DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4311

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(Withdrawn ✓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

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

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

Left Side

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

Right Side

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

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

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

Left Side

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

Right Side

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

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

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

DMPA 4311

DOCKET INDEX

ACTION DOCUMENTS

1. APPLICATION DATE RECEIVED

2. CONTRACT 1049 DATE JAN 1 0 1951

3. TERMINATION AGREEMENT: DATE

   a. Mutual (with/without repayment provision).
   b. Unilateral.
   c. Amendment with automatic termination clause and with/without repayment provision.

4. CERTIFICATION DATE

5. AUDIT REPORT DATE

6. AMENDMENTS = NUMBERS DATE

Government's Copy

MF-200
(Revised June 1954)

Docket No. DMEA 4311

Commodity Uranium

Contract No. Idm-E 1049

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this JAN 10 1957 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] a Joint Venture consisting of the nine individuals and one corporation listed in Annex II, and represented by the corporate member, Denver-Golden Oil and Uranium Co., a Colorado corporation, whose mailing address is 760 Denver Club Building, Denver 2, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, Annex II and 2 maps (Figure 4 and Figure 5)

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

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

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Owner of [5] the mineral rights, except coal, gas, and oil in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] ..... recorded in Book ....., page See Annex I 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: 10% Royalty interest of Paul R. and Anna Lee White

(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

[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."

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien and Subordination Agreement of Paul R. and Anna Lee White

(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 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium The work to be performed is described in Exhibit "A." The Operator on or before shall commence the work, and on or before February 1, 1958 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall ~~either~~ have completed the work ~~or shall have incurred allowable costs (see Article 6) in a sum not less than the estimated total allowable cost set forth in Exhibit "A"~~ except as otherwise provided in Exhibit "A" with respect to stages of work. See Article 13.

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) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *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.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 57,980.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $43,485.00 : *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 or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(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. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated total allowable cost of the work.~~ See Article 13.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. See Article 13.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. **See Article 13.**

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the 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. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. 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. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved 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 detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

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

(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 8. *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 7) 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. **See Article 13.**

(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 therof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

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

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

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

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

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

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

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

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *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: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) 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.

(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: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) 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 10 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 11. *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 12. *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 13. *Changes and added provisions.*—

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stages of work."

(b) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon is deleted.

(c) Categories (2) through (7) of Article 6(a) are deleted.

(d) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.

(e) In the last sentence of Article 6(c), the words "Article 8" are substituted for the words "Article 9."

(f) Notwithstanding any other provision of the contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator: Provided, That the Government will not contribute to any portion of an average unit cost of a drilling item that exceeds the estimated unit cost of said item set forth in the contract.

(g) In Article 8(b) the term "minerals" does not include oil, gas or coal.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator, Defense Minerals
Exploration Administration

XXXXXXX

By

Denver-Golden Oil and Uranium Co.

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—70617-1

EXPLORATION PROJECT CONTRACT
DENVER-GOLDEN OIL AND URANIUM CO.
DOCKET NO. DMEA-4311

ANNEX I

The land referred to in Article 2 of the Contract consists of the SE$\frac{1}{4}$ of sec. 25, T. 2 S., R. 71 W., 6th P.M.&B., Jefferson County, Colorado.

Paul R. White and Anna Lee White by Mineral Deed, dated February 15, 1956, recorded in Book 979, Page 187, Office of the County Recorder, conveyed all minerals rights, except oil, gas, casinghead gas or other gaseous or vaporous substances, and coal, to Denver-Golden Oil and Uranium Co., but reserved a 10 percent royalty interest.

Denver-Golden Oil and Uranium Co. by Mineral Deed, also dated February 15, 1956 (recorded in Book 979, Page 190, in the Office of the County Recorder), conveyed its rights in the land to all the joint ventures as follows:

Madge Johnston, a widow Longview, Texas	an undivided 1/20 interest
E. C. Johnston, Jr. Longview, Texas	an undivided 1/20 interest
Gordon C. Johnston Longview, Texas	an undivided 1/20 interest
J. Glenn Johnston Longview, Texas	an undivided 1/20 interest
Carl von Bibra Long Beach, California	an undivided 1/10 interest
Edward Koppelman Long Beach, California	an undivided 1/10 interest
M. O. Johnston Glendale, California	an undivided 1/10 interest
Harry Cohen Denver, Colorado	an undivided 1/5 interest
A. H. Bernstein Pueblo, Colorado	an undivided 1/10 interest
Denver-Golden Oil and Uranium Co., a Colorado corporation	an undivided 1/5 interest

EXPLORATION PROJECT CONTRACT
DENVER-GOLDEN OIL AND URANIUM CO.
DOCKET NO. DMEA-4311

ANNEX II

Members of the Joint Venture, Operator, are as follows:

Madge Johnston	Longview, Texas
E. C. Johnston, Jr.	Longview, Texas
Gordon C. Johnston	Longview, Texas
J. Glenn Johnston	Longview, Texas
Carl von Bibra	Long Beach, California
Edward Koppelman	Long Beach, California
M. O. Johnston	Glendale, California
Harry Cohen	Denver, Colorado
A. H. Bernstein	Pueblo, Colorado
Denver-Golden Oil and Uranium Co.	760 Denver Club Building Denver 2, Colorado

EXPLORATION PROJECT CONTRACT
DENVER-GOLDEN OIL AND URANIUM CO.
DOCKET NO. DMEA-4311

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by core drilling, from surface and underground locations, to test known and inferred ore-bearing breccia faults laterally and at depth. The general area of the work is shown on two maps entitled "Figure 4 - Map of Denver-Golden Oil and Uranium Co., Ralston Creek Mine, Showing Approximate Location of Proposed Stage I Drill Holes, Jefferson County, Colo. (DMEA-4311)," and "Figure 5 - Vertical Section Showing Location of Proposed Stage I Exploration Drill Holes, Denver-Golden Oil and Uranium Co., Ralston Creek Mine, Jefferson County, Colo. (DMEA-4311)," attached hereto and made a part hereof.

All holes shall be reamed, cased, and cemented as necessary, and the core shall be AX in size except where maintenance of this size is impracticable, in which case EX size is acceptable. The Government will not contribute to the cost of any incompleted hole.

All core and cuttings from the drill holes shall be saved and checked for radioactivity. Sections indicating significant mineralization shall be split for samples, and such samples shall be analyzed chemically for uranium. All the remaining core and cuttings saved shall be properly labeled and stored for inspection by the Government and shall be disposed of by the Operator upon authorization by the Government.

All drill holes shall be logged geologically and probed radiometrically, and the record of such logging and probing, together with certified copies of all assay certificates, shall be submitted with the Operator's monthly progress reports.

The project shall be supervised by a competent geologist or mining engineer, who shall devote sufficient time to the project work to insure efficient operations and satisfactory results.

The location, direction, inclination, and extent of all project work are subject to the approval of the Government.

The work is divided into two stages, as hereinafter described. The Operator shall complete Stage I, and shall perform as much of the work in Stage II as the Government approves in writing in advance.

Stage I

Prepare two underground drill stations and five surface drill sites and drill a total of nine diamond drill holes from these sites aggregating approximately 3,500 feet. The drill holes are indicated on the maps (Figure 4 and Figure 5). Five of the holes shall be drilled vertically from surface locations. The approximate depths of these holes shall be as follows: holes Nos. 1 and 9 each 300 feet, hole No. 2 400 feet, and holes Nos. 7 and 8 each 500 feet. Four holes shall be drilled from underground locations within practically the same vertical NE-SW plane. Holes Nos. 3, 5, and 6 are inclined holes approximately 400, 400, and 200 feet in depth, respectively. Hole No. 4 is a vertical hole approximately 500 feet in depth. If the nine holes require more than 3,500 feet to reach the desired objectives, the additional footage and funds required may be transferred and deducted from Stage II upon the written approval of the Government.

Stage II

Prepare necessary drill sites and drill not more than 18 holes aggregating not more than 7,000 feet at locations to be determined from the results of drilling in Stage I and also as it progresses in Stage II.

The purpose of Stage II drilling is to explore ore-bearing fault breccias in the vicinity of favorable host rocks at points beyond and, if warranted, between the zones covered by Stage I and other previous work.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts			
3,500 feet core drilling @ $5.00/ft.		$17,500.00	
20 hours drill crew stand-by time @ $5.00/hr.		100.00	
20 hours cementing and drilling out @ $5.00/hr.		100.00	
100 feet reaming and casing @ $3.00/ft.		300.00	
Categories (2) through(7)	None	-	$18,000.00

Fixed Unit Costs (See Article 13)

2 Underground drilling stations @ $100.00/ each completed station		$ 200.00	
5 Surface drill sites @ $20.00/each completed site		100.00	
120 Cardboard core boxes	@ $1.25 each	150.00	
40 Chemical sample analyses	@ $3.50/sample	140.00	
Incidental allowance for each foot of drilling completed, 3,500 feet @ $0.24/ft.*		840.00	$ 1,430.00
Estimated Total Cost of Stage I			$19,430.00

Stage II

Actual Costs

Category (1) Independent Contracts

7,000 feet core drilling	@ $5.00/ft.	$35,000.00	
40 hours drill crew stand-by time @ $5.00/hr.		200.00	
40 hours cementing and drilling out @ $5.00/hr.		200.00	
200 feet reaming and casing	@ $3.00/ft.	600.00	
Categories (2) through (7)	None	-	$36,000.00

Fixed Unit Costs (See Article 13)

18 Drill sites	@ $20.00 each	$ 360.00	
240 Cardboard core boxes	@ $1.25 each	300.00	
60 Chemical sample analyses	@ $3.50/sample	210.00	
Incidental allowance for each foot of drilling completed, 7,000 feet @ $0.24/ft.*		1,680.00	2,550.00
Estimated Total Cost of Stage II			$38,550.00

SUMMARY OF COSTS

Estimated Total Cost of Stage I	$19,430.00	
Estimated Total Cost of Stage II	38,550.00	
Estimated Total Cost of the Project		$57,980.00
Government Participation @ 75%		$43,485.00

* Includes supervision, compressed air, and all other items of cost that might otherwise have been allowable costs under Categories (2) through (7) of Article 6, except other items listed under "Fixed unit Costs."

979 190

Recorded at 8:45 o'clock A M. FEB 16 1956

Reception No. 635392 ROBERT W. NEWTON, Recorder.

RECEIVED MAY 28 1955

MINERAL DEED

THIS DEED Made this 15 day of February, 1956, between DENVER-GOLDEN OIL AND URANIUM CO., a Colorado corporation, of the first part, and the various named assignees listed hereinbelow, of the second part.

WITNESSETH, That the said party of the first part, for and in consideration of the sum of One Thousand Dollars and other good and valuable considerations to the said party of the first part in hand paid by the parties of the second part, the receipt of which is hereby confessed and acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm unto:

Madge Johnston, a widow Longview, Texas	an undivided 1/20 interest
E. C. Johnston, Jr. Longview, Texas	an undivided 1/20 interest
Gordon C. Johnston Longview, Texas	an undivided 1/20 interest
J. Glenn Johnston Longview, Texas	an undivided 1/20 interest
Carl von Bibra Long Beach, California	an undivided 1/10 interest
Edward Koppelman Long Beach, California	an undivided 1/10 interest
M. O. Johnston Glendale, California	an undivided 1/10 interest
Harry Cohen Denver, Colorado	an undivided 1/5 interest
A. H. Bernstein Pueblo, Colorado	an undivided 1/10 interest
Denver-Golden Oil and Uranium Co., a Colorado corporation	an undivided 1/5 interest

their heirs, assigns, successors and representatives forever, all and each of the ores and minerals, of whatsoever class or kind, EXCEPT oil, gas, casinghead gas or other gaseous or vaporous substances, and coal, on or in the following described tract of land situate in the County of Jefferson, State of Colorado, to-wit:

The Southeast quarter of Section Twenty-five, Township Two South, Range Seventy-one West of the Sixth Principal Meridian, —IMEA-2888

togehter with the right of ingress thereto and egress therefrom at all times for the purpose of mining, drilling, exploring, prospecting, operating and developing said lands for minerals aforesaid, and for storing, handling, transporting and marketing the same therefrom with the right to remove from said tract of land all of the parties of the second part's property and improvements; together with the further right to sink any and all shafts, drive tunnels and drifts, and the right to erect and maintain shaft houses, storage bins, buildings and structures, machinery, equipment and apparatus of any and every kind whatsoever deemed necessary by parties of the second part in mining said property; together with the further right to build roads and pole lines and wire lines for transmission of electric energy and telephone communications; together with the further right to use so much of the premises as may be necessary or convenient for dumping and storing of waste material.

328
456

This conveyance shall be subject to a royalty of 10% previously reserved unto Paul R. White and Anna Lee White in that certain Mineral Deed dated February 15, 1956, and recorded at Book 979, Page 187 of the records of Jefferson County, Colorado.

TO HAVE AND TO HOLD the above described property, easements and interests with all and singular the rights, privileges and appurtenances thereto or in any wise belonging, unto parties of second part, their heirs, assigns, successors and representatives forever, the party of the first part hereby warranting said title to parties of second part, their heirs, assigns, successors and representatives forever by, through or under party of the first part.

IN WITNESS WHEREOF, the party of the first part has hereunto set its hands and seals the day and year first above written.

