work	$1,000.00
TOTAL . . .	$27,176.92

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

7.(a) We are prepared to furnish our share of the cost of the proposed project in accordance with the regulations on Government participation.

(b) Our share of the costs will be $6,793.22. We can furnish at least $5,000 in cash if necessary. The remainder will be made up through use of equipment owned by us.

LEASE

THIS AGREEMENT, Made and entered into this 25th day of August, 1954, by and between Louis Erickson of Corvallis, Montana, party of the first part and William J. Van Matre of Butte, Montana, party of the second part;

W I T N E S S E T H

That the party of the first part for valuable considerations and of the covenants and agreements hereinafter contained to be kept and performed by the party of the second part, does by these considerations grant, devise, lease, and let exclusively unto the said party of the second part, commencing on the 25th day of August, 1954, the following described unpatented lode mining claims, all situated in the Alta (unorganized) mining district, in Ravalli County, State of Montana, all being duly recorded in the Lode Locations Records of said Ravalli County, in the book and at the page numbers designated as follows:

The Dark Star recorded in Book 9, Page 23 of Lode Locations, and Determined recorded in Book 9, Page 25 of Lode Locations.

to all of which reference is hereby made for a more complete description of said claims: together with all machinery, track, equipment, and appurtenances thereunto belonging.

The party of the second part agrees to enter upon said premises and begin work by the 15th day of September, 1954, and work the same in a manner necessary to good and economical mining, and in a good and workmanlike manner. Said party of the second part agrees to do all assessment work and that not less than 700 cubic feet of

rock shall be excavated from underground workings during each month of the term of this lease, except during the months of December, January, February, March and April, during which time the premises may be expected to be inaccessible because of heavy snowfall, or other causes beyond the control of the party of the second part. The accumulative excavation may be so distributed that any excavation in excess of 700 cubic feet per month may be carried forward, in whole or in part, and added to the excavation of any month in which less than 700 feet were excavated, so as to satisfy the excavation requirements.

The party of the second part further agrees to pay to the party of the first part 10% royalty based upon the gross mill or smelter returns of all ores, concentrates or metals extracted by him from the premises, the payment of such royalties to be made directly to the party of the first part by the mill, smelter, or buyer treating or purchasing the said ores, concentrates or metals, such payment to be made by check or draft to him at Corvallis, Montana. By "gross mill or smelter returns" is meant the gross amount paid by the mill or smelter for said ores, concentrates and metals.

The party of the first part agrees that upon the payment of said royalties in the total amount of $25,000.00, said party of the first part shall convey all right, title and interest in and to the above described premises to the party of the second part, or his heirs, personal representatives or assigns; provided, however, that the party of the second part shall have the option of purchasing said property for the sum of $25,000.00 less the amount paid at the time of the exercise thereof in royalties as aforesaid, at

any time during the term of this lease.

The party of the first part shall at all times during the term of this lease have the right to enter upon and inspect the mine or mines, and all the workings thereof, on the demised premises, and to make any survey that he may deem necessary, either for the purpose of checking the amount of ores mined or for an examination of the physical condition of the property and workings.

The party of the second part agrees that he will well and sufficiently timber any mine or mines on the demised premises at all points where proper, and repair all old timbering whenever it may become necessary in order to preserve the mine or mines in a workable condition; that he will keep all shafts, drifts, tunnels, and workings in good condition of repair, keep the same drained, and clear of loose rock and debris of all kinds.

The party of the second part further agrees that he will keep books and accounts showing the number of shifts worked, the amount of ore extracted from said mine, the amount of ore shipped, billed, sold, or treated and the amount of minerals sold from said ore, or value extracted therefrom, and the party of the first part shall have free and full access to said books, accounts and records at reasonable times.

The party of the second part will pay all taxes hereafter levied on the improvements now upon said premises or placed thereon by him. Taxes levied on account of production from the property shall be paid as provided by law, the party of the first part to bear that part thereof assessed against his royalty interest.

The party of the second part further agrees that he will not permit or suffer any liens of any kind or nature to be enforced against the demised premises for any work done, or machinery, equipment or materials furnished thereon at the instance or request, or on behalf, of the party of the second part, unless the party of the first part gives permission in writing that such lien is acceptable to him.

Time is the essence of this agreement, and in case the party of the second part shall fail to keep and perform the covenants and agreements herein contained, and to be by him performed, then the party of the first part may, at his option, give to the party of the second part notice in writing, specifying the nature of the default, and the party of the second part shall have thirty (30) days thereafter within which to make good such default, and if he fails so to do, this agreement shall be subject to cancellation and determination.

The party of the second part shall have the right at any time to surrender and terminate this lease in whole, and upon so doing he shall thereafter be relieved from the obligations thereof thereafter to be performed. Upon such surrender and termination, the party of the second part will execute and deliver to the party of the first part a suitable release of this lease.

THE TERMS OF THIS AGREEMENT, and all the conditions and covenants therein contained, shall extend to and be binding upon the parties hereto, their heirs, administrators, executors and assigns.

STATE OF MONTANA,
ss.
County of Ravalli.

On this 25 day of August, 1954, before the undersigned, a Notary Public in and for the State of Montana, personally appeared Irene E. Eastwood and William J. Van Wate known to me to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first above written.

Raymond Parker
Notary Public for the State of Montana
Residing at Hamilton Mont.
My Commission expires 2/1/57

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

Louis Erickson
Party of the First Part

William J. Van Matre
Party of the Second Part

ASSIGNMENT OF LEASE

KNOW ALL MEN BY THESE PRESENTS:

That William J. Van Metre residing at 1703 Texas Avenue in the City of Butte, State of Montana, in consideration of the sum of One ($1.00) Dollar and other valuable considerations, paid by the Dark Star Mining Company having its office and principal place of business at 1703 Texas Avenue, City of Butte, State of Montana, assignee, hereby assigns unto the assignee, its successors and assigns, a certain lease made by Louis Erickson to the assignor herein, dated the 25th day of August, 1954 and recorded on the 19th day of April, 1955, in the office of the Clerk and Recorder of Ravalli County, State of Montana on page 177, Vol. 14, Miscellaneous records of said county, covering premises described as follows:

The Dark Star quartz lode mining claim, notice of location recorded on page 23, book 9 of lode locations, and Determined quartz lode mining claim, notice of location recorded on page25, book 9 of lode locations official records of theClerk and Recorder of Ravalli County, State of Montana.

Together with the premises therein described, and the buildings and equipment thereon, with the appurtenances and also all deposits to secure the obligation s of said lease and together with any and all options for purchase of premises or renewal or extension of lease.

TO HAVE AND TO HOLD THE same unto the assignee, its successors and assigns from the 23rd day of July, 1955, for all the rest of the term of said lease and/or extensions thereof, subject to the rents, covenants and provisions therein also mentioned.

And the assignor hereby covenants that the said lease is free from incumbrances, and that the said lease is valid and existing according to its terms.

The assignor agrees that it will execute or procure any further necessary

consent or assurance of title to said premises and/or privileges and appurtenances belonging thereto.

IN WITNESS WHEREOF, the assignor has hereunto set his hand and seal this 23rd day of July, 1955.

William J. Van Matre
Assignor

STATE OF MONTANA)
) ss.
County of SILVER BOW)

On this 23rd day of July, 1955, before the undersigned, a Notary Public in and for the State of Montana, personally appeared William J. Van Matre known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first above written.

William J. Kelly
Notary Public for the State of Montana
Residing at Butte, Montana
My Commission expires April 30, 1956

ASSIGNMENT OF LEASE

KNOW ALL MEN BY THESE PRESENTS:

That William J. Van Metre residing at 1708 Texas Avenue in the City of Butte, State of Montana, in consideration of the sum of One ($1.00) Dollar and other valuable considerations, paid by the Dark Star Mining Company having its office and principal place of business at 1708 Texas Avenue, City of Butte, State of Montana, assignee, hereby assigns unto the assignee, its successors and assigns, a certain lease made by Louis Erickson to the assignor herein, dated the 25th day of August, 1954 and recorded on the 19th day of April, 1955, in the office of the Clerk and Recorder of Ravalli County, State of Montana on page 177, Vol. 14, Miscellaneous records of said county, covering premises described as follows:

The Dark Star quartz lode mining claim, notice of location recorded on page 23, book 9 of lode locations, and Determined quartz lode mining claim, notice of location recorded on page25, book 9 of lode locations official records of theClerk and Recorder of Ravalli County, State of Montana.

Together with the premises therein described, and the buildings and equipment thereon, with the appurtenances and also all deposits to secure the obligation s of said lease and together with any and all options for purchase of premises or renewal or extension of lease.

TO HAVE AND TO HOLD THE same unto the assignee, its successors and assigns from the 23rd day of July, 1955, for all the rest of the term of said lease and/or extensions thereof, subject to the rents, covenants and provisions therein also mentioned.

And the assignor hereby covenants that the said lease is free from incumbrances, and that the said lease is valid and existing according to its terms.

The assignor agrees that it will execute or procure any further necessary

consent or assurance of title [illegible] /or [illegible] villages [illegible] appurtenances belonging thereto.

IN WITNESS WHEREOF, the assignor has hereunto set his hand and seal this 23rd day of July, 1955.

William J Van Matre
Assignor

STATE OF MONTANA)
: ss.
County of SILVER BOW)

On this 23rd day of July, 1955, before the undersigned, a Notary Public in and for the State of Montana, personally appeared William J Van Matre known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first above written.

William J Kelly
Notary Public for the State of Montana
Residing at Butte, Montana
My Commission expires April 30, 1956

ASSIGNMENT OF LEASE

KNOW ALL MEN BY THESE PRESENTS:

That William J. Van Metre residing at 1708 Texas Avenue in the City of Butte, State of Montana, in consideration of the sum of One ($1.00) Dollar and other valuable considerations, paid by the Dark Star Mining Company having its office and principal place of business at 1708 Texas Avenue, City of Butte, State of Montana, assignee, hereby assigns unto the assignee, its successors and assigns, a certain lease made by Louis Erickson to the assignor herein, dated the 25th day of August, 1954 and recorded on the 19th day of April, 1955, in the office of the Clerk and Recorder of Ravalli County, State of Montana on page 177, Vol. 14, Miscellaneous records of said county, covering premises described as follows:

The Dark Star quarts lode mining claim, notice of location recorded on page 23, book 9 of lode locations, and Determined quarts lode mining claim, notice of location recorded on page25, book 9 of lode locations official records of theClerk and Recorder of Ravalli County, State of Montana.

Together with the premises therein described, and the buildings and equipment thereon, with the appurtenances and also all deposits to secure the obligation s of said lease and together with any and all options for purchase of premises or renewal or extension of lease.

TO HAVE AND TO HOLD THE same unto the assignee, its successors and assigns from the 23rd day of July, 1955, for all the rest of the term of said lease and/or extensions thereof, subject to the rents, covenants and provisions therein also mentioned.

And the assignor hereby covenants that the said lease is free from incumbrances, and that the said lease is valid and existing according to its terms.

The assignor agrees that it will execute or procure any further necessary

consent or dissension of title [illegible] the premises and appurtenances belonging thereto.

IN WITNESS WHEREOF, the undersigned has hereunto set his hand and seal this 23rd day of July, 1955.

William J. Van Matre
Mortgagor

STATE OF MONTANA)
) ss.
County of SILVER BOW)

On this 23rd day of July, 1955, before the undersigned, a Notary Public in and for the State of Montana, personally appeared William J. Van Matre known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first above written.

William J. Kelly
Notary Public for the State of Montana
Residing at Butte, Montana
My Commission expires April 30, 1956

D Mes

GENERAL SERVICES ADMINISTRATION

Region 6
Kansas City 6, Missouri

Custer, South Dakota
November 8, 1954

IN REPLY REFER TO:

RECEIVED
JUL - 1 1955

William J. Van Matre
1708 Texas Avenue
Butte, Montana

Dear Mr. Van Matre:

Attached find copy of report of analysis which we received from Ledoux and Company this morning.

In accordance with the regulations we can purchase this columbium-tantalum at $1.70 per pound on a visual inspection basis in lots under 2,000 pounds.

Out of the original 35 pounds you forwarded to us we took out a couple of samples amounting to 3 pounds 12 ounces so we still have on hand 31 pounds 4 ounces. Will you kindly advise if you wish to send us an additional quantity to add to this 31 pounds 4 ounces but not to exceed 2,000 pounds. If you do not intend to ship an additional quantity we will prepare the necessary papers in payment of the 31 pounds 4 ounces we have on hand at the present time.

Very truly yours,

~~GENERAL SERVICES ADMINISTRATION~~
Mica Purchasing & Processing Depot

J. F. McGinness
Depot Superintendent

JFMcG:erv

:20M 54 F. & K. INC.

LEDOUX & COMPANY,
(Inc.)
ENGINEERS, CHEMISTS AND ASSAYERS
359 ALFRED AVENUE TEANECK, NEW JERSEY

RECEIVED
JUL - 1 1955

REPORT OF ANALYSIS

M

No. 713148

Teaneck, N. J. November 5, 1954

Our analysis of the sample of Columbium-Tantalum Ore

From General Services Administration

Marked: Columbium-Tantalum William J. Van Matre 1708 Texas Avenue, Butte, Montana

and submitted to us, shows:

After drying:

Columbium Oxide (Cb_2O_5)	52.29%
Tantalum Oxide (Ta_2O_5)	0.30%
Titanium Oxide (TiO_2)	1.64%
Tin Oxide (SnO_2)	0.65%
Manganese Oxide (MnO)	1.06%
Iron Oxide (FeO)	12.48%

* * *

To General Services Administration

LEDOUX & COMPANY, Inc.

LEDOUX & COMPANY
(INC.)

359 ALFRED AVENUE
TEANECK, NEW JERSEY

TELEPHONE
TEANECK 7-7160

CABLE ADDRESS
"LEDOUX TEANECK"

RECEIVED
JUL - 1 1955

INDEPENDENT CONTROL & RESEARCH CHEMISTS, SPECTROSCOPISTS – SAMPLING, WEIGHING & SHIPPERS' REPRESENTATION

March 30, 1955

Mr. William J. Van Matre
1708 Texas Avenue
Butte, Montana

Dear Mr. Van Matre:

We would be glad to analyze your lode deposit samples for the elements listed in your letter of March 22, 1955. We understand that this material contains from 0.1% to 2% of Cb_2O_5 and from 1% to 20% of rare earth oxides.

If a large number of samples are submitted to us at the same time (ten), we would be able to run the Columbium determinations spectroscopically with the aid of properly prepared standards at a cost of $25.00 for Cb and Ta. For an individual sample, the cost of preparing spectroscopic standards would be prohibitive and we would have recourse to standard chemical analytical procedures involving the following charges:

Ta_2O_5, Cb_2O_5, TiO_2, ZrO_2	$140.00	MnO	$6.00
		Fe_2O_3	$7.00

Total Rare Earths Oxides including ThO_2 - $50.00

Individual Rare Earths (semi-quantitative) $125.00.

Our cost for testing your samples qualitatively for any or all of the constituents listed above would be $12.00.

RECEIVED
JUL - 1 1955

Mr. William J. Van Matre March 30, 1955

Trusting that we may be able to serve you, we are

Very truly yours,

LEDOUX & COMPANY

Silve Kallmann

Silve Kallmann,
Research Director.

SK:mmm

July 5, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region I & N.W. Dist.

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 I & N.W. Dist.

DMEA3884 Dark Star Mining Co.

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

July 5, 1955
Subject: DMEA3884
Re: Exploration Assistance
Dark Star Mine

Dark Star Mining Co.
1708 Texas Avenue
Butte, Montana

Gentlemen:

The receipt of your application dated June 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-3884 and referred to the Rare & Miscellaneous Metals 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

60932

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
JUL - 1 1955

RECEIVED
JUN 10 1955
U. S. G. S.
SPOKANE, WASH.

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. 3884
Metal or Mineral Columbite & Rare earth
Date Received 7-1-55
Estimated Cost $27,176.92
Participation (Government %)

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: Dark Star Mining Co. Mining Partnership
1708 Texas Avenue William J. & Victor E. Van Matre
Butte, Montana 1708 Texas Avenue
Butte, Montana

(*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 Dark Star Claim recorded in Book 9, Page23 of Lode Locations, and Determined Claim recorded in Book 9, Page 25 of Lode Locations, Ravalli County, State of Montana.

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

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

(*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 Columbite and Rare Earth Minerals

(*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 10 days and be completed within 12 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 [x] 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 June 9th, 1955

William J. Van Matre

Victor E. Van Matre

(Applicant)

By

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

RECEIVED
JUL - 1 1955

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

4.(a) Preliminary exploration work consisted of test-pitting, bulldozing, chemical and mineral analyses and geological mapping of the veins. Most of this work was executed by Louis Erickson with technical work by William J. Van Matre. 40 feet of drifting was done by William J. Van Matre in September 1954. Work on the claim will be resumed before June 15, 1955 by William J. Van Matre and Victor E. Van Matre. The property and workings thereon are accessable for examination.

(b) Between 50 and 60 tons of vein material has been mined to date. Of this, about 20 tons of vein material has been "hand cobbed" for coarse columbite yeilding 250 to 300 pounds of material that will assay over 50% Cb_2O_5.

A test shipment of 35 pounds of this "cobbed" material was sent to the Government Services Administration Purchasing Station at Custer, South Dakota. The analysis of this test shipment is enclosed.

It is estimated that the grade of the material that has been mined will run from 0.30% to 0.70% Cb_2O_5 as columbite and from 5.0% to 10.0% in rare-earth oxides chiefly as ancylite with some bastnaesite and monazite. The ore reserve that has been developed is approximately 200 tons of probable ore.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

(c) The country rocks are believed to be impure argillites containing lenses of altered chlorite shist of Beltian age and hard granitic gneisses of greater pre-Cambrain age. The valuable mineralization occurs in thin, well-defined beds or veins of chiefly carbonate material. The particular "lead" that work is to be done on is considered to be a vein because it is unreasonable to assume that a single lime bed may have argillite walls in one outcrop and walls of gneiss that is probably of Archeozoic age in another outcrop.

The particular vein that has been and is to be mined has been found over that portion of the Dark Star claim where bedrock is near the surface of the ground. It is believed to extend the entire length of the claim. This vein varies in width from 18 inches to nearly four feet. Surface exposures average over 24 inches in width. In no exposure has the vein been found to have a dip of less than 70 degrees.

This vein is composed chiefly of calcite with ancylite, barite, quartz, bastnaesite, monazite and columbite in lesser amounts. The occurance of sulfides is rare, but an unidentified iron sulfide and molybdenite have been observed as well as minor amounts of oxidized copper in small vugs of limonite which may indicate copper sulfide at greater depth. Very minor magnetite is also present. Local inclusions of vermiculite and various lime silicates have also been observed.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

The country rock is also host to many quartz veins ranging in width from a few inches to more than 20 feet. Pegmatitesdikes are also a relatively common accurance. Granite which is presumed to be of the age of the Idaho Batholith has been observed within 20 miles of the project and it may occur much closer than that. The general geology that is available on the area does not differentiate between the granite of Tertiary age and the foliated granite of pre-Cambrian age. Future work may show the above types of structures to be of importance in the control of valuable mineralization within the lime veins. To date no columbium or rare-earth minerals have been detected in either the pegmatites or the quartz veins.