DENVER-GOLDEN OIL AND URANIUM CO.,
a Colorado corporation,

By Charles O. Parker
President

ATTEST:

Roy O. Goldin
Secretary

DENVER-GOLDEN OIL & URANIUM CO. COLORADO SEAL

STATE OF COLORADO)
CITY AND) SS.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 15 day of February, A.D. 1956, by CHARLES O. PARKER, President of Denver-Golden Oil and Uranium Co., a Colorado corporation, and ROY O. GOLDIN, Secretary of Denver-Golden Oil and Uranium Co., a Colorado corporation.

Witness my hand and official seal.

My commission expires: March 29, 1959

JEANE R. BARRISON NOTARY PUBLIC CITY & COUNTY OF DENVER, COLO.

Jeane R. Barrison
Notary Public

-08

4

635392

Mineral Deed

EXAMINED

STATE OF COLORADO, }
County of Weld, ss.

I hereby certify that this instrument was filed for record in my office, at 8:45 o'clock, A. M. FEB 16 1958 A. D. 19 , and recorded in book 979 on page 190

Robert W. Hewston Recorder.

Deputy.

No. Fees, $

Denver - Golden Oil & Uranium Co

see Grantee

JCC 56890 FB1 656 4.00

329

DENVER-GOLDEN OIL AND URANIUM CO.
760 DENVER CLUB BUILDING
DENVER 2, COLORADO
TELEPHONE AC 2-0841

November 27, 1956

D. M. E. A.
224 New Customs House
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
NOV 29 1956
REGION III
DENVER, COLORADO

Attention: Mr. Traver

4311

Gentlemen:

Enclosed please find photocopy of "Mineral Deed" regarding the royalty retained by Mr. Paul White.

This letter will also advise that Mr. Fred Schwartzwalder, whose lease we purchased, no longer owns any interest whatsoever in the property.

Yours very truly,

DENVER GOLDEN OIL AND URANIUM CO.

By: G H Brodie
G. H. Brodie
Vice President

Encl.

979 187

Recorded at 8:35 o'clock A. M. FEB 16 1956

Reception No. 635390 ROBERT W. NEWTON, Recorder.

DMEA
DEPARTMENT OF THE INTERIOR
NOV 29 1956
REGION III
DENVER, COLORADO

MINERAL DEED

THIS DEED Made this 15th day of February, 1956, between PAUL R. WHITE and ANNA LEE WHITE, of the County of Jefferson, State of Colorado, of the first part, and DENVER-GOLDEN OIL AND URANIUM CO., a corporation organized and existing under and by virtue of the laws of the State of Colorado, of the second part,

WITNESSETH, That the said parties of the first part, for and in consideration of the sum of One Thousand Dollars and other good and valuable considerations to the said parties of the first part in hand paid by the party of the second part, the receipt of which is hereby confessed and acknowledged, have granted, bargained, sold and conveyed, and by these presents do grant, bargain, sell, convey and confirm unto party of the second part, its successors and assigns forever, all and each of the ores and minerals, of whatsoever class or kind, EXCEPT oil, gas, casinghead gas or other gaseous or vaporous substances, and coal, on or in the following described tract of land situate in the County of Jefferson, State of Colorado, to wit:

The Southeast quarter of Section Twenty-five, Township Two South, Range Seventy-one West of the Sixth Principal Meridian,

together with the right of ingress thereto and egress therefrom at all times for the purpose of mining, drilling, exploring, prospecting, operating and developing said lands for minerals aforesaid, and for storing, handling, transporting and marketing the same therefrom with the right to remove from said tract of land all of the party of second part's property and improvements; together with the further right to sink any and all shafts, drive tunnels and drifts, and the right to erect and maintain shaft houses, storage bins, buildings and structures, machinery, equipment and apparatus of any and every kind whatsoever deemed necessary by party of second part in mining said property; together with the further right to build roads and pole lines and wire lines for transmission of electric energy and telephone communication; together with the further right to use so much of the premises as may be necessary or convenient for dumping and storing of waste material.

The parties of the first part reserve a royalty and in addition to the other considerations above stated, party of second part agrees to pay parties of first part a royalty of ten per centum (10%) of the gross value of all minerals mined, marketed and sold from the premises, said gross value being determined by payments received for all ores including bonuses and freight allowances but after deduction of actual costs of milling, smelting, treatment, cost of transporting the ores, and imposition of penalties if any; payments for such reserved royalties shall be direct to parties of first part or to the First National Bank of Golden, Colorado, for their account.

This conveyance is made subject to any rights now existing by virtue of mining lease granted by parties of first part to Fred Schwartzwalder, for which lease consent of assignment unto party of second part has been previously given by parties of first part, with the provision, however, that parties of first part upon the delivery hereof, do relinquish all further rights or interests in said lease and especially as to the royalties or payments thereunder reserved or entitled, all future rights and entitlements of said parties of first part being henceforth as hereinabove set forth and provided, and none other.

TO HAVE AND TO HOLD the above described property, easements and interests with all and singular the rights, privileges and appurtenances thereto or in any wise belonging, unto party of second part, its successors and assigns forever, the parties of first part hereby warranting said title to party of second part, its successors and assigns forever.

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

Paul R. White (SEAL)
Paul R. White

Anna Lee White (SEAL)
Anna Lee White

STATE OF COLORADO)
) ss.
County of Jefferson)

The foregoing instrument was acknowledged before me this fifteenth day of February, A. D. 1956 by Paul R. White and Anna Lee White.

Witness my hand and official seal.

My commission expires January 26th, 1957.

Notary Public

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

RECEIVED
MAY 25 1956

May 23, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Denver-Golden Oil and Uranium Company (Ralston Creek Mine and/or Schwartzwalder Mine), Jefferson County, Colorado

Enclosed are three copies of the subject application in the amount of $63,136.00. One copy of the application is being retained in our file.

DMEA Field Team, Region III

By J. W. Townsend
Acting Executive Officer

Enclosures

DMEA
Date Rec'd.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

MAY 28 1956

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

RECEIVED
MAY 25 1956
BUREAU OF MINES
Denver, Colorado

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

Not to be filled in by applicant

Docket No. DMEA- 4311
Metal or Mineral URANIUM
Date Received 5/25/56
Estimated Cost $63,136.00
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: Denver-Golden Oil and Uranium Co.
760 Denver Club Building, Denver 2, Colo.

Colorado Corporation

(*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. – see attached sheet

(*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 Fee land located in the S.E. Qtr. of Sect25. T.2 SO., R.71 W. of the Sixth Principal Meridian in Jefferson County, Colorado 71 ?

(*b*) State any mine name by which the property is known. Ralston CreekMine and/or Schwartwalder Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise see sect. 4(a)

(*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. attached

(*e*) If you own the land, describe any liens or encumbrances on it does not apply

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. does not apply

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. see attached statement

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

(*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. see attached

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

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

see attached

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore uranium 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. see attached

(*c*) The work will start within 30 days and be completed within 6 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. see attached

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: see attached

(*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)? yes

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

out of company funds which are in hand

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on accompanying paper.

CERTIFICATION

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

Dated May 21st, 1956

Denver Golden Oil & Uranium
(Applicant)

By A H Brodie
Vice-Pres & Gen. Manager

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

1(c) Charles O. Parker, President
2114 Curtis, Denver, Colorado
G. H. Brodie, Vice President and General Manager
760 Denver Club Building, Denver 2, Colorado
Roy O. Goldin, Secretary
Symes Building, Denver, Colo.
Barney Janow, Treasurer
760 Denver Club Building, Denver, Colo.

RECEIVED
MAY 25 1956

4(a) Physical description
The mine has been explored as follows:
The upper tunnel (Ralston Creek Mine Tunnel) consists of 160 feet of crosscut tunnel and 80 feet of drift tunnel which exposed ore that was mined from winzes totalling 90 feet in length and 20 feet in width.

An adit tunnel (Minnesota Crosscut) was driven 340 feet to explore for downward and lateral extensions of surface occurrences and those in the upper tunnel. 290 feet of drifting has been done in the Minnesota on ore structures.

The Atomic Energy Commission and various private entities have drilled a total of 18 diamond drill holes with a total of 5,877 ft. The Atomic Energy Commission completed extensive stripping and trenching at surface points where anomalous radioactivity occurred.

Mine production operations are being carried on in the present underground workings at the rate of about 500 tons of ore monthly.

Interest: One of a joint venture group (Denver-Golden Oil and Uranium Co. owning 20%) owning the mineral rights and Denver-Golden Oil and Uranium Co. acting as operators for the group under contract.

4(b) 1561 tons of .70 grade were mined and shipped to Vitro Corp. up to Feb. 1956. In addition to the foregoing the present owners have shipped 963 tons, averaging approximately .55 grade.

Considering present limited exposures in the underground workings ore reserves calculations have not been made.

4(c) The uranium veins on this property are found in a wide band of badly fractured metamorphic rocks of the pre-Cambrian Idaho Springs formation. The formation is cut by three basis sets of faults, any of which may contain uranium mineralization. The first two sets are parallel with a strike of N 35-40°, but the dip varies from 45° to 80° to the north for the first set to 35° to the south for the second. The third set strikes northeast with the dip 73° to the west. The uranium minerals found on this property include pitchblende, torbernite, autunite, sooty uraninite and uranophane. Other metals present but not in quantity, include iron, copper and lead with a minor amount of molybdenum and vanadium.

.....

Reasons for wishing to explore: For the purpose of determining mineralization and structural conditions at lower, unexplored horizons.

Maps & sketches to be supplied by A.G. Bird
Reports of A.G. Bird being submitted. Report may be retained.

4(d) Access Roads: Property is reached by 2 miles of secondary county road north of Golden, Colorado and 6 miles of unimproved roads to the mine.

Distance to shipping - 13 miles

Distance to supply and residence points - 8 miles.

4(e) Mining labor available from Front Range area and Idaho Springs, Colorado is plentiful.

Material, supplies and equipment are all readily available from Denver and Golden area.

Water supply is available from Ralston Creek which runs through the property.

Power is supplied by internal combustion engines. Public utilities are interested in providing electric power if 200 horsepower load can be assured.

5(b) Maps same as those provided by A.G. Bird for 4(c) above. Proposed work will consist of driving an adit tunnel located 220 feet in elevation below the Minnesota crosscut. The length of the adit 220 feet below the Minnesota will be 1000 feet from the portal. This adit crosscut will serve to explore for mineralization and structural conditions on the downward extensions of all vein structures known in upper workings or on the surface and any new occurrences indicated by diamond drilling.

5(d) Denver-Golden Oil and Uranium Co. has extensive mineral holdings in the Front Range area and is operating the Schwartzwalder Mine and Ladwig Property both on a production basis. The Company has an experienced organization to carry on all types and phases of mining work.

The following will supervise the operation:
G.H. Brodie, Vice President and General Manager.
twenty years of geological and managing experience.
Lawrence E. Smith, Registered professional Mining Engineer
25 years experience in all phases of mining operations and supervision both locally and abroad.
Charles O. Parker II - Graduate Mining Engineer - 3 years experience in supervision and mining engineering.

6. Estimate of costs:

6(a) Independent contracts: None

6(b) Labor, supervision, consultants:
Requirements:
3 miners for adit for first 200 feet advanced
4 miners for adit from 200 feet to completion
1 manager for supervision
2 men for engineering and consulting

Rates:
Miners: $2.00 per hour or $104.00 per week
Manager: $1000.00 per month
Engineering & Consulting: $1000.00 per month

Total Costs:

Labor:	3 miners for 5 weeks	$1560.00
	4 miners for 20 weeks	8320.00
Supervision	Manager for six months	6000.00
Engineering: Consulting	Engineer & Consultant for 6 mos.	6000.00
Total Personnel Costs:		21880.00

6(c) Operating materials & supplies:
Items:

Timber	$ 500.00	
Petroleum Products	1200.00	
Hand Tools	200.00	
Nails and spikes	50.00	
Wire	20.00	
Rope	25.00	
Air hose	200.00	
Water hose	200.00	
Pipe	1625.00	
Pipe fittings	100.00	
Rail	850.00	
Rail accessories, switches, etc.	1000.00	
ventilation tubing	1600.00	
Blasting wire	560.00	
Drill steel	2900.00	
Explosives	8860.00	
		19890.00

6(d) Operating Equipment
Items:

1 ea 365 cfm Compressor @ $350.00?mo.	$2100.00
4 ea Jackhammers with air leg and oiler @ $800 ea.	3200.00
4 ea. Mine Cars, 20 cu.yd.@$250. ea	1000.00
1 ea. Air Locomotives @ $2000. ea	2000.00
1 ea. Ventilation Blowers @ $750. ea	750.00
1 ea Water Pump @ 300.	300.00
1 ea Water pressure tanks, 150 gal. @ $100.	200.00
1 ea Mucking machines @ $12350. ea.	1250.00
1 ea Pickup Truck @ $5.00/day	750.00
1 ea Blasting Machines @50.0	50.00
4 ea. Electric Cap Lamps @ $40. ea	160.00
1 ea. Lamp charging unit @ $80.	80.00
1 ea. Generator @ $5./week	125.00
1 ea. Heating Stoves @ $25.00 ea.	25.00
Total Equipment	11990.00

6(e) Rehabilitation and repairs: none

6(f) New buildings, improvements, installations:
Items:

1 ea building 12' x 30' warehouse, office	850.00
1 ea building 12' x 25', change rooms	700.00
1 ea Trestles for waste dump	100.00
Total new improvements:	1650.00

6(g) Miscellaneous

Repairs and Maintenance:	
Drills @ $100./mo.	600.-
Steel sharpening @ 265.00/mo.	1600.00
Mucking machines @ $20./mo	120.00
Blowers @ $10./mo	60.00
Air Locomotives @ $20.00/mo	120.00
Analytical Work	
Assaying 75 samples @ $5.00 ea	250.00
Total Miscellaneous (as above listed)	$2750.00

6(g) Miscellaneous (continued)

Accounting	$750.00	
Workmen's Compensation	400.00	
Insurance	500.00	
Payroll Taxes	320.00	$1970.00

6(h) Contingencies:
5% of Total Estimate $3006.50

Summary of Cost Estimate:

(a) Independent Contracts	None
(b) Labor, Supervision, Consultants	$21880.00
(c) Operating materials and supplies	$19890.00
(d) Operating equipment	$11990.00
(e) Rehabilitation and repairs	None
(f) New Buildings, improvements, installations	$ 1650.00
(g) Miscellaneous	$ 2750.00
Accounting, Workmen's Compensation, Insurance, Payroll Taxes	$ 1970.00
(h) Contingencies	$ 3006.00
Total Cost Estimate	$63136.00

A GEOLOGIC REPORT OF THE RALSTON CREEK MINE JEFFERSON COUNTY, COLORADO

RECEIVED
MAY 25 1956

Introduction:

The examination of the Ralston Creek Mine, upon which this report is based, was made during a two and one-half year period between October, 1953 and May, 1956. When the writer began work on the property for the A.E.C., one small 30 foot adit was the total extent of the exploratory work done on the property. All diamond drilling and bulldozing completed by the A.E.C. and the Farmington Funding Corporation was outlined by the writer. The purpose of the exploration program conducted by the A.E.C. was to determine the extent, future development possibilities, and general geologic relations of the vein structures in the Ralston Creek Mine area. Much information was gained from this exploration work; however, many questions remain unanswered. The Denver Golden Oil and Uranium Company, present operators of the property, have confined all their exploratory work to the ground above the Minnesota Tunnel Level.