Faulting of two types has been observed on the Dark Star claim. A low-angle thrust fault dipping 15 degrees to the northeast and striking 25 degrees NW-SE gives the overthrust portion of the vein an apparent horizontal offset of approximately 100 feet to the southeast. The portal of the adit is located at the junction of this fault and the overthrust portion of the vein. Minor, near-vertical, normal faulting has been observed to occur mostly parallel to the vein.

Mr. E. P. Kaiser of the U. S. Geological Survey in

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

Denver, Colorado visited the project in September of 1954 and collected specimens of vein material. Mineral identifications of this material are being made by Mr. Howard Joffe in Washington D. C. Mr. Howard Nickelson of the U. S. Geological Survey in Spokane, Washington visited the project in May of 1955 and cut samples of many of the outcrops and the dumps. The analytical results of these examinations are not available at this writing.

We desire to further explore for columbite and rare-earth minerals because they are of strategic importance to our countrys defense program. Because of the absence of production of these minerals in our country, adequate metallurgical facilities do not exist; therefore, we have no market for the product we can mine. If, in the course of an exploration project, we were to develop a reasonable large tonnage of probable ore that would indicate a much larger tonnage of possible ore, then suitable metallurgical facilities could be arranged. We intend to continue with our exploration project until our resources are exhausted. If we are able to obtain help through an exploration contract, we will be able to complete much more work than if we were to carry the entire burden ourselves.

(d) The project is located at the foot of the high mountain

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte Montana

range dividing the Salmon River drainage of Idaho and the Bitterroot River drainage of Montana. The portal of the adit is approximately 500 feet east of the junction of Sheep creek and the West Fork of the Bitterroot River in the extreme southern portion of the Bitterroot National Forest, Ravalli county, Montana.

The project is accessible from Darby, Montana, a railhead on the Northern Pacific Railway and the Nearest town, over four miles of paved highway, 18 miles of improved gravel roads, and 24 miles of forest service access roads. No steep grades are encountered over this entire distance.

(e) Because of the recent mechanization of the farming and lumber industries in the Bitterroot Valley, there is a surplus of manpower available.

Sufficient timber is available on the claim.

Materials, supplies and equipment may be obtained in Missoula, Montana, a distance of 110 miles.

Abundant water and future water power is available several hundred feet below the adit.

Electrical power lines would have to be extened 25 miles to reach the project.

5.(a) The minerals for which we wish to explore are columbite, ancylite, bastnaesite and monazite.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

(b) It is planned to continue drifting on the vein for a distance of 500 feet from the face as of the date of the contract, if a contract is approved. If, in the course of drifting, the vein is faulted off, a portion of the 500 feet may be used to go thru the fault and cross-cut to pick up the vein. It is best to plan on timbering when the walls are argillite, but it may not be needed. Drifting done in gneiss will probably need no timber as these walls show very little or no alteration and are as hard as tombstone granite. About 250 feet of work will be in argillite and 250 feet of work in gneiss.

About 100 hours of bulldozing is necessary to improve existing roads, provide additional cuts below the adit for rock storage, to look for the vein in case it is faulted off, and for snow removal if necessary. Only bulldozing of an absolute necessity to the project will be performed.

As no buildings are available to the project, it is recommended that a compressor shack and a bunk house be allowed in the contract.

(c) The work will start within 10 days and be completed within 12 months from the date of an exploration project contract.

(d) William J. Van Matre has been in charge of this project from inception. He will continue to manage the project

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

and act as technical consultant. His background follows:

Nearly three years in the U. S. Navy during World War II, Graduate of Navy Radio Material School, discharged as Radio Technician first class.

1950 graduate of Montana School of Mines in Geological Engineering. Four summers experience as a miner in Butte, Montana and Shullsburg, Wisconsin.

Supervisor of ballast contract including a quarry operation on highway construction in 1950.

Mining Engineer, Anaconda Copper Mining Company, Butte, Montana 1951-1953.

Geologist, Anaconda Copper Mining Company, 1953 to date. Currently in charge of geological work at Kelley Mine, Butte, Montana.

Victor E. Van Matre will be resident supervisor of the project. His background follows:

1950 Graduate of Missouri School of Mines in Mining Engineering, four summers experience as a miner at Butte, Montana and construction worker at Platteville, Wisconsin.

Six months experience as Mining Engineer, Anaconda Copper Mining Company, Butte, Montana.

Two years in the U. S. Army Engineers during Korean War. Gained wide range of engineering experience.

One year as supervisor of building construction, home

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

development project at Baraboo, Wisconsin.

1954-1955, Mining Engineer in charge of mine surveying, White Pine Copper Company, White Pine, Michigan.

As a silent partner we have our father, Mr. Joseph M. Van Matre of Platteville, Wisconsin. He is a 1922 graduate of the Wisconsin Institute of Technology in Mining Engineering. His experience includes a number of positions as a mine manager and as a superintendent of several beneficiation plants. He is now a partner in the V. & E. Construction Company.

6. Estimate of costs-

By far the greater expenditure on this project will be drifting on the vein. To eliminate the inconvenience and cost of keeping certified records on purchases and inventories of the many items that will be needed to complete the proposed project, and as we intend to use our own mining equipment, it would be very desirable on our part to receive reimbursement for work completed on the Unit Cost Plan.

Our drifting operation calls for a three-man set-up, two miners and a utility man to attend to work that is necessary other than drilling, blasting, mucking, timbering and standing rail. We will drill a four foot round and hope to pull three and one-half feet. Mucking and tramming will be done by hand. Unit cost calculations are based on advancing

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

three and one-half feet per shift or 70 feet per month.

We intend to make the cross-section of our drifting seven feet high by five feet wide. As the vein is narrow in respect to the width of the drift, we propose to double blast the face in order to keep the vein material separate from the wallrock. This proceedure is nearly a must as we would need to bulldoze over twice the storage space if it were not done. Also, the wallrock contains magnetite and possibly ilmenite which would complicate a future scheme of beneficiation.

Following is an itemized list of expenses, calculated on a unit cost basis for one blast per round in argillite walls that will not need timber. Included in this listing are labor, operating materials and supplies, suggested use-allowance on operating equipment, tools and tool maintenance, workmen's compensation and employers' liability insurance, and payroll taxes. Costs that are excluded from this listing include bulldozing, cost of erecting buildings, supervision, technical consultants, and analytical work, any of which may be calculated on a unit cost basis if it is thought to be appropriate. We do not expect rehabilitation and repairs or accounting to be an expense in this project.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

Labor-

The rate for hard, semi-skilled labor in this vicinity is$2.00 per hour or $16.00 for an eight hour shift.

$$\frac{3 \text{ men x } \$16.00 \text{ per day}}{3.5 \text{ feet per day}} = \$13.71 \text{ per foot}$$

Operating materials and supplies-

Powder	$3.00	per foot
Fuse	0.60	" "
Caps	0.09	" "
Track Spikes	0.06	" "
Track Bolts	0.01	" "
Fish Plates	0.05	" "
Oil and Grease	0.20	" "
Gasoline	2.00	" "
Miscellaneous (includes chain, rope, sample sacks and carbide). . .	0.15	" "
Total . . .	$6.16	per foot

Suggested use-allowance on operating equipment-

Compressor	$1.43	per foot
Jackleg	0.93	" "
Hoses	0.30	" "
2" Pipe (difference between new and salvage value).	0.11	" "
Submarine	0.14	" "
10 cu. ft. mine cars	0.36	" "
12 lb. track (difference between new and salvage value)	0.44	" "
1½ ton truck (includes servicing). .	0.71	" "
Pickup truck (includes servicing). .	1.43	" "
Ventilation blower	0.36	" "
Fanbag (difference between new and salvage value).	0.40	" "
Miscellaneous (includes pipe fittings and valves, steel and bits, muck sheets, wheelbarrow, blowpipe, oiler, lamps, vessels and containers, jim crow, and first-aid equipment	0.60	" "
Total . . .	$7.21	Per foot

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

Tools and tool maintenance-

Includes cap crimper, shovels, saws, axes, picks, sample picks, rock hammers, rock bars, wrenches and other small tools, track spike puller and loading sticks.

Total . . . $2.00 per foot

Workmen's compensation and employers' liability insurance-

Approximately 9% of payroll . . . . . $1.23 per foot

Payroll taxes-

F. I. C. (2% of payroll)	$0.27	per foot
Unemployment compensation (2.7% of payroll)	0.37	" "
Total . . .	$0.64	per foot

SUMMARY OF COSTS PER FOOT OF DRIFTING

Labor	$13.71	per foot
Operating materials and supplies	6.16	" "
Suggested use-allowance on operating equipment	7.21	" "
Tools and tool maintenance	2.00	" "
Workmen's compensation and employers' liability insurance	1.23	" "
Payroll taxes	0.64	" "
Total base price per foot . . .	$30.95	per foot
Allowance for double blast if appropriate	$3.00	per foot
Allowance for timber if needed	$5.00	per foot
Allowance for extra time and materials consumed when walls are gneiss	$5.00	per foot

Drifting, 500 feet @ $38.95 per foot . . $19,475.00

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

6.(a) The only contract work to be let will be bulldozing. We have in the past been able to obtain this work at the rate of $10.00 per hour. The cat we used is an old 12-ton Cletrac. The operator is very skilful and for the small amount of work we have, he is highly satisfactory.

Bulldozing, 100 hours @ $10.00 per hour . . . $1000.00

(b) Labor is included in the unit cost of drifting.