Location:

The Ralston Creek Mine is located in the SE/4, Section 25, T2S, R71W, Jefferson County, Colorado. The property is eight miles northwest of Golden, Colorado and is accessible from there by four miles of paved road and five miles of private dirt road. A severe snow storm may close the road temporarily, but it can be kept open at all other times.

Timber:

The property is covered with a good stand of timber suitable for use in the mine. Cut lumber is available in Golden.

Water:

Water for all operations can be obtained from Ralston Creek, a few hundred feet to the north of the present mine workings.

Topography:

The property is in the mountainous terrain of the eastern edge of the Front Range of Colorado. The mine is located on a very steep north slope. Adequate roads have been built to allow access to any part of the property by automotive equipment.

Mine Workings:

The mine workings consist of two levels, the upper or original discovery level and the lower or Minnesota Tunnel Level. The upper level is developed by 185 feet of crosscutting and 90 feet of drifting on the Colorado Vein, which is, for the most part, barren at this level. An underhand stope having a slope distance of roughly 85 feet, an average width of 20 feet, and an average thickness of 6.0 feet, has been mined on a flat vein. (See section through 132 Raise.) An 18 foot winze was sunk from the tunnel level and the rich ore which was exposed in the number 4 A.E.C. diamond drill hole was encountered. The vein is the same flat vein mined in the underhand stope. A distance of 12.5 feet separates the end of the stope from the bottom of the winze.

The Minnesota Tunnel level is 120 feet below the upper level. This distance is from track to track. The tunnel is 342 feet long. A total of 260 feet of drifting and 30 feet of crosscutting has been completed to date. A raise, approximately 140 feet high, was driven from the Minnesota Tunnel level on the Nebraska Vein to the bottom of the winze in the upper tunnel. Three and possibly four veins were encountered by the Minnesota Tunnel. The Nebraska Vein, which was located by the A.E.C. drill hole No. RC 3, was cut near the end of the tunnel. This vein is roughly parallel to the Colorado vein, which was encountered at 205 feet in the tunnel. Both veins dip approximately 50 to 55 degrees to the northeast and strike between N 15° W and N 40° W. Drilling has indicated that the Nebraska Vein is probably the stronger of the two, however, more exploration is needed to justify this statement. The Kansas Vein, a vein about which little is known, was discovered by the Minnesota Tunnel at 280 feet from the portal. Several mineralized fractures were cut within 35 feet of the Colorado Vein. They may possibly be splits off of the Colorado Vein or the junction zone between the Colorado Vein and the Walder Vein, a vein which was opened on the surface by the A.E.C. bulldozer. Approximately 120 tons of ore assaying 0.61% U_3O_8 was mined from one of these secondary veins in the process of driving the Minnesota Tunnel and drifting 13 feet to the southeast of the tunnel.

Geology:

The Ralston Creek or Scwartzwalder Mine is located in a garnetiferous contact zone separating a large area of muscovite and biotite schists to the south and east of the mine from a thick section of hornblende and granite gneisses to the north and west. This contact crosses section 25 with a gently curved N 58° W outcrop pattern. In the mine area, the contact zone varies between 50 and 130 feet in width and is characterized by a mapable unit of garnetiferous biotite-hornblende gneiss which in place contains numerous quartz stringers parallel to the foliation. This material changes rapidly along strike. Some of the gradations are from a garnet-biotite-hornblende gneiss to a garnet-biotite schist to a garnet biotite-muscovite schist to a sericitic appearing muscovite-biotite schist. In the other extreme, the garnet-biotite-hornblende gneiss grades to a biotite-hornblende gneiss, losing the garnets. This material in turn grades into a biotite schist which finally blends in with the thick section of muscovite-biotite schist to the south and east of the mine. These local variations were undoubtedly due to some slight change in the character of the original sediments from which these rocks originated. All the commercial uranium found in the mine and in the drill holes is localized in the portions of the veins which are cutting through this contact zone. The values drop rapidly as the veins pass into the overlying muscovite-biotite schists and the underlying zone of amphibolite and lime silicate material which separates the garnet bearing zone from the thick section of hornblende and granite gneisses to the north and west of the mine. Intense folding of these rock during pre-Cambrian times has resulted in a series of steeply plunging asymmetrical and isoclinal folds. In the vicinity of the mine, these folds plunge 60 to 70 degrees to the southwest. The mine is located in the east limb of a large overturned isoclinal fold. The distance along the east limb of the anticlinal fold from the crest of the anticline to the trough of the syncline is approximately 1,100 feet. The length of the west limb of the anticlinal fold is roughly 120 feet. Numerous small drag folds are apparent in the garnet-biotite-hornblende gneiss. These folds are similar in shape and plunge to the major fold. The major fold is a disharmonic fold, that is, the fold is not propagated indefinitely upward and downward. On the contrary, little evidence exists in the schists a few hundred feet to the south of the garnet bearing gneiss contact that a large fold is present. Strong crenulations exist in the schist at and near the contact and in the area which has been under compression between the two limbs of the syncline. Many large pegmatite dikes are localized in the area of schist to the south of the mine. The amphibolite and lime silicate rocks also contain some rather large pegmatite dikes; however, they are not as numerous as in the schists. No large pegmatites were encountered in the garnet bearing contact zone between the two lithologic units.

The area in the vicinity of the mine has been cut by a series of large brecciated faults or breccia reefs. The Rogers Breccia Reef, a major fault which cuts through the Front Range, crops out on the slope to the northeast of Ralston Creek opposite the Ralston Creek Mine. This fault may have had a direct genetic relationship to the uranium mineralization found in the Scwartzwalder Mine.

Three generations of faulting are apparent in the mine workings. The steeply plunging anticlinal structure is cut by a flat thrust fault which dips between 0 and 35 degrees to the southwest and strikes roughly N 40° W; however, in places the dip is so flat that any slight undulation in the vein will change the strike. This fault shows reverse fault movement and has a displacement of approximately 30 to 35 feet. A second system of steep northerly dipping faults has cut and displaced the flat thrust fault. These faults, which are known as the Colorado, Kansas, Nebraska, and possibly the Illinois Veins, strike between N 10° W to N 40° W and dip from 40 to 80 degrees to the northeast. The average dip of the Nebraska Vein between the Minnesota Tunnel level and the Upper Tunnel level was 50 degrees. The Colorado, Kansas, and Nebraska veins are all reverse faults. The Colorado and Nebraska Veins have about 30 to 40 feet of displacement and the Kansas vein exhibits roughly five feet of displacement. The Colorado Vein has cut and dragged the flat vein, the Kansas Vein has dragged the flat vein and caused only slight rupture of this vein. The result of this reverse fault movement on the Kansas Vein has been the development of a sharp apparent roll in the flat vein. The Nebraska Vein has not been encountered at the upper tunnel level; however, a raise has been driven on the vein to within 20 feet of the tunnel level, at which point the raise diverged from the vein into the hanging wall to make a ventilation connection with a winze 18 feet below the tunnel level. The Nebraska vein will be less than 20 feet to the southwest of the breast of the present upper tunnel crosscut. A third set of faults, which apparently represents the latest generation of faults, strikes parallel to the schistosity and gneissic foliation. This set of faults is roughly normal to the first and second set. These fractures form in areas of local folding along the flank of the anticlinal fold. They are similar to the bedding plane fractures found in the sediments. A displacement of a few feet has been measured where these structures cut and displace the Colorado Vein. They are, for the most part, localized in the areas of schist or schistose garnetiferous gneiss. These fractures are generally rather tight and gouge filled. Two of these fractures show mineralization of ore grade in surface trenches, these are: the Washington Vein and the East Vein. The East Vein appears to be the weaker of the two and is characterized by about one foot of limonite staining. The Washington Vein is composed of about one foot of grey fault gouge with sheared limonite stained skarn adjacent to the gouge. A four foot channel

sample across this structure assayed 0.26% U_3O_8. There is an abundance of secondary autunite and torbernite in the wall rock and gouge of the Washington Vein.

Ore Controls:

The wall rock in the Ralston Creek Mine appears to have had a definite control over the ore deposition. The garnetiferous biotite-hornblende gneiss found in the contact zone between the area of muscovite schist and hornblende gneiss, appears to be an excellent host rock for uranium deposition. Within this contact zone there are several facies changes. The garnetiferous muscovite schist and the finely crystalline fiotite schist facies appear to be equally receptive to uranium bearing hydrothermal solutions. The coarsely crystalline muscovite schist which overlies the garnet bearing contact zone is a very poor host rock. The uranium contest of the veins drops from several percent to nil as the veins pass from the garnetiferous biotite-hornblende gneiss into the muscovite schist. The same condition exists in the silicified lime-silicate rocks which lie directly below the garnet bearing gneiss. The silicified zone varies in thickness and locally may be 50 feet thick. The unsilicified lime-silicate rocks which underlie the silicified zone form a poor host rock although some marginal grade ore has been precipitated in this material. Drill holes have encountered strong breccia zones containing weak uranium mineralization in this material. One of the greatest potentials of the mine is the projecting of these strong, weakly mineralized fault zones, which have been encountered in virgin ground far beyond the known ore bodies, into the apparently favorable garnet bearing host rock. To date, there has been a total of 5,877 feet of diamond drilling completed on the property. All ore grade mineralization encountered, without exception, was found in the garnet bearing gneiss or one of its transition facies. No mineralization of any kind was found in the overlying muscovite schists and only weak mineralization was encountered in the underlying lime-silicate material.

The question of why the heavy uranium mineralization at the Ralston Creek Mine occurs, with no apparent similar concentrations in the immediate area, is often asked. A coincidence of several factors, all of which are not known, probably holds the answer. The band of garnetiferous biotite-hornblende gneiss which passes through Section 25 and extends for many miles has not as yet revealed any other large uranium deposits similar to the Ralston Creek Deposit. It appears that the favorable host rock alone is not the primary control. Perhaps the presence of some type of structural trap which will impede the uranium bearing hydrothermal solutions is also necessary. This condition is satisfied at the Ralston Creek Mine. The ore bearing breccia zones or veins found in the mine, have a tendency to shatter

and brecciated the competent garnetiferous biotite-hornblende gneiss, thus leaving ample open space suitable for mineral deposition. The breccia reefs and the veins found in the mine become very tight upon entering the overlying muscovite schist. Instead of strong open breccia zones, the faults have a tendency to form a series of tight parallel slips when they are parallel to the schistosity of the schist or a very tightly sealed breccia zone when they form at an angle to the schistosity. In both cases, the mica flakes of which the schist is composed tend to fill in the open spaces formed by the fracturing and seal the faults.

Therefore, at the Ralston Creek Mine, there is an anticlinal core of brittle, competent rock overlain by a thick shell of soft imcompetent schist which would possibly act as a seal or impediment to ascending hydrothermal solutions passing through the coarsely brecciated zones within the favorable host rock, thus bringing uranium bearing solutions in contact with a highly favorable host rock for the period of time which would be necessary for the proper chemical reactions to take place which would initiate precipitation of the uranium minerals. If this condition does exist and is one of the controlling factors which will determine the presence or absence of ore deposits in the area, then it is probable that other deposits of equal value may exist in the area; however, if such deposits do exist and are related to the secondary fractures which have resulted from movement along the major breccia reefs of the Front Range, it is not likely that too many of these deposits will be exposed at the surface. To emphasize this point, it must be pointed out that only a very few of the ore bearing veins indicated by drilling and underground exploration in the Ralston Creek Mine cropout in the favorable host rock and are radioactive at the surface. The Nebraska Vein, one of the better veins found in the mine dips approximately normal to the plunge of the anticlinal fold, the affect of this association is that the vein passes from the favorable host rock into the overlying schist at a point several hundred feet below the surface and the actual outcrop of the vein is in the overlying schist. No radioactivity, even in the trace amounts has been found in the surface outcrop of this vein. It is the combination of several favorable erosional features formed by Ralston Creek along with a favorable coincidence of Tertiary veins cutting pre-Cambrian folds which has allowed the formation and subsequent exposure of the uranium bearing portions of the veins found at the Ralston Creek Mine.

Local ore controls within the mine are the junctions of minor fractures with the major veins, also the tendency of the major veins to have a braided appearance which results in the frequent spliting and rejoining of segments

of the veins with the formation of rich pockets at these junctions. All of the known north dipping veins are mineralized reverse faults having dip slip movement. This type of movement is characterized by zones of pinching and swelling along horizontal trends, thus the portions of the veins which are characterized by areas of relatively flat dips tend to be under tension and zones of open breccia have been formed and subsequently mineralized. The portions of the veins which exhibit steep dips of 70 degrees or more have formed under compression and for the most part have been characterized by a tight zone of clay gouge along which very little, if any, uranium deposition has taken place.

Mineralogy:

Sooty uraninite and pitchblende are the predominant ore minerals found in the veins. Fine-grained pyrite, chalcopyrite, and galena are found in lesser amounts. The veins carry abnormally high amounts of vanadium and molybdenum; however, it is not in commercial quantities. Silica, carbonates, and orthoclase are the main gangue minerals. There appears to have been at least two periods of pitchblende mineralization. Post mineral movement along the veins has brecciated the vein filling, with subsequent quartz, carbonate, and pitchblende recementing the fractured breccia.

The near-surface oxidized portions of the veins contain the usual iron minerals, limonite, hematite, and jarosite, and black coatings of manganese minerals, which give the outcrops a yellow-and-brown mottled appearance. Secondary uranium minerals in the osicized zone include the green torbernite and yellow autunite and uranophane. Green secondary copper minerals are also present.

Below a zone of completely oxidized uranium minerals, the vein passes through a transition zone containing both highly colored secondary uranium minerals and sooty uraninite, and beneath this transition zone unoxidized sulfides, sooty uraninite and pitchblende. This sequence may be observed, usually, within 100 feet of the surface.

Rock Alteration:

The garnetiferous biotite-hornblende gneiss and some of the transition facies within the gneiss has been intensely altered and bleached by slightly acid ground waters. The gneiss weathers to a rotten, soft brownish-purple color. The pyrite, which forms an accessory mineral within the metamorphic rock, has been completely destroyed leaving a residue of

limonite, which has been discolored by manganese staining. This surface alteration has penetrated to a depth of about 80 feet below the surface. In the upper workings, the skarn has been altered to kaolin in places. Near the vein outcrops, there is strong limonite, hematite, jarosite mineralization in addition to secondary copper and uranium minerals.

Below the oxidized zone, silicification is the main form of hydrothermal alteration. All of the veins in the garnetiferous biotite hornblende gneiss are highly silicified. . The silicified lime silicate and amphibolite zone is probably a result of pre-Cambrian silicification; however, in the vicinity of the veins, subsequent generations of silicification probably occured during Tertiary times.

Conclusions and Recommendations:

Sufficient diamond drilling has been done to indicate the presence of ore grade uranium mineralization to depths of over 400 feet below the Minnesota Tunnel Level. Two drill holes, RC #11 and F.F.C. #2 have cut large zones of mineralization which fall in the approximate downward projection of the Nebraska Vein. Drill Hole RC #11 encountered 22.2 feet of continuous mineralization in a zone roughly 200 feet below the level of Ralston Creek. Drill Hole F.F.C. #2 encountered 54.5 feet of continuous mineralization having an average value of 0.42% U_3O_8. In addition to this zone, which was cut at about the level of Ralston Creek, several rich zones were encountered in a zone located about 30 feet above the 54.5 foot zone. This hole was drilled to a total depth of 700 feet. Two strong breccia zones were cut between 500 and 700 feet which contained marginal grade ore in an unfavorable host rock. The hole was surveyed to a depth of 300 feet, at which point it was caved, and strong deflection was discovered. No survey was made of hole RC #11, which was a 600 foot hole (see section and plan maps for location of these holes); however, it is highly probable that this hole was deflected also. Because of this radical deflection in the drill holes, their use is confined to ore and structure indicators only. It is recommended that a tunnel be driven to explore these structures and determine the true nature of these veins. This tunnel should be driven from an elevation approximately 220 feet below the Minnesota Tunnel Level. This would place the portal of the tunnel about 35 feet above the level of Ralston Creek. The tunnel should be driven in the garnetiferous biotite-hornblende gneiss and should extend to a depth of at least 1,000 feet into the hill. The purpose of the long length is to explore for the presence of several structures encountered in the deep drill holes which, when projected into the favorable host rock, could produce new ore bearing veins.

In the writer's opinion, the geologic information obtained from such a tunnel should provide the key to new ore bodies and the thorough understanding of the geologic potential of the mine. This tunnel should supply information as to the nature of the downward extensions of the Washington, Colorado, Kansas, Nebraska, and any new veins which may be encountered in the virgin ground beyond the Nebraska Vein.

It is also recommended that Mr. Smith, the mine superintendent and chief mining engineer, be consulted as to the costs and engineering problems which will be involved in such an undertaking.

Respectfully submitted,

Allan G. Bird

Allan G. Bird
Consulting Geologist.

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
2/12	Ching	700
2-13	[illegible]	700
		[redacted]
2/13	Selfridge	120
4	[illegible]	110
4	Mittendorf	100
		220

FEB 13 1957

Mr. G. H. Brodie, Vice President
Denver-Golden Oil and Uranium Co.
760 Denver Club Building
Denver 2, Colorado

Re: Docket No. DMEA-4311 (Uranium)
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Brodie:

Your letter of February 6, 1957, addressed to our Mr. Traver at Denver, advising that exploration aid is no longer needed, and returning the unsigned contract, has been forwarded to this office.

Accordingly, we are considering your application as having been withdrawn as of February 6, 1957, and are closing our records on this case.

Sincerely yours,

C. O. Mittendorf

Administrator

MChing/gla
2-12-57
cc to: Admr.'s Reading File
Code 700, Mr. Ching
DMEA Field Team, Region III (2)
T. H. Kiilsgaard, 5224
Jack Kratchman - AEC

8623

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

224 New Customhouse
Denver 2, Colorado

February 8, 1957

OFFICIAL FILE COPY DMEA RECEIVED FEB 11 1957		
DATE	INITIALS	CODE
2/12	C	220
"	Chief	700
		225

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Company (Ralston Creek Mine)
Jefferson County, Colorado
Proposed Exploration Project Contract No. Idm-E1049

Enclosed are the original and five copies of the subject contract which was forwarded by your letter of January 10, 1957, for signature by the applicant. Also enclosed are the original and two copies of the applicant's letter of February 6, 1957, whereby the unexecuted copies of the contract were returned for reasons stated.

Under the circumstances, we assume that the contract will be cancelled by considering that the application was withdrawn. In any event, we will appreciate advice from you as to final action in the matter.

W. M. Traver

Encls.

W. M. Traver

DENVER-GOLDEN OIL AND URANIUM CO.
760 DENVER CLUB BUILDING
DENVER 2, COLORADO

TELEPHONE AC 2-0841

February 6, 1957

DMEA
DEPARTMENT OF THE INTERIOR
FEB 6 1957
REGION III
DENVER, COLORADO

Mr. W. M. Traver
Executive Officer, DMEA
Field Team, Region III
U. S. Dept. of the Interior
224 New Customhouse
Denver 2, Colorado

Dear Mr. Traver:

Re: Docket No. DMEA-4311(Uranium)
Proposed Contract Idm-E1049
Denver-Golden Oil and Uranium Co.
(Ralston Creek Mine)
Jefferson County, Colorado

This is to advise you that due to developments of the past three months at the Ralston Creek mine which have been reflected in a volume and gross value of production not anticipated when we first applied for our DMEA exploration loan, we do not feel that it will be necessary for us to conclude this contract with your Agency. We are now producing a monthly value of ore which would repay the loan in approximately the same length of time as would be taken in the expenditure of the funds provided for in the contract. We would thus derive little or no advantage in deferment of the cash outlay by going through your Agency.

We very much regret this situation from the point of view of the time and effort your people have spent on this project and we are very appreciative for the cooperation you have given us.

We return herewith the copy of Annex I, Annex II and Exhibit "A" with maps, Figures 4 and 5 of the captioned Proposed Exploration Contract.

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 11 1957

DATE	INITIALS	CODE
Encl.		

Cordially yours,

DENVER GOLDEN OIL AND URANIUM CO.

By: G H Brodie
G. H. Brodie
Vice President

DMEA Form 7
(12-56)

TELETYPE

Dept. of the Interior

Defense Minerals Exploration Admin.

Date	Surname	Code
1/15	Dakan	200
1/15	Selfridge	120
	[illegible]	110
	January 15, 1957	100
1-16	CW	225
1-16	[illegible]	700

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

JAN 16 1957

Message:

THE DATE ON PAGE ONE OF THE CONTRACT FOR THE DENVER-GOLDEN OIL AND URANIUM COMPANY, DOCKET NO. 4311, Idm-E 1049 SHOULD READ JANUARY 10, 1957 RATHER THAN 1951. PLEASE CHANGE ALL COPIES.

George C. Selfridge

GEORGE C. SELFRIDGE
CHAIRMAN, OPERATING COMMITTEE

ASDakan:mm - 1/15/57

Copy to: Adm. R. File
Operating Committee
Mr. Selfridge
Miss Curtin
Confirmation
Chron.
Bureau of Mines, Audit Div., Rm. 2509
Mail & Files

R.C.S.

8623

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
1/4/57	Ching	700
1/8	Ellis	700
1/4	Chamberlin	800
1/9	Selbridge	130
1/9	[illegible]	110
1/11	CW	~~100~~ 225

700

Mr. U. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Company
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Traver:

Enclosed are the original and five copies of a proposed long-form contract between the Government and a Joint Venture represented by Denver-Golden Oil and Uranium Company, signed by the Administrator. The contract consists of Form UF-200, Annex I, Annex II, Exhibit "A" (four pages), and two maps (Figure 4 and Figure 5). Also enclosed are two extra copies each of Annex I, Annex II, Exhibit "A," and maps (Figure 4 and Figure 5) for the use of the Field Team.

If you and the Operator find the proposed contract satisfactory, it is ready for the signature of the Operator, provided that the following conditions are met:

1. A suitable final starting date is inserted under Article 3.

2. The Consent to Lien and Subordination Agreement form referred to in Article 2(c) is attached to the contract.

3. If Denver-Golden Oil and Uranium Co. is to execute the contract in behalf of the Joint Venture, the revised Power of Attorney form attached to your letter of November 9, 1956, to Mr. G. M. Brodie must be executed and on hand. Otherwise, each member of the Joint Venture must sign in his own behalf.

If a revised Power of Attorney is not granted by the other nine members of the Joint Venture, Denver-Golden Oil and Uranium Co. may represent them, after they execute the contract, by virtue of the first Power of Attorney granted.

The contract costs are based upon the lowest of the three drilling bids submitted and upon the costs suggested by the field examiners. However, in lieu of the allowance of $0.50 per foot for

R.S.K.

8623

stand-by time, cementing, and reaming and casing we have substituted an estimate of the requirements and costs of each of these items.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

O. M. Bishop (OMB)

Member, Bureau of Mines

Thor H. Kiilsgaard (THK)

Member, Geological Survey

MChing/gla
1-4-57

cc to: Admr.'s Reading File
Operating Committee
JECrawford, 3643
THKiilsgaard, 5224
JOHosted, 3210, GSA
Code 700
Mr. Ching

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 7 1957

DATE	INITIALS	CODE
1-7	C C	700

224 New Customhouse
Denver 2, Colorado

January 4, 1957

Mr. G. H. Brodie, Vice-President
Denver-Golden Oil and Uranium Company
760 Denver Club Building
Denver 2, Colorado

Re: Docket DMEA 4311 (Uranium)
Denver-Golden Oil and Uranium Co.
(Ralston Creek Mine)
Jefferson County, Colorado

Dear Mr. Brodie:

This is to advise that we have not received the Consent to Lien and Subordination Agreements to be signed by Paul R. and Anna Lee White, which were forwarded you with our letter of November 30, 1956.

Our letter to you, dated November 9, 1956, included a suggested Power of Attorney which would be acceptable to the Washington Office, DMEA. As yet we have not received the executed copies of this Power of Attorney.

Will you please advise the date on or before which we may expect to receive the above mentioned Owner's Consent to Lien and Subordination Agreements, as well as the executed Power of Attorney, so that we may continue to process your application.

Yours very truly,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ytl
cc
Sec. Op. Comm. (2)
Harshman
Shaw (2)
Docket 4311
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 3 1957

DATE	INITIALS	CODE
		700

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

Date January 2, 1957

DMEA Docket No. 4311
DMEA Contract No.
Commodity Uranium
Name of applicant Denver-Golden Oil and Uranium Co.
Name of property Ralston Creek
Location of property Jefferson County, Colo.
Estimated cost of project

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E, Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Review of Supplement to Rept. of Examination
(Application, Field Team Report, etc.)