Supervision, 160 shifts @$28.42 per shift . $4547.20

Technical consultation, 16 shifts @ $28.42 per shift . $454.72
(includes $3.42 per shift payroll tax and insurance)

(c) Operating materials and supplies are included in the cost of drifting.

(d) Suggested use-allowance of operating equipment is included in the cost of drifting.

(e) No rehabilitation or repairs are needed.

(f) Bunkhouse, one @ $500.00 . . . . . $500.00

Compressor shack, one @ $200.00 . . . . . $200.00

(g) Requests for bids on analytical work were sent to several analytical chemists. The only answer that was received was from Ledoux & Company. The degree of accuracy of their analyses are of shipment grade. A lesser degree of accuracy would be adequate for development analyses. Their price quotations are enclosed. The minimum price per analysis of Cb_2O_5 and Rare Earth Oxide would be $75.00 in lots of ten.

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

This cost would be prohibitive unless a sample was cut every 50 or 100 feet and estimates of grade were made for each round between samples. Perhaps Government facilities could be utilized to handle the assaying. If this is possible, we are willing to pay our share of any reasonable cost. We submit a temporary estimate for analytical work of $2.00 per foot. We realize that this may vary a great deal depending on the number of analyses needed and the cost per analysis.

Analytical work, 500 feet @ $2.00 per foot $1000.00

The cost of repairs to and maintenance of operating equipment is distributed throughout the costs of drifting.

Accounting will be handled by the supervisor.

Workmen's compensation and employers' liability insurance have been accounted for.

(h) Contingencies will be absorbed by the operator.

ESTIMATED TOTAL COST OF PROJECT

Drifting, 500 feet @ $38.95 per foot	$19,475.00
Supervision, 160 shifts @ $28.42 per shift . . .	4,547.20
Consultation, 16 shifts @ $28.42 per shift . . .	454.72
Bulldozing, 100 hours @ $10.00 per hour	1,000.00
Bunkhouse, one @ $500.00	500.00
Compressor shack, one @ $200.00	200.00
Total (less analytical work)	$26,176.92
Temporary estimate for analytical work	$1,000.00
TOTAL	$27,176.92

William J. Van Matre
Victor E. Van Matre
1708 Texas Avenue
Butte, Montana

7.(a) We are prepared to furnish our share of the cost of the proposed project in accordance with the regulations on Government participation.

(b) Our share of the costs will be $6,793.22. We can furnish at least $5,000 in cash if necessary. The remainder will be made up through use of equipment owned by us.

Drier

GENERAL SERVICES ADMINISTRATION

Region 6
Kansas City 6, Missouri

Custer, South Dakota
November 8, 1954

IN REPLY REFER TO:

RECEIVED
JUL - 1 1955

William J. Van Matre
1708 Texas Avenue
Butte, Montana

Dear Mr. Van Matre:

Attached find copy of report of analysis which we received from Ledoux and Company this morning.

In accordance with the regulations we can purchase this columbium-tantalum at $1.70 per pound on a visual inspection basis in lots under 2,000 pounds.

Out of the original 35 pounds you forwarded to us we took out a couple of samples amounting to 3 pounds 12 ounces so we still have on hand 31 pounds 4 ounces. Will you kindly advise if you wish to send us an additional quantity to add to this 31 pounds 4 ounces but not to exceed 2,000 pounds. If you do not intend to ship an additional quantity we will prepare the necessary papers in payment of the 31 pounds 4 ounces we have on hand at the present time.

Very truly yours,

~~GENERAL SERVICES ADMINISTRATION~~
Mica Purchasing & Processing Depot

J. F. McGinness

J. F. McGinness
Depot Superintendent

JFMcG:erv

;20M 54 F. & K. INC.

LEDOUX & COMPANY,
(Inc.)
ENGINEERS, CHEMISTS AND ASSAYERS
359 ALFRED AVENUE TEANECK, NEW JERSEY

RECEIVED
JUL - 1 1956

REPORT OF ANALYSIS

M

No. 713148 Teaneck, N. J. November 5, 1954

Our analysis of the sample of Columbium-Tantalum Ore

From General Services Administration

Marked: Columbium-Tantalum William J. Van Matre 1708 Texas Avenue, Butte, Montana and submitted to us, shows:

After drying:

Columbium Oxide (Cb_2O_5)	52.29%
Tantalum Oxide (Ta_2O_5)	0.30%
Titanium Oxide (TiO_2)	1.64%
Tin Oxide (SnO_2)	0.65%
Manganese Oxide (MnO)	1.06%
Iron Oxide (FeO)	12.48%

* * *

To General Services Administration

LEDOUX & COMPANY, Inc.

LEDOUX & COMPANY
(INC.)

TELEPHONE
TEANECK 7-7160

359 ALFRED AVENUE
TEANECK, NEW JERSEY

CABLE ADDRESS
"LEDOUX TEANECK"

RECEIVED
JUL - 1 1955

INDEPENDENT CONTROL & RESEARCH CHEMISTS, SPECTROSCOPISTS – SAMPLING, WEIGHING & SHIPPERS REPRESENTATION

March 30, 1955

Mr. William J. Van Matre
1708 Texas Avenue
Butte, Montana

Dear Mr. Van Matre:

We would be glad to analyze your lode deposit samples for the elements listed in your letter of March 22, 1955. We understand that this material contains from 0.1% to 2% of Cb_2O_5 and from 1% to 20% of rare earth oxides.

If a large number of samples are submitted to us at the same time (ten), we would be able to run the Columbium determinations spectroscopically with the aid of properly prepared standards at a cost of $25.00 for Cb and Ta. For an individual sample, the cost of preparing spectroscopic standards would be prohibitive and we would have recourse to standard chemical analytical procedures involving the following charges:

Ta_2O_5, Cb_2O_5, TiO_2, ZrO_2	$140.00	MnO	$6.00
		Fe_2O_3	$7.00

Total Rare Earths Oxides including ThO_2 - $50.00

Individual Rare Earths (semi-quantitative) $125.00.

Our cost for testing your samples qualitatively for any or all of the constituents listed above would be $12.00.

Mr. William J. Van Matre March 30, 1955

Trusting that we may be able to serve you, we are

Very truly yours,

LEDOUX & COMPANY

Silve Kallmann

Silve Kallmann,
Research Director.

SK:mmm

RECEIVED
JUL - 1 1955

LEASE

THIS AGREEMENT, Made and entered into this 25th day of August, 1954, by and between Louis Erickson of Corvallis, Montana, party of the first part and William J. Van Matre of Butte, Montana, party of the second part;

W I T N E S S E T H

That the party of the first part for valuable considerations and of the covenants and agreements hereinafter contained to be kept and performed by the party of the second part, does by these considerations grant, demise, lease, and let exclusively unto the said party of the second part, commencing on the 25th day of August, 1954, the following described unpatented lode mining claims, all situated in the Alta (unorganized) mining district, in Ravalli County, State of Montana, all being duly recorded in the Lode Locations Records of said Ravalli County, in the book and at the page numbers designated as follows:

The Dark Star recorded in Book 9, Page 23 of Lode Locations, and Determined recorded in Book 9, Page 25 of Lode Locations.

to all of which reference is hereby made for a more complete description of said claims; together with all machinery, track, equipment, and appurtenances thereunto belonging.

The party of the second part agrees to enter upon said premises and begin work by the 15th day of September, 1954, and work the same in a manner necessary to good and economical mining, and in a good and workmanlike manner. Said party of the second part agrees to do all assessment work and that not less than 700 cubic feet of

rock shall be excavated from underground workings during each month of the term of this lease, except during the months of December, January, February, March and April, during which time the premises may be expected to be inaccessible because of heavy snowfall, or other causes beyond the control of the party of the second part. The accumulative excavation may be so distributed that any excavation in excess of 700 cubic feet per month may be carried forward, in whole or in part, and added to the excavation of any month in which less than 700 feet were excavated, so as to satisfy the excavation requirements.

The party of the second part further agrees to pay to the party of the first part 10% royalty based upon the gross mill or smelter returns of all ores, concentrates or metals extracted by him from the premises, the payment of such royalties to be made directly to the party of the first part by the mill, smelter, or buyer treating or purchasing the said ores, concentrates or metals, such payment to be made by check or draft to him at Corvallis, Montana. By "gross mill or smelter returns" is meant the gross amount paid by the mill or smelter for said ores, concentrates and metals.

The party of the first part agrees that upon the payment of said royalties in the total amount of $25,000.00, said party of the first part shall convey all right, title and interest in and to the above described premises to the party of the second part, or his heirs, personal representatives or assigns; provided, however, that the party of the second part shall have the option of purchasing said property for the sum of $25,000.00 less the amount paid at the time of the exercise thereof in royalties as aforesaid, at

any time during the term of this lease.

The party of the first part shall at all times during the term of this lease have the right to enter upon and inspect the mine or mines, and all the workings thereof, on the demised premises, and to make any survey that he may deem necessary, either for the purpose of checking the amount of ores mined or for an examination of the physical condition of the property and workings.

The party of the second part agrees that he will well and sufficiently timber any mine or mines on the demised premises at all points where proper, and repair all old timbering whenever it may become necessary in order to preserve the mine or mines in a workable condition; that he will keep all shafts, drifts, tunnels, and workings in good condition of repair, keep the same drained, and clear of loose rock and debris of all kinds.

The party of the second part further agrees that he will keep books and accounts showing the number of shifts worked, the amount of ore extracted from said mine, the amount of ore shipped, billed, sold, or treated and the amount of minerals sold from said ore, or value extracted therefrom, and the party of the first part shall have free and full access to said books, accounts and records at reasonable times.