1. Date of subject document: 12/10/56. 2. Date received by reviewer: 12/18/56

3. Prior reports on this property known to reviewer: Yes ☐ No ☐

4. Prior reports on nearby properties known to reviewer: Yes ☐ No ☐

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked yes above:

8. Factors needing special consideration:
   a. Location ☐
   b. Ownership ☐
   c. Evidence of mineralization ☐
   d. Geology ☐
   e. Proposed exploration method ☐
   f. Alternate exploration method ☐
   g. Costs ☐
   h. ☐

9. Action advised:
   a. Obtain information from applicant ☐
   b. Refer to Field Team ☐
   c. Denial ☐
   d. Agree with Field Team ☒
   e. Disagree with Field Team ☐
   f. Suggest alternate plan ☐
   g. Request another examination ☐
   h. Approval ☐
   i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary) Proposed work does not appear to be duplication of previous exploration of subject mine. Mr. J. O. Hosted, Washington representative of the Atomic Energy Commission, assisted in the review.

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

DEC 31 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Rare and Miscellaneous Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Co.
Ralston Creek Mine
Jefferson County, Colorado

As requested in a reference slip dated December 19, 1956, from Mr. Ellis, we have prepared the attached Contract.

A Form MF 205 (June 1956) executed by Paul R. and Anna Lee White is required prior to execution of the Contract.

As pointed out in our memorandum dated June 20, 1956, if Denver-Golden Oil and Uranium Co. is to execute the Contract in behalf of the 9 other joint venturers, as well as for itself, a new Power of Attorney so authorizing it is required from each of the joint venturers. Otherwise, each individual should sign in his own behalf.

If a new Power of Attorney is not granted by the 9 individuals, Denver-Golden Oil and Uranium Co. may represent them, after they execute the Contract by virtue of the first Power of Attorney granted.

Robert P. Dwyer

IN REPLY REFER TO:

12-19-56

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

December 18, 1956
Re: DMEA 4311
Denver-Golden Oil and Uranium Company
Ralston Creek Mine
Jefferson County, Colorado
Recommended Estimate $61,450.00 - Uranium

Memorandum

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

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

Subject: Review of supplement to examiners' report.

The supplemental report answers questions concerning drill hole locations. The examiners conclude the original locations are as they should be.

I concur with the conclusions.

N. E. Nelson

N. E. Nelson

RECEIVED
DEC 19 1956
D.M.E.A.

Surname copy

700
Ching

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

December 18, 1956

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Proposed Contract
Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Company
Ralston Creek Mine
Jefferson County, Colorado

Will you kindly prepare a long-form contract between the Government and the subject Applicant in accordance with the attached draft.

The required Consent to Lien and Subordination Agreement is being secured by Mr. W. M. Traver.

Nine copieseach of two maps (Figure 4 and Figure 5) are attached for use with the proposed contract.

/s/ Ernest Wm. Ellis

Ernest Wm. Ellis

MChing/gla
12/18/56
cc to: Docket
Code 700
Mr. Ching

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

DOCKET COPY

December 18, 1956

Memorandum

To: The Files

From: Michael Ching, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Proposed Contract Costs
Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Company
Ralston Creek Mine
Jefferson County, Colorado

The following costs are based upon the lowest of three drilling bids and upon the costs suggested in the Report of Examination, dated November 2, 1956.

The Report of Examination provides an allowance of $0.50 per foot for stand-by time, cementing, reaming, and casing. The present costs include an estimate of the requirements and costs for these items in lieu of the $0.50 allowance.

Stage I

Independent Contracts

3,500 feet core drilling @ $5.00/ft. (Compressed air to be furnished by Operator)	$17,500.00	
20 hrs. drill crew stand-by time @ $5.00/hr.	100.00	
20 hrs. cementing and drilling out @ $5.00/hr.	100.00	
100 feet reaming and casing @ $3.00/ft.	300.00	$18,000.00

Incidental Allowance

Compressed air and water (furnished by Operator)	$ 350.00	
Labor and supervision	500.00	850.00

Incidental allowance per foot drilling = $0.24

Other Fixed Unit Costs

2 underground drilling stations @ $100.00 each	$ 200.00	
5 surface drill sites @ $20.00 each	100.00	
120 cardboard core boxes @ $1.25 each	150.00	
40 chemical sample analyses @ $3.50/sample	140.00	$ 590.00
Estimated total cost of Stage I		$19,440.00

Stage II

Independent Contracts

7,000 feet core drilling @ $5.00/ft. (Compressed air to be furnished by Operator)	$35,000.00	
40 hrs. drill crew stand-by @ $5.00/hr.	200.00	
40 hrs. cementing and drilling out @ $5.00/hr.	200.00	
200 feet reaming and casing @ $3.00/ft.	600.00	$36,000.00

Incidental Allowance

7,000 feet @ $0.24/ft.		1,680.00

Other Fixed Unit Costs

18 drill sites @ $20.00 each	$ 360.00	
240 cardboard core boxes @ $1.25 each	300.00	
60 chemical sample analyses @ $3.50/sample	210.00	870.00
Estimated total cost of Stage II		$38,550.00

Summary of Costs

Estimated total cost of Stage I	$19,440.00
" " " " " II	38,550.00
" " " " " project	$57,990.00
Government participation @ 75%	$43,492.50

Michael Ching

Michael Ching

DRAFT
12/18/56
MChing/gla

DOCKET COPY

MF-200
(Revised June 1954)

Docket No. DMEA -4311

Commodity Uranium

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

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] Denver-Golden Oil and Uranium Company Agent for a Joint Venture consisting of ten members, whose mailing address is 760 Denver Club Building Denver 2, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and two maps (Figure 4 and Figure 5)

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

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

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Owner of [5] the mineral rights, except coal, gas, and oil in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] 2 mineral deeds, [7] recorded in Book 979, page 187 and Book 979, page 190, 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: Royalty rights of Paul R. and Anna Lee White

(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

[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."

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien and Subordination Agreement of Paul R. and Anna Lee White

(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 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium. The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before February 1, 1958 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall either have completed the work or shall have incurred allowable costs (see Article 6) in such amounts that the estimated total allowable cost set forth in Exhibit "A" except as otherwise provided in Exhibit "A" with respect to stages of work. See Article 13.

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) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *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.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 57,980.00. The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ 43,485.00: *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 or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(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. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated total allowable cost of the work~~ **See Article 13.**

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. **See Article 13.**

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. **See Article 13.**

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the 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. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. 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. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved 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 detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

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

(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 8. *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 7) 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 therof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

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

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

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

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

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

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

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

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *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: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) 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.

(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: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) 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 10 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 11. *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 12. *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 13. *Changes and added provisions.*—

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stages of work."

(b) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon is deleted.

(c) Categories (2) through (7) of Article 6(a) are deleted.

(d) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.

(e) In the last sentence of Article 6(c), thewords "Article 8" are substituted for the words "Article 9."

(f) Notwithstanding any other provision of the contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator: Provided, That the Government will not contribute to any portion of an average unit cost of a drilling item that exceeds the estimated unit cost of said item set forth in the contract.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....

.....
(Operator)

By .....

.....

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—70617-1

DRAFT
12/18/56
MChing/gla

EXPLORATION PROJECT CONTRACT
DENVER-GOLDEN OIL AND URANIUM COMPANY
DOCKET NO. DMSA-4311

ANNEX I

The land referred to in Article 2 of the contract consists of the SE¼ of sec. 25, T. 2 S., R. 71 W., 6th P.M.& B., Jefferson County, Colorado.

The original owners of the land were Paul R. White and Anna Lee White who, by Mineral Deed, dated February 15, 1956, conveyed all mineral rights except oil, gas, casinghead gas or other gaseous or vaporous substances, and coal, to Denver-Golden Oil and Uranium Company, but ~~received~~ reserved certain royalty rights.

Denver-Golden Oil and Uranium Company, by Mineral Deed, dated February 15, 1956, conveyed its rights in the land to the following parties:

Madge Johnston, a widow Longview, Texas	an undivided 1/20 interest
E. C. Johnston, Jr. Longview, Texas	an undivided 1/20 interest
Gordon C. Johnston Longview, Texas	an undivided 1/20 interest
J. Glenn Johnston Longview, Texas	an undivided 1/20 interest
Carl von Bibra Long Beach, California	an undivided 1/10 interest
Edward Koppelman Long Beach, California	an undivided 1/10 interest
M. O. Johnston Glendale, California	an undivided 1/10 interest
Harry Cohen Denver, Colorado	an undivided 1/5 interest

A. H. Bernstein Pueblo, Colorado	an undivided 1/10 interest
Denver-Golden Oil and Uranium Co., a Colorado corporation	an undivided 1/5 interest

DRAFT
12/18/56
MChing/gla

EXPLORATION PROJECT CONTRACT
DENVER-GOLDEN OIL AND URANIUM COMPANY
DOCKET NO. DMEA-4311

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by core drilling from surface and underground locations to test known and inferred ore-bearing breccia faults laterally and at depth. The general area of the work is shown on two maps entitled "Figure 4 - Map of Denver-Golden Oil and Uranium Co. Ralston Creek Mines, Showing Approximate location of Proposed Stage I Drill Holes, Jefferson County, Colo. (DMEA 4311)", and "Figure 5 - Vertical Section Showing Location of Proposed Stage I Exploration Drill Holes, Denver-Golden Oil and Uranium Co., Ralston Creek Mine, Jefferson County, Colo. (DMEA-4311)," attached hereto and made a part hereof.

All holes shall be reamed, cased, and cemented as necessary, and the core shall be AX in size except where maintenance of this size is impracticable, in which case EX size is acceptable. The Government will not contribute to the cost of any uncompleted hole.

All core and cuttings from the drill holes shall be saved and checked for radioactivity. Sections indicating significant mineralization shall be split for samples, and such samples shall be analyzed chemically for uranium. All the remaining core and cuttings saved shall be properly labeled and stored for inspection and shall be disposed of by the Operator upon authorization by the Government.

All drill holes shall be logged geologically and probed radiometrically, and the record of such logging and probing, together with certified copies of all assay certificates, shall be submitted with the Operator's monthly progress reports.

The project shall be supervised by a competent geologist or mining engineer, who shall devote sufficient time to the project work to insure efficient operations and satisfactory results.

The location, direction, inclination, and extent of all project work are subject to the approval of the Government.

The work shall be divided into two stages, as hereinafter described. The Operator shall complete Stage I, and shall perform as much of the work in Stage II as the Government approves in writing in advance.

Stage I

Prepare two underground drill stations and five surface drill sites and drill nine diamond drill holes aggregating approximately 3,500 feet, as indicated on the maps (Figure 4 and Figure 5). Five of the holes shall be drilled vertically from surface locations. Holes Nos. 1 and 9 are each approximately 300 feet deep, hole No. 2 approximately 400 feet deep, and holes Nos. 7 and 8 each approximately 500 feet deep. Four holes shall be drilled from underground locations within practically the same vertical NE-SW plane. Hole Nos. 3, 5, and 6 are inclined holes approximately 400, 400, and 200 feet in depth, respectively. Hole No. 4 is a vertical hole approximately 500 feet in depth. If the nine holes require more than ~~2,~~ 3,500 feet to reach

the desired objectives, the additional footage and funds required may be transferred and deducted from Stage II upon the written approval of the Government.

Stage II

Prepare necessary drill sites and drill not more than 18 holes aggregating not more than 7,000 feet at locations to be determined from the results of drilling in Stage I and as it progresses in Stage II. The purpose of Stage II drilling is to explore ore-bearing fault breccias in the vicinity of favorable ~~hos~~ host rocks at points beyond and, if warranted, between the zones covered by Stage I and other previous work.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts

3,500 feet core drilling @ $5.00/ft. (Compressed air to be furnished by Operator)	$17,500.00	
20 hrs. drill crew stand-by time @ $5.00/hr.	100.00	
20 hrs. cementing and drilling out @ $5.00/hr.	100.00	
100 feet reaming and casing @ $3.00/ft.	300.00	
Categories (2) through (7) None	-	$18,000.00

Fixed Unit Costs (See Article 13)

2 underground drilling stations @ $100.00 each	$ 200.00	

5 surface drill sites @ $20.00 each	$ 100.00	
120 cardboard core boxes @ $1.25 each	150.00	
40 chemical sample analyses @ $3.50/sample	140.00	
Incidental allowance for each foot of drilling completed - 3,500 feet @ $0.24/ft.*	840.00	$ 1,430.00
Estimated Total Cost of Stage I		$19,430.00

Stage II

Actual Costs

Category (1) Independent Contracts

7,000 feet core drilling @ $5.00/ft. (Compressed air to be furnished by Operator)	$35,000.00	
40 hrs. drill crew stand-by time @ $5.00/hr.	200.00	
40 hrs. cementing and drilling out @ $5.00/hr.	200.00	
200 ft. reaming and casing @ $3.00/ft.	600.00	
Categories (2) through (7) None	-	$36,000.00

Fixed Unit Costs (See Article 13)

18 drill sites @ $20.00 each	360.00	
240 cardboard core boxes @ $1.25 each	300.00	
60 chemical sample analyses @ $3.50/sample	210.00	
Incidental allowance for each foot of drilling completed - 7,000 ft. @ $0.24/ft.*	1,680.00	2,550.00
Estimated Total Cost of Stage II		$38,550.00

Summary of Costs

Estimated total cost of Stage I	$19,430.00	
" " " " Stage II	38,550.00	
" " " " the Project		$57,980.00
Government participation @ 75%		$43,485.00

* Includes supervision, compressed air, and all other items of cost that might otherwise have been allowable costs under Categories (2) through (7), except other items listed under Fixed Unit Costs.