The party of the second part will pay all taxes hereafter levied on the improvements now upon said premises or placed thereon by him. Taxes levied on account of production from the property shall be paid as provided by law, the party of the first part to bear that part thereof assessed against his royalty interest.

The party of the second part further agrees that he will not permit or suffer any liens of any kind or nature to be enforced against the demised premises for any work done, or machinery, equipment or materials furnished thereon at the instance or request, or on behalf, of the party of the second part, unless the party of the first part gives permission in writing that such lien is acceptable to him.

Time is the essence of this agreement, and in case the party of the second part shall fail to keep and perform the covenants and agreements herein contained, and to be by him performed, then the party of the first part may, at his option, give to the party of the second part notice in writing, specifying the nature of the default, and the party of the second part shall have thirty (30) days thereafter within which to make good such default, and if he fails so to do, this agreement shall be subject to cancellation and determination.

The party of the second part shall have the right at any time to surrender and terminate this lease in whole, and upon so doing he shall thereafter be relieved from the obligations thereof thereafter to be performed. Upon such surrender and termination, the party of the second part will execute and deliver to the party of the first part a suitable release of this lease.

THE TERMS OF THIS AGREEMENT, and all the conditions and covenants therein contained, shall extend to and be binding upon the parties hereto, their heirs, administrators, executors and assigns.

STATE OF MONTANA,
ss.
County of Ravalli.

On this 25 day of August, 1954, before the undersigned, a Notary Public in and for the State of Montana, personally appeared Louis Erickson and William J. Van Matre known to me to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first above written.

Virginia Parker
Notary Public for the State of Montana
Residing at Hamilton Mont.
My Commission expires 3/1/57

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

Louis Erickson
Party of the First Part

William J. Van Matre
Party of the Second Part

EXPLORATION PROJECT CONTRACT
DARK STAR MINING COMPANY
DOCKET NO. DMEA-3884

ANNEX I

The land referred to in Article 2 of the contract form consists of 2 unpatented lode mining claims situated in the Alta Mining District, more particularly identified and described as follows:

The Dark Star claim recorded in Book 9, Page 23 of Lode Locations.
Determined claim recorded in Book 9, Page 25 of Lode Locations.
All being duly recorded in the Lode Locations Records of Ravalli County, Montana.

The Dark Star Mining Company (a partnership) holds the property by a mining lease with option to purchase which agreement is dated August 25, 1954. Said lease to be for an undetermined period contingent upon certain convenants and agreements to be performed.

DESCRIPTION OF THE WORK

The purpose of the work is to explore for columbite and rare earth minerals contained in narrow calcareous beds. The project work consists of bulldozer surface trenching, and stripping, underground drifting and/or crosscutting. The location direction and extent of the drifting and crosscutting shall be determined by the results of the surface trenching and stripping.

The project is to be accomplished in two successive stages:

Stage I - Surface trenching and stripping by bulldozer.

The location, extent, and manner of all surface trenching and stripping shall be subject to the prior approval of the Government. Two trenches shall be excavated by bulldozer approximately 600 feet in length trending generally south 15 degrees east as shown on the attached map. As a result of this work the overburden in areas of indicated outcrops of ore beds shall be stripped where ever possible but if the overburden extends to a depth such as will render the operation impractical, then attempts shall be made to expose the beds by cross trenches at approximately 50 foot intervals. Upon the consumation of the above described work, in whole or in part, additional trenching and/or stripping may be undertaken in other areas in which favorable indications have been disclosed by previous work.

Samples of the trenching and stripping shall be taken in such locations, extent, size and weight as will meet the prior approval of the Government.

State II - Drifting and/or crosscutting shall be undertaken all or in part only if, in the opinion of the Government expressed in writing in advance, the results of the preceeding Stage I warrant further exploration. The location, direction and extent of all drifting or crosscutting shall be subject to prior approval expressed in writing by the Government. Drifts and crosscuts shall be a minimum of 5 ft.x7 ft. in cross section.

While drifting or crosscutting in mineralized ground, a sample shall be taken of each round by car sampling which samples shall be crushed, split, and combined with the split portions of 4 rounds to make up an amount in weight and size acceptable to the Government.

All samples are to be tested at no cost to the Operator by the Petrology Branch of the Geological Survey at Denver, Colorado. These samples are to assayed chemically for columbium and the rare earth content determined spectographically.

A map titled "Dark Star Claim" indicating the location of the proposed work is attached hereto and made a part hereof.

ESTIMATED COSTS OF PROJECT

AGREED UNIT COSTS

Stage I

Tent for living quarters	$ 100.00
Access road improvements, D-6 Bulldozer or equivalent fully manned and operated (20) hours @ $10.00 per hour	200.00
Trenching, D-6 Bulldozer or equivalent fully manned and operated (120) hours @ $10.00 per hour	1,200.00
1 helper 15 days @ $16.00 per day	240.00
Sampling (preparation, sacks and freight) 25 samples @ $2.00 each	50.00
Supervision ½ month @ $600.00 per month	300.00

Stage II

Adit site excavation, D-6 Bulldozer or equivalent fully manned and operated (16) hours @ $10.00 per hour	160.00
Drifting and/or crosscutting 500 ft. @ $35.00 per ft. (including supervision, technical services, depreciation, rentals and all costs incidental to the work other than those set forth herein.)	17,500.00
Timbering where necessary 150 ft. @ $5.00 per ft.	750.00
Sampling (preparation, sacks, and freight) 50 samples @ $2.00 each	100.00
Snow removal if necessary, D-6 Bulldozer or equivalent fully manned and operated (8) hours @ $10.00 per hour	80.00
Bunkhouse	500.00
Compressor house	200.00
Total estimated cost of project	$21,380.00
Government participation @ 75%	$16,035.00

August 18, 1955

Docket No. DMEA-3884 - Dark Star Mining Company

Memorandum contract terms estimate of costs.

Drifting and crosscutting - 500 ft. - 7 months

Summary of costs per foot of drifting.

Labor	$ 13.75
Supervision, technical services, preparation of maps	8.00
Materials and supplies	6.16
Depreciation allowance	3.22
Tools and tool maintenance, and mine repairs	2.00
Compensation and liability insurance	1.23
Payroll taxes	.64
	$ 35.00

EXPLORATION PROJECT CONTRACT
DARK STAR MINING COMPANY
DOCKET NO. DMEA-3884

ANNEX I

The land referred to in Article 2 of the contract form consists of 2 unpatented lode mining claims situated in the Alta Mining District, more particularly identified and described as follows:

The Dark Star claim recorded in Book 9, Page 23 of Lode Locations.
Determined claim recorded in Book 9, Page 25 of Lode Locations.
All being duly recorded in the Lode Locations Records of Ravalli County, Montana.

The Dark Star Mining Company (a partnership) holds the property by a mining lease with option to purchase which agreement is dated August 25, 1954. Said lease to be for an undetermined period contingent upon certain convenants and agreements to be performed.

DESCRIPTION OF THE WORK

The purpose of the work is to explore for columbite and rare earth minerals contained in narrow calcareous beds. The project work consists of bulldozer surface trenching, and stripping, underground drifting and/or crosscutting. The location direction and extent of the drifting and crosscutting shall be determined by the results of the surface trenching and stripping.

The project is to be accomplished in two successive stages:

Stage I - Surface trenching and stripping by bulldozer.

The location, extent, and manner of all surface trenching and stripping shall be subject to the prior approval of the Government. Two trenches shall be excavated by bulldozer approximately 600 feet in length trending generally N15 degrees east as shown on the attached map. As a result of this work the overburden in areas of indicated outcrops of ore beds shall be stripped where ever possible but if the overburden extends to a depth such as will render the operation impractical, then attempts shall be made to expose the beds by cross trenches at approximately 50 foot intervals. Upon the consumation of the above described work, in whole or in part, additional trenching and/or stripping may be undertaken in other areas in which favorable indications have been disclosed by previous work.

Samples of the trenching and stripping shall be taken in such locations, extent, size and weight as will meet the prior approval of the Government.

State II - Drifting and/or crosscutting shall be undertaken all or in part only if, in the opinion of the Government expressed in writing in advance, the results of the preceeding Stage I warrant further exploration. The location, direction and extent of all drifting or crosscutting shall be subject to prior approval expressed in writing by the Government. Drifts and crosscuts shall be a minimum of 5 ft.x7 ft. in cross section.

While drifting or crosscutting in mineralized ground, a sample shall be taken of each round by car sampling which samples shall be crushed, split, and combined with the split portions of 4 rounds to make up an amount in weight and size acceptable to the Government.

All samples are to be tested at no cost to the Operator by the Petrology Branch of the Geological Survey at Denver, Colorado. These samples are to assayed chemically for columbium and the rare earth content determined spectographically.

A map titled "Dark Star Claim" indicating the location of the proposed work is attached hereto and made a part hereof.

ESTIMATED COSTS OF PROJECT

AGREED UNIT COSTS

Stage I

Tent for living quarters	$ 100.00
Access road improvements, D-6 Bulldozer or equivalent fully manned and operated (20) hours @ $10.00 per hour	200.00
Trenching, D-6 Bulldozer or equivalent fully manned and operated (120) hours @ $10.00 per hour	1,200.00
1 helper 15 days @ $16.00 per day	240.00
Sampling (preparation, sacks and freight) 25 samples @ $2.00 each	50.00
Supervision ½ month @ $600.00 per month	300.00

Stage II

Adit site excavation, D-6 Bulldozer or equivalent fully manned and operated (16) hours @ $10.00 per hour	160.00
Drifting and/or crosscutting 500 ft. @ $35.00 per ft. (including supervision, technical services, depreciation, rentals and all costs incidental to the work other than those set forth herein.)	17,500.00
Timbering where necessary 150 ft. @ $5.00 per ft.	750.00
Sampling (preparation, sacks, and freight) 50 samples @ $2.00 each	100.00
Snow removal if necessary, D-6 Bulldozer or equivalent fully manned and operated (8) hours @ $10.00 per hour	80.00
Bunkhouse	500.00
Compressor house	200.00
Total estimated cost of project	$21,380.00
Government participation @ 75%	$16,035.00

August 18, 1955

Docket No. DMEA-3884 - Dark Star Mining Company

Memorandum contract terms estimate of costs.