12-18-56

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

RECEIVED DEC 13 1956 D.M.E.A.

224 New Customhouse
Denver 2, Colorado

December 17, 1956

Memorandum

To: Chairman, Operating Committee

From: DMEA Field Team, Region III

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Company (Ralston Creek) Jefferson County, Colorado

In reference to your letter dated November 27, 1956 on the subject docket, enclosed are the original and three copies of a supplement to the Report of Examination transmitted November 9, 1956. Will you please incorporate this supplemental memorandum with the original Report of Examination.

A review of the proposed drilling under Stage I as discussed in the attached memorandum indicates no duplication of work previously done. The Field Team concurs in the findings of the field examiners.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
12-17-56
(date)

IN REPLY REFER TO:

DMEA

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

DEPARTMENT OF THE INTERIOR
DEC 11 1956
REGION III
DENVER, COLORADO

December 10, 1956

Memorandum

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

From: R. U. King
C. M. Harrer

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Company (Ralston Creek mine) Jefferson County, Colorado

RECEIVED DEC 13 1956 D.M.E.A.

In reference to your memorandum of December 3 on the subject docket, the recommended exploration outlined in the subject Examination Report was designed to avoid all possible duplication of core drilling, and was in part the result of several conferences with the applicant. Several holes proposed by the applicant did appear to the examining team to duplicate previous drilling, and the applicant was so advised. Alternate locations were therefore proposed, and suitable holes were recommended in the report.

Hole no. 1 was spotted about 20 feet northwest of the collar of AEC hole RC-13 (see accompanying section). Because of the inclination (-45°) and bearing (S. 45° E.) of hole RC-13, hole no. 1 will be more than 100 feet from RC-13 before it will have reached a depth of 80 feet. The exploration targets, the Illinois and Washington veins, are expected to be encountered at depths from 150 to 300 feet and thus would explore for uranium farther than 150 feet from where veins had been cut in hole RC-13.

Reviewed by
DMEA OPERATING COMMITTEE
12-17-56
(date)

SUPPLEMENTAL ON-SITE EXAM. REPORT

The description of the location of the collar of hole no. 1 as given on page 17 of the Examination Report, DMEA 4311, is incomplete and to be correctly described should read as follows:

Hole No. 1 - Drill from surface 170 feet N. 65° W. of the portal of the Charlie adit, approximately 20 feet northwest of the collar of hole RC-13.

The description of the location of the collar of hole no. 2 is incorrectly stated on page 17 of the Examination Report DMEA 4311, and should be corrected to read as follows:

Hole no. 2 - Drill from surface 200 feet S. 30° E. of the portal of the Minnesota adit, approximately 150 feet * southeast of the collars of holes RC-12 and FFC-2.

* (Note - at this spacing, no duplication of drilling exists especially as both RC-12 and FFC-2 are inclined holes and both have northwesterly bearings.)

The above corrected descriptions correspond with the locations of the recommended Stage I exploration as plotted on figure 4 of the subject report.

The statement in final report DMEA 2888 that the property was explored by nine AEC holes is correct and refers to the Schwartzwalder mine area. Footage measured from printed logs amounts to approximately 2,750 feet. The number of holes (13) drilled by the AEC as given in the Examination Report DMEA 4311 is in error. It should have been 9 as in the final report DMEA 2888. The information supplied

by the Washington representative of the AEC stating that 14 holes totaling 4,354 feet were drilled is essentially correct but includes 5 holes drilled from one-half to 3 miles away from the Ralston Creek mine. Inasmuch as these 5 holes had no direct bearing on the uranium potential of the Ralston Creek mine, we excluded them from consideration in the report.

Of the nine AEC holes drilled within the mine area, only two holes (RC-11 and RC-12) reach depths at which exploration is recommended in Stage I, and these holes are both drilled virtually in the plane of the Ralston Creek, Minnesota, and Charlie adits. Stage I hole no. 3 will explore at depths greater than that reached by RC-12; its bearing and inclination, being opposite that of RC-12, it will explore the uranium-bearing Illinois and Washington veins that could not effectively be explored by RC-11 which parallels these veins. Stage I hole no. 4 explores ground not closer than 100 feet from any previously drilled hole including hole RC-11.

Farmington Funding Corporation No. 1 hole is drilled at so great a depth below existing workings and other drill holes that the geologic relationships are not clear. None of the recommended Stage I holes approach this hole laterally or vertically.

The locations of ore intersections along the lower part of hole FFC-2 are so poorly known that it is concluded that exploration will be required in this area in order to adequately determine their true position with respect to known ore-bearing structures.

The Newmont Exploration Corporation's six core holes are relatively short and have mostly explored ground above the Charlie adit level. Stage I hole no. 5 although approaching Newmont hole K (no. 2), will explore an inferred uranium vein beyond the depth reached by hole K.

A hole drilled by Coors from a surface location presumably between the Minnesota and Ralston Creek tunnel portals reached a depth of not over 200 feet; therefore, no duplication of drilling would result from the Coors exploration.

To summarize then, previous drilling concentrated within a 100-foot wide northeastward-trending vertical zone, has indicated that the several ore-bearing structures found early during the development of the Ralston Creek mine are likely to continue to be ore-bearing for considerable distances down dip, but little new information has been obtained regarding their lateral extent and whether similar ore-bearing structures are likely to be repeated southwest of the present workings.

Four of the recommended Stage I holes are in the vertical plane of the major workings but are located so as to explore known veins below and to the southwest of previously drilled areas; five of the Stage I holes are located to explore known ore-bearing structures laterally in areas not previously explored.

R U King

R. U. King, Geologist

C M Harrer

C. M. Harrer, Mining Engineer

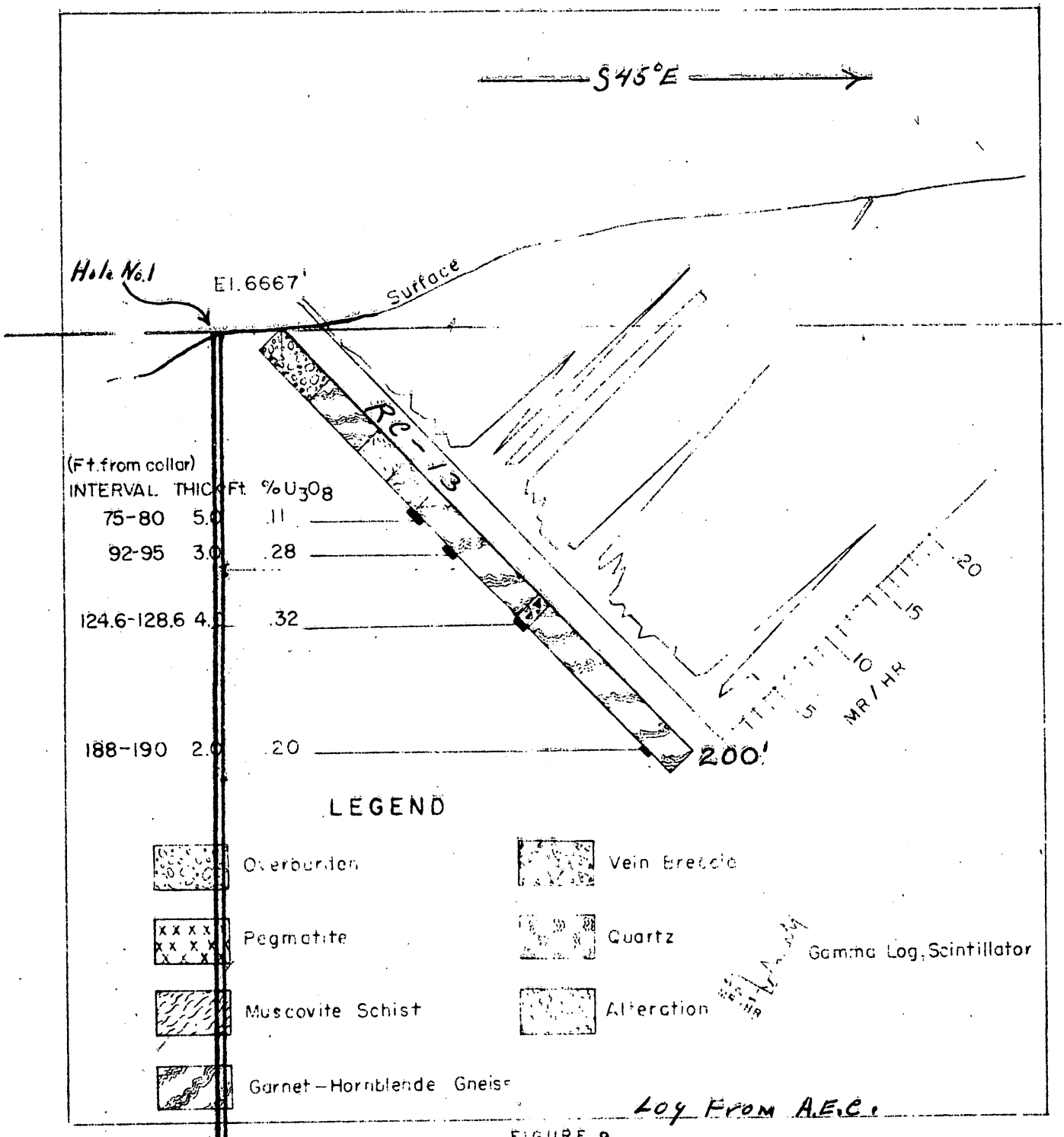

FIGURE 9

GEOLOGIC SECTION OF RALSTON CREEK. DIAMOND DRILL HOLE NO. 13

300'

RALSTON CREEK MINE AREA, JEFFERSON CO., COLO.

Scale 1"=50'

12/5/5
Chang

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

224 New Customhouse
Denver 2, Colorado

December 3, 1956

RECEIVED DEC 5 1956 D.M.E.A.

Memorandum

To: E. N. Harshman
J. F. Shaw (2)

From: DMEA Field Team, Region III

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Company (Ralston Creek Mine) Jefferson County, Colorado

Attached is a copy of a letter from the Chairman of the Operating Committee, dated November 27, 1956, requesting more detailed information on the drilling which has already been accomplished on the property by the AEC, the Farmington Funding Corporation, and the Newmont Exploration Company.

Will you please review the results of the previous drilling with the view of eliminating any possible duplication of work under your proposed Stage I and promplty forward your comments to this office, so that we may reply to the Chairman's letter.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosure

RMC:ytl
cc: Chairman Op.Comm.(2)
Docket 4311
Chron.

12-4-56

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

224 New Customhouse
Denver 2, Colorado

November 30, 1956

RECEIVED
DEC 3 1956
D.M.E.A.

Memorandum

To: Chairman, Operating Committee

From: DMEA Field Team, Region III

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Co. (Ralston Creek mine) Jefferson County, Colorado

This refers to our telephone conversation of November 26, 1956, wherein you inquired concerning the interest of Paul B. and Anna Lee White and also Fred Schwartzwalder in the property involved in the subject application.

Enclosed are two photo copies of the Applicant's reply to my telephone inquiry on the subject, transmitting a photo copy (two copies also enclosed) of the Mineral Deed, acknowledging a royalty payment of 10 percent to the Whites from Denver-Golden Oil and Uranium Co.

We are, accordingly, preparing forms MF-205 for signature and will forward them to you immediately upon their receipt, for incorporating in your proposed contract.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

700

FILE COPY

Surname: Ching

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

NOV 27 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Co.
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Traver:

In reviewing the Stage I drilling proposed by the examiners we note that Hole No. 1 is to be located near the site of AEC Hole No. RC-13 and Hole No. 2 is to be located near the site of AEC Hole No. RC-12. The Farmington Funding Corporation's Hole No. 2 is also located approximately 30 feet from RC-12 and was drilled to a depth of 1,000 feet. We do not have detailed information on the two AEC holes, but, if they reached the average depth reported for the AEC drilling (311 feet), there would appear to be a duplication of work in drilling holes Nos. 1 and 2 at the locations proposed.

We note that the final field report on this property under Docket No. DMEA-2808 stated that 9 holes totaling 2,756 feet were drilled under the AEC program whereas the Report of Examination under Docket No. DMEA-4311 stated that 13 holes totaling 2,756 feet were drilled. A Washington representative of the AEC informs us that 14 holes totaling 4,354 feet were drilled, but detailed information on the individual holes was not immediately available.

In view of the considerable amount of drilling done by the AEC, the Farmington Funding Corporation, and the Newmont Exploration Company, it is suggested that the results of such previous drilling be reviewed and weighed against the proposed drilling under Stage I with the view of eliminating any possible duplication of work. We will delay the drafting of a contract pending receipt of your conclusions.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

APPROVED:

Frank D. Lamb (FDL)
Member, Bureau of Mines

Thor H. Kiilsgaard (THK)
Member, Geological Survey

MChing/izm 11-23-56
cc to: Docket
Code 700
Admr.'s Reading File
Operating Committee
Mr. Ching
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

Mr. George Selfridge

RECEIVED
NOV 20 1956
D.M.E.A.