Drifting and crosscutting - 500 ft. - 7 months

Summary of costs per foot of drifting.

Labor	$ 13.75
Supervision, technical services, preparation of maps	8.00
Materials and supplies	6.16
Depreciation allowance	3.22
Tools and tool maintenance, and mine repairs	2.00
Compensation and liability insurance	1.23
Payroll taxes	.64
	$ 35.00

August 18, 1955

Docket No. DMEA-3884 - Dark Star Mining Company

Memorandum contract terms estimate of costs.

Drifting and crosscutting - 500 ft. - 7 months

Summary of costs per foot of drifting.

Labor	$ 13.75
Supervision, technical services, preparation of maps.	8.00
Materials and supplies	6.16
Depreciation allowance	3.22
Tools and tool maintenance, and mine repairs	2.00
Compensation and liability insurance	1.23
Payroll taxes	.64
	$ 35.00

Keating

Tent - minimum - 10' x 10' x 7' center-wall type	$100.00
Bunkhouse minimum - 14' x 16' frame building composition roof	$500.00
Compressor and toolhouse - 8' x 10' frame builing composition roof	$200.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

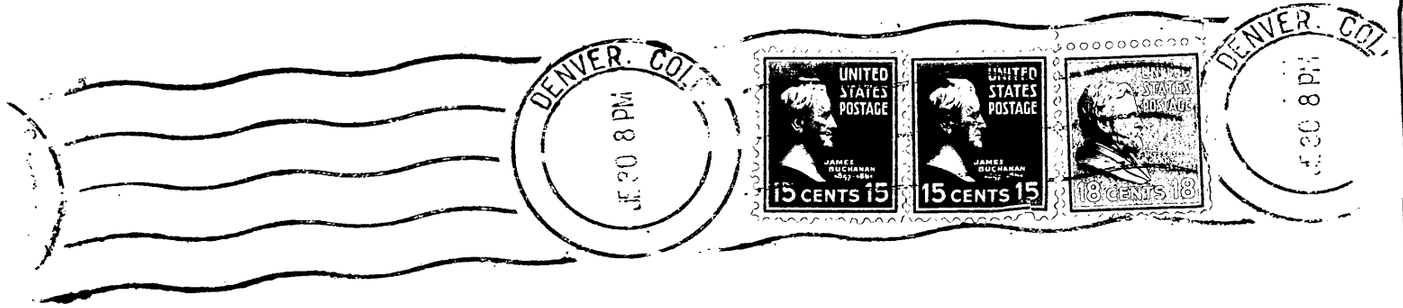
PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300
(PMGC)

Docket No DMEA. 3884. - Dark Star. Mining Co.

OFFICIAL BUSINESS

Maps

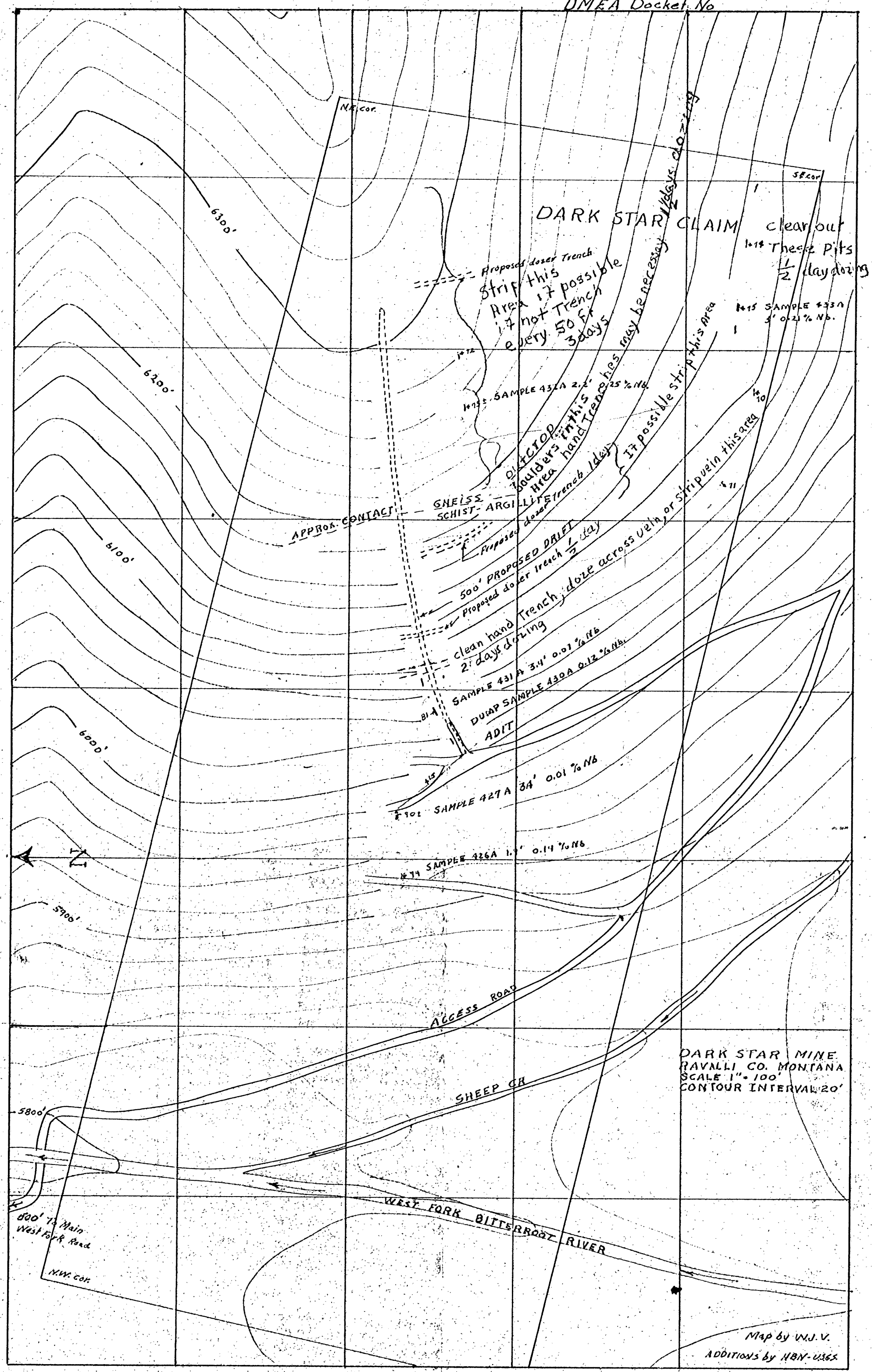
OFFICIAL BUSINESS
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