DN 235 BUR MINES 11-20-56 10-19

CHAIRMAN, OPERATING COMMITTEE, DMEA

REURTT 11-19-56 DOCKET DMEA 4311 PROPOEXX PROPOSED CONTRACT DENVER-GOLDEN OIL AND URANIUM CO. ENGINEER USED MARSHALL BID OF $5.00 PER FOOT AND ADDED AN ALLOWANCE OF 50 CENTS PER FOOT FOR COSTS INCIDENT TO THE DRILLING SUCH AS CASING, REAMING, ETC. ALLOWANCE OF $5.50 APPEARS REASONABLE AND FIELD TEAM RECOMMENDS YOU USE IT NXX IN PREPARING THE CONTRACT.

W M TRAVER

Denver, Colo.

NOV 20 12 30 PM '56

Surname copy
Department of the Interior

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

DMEA
11X1401(01) Revolving Fund, Defense Production Act, Interior (Allocated from Eng. Fund to the Office of the Secy.)

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Selfridge
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TELETYPE

NOV 19 1956

W. M. TRAVER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

RE STOCKPILE CONTRACT DENVER-GOLDEN OIL AND URANIUM COMPANY

CONTRACT 1311 SUGGESTED BE AWARD COST HIGHER THAN LOWEST BID BY GEORGE MARSHALL. ANY OBJECTIONS TO USING SUCH LOWEST BID AS BASIS FOR CONTRACT COST ESTIMATE?

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (GCS)

MChing/gla
11-19-56
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, 3643
THKiilsgaard, 5224
JOHosted, 3210, GSA
Code 700
Mr. Ching
Confirmation to Region III Field Team

11/23/56

IN REPLY REFER TO:

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

November 19, 1956

Re: DMEA 4311
Denver-Golden Oil and Uranium Co.
Ralston Creek mine
Jefferson County, Colorado
App. Est. $63,136.00
Rec'd Est. $61,450.00 Uranium

Memorandum

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

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

Subject: Review of Field Team Report.

The applicant requested assistance in driving a long (1000 feet) crosscut, which would have been only 100 feet under the next lowest level. The examiners and Field Team recommend an alternative work program consisting of 10,500 feet of diamond drilling.

The property, then known as the Schwartzwalder, was explored with the assistance of DMEA funds (Idm-E595) in 1953-55. The results were so favorable the contract was terminated by request of the Operator. The reserves are now estimated to be 25,800 tons of 0.5% U_3O_8. The recommended work would explore for the extensions of veins, known and inferred, cut in underground work and drill holes. As planned the drill holes would search for the vein extensions in the favorably regarded garnetiferous gneiss formation. Except that it appears unlikely Hole No. 7, as platted, would enter the favorable formation, the drilling pattern is well designed.

I concur with the recommendation of the examiners and the Field Team.

N. E. Nelson

N. E. Nelson

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

RECEIVED NOV 20 1956 D.M.E.A.

Date November 19, 1956

DMEA Docket No. 4311
DMEA Contract No.
Commodity Uranium
Name of applicant Denver-Golden Oil & Uranium Co.
Name of property Ralston Creek Mine
Location of property Jefferson County, Colorado
Estimated cost of project $61,450.00

Memorandum ✓

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Review of Field Team Report
(Application, Field Team Report, etc.)

1. Date of subject document: 10/9/56. 2. Date received by reviewer: 11/16/56.

3. Prior reports on this property known to reviewer: Yes ☐ No ☐

4. Prior reports on nearby properties known to reviewer: Yes ☐ No ☐

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked yes above:

8. Factors needing special consideration:
   a. Location ☐
   b. Ownership ☐
   c. Evidence of mineralization ☐
   d. Geology ☐
   e. Proposed exploration method ☐
   f. Alternate exploration method ☐
   g. Costs ☐
   h. _____ ☐

9. Action advised:
   a. Obtain information from applicant ☐
   b. Refer to Field Team ☐
   c. Denial ☐
   d. Agree with Field Team ☒
   e. Disagree with Field Team ☐
   f. Suggest alternate plan ☐
   g. Request another examination ☐
   h. Approval ☐
   i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary) Mr. J. O. Hosted, Washington representative of the Atomic Energy Commission, assisted in the review. Inasmuch as the subject mine has been partially explored under contract Idm E 595, the amount of participation requested is questionable.

11-16-56

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

224 New Customhouse
Denver 2, Colorado

November 9, 1956

RECEIVED NOV 13 1956 D.M.E.A.

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Docket DMEA No. 4311 (Uranium) Denver Golden Oil and Uranium Company (Ralston Creek Mine) Jefferson County, Colorado

Enclosed are the original and three copies of a Joint Engineering and Geologic Report of Examination on the subject property.

The field examiners recommend a short form contract be prepared to provide for an exploration program consisting of 10,500 feet of core drilling in two stages, estimated cost $61,450.00, Government participation $46,087.50. We concur in this recommendation.

A check with the Engineer Examiner reveals that in his estimate of costs for core boxes, he contemplated using paper boxes which cost $1.25 each. He estimated that 120 core boxes would be sufficient in Stage I and 200 boxes in Stage II. All core would be saved within the favorable host rock.

Enclosed for possible use in the contract are 9 extra copies of Figure 4 which accompanied the Report of Examination.

In accordance with the Chairman's letter dated June 25, 1956 on the subject Docket, a revised Power of Attorney has been requested to allow the Applicant to sign a contract.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
11-16-56
(date)

MINERAL EXPLORATION TEST BORINGS - GROUT HOLE DRILLING

GOLDEN DRILLING COMPANY

DIAMOND DRILLING CONTRACTORS

2301 EAST STREET

GOLDEN, COLORADO

PHONE CRestview 9-1371

W. E. MATTHEWS.
MANAGER

October 9
1 9 5 6

RECEIVED
NOV 13 1956
D.M.E.A.

Denver-Golden Oil & Uranium
Box 108
Golden, Colorado

Attention: Mr. Ed Rice

The Golden Drilling Company agrees to drill the proposed three to four thousand feet of diamond core drilling located in the Ralston Creek area known as the Schultzwalter Lease, with the understanding that Denver-Golden Oil and Uranium Company will build roads and provide set ups for surface drilling and cut a satisfactory station for under ground drilling.

This will be done at the price of:

Denver-Golden Oil and Uranium Company furnish air:

EX size bit	$6.25 per foot
AX size bit	6.50 per foot

Golden Drilling Company furnish air.

EX size bit	$6.75 per foot
AX size bit	7.00 per foot

Cementing, if necessary, will be done and drilled out at $2.50 per foot.

GOLDEN DRILLING COMPANY

W E Matthews

W.E. Matthews

Reviewed by
DMEA OPERATING COMMITTEE
11-16-56
(Case)

JOY MANUFACTURING COMPANY
1626 WAZEE STREET
DENVER 2, COLORADO
TELEPHONE KEYSTONE 6334

EXECUTIVE OFFICES
HENRY W. OLIVER BUILDING
PITTSBURGH 22, PA.

October 11, 1956

RECEIVED
NOV 13 1956
D.M.E.A.

Mr. E. Rice, Superintendent
Denver Golden Oil & Uranium Company
P. O. Box 109
Golden, Colorado

Subject: Core Drilling

Dear Sir:

With reference to your inquiry, we are pleased to quote prices covering core drilling in your mine near Golden, Colorado, known by us as the Schwartzwalder Mine.

On condition that we are guaranteed a minimum of 2500 feet of drilling and that you supply us with ample compressed air and water for the drilling machine or machines and furnish facilities for movement of the drilling equipment in the mine and supply the core boxes, the prices are as follows for holes not exceeding 500 feet in depth:

- $5.25 per foot for AX Core
- 5.00 per foot for EX core
- 3.50 per foot for AX reaming where necessary.
- 3.00 per foot for EX reaming where necessary.
- 12.50 per hour for cementing holes where necessary.

Any casing lost in hole or ordered left therein will be invoiced at cost.

Cement will be furnished at cost.

Delays because of lack of air or water or any other reason on your account will be charged for at the rate of $10.00 per hour.

We would expect that sufficient headroom be provided so that drill rods in 10 foot sections can be handled.

We are in position to start this work within the next two or three weeks.

If conditions as above set forth meet with your approval, we will forward our firm agreement to cover same.

Very truly yours,

JOY MANUFACTURING COMPANY

J. M. Flanagan

J. M. Flanagan

Reviewed by
DMEA OPERATING COMMITTEE
11-16-56
(date)

JMF/jb

GEORGE MARSHALL

DIAMOND DRILL CONTRACTOR

SURFACE AND UNDERGROUND WORK

MAXIMUM CORE RECOVERY

PHONE 40

IDAHO SPRINGS COLORADO

October 10, 19565

RECEIVED NOV 13 1956 DMEA

Denver-Golden Mining Co.
Schwartzwalder Mine
c/o E. C. Rice
Idaho Springs, Colorado

Dear Mr. Rice:

I wish to make a bid on diamond drilling which I understand you are contemplating.

On a thousand feet or more of drilling, with holes not much over 500' in depth, I will drill for $5.00 per foot with you furnishing air to run drills, or $7.00 per foot if I furnish air.

There will be $5.00 per hour charge for each shift that a drill is held up due to no fault of my own. Also, there will be $5.00 per hour charge for cementing and drilling cement out when needed. Core boxes to be furnished by you. It is my understanding that AX or EX core is permissible.

Very truly yours,

George Marshall

Reviewed by
DMEA OPERATING COMMITTEE
11-16-56
(date)

GEORGE MARSHALL

DIAMOND DRILL CONTRACTOR

SURFACE AND UNDERGROUND WORK

MAXIMUM CORE RECOVERY

PHONE 40

IDAHO SPRINGS COLORADO

October 22, 1956

RECEIVED
NOV 13 1956
D.M.E.A.

Mr. E. C. Rice
Denver-Golden-Schwartzwalder Mine
Idaho Springs, Colorado

Dear Mr. Rice:

The bid I submitted last week for diamond core drilling is for either surface or underground work.

Very truly yours,

George G. Marshall

George G. Marshall

Reviewed by
DMEA OPERATING COMMITTEE
11-16-56
(date)

FOR UNITED STATES GOVERNMENT USE ONLY

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

TRANSMITTED

DEFENSE MINERALS EXPLORATION ADMINISTRATION

NOV 9 1956

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

DMEA 4311

Denver-Golden Oil and Uranium Company

Ralston Creek Mine

Jefferson County, Colorado

Uranium

Reviewed by
DMEA OPERATING COMMITTEE
11-16-56
(date)

Joint Engineering and Geological Report

by

R. U. King, Geologist
Geological Survey

C. M. Harrer, Mining Engineer
Bureau of Mines

November 2, 1956

ON-SITE EXAM. REPORT

RECEIVED
NOV 1956
D.M.E.A.

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DMEA 4311

DENVER-GOLDEN OIL AND URANIUM COMPANY
RALSTON CREEK MINE
JEFFERSON COUNTY, COLORADO

RECEIVED
NOV 13 1956
D.M.E.A.

INTRODUCTION AND SUMMARY

Denver-Golden Oil and Uranium Company, 760 Denver Club Building, Denver 2, Colorado, a Colorado company, has applied for Defense Minerals Exploration Administration assistance to explore the Ralston Creek mine further for uranium. The property is also known as the Schwartzwalder mine. The mine area comprises the SE 1/4 sec. 25, T. 2 S., R. 71 W., sixth principal meridian, and the applicant owns the mineral rights thereto.

The applicant proposed to explore the Ralston Creek mine with 1,000 feet of crosscut adit to be driven about 100 feet below the present lowest level (Charlie tunnel). Cost of the project was estimated at $63,136. This proposal cannot be considered as valid exploration under DMEA since it is chiefly mine development.

Lenticular deposits of pitchblende, associated with base-metal sulfides, occur along carbonate-bearing breccia faults in a contact zone of garnetiferous gneiss that lies between two units of Precambrian metamorphic rocks.

The property has yielded 3,410 dry tons of uranium ore, to July 1956, that contained about 0.7 percent U_3O_8. Inferred reserves are

estimated at 25,800 tons containing 0.5 percent U_3O_8. The ore-producing potential of the property is believed to be several times this amount. It is believed that the property will continue to be an important source of uranium.

The property was explored under DMEA contract Idm-E595 (DMEA Docket 2888) beginning on September 2, 1953, and ending June 23, 1955. The contract was terminated by request of the operator and with concurrence of the Government on June 23, 1955.

During the period from April 1954 through March 1955, the Atomic Energy Commission explored the property by trenching and core drilling. The Farmington Funding Corporation core drilled two holes on the property while it was under option. The Newmont Exploration Company drilled six holes while the property was under option. The property was acquired by Denver-Golden Oil and Uranium Company on February 17, 1956.

The Ralston Creek mine was examined on July 2, 1956, after Denver-Golden Oil and Uranium Company had applied for Defense Minerals Exploration Administration assistance.

After several conferences with representatives of the applicant, the last of which was held October 16, 1956, a two-stage core-drilling exploration program was set up which appears to be mutually acceptable to the writers and the applicant. The program recommended includes a total of 10,500 feet of core drilling (size AX) at an over-all cost of $61,450. Government participation of 75 percent would be $46,087.50.

ACKNOWLEDGMENTS

The examining team was accompanied on the property by G. H. Brodie, vice-president and general manager, and Charles O. Parker, Jr., mine superintendent for the applicant. The Denver Exploration Branch of the Atomic Energy Commission made the results of its studies of the property available to the examining team, including large-scale geologic maps and geologic logs of core-drill holes. Much of the geology described in this report is based on unpublished data supplied by D. M. Sheridan and others of the U. S. Geological Survey, who are mapping the Ralston Buttes quadrangle.

LOCATION, TOPOGRAPHY, AND CLIMATE

The Ralston Creek mine is in the SE 1/4 sec. 25, T. 2 S., R. 71 W., sixth principal meridian, Jefferson County, Colorado, at an altitude of about 7,000 feet (fig. 1). It is 18 miles from Denver, Colorado, and 9 miles northwest of Golden, Colorado; the last 5 miles are over a very steep and rough access road which winds along Ralston Creek. Altitudes within a mile of the mine range from 6,500 feet, at the valley floor, to 7,500 feet along the ridges. The terrain is steep and rugged. The climate is mild. Mining can be conducted the year around. During the winters occasional storms might hamper the work. Timber for mine use grows on the property. Supplies and labor are readily obtainable at Golden, Central City, Idaho Springs, and Denver.

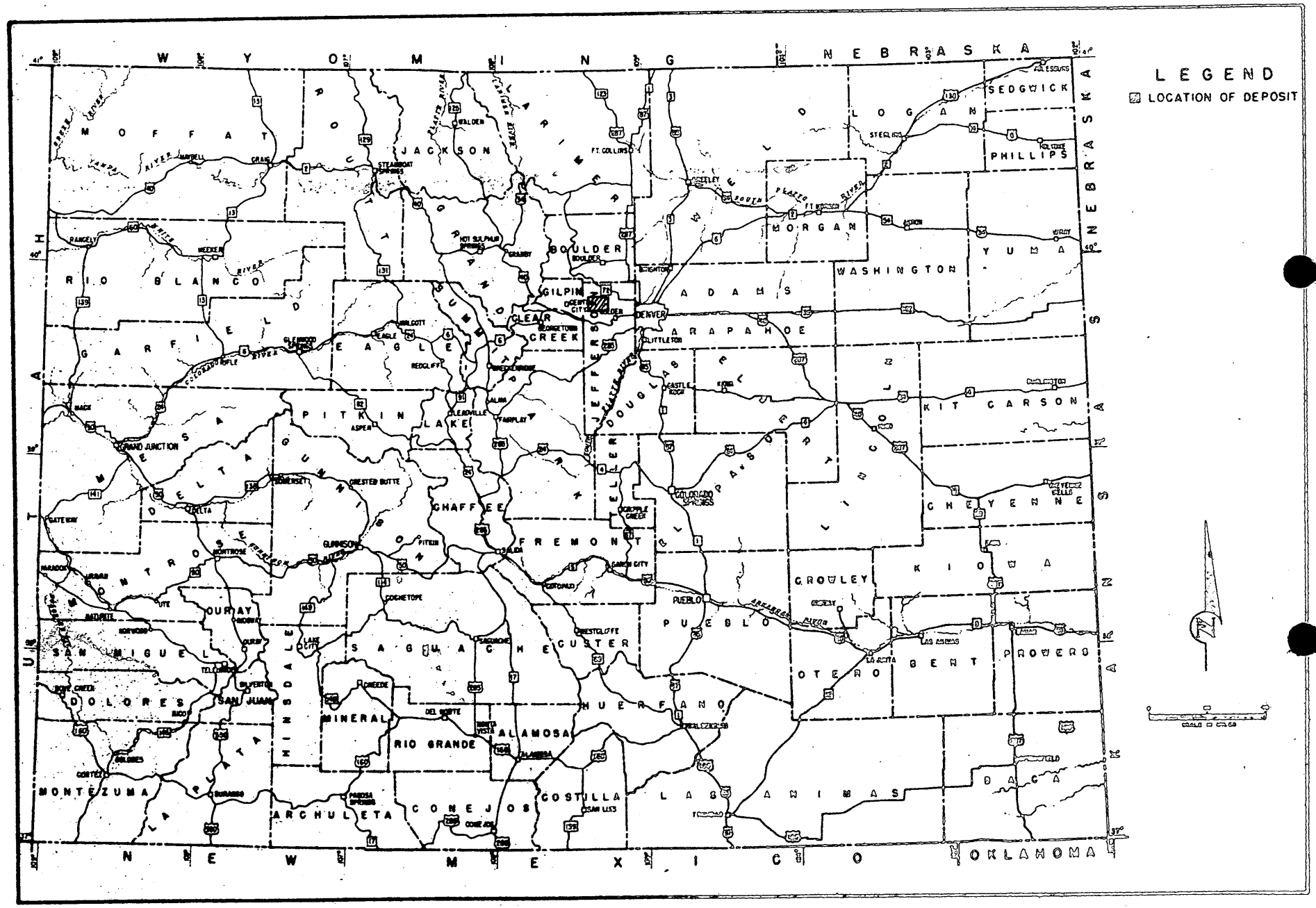


FIGURE 1 - LOCATION MAP, DENVER-GOLDEN OIL AND URANIUM COMPANY, RALSTON CREEK MINE, JEFFERSON COUNTY, COLO.
(DMEA 4311)

HISTORY AND PRODUCTION

Section 23 is owned by Paul R. and Anna Lee White of Golden, Colorado. The property was leased to Fred Schwartzwalder. The Ralston Creek mine was first located as a copper prospect and had been worked as early as 1897. Uranium was discovered in surface float, on old dumps, and in an old adit during 1949 by Mr. Schwartzwalder. The property was examined by members of the Geological Survey and Atomic Energy Commission during 1950-53. A Defense Minerals Exploration Administration team examined the property on April 8, 1953, after Mr. Schwartzwalder applied for exploration assistance (DMEA 2888). From September 2, 1953, to June 23, 1955, DMEA exploration contract Idm-E 595 was in effect. The contract was terminated on June 23, 1955, on request of the operator, with the concurrence of the Government. Mr. Schwartzwalder paid the Government's participating share in exploration costs in full. There were no known copper or uranium ores produced from the property prior to DMEA exploration. During 1953-55, Mr. Schwartzwalder shipped 1,561 dry tons of uranium ore averaging 0.66 percent U_3O_8. On the basis of mine-car tally, total production amounted to 4,915 tons of crude ore of which 2,020 tons came from the Flat vein below the upper level; 1,665 tons came from the Nebraska vein; 1,225 tons came from the Colorado vein; 3 tons from the Kansas vein and 2 tons from the Walder vein.

OWNERSHIP AND EXTENT

Denver-Golden Oil and Uranium Company, 760 Denver Club Building, Denver 2, Colorado, purchased the lease rights of Fred Schwartzwalder and also purchased the mineral rights to the SE 1/4 sec. 25, T. 2 S., R. 71 W., sixth principal meridian (which includes the Ralston Creek mine) on February 15, 1956. The property and mineral rights originally belonged to Paul R. and Anna Lee White of Golden, Colorado. The mineral rights apply to all ores and minerals except oil, gas, gaseous or vaporous substances and coal. On February 15, 1956, Denver-Golden Oil and Uranium Company assigned 80 percent of its mineral rights to various parties in a joint venture as follows:

Name	Address	Undivided interest
Madge Johnson	Longview, Texas	1/20
E. C. Johnson	" "	1/20
Gordon C. Johnson	" "	1/20
J. Glenn Johnson	" "	1/20
Carl von Bibra	Long Beach, California	1/10
Edward Koppelman	Long Beach, California	1/10
M. O. Johnson	Glendale, California	1/10
Harry Cohen	Denver, Colorado	1/5
A. H. Bernstein	Pueblo, Colorado	1/10

The purchase of mineral rights from the Whites and the assignment of the mineral rights by Denver-Golden Oil and Uranium Company are recorded in Book 979, page 187 of the records of Jefferson County, Colorado.

PRESENT STATUS

Exploration and development

The Ralston Creek mine has been explored and developed by two crosscut adits. The Ralston Creek (upper) and the Minnesota (middle) adits are at altitudes of 6,893 and 6,770 feet, respectively. The Ralston Creek adit level consists of 280 feet of drift and crosscut. Under DMEA contract Idm-E 595, the portal and first 70 feet were rehabilitated and 149 feet were driven. The Minnesota adit level consists of 345 feet of crosscut and 222 feet of drifts driven to explore five uranium-bearing veins. After 200 feet of the Minnesota crosscut were driven, the operator requested termination of the contract. An inclined raise, about 140 feet long, connects the two levels. The applicant has recently started a third adit at 6,659.5 feet altitude. This adit was in 45 feet at the time of the examination and is known as the Charlie tunnel. The Charlie (lower) tunnel is now in 450 feet.

Several prospective purchasers explored the property by core and long hole drilling during 1954-1955. The Atomic Energy Commission completed 992 hours of bulldozing and 13 diamond-drill holes 93 to 600 feet deep, totaling 2,756.3 feet. The Farmington Funding Corp. core drilled two holes totaling 1,800 feet. Coors Brewing Co. core drilled one hole about 200 feet deep, and Newmont Mining Co. drilled six long-holes 60 to 90 feet deep from underground locations.

Mining, milling, and other facilities

A storehouse and ore bin are at the portal of the Ralston Creek tunnel. The tunnel level is equipped with track and compressed air line. The Minnesota adit is the main haulage level. All compressors and other surface equipment are distributed between the Minnesota and Charlie levels. The surface plant includes a frame office and warehouse building and an ore bin. The compressors are diesel-engine driven, and all underground equipment is run by compressed air. A new level, known as the Charlie tunnel, was driven about 107 feet below the Minnesota tunnel level. This tunnel is now in 450 feet, and is equipped with track and vent pipe; an ore bin is being constructed near the portal. Mining equipment includes jackleg drills and an Eimco 12 B loader. All mine portals are connected by roads. Water is pumped from Ralston Creek to storage tanks at the mine portals. Electric power is not available at the property.

GEOLOGY

The Ralston Creek (Schwartzwalder) mine, originally a copper prospect, is in the Ralston Creek district, Jefferson County, Colorado. It exploits vein-type deposits of pitchblende associated with base-metal sulfides in Precambrian metamorphic rocks of the Idaho Springs formation that lie along the eastern flank of the Colorado Front Range.

Mica schists, lime-silicate gneiss, amphibolite, and minor pegmatites comprise the Precambrian rocks of the Idaho Springs formation in the Ralston Creek district. Small elongate bodies of pegmatite are irregularly scattered in the Precambrian terrane. A zone of garnetiferous gneiss marks the gradational contact between the two major rocks units - the unit of schist and the unit of lime silicate gneiss and amphibolite. The contact zone consists of several minor rock units including garnetiferous biotite gneiss, layered quartzite, and fine-grained biotite-quartz-muscovite schist. The major structural features of the district are northward-trending asymetrical folds and northwestward-trending breccia faults.

Most of the significant pitchblende deposits of the district are associated with base-metal sulfides in or near carbonate-bearing breccia faults of probable Tertiary age, and most of the known productive deposits occur where the faults cut Precambrian rocks rich in hornblende, biotite or lime-silicate minerals. It thus appears that the location of the pitchblende deposits is controlled by structure and favorable host rock.

The Ralston Creek mine is at a place where a group of northwestward-trending faults cut a zone of garnet and biotite-rich rocks (figs. 2 and 3). The upper (Ralston Creek tunnel) workings are near the crown of an asymmetrical north-trending anticline, and the lower (Charlie tunnel) workings are along the steeply dipping, overturned, east limb of the anticline. The workings have explored uranium-bearing fault

breccias that are almost entirely within the contact zone between schist and amphibolite. Six mineralized faults are currently being exploited, but several other mineralized structures have been discovered in the immediate area (fig. 2). The mineralized fault breccias along which uranium ore has been mined include the Flat, Nebraska, Walder, and Colorado veins. Two other veins, the Illinois and Washington, encountered in the Charlie tunnel, have been explored for very short distances.

The uranium ore consists of finely disseminated pitchblende that is associated with chalcopyrite, pyrite, galena, and small quantities of other sulfides in a gangue of shattered hematitic quartz and potash feldspar. A few carbonate veinlets and stringers cut the fault breccias.

Near-surface deposits contain the secondary uranium minerals torbernite and autunite, and secondary copper minerals.

The Flat vein, a 5- to 10-foot-thick breccia fault, strikes N. 40° W. and dips 30° SW, and is crossed by the upper tunnel 50 feet from the portal (fig. 3). The vein has been stoped for more than 150 feet along the dip and for an average strike length of 30 feet. The vein flattens and reverses dip as it is followed southwestward.

Ore-grade material is exposed in both walls of the stope, but it is not expected that the breccia zone will contain much ore beyond the limits of the garnetiferous gneiss contact zone.

The Walder vein, uncovered by trenching, is cut by the Minnesota tunnel, 180 feet from the portal and about 100 feet below the surface.

The vein, occupying a fault breccia, strikes south-southeast and dips about 70° east. It is from 6 inches to 2 feet wide, and has been traced for less than 100 feet along its strike. The Walder vein has been followed for 15 feet in a southerly direction. North of the Minnesota tunnel the vein enters biotite schist, quartzite, and amphibolite and breaks up into barren stringers. South of the adit, the vein, in garnetiferous gneiss is ore-bearing for the exposed length. Ore-grade material was produced from the vein at the surface.

The Colorado vein is cut in the same adit, 200 feet from the portal, and in the face of a drift that extends northwestward. The mineralized fault breccia strikes north-northwest and dips about 50° E. Because of the steep dip of the Walder vein it is likely that it will junction with the Colorado vein a short distance below the Minnesota adit level. It has been cut in the Charlie tunnel where it is ore-bearing, but narrow.

The Kansas vein is cut in the Minnesota tunnel 280 feet