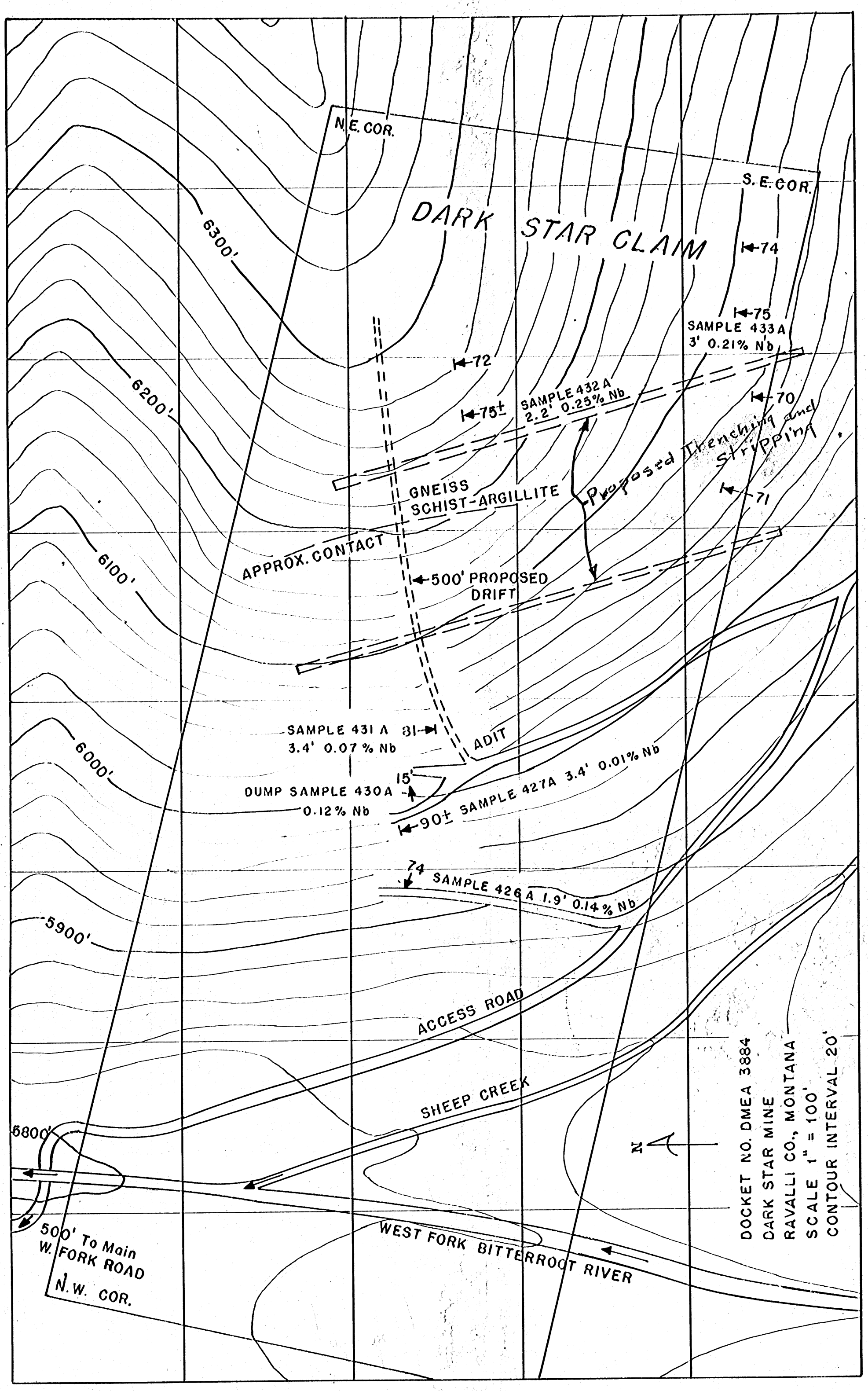


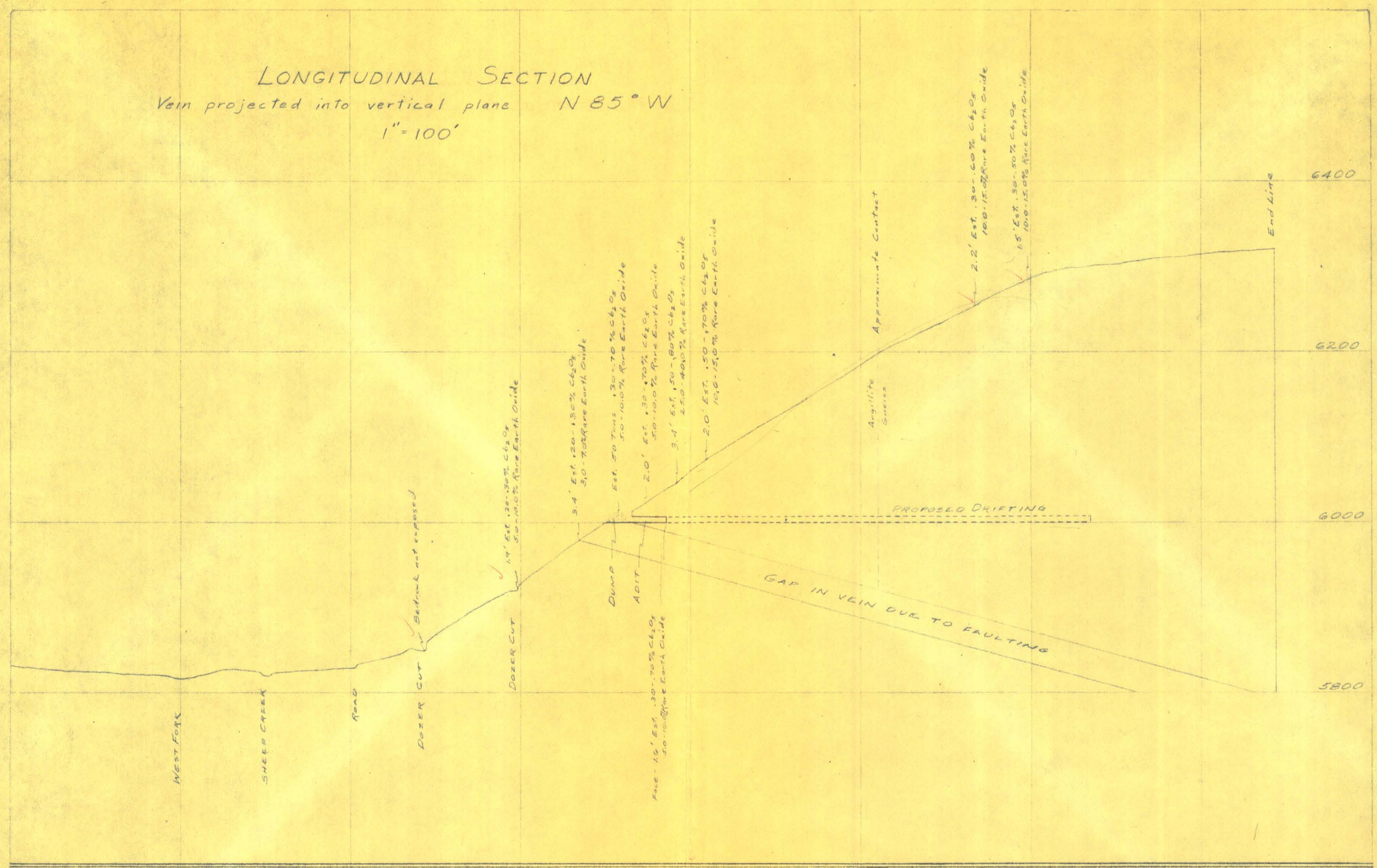
Defense Minerals Exploration Administration
U°S° Dept. of the Interior
Interior Bldg.
Washington 25, D.C.

3884

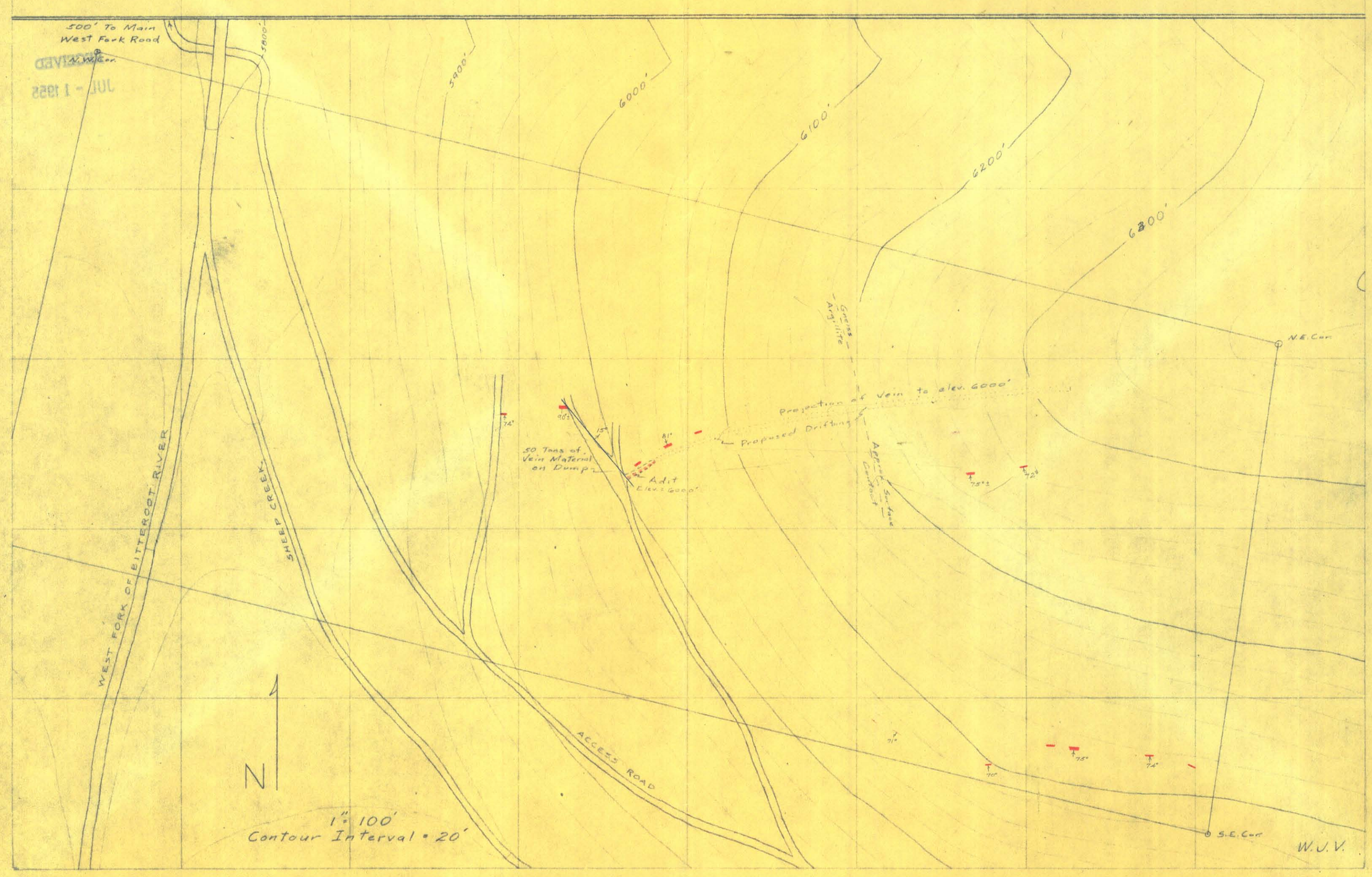
DMEA Docket No




N.E. COR.
S.E. COR.
DARK STAR CLAIM
74
75
SAMPLE 433A
3' 0.21% Nb
72
75±
SAMPLE 432A
2.2' 0.25% Nb
70
Proposed Trenching and Stripping
71
GNEISS
SCHIST-ARGILLITE
APPROX. CONTACT
500' PROPOSED DRIFT
SAMPLE 431A 81
3.4' 0.07% Nb
ADIT
15'
DUMP SAMPLE 430A
0.12% Nb
90± SAMPLE 427A 3.4' 0.01% Nb
74
SAMPLE 426A 1.9' 0.14% Nb
ACCESS ROAD
SHEEP CREEK
6300'
6200'
6100'
6000'
5900'
5800'
500' To Main W. FORK ROAD
N.W. COR.
WEST FORK BITTERROOT RIVER
N
DOCKET NO. DMEA 3884
DARK STAR MINE
RAVALLI CO., MONTANA
SCALE 1" = 100'
CONTOUR INTERVAL 20'



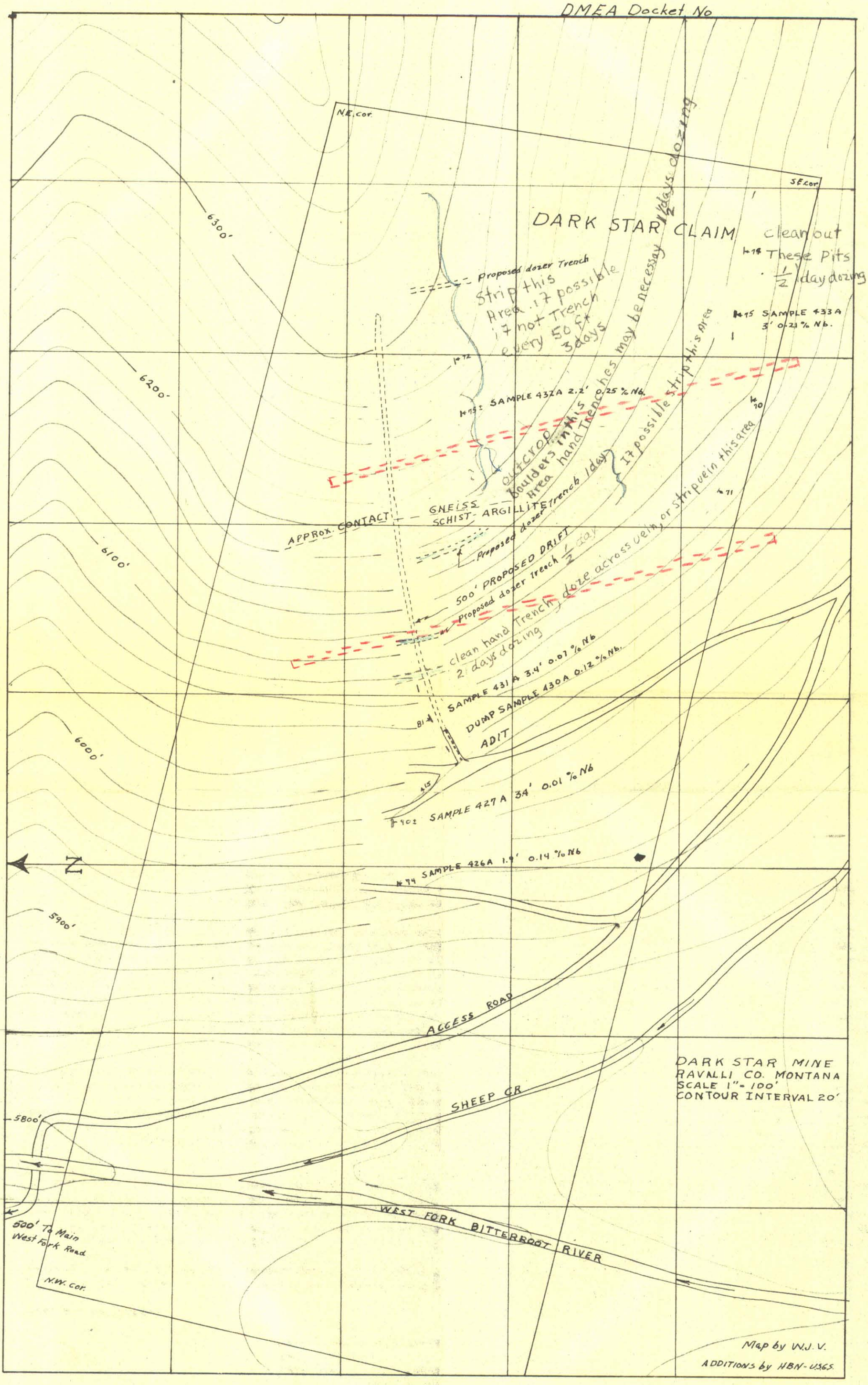
DARK STAR CLAIM



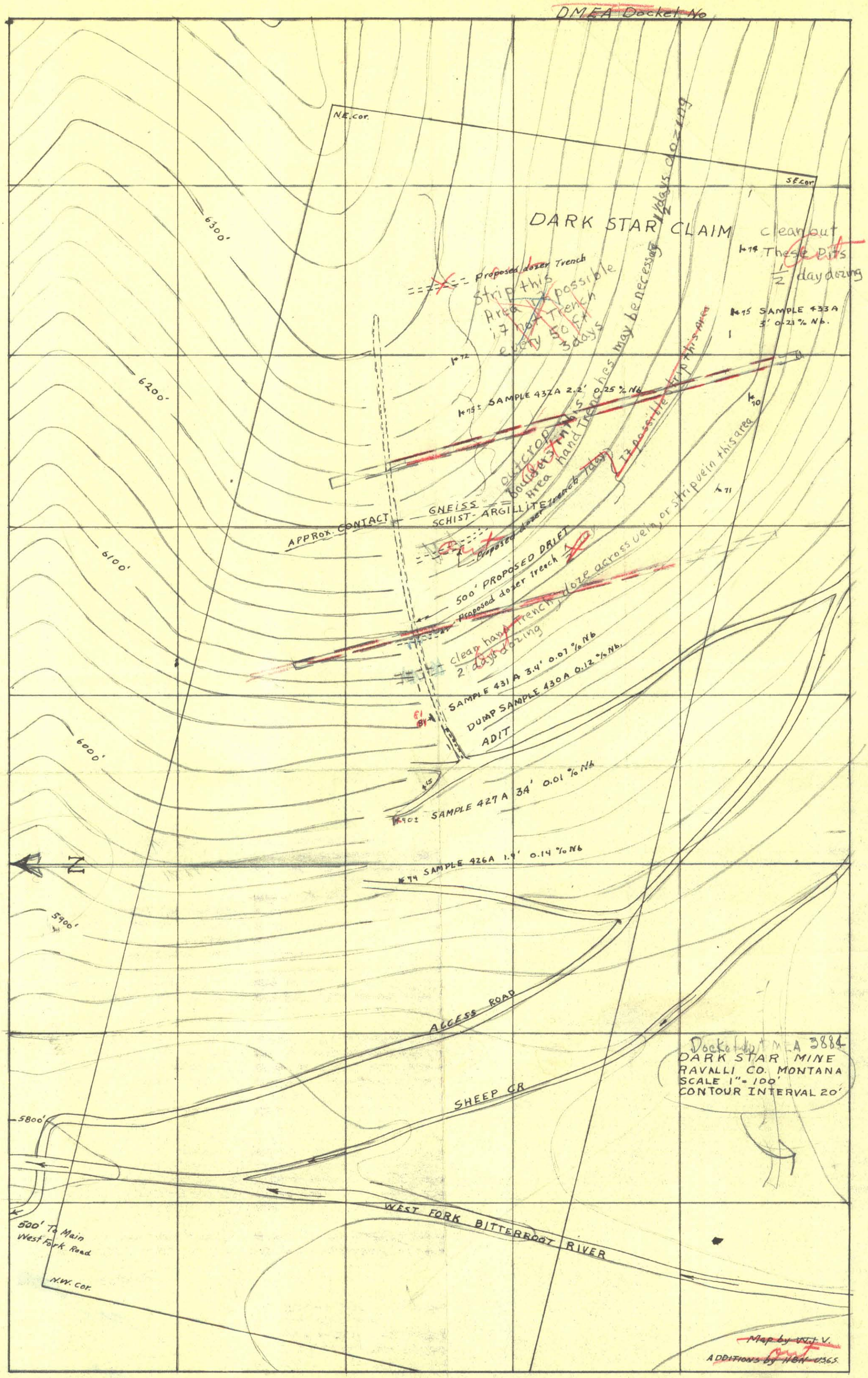
RECEIVED
JUL - 1 1955

3384

DMEA Docket No



3884


DMEA Docket No
N.E. cor.
S.E. cor.
DARK STAR CLAIM
clean out
#14 These Pits
1/2 day dozing
6300'
6200'
6100'
6000'
5900'
5800'
Proposed dozer Trench
Strip this Area if possible
17 hand Trench every 50 ft 3 days
1/2 days dozing
#15 SAMPLE 433A 3' 0.21 % Nb.
#12
#15± SAMPLE 437A 2.2' 0.25 % Nb
#10
outcrop bouldery Area
hand Trenches may be necessary
strip this area
#11
GNEISS
SCHIST - ARGILLITE
APPROX. CONTACT
Proposed dozer trench
500' PROPOSED DRIFT
Proposed dozer trench
clean hand trench, doze across vein, or strip vein this area
2' days dozing
SAMPLE 431 A 3.4' 0.07 % Nb
DUMP SAMPLE 430 A 0.12 % Nb.
ADIT
#15
#90± SAMPLE 427 A 3.4' 0.01 % Nb
N
#74 SAMPLE 426A 1.9' 0.14 % Nb
ACCESS ROAD
SHEEP CR
WEST FORK BITTERROOT RIVER
500' To Main West Fork Road
N.W. cor.
Docket No DMEA 3884
DARK STAR MINE
RAVALLI CO. MONTANA
SCALE 1" = 100'
CONTOUR INTERVAL 20'
Map by W.J.V.
ADDITIONS by HGA 1965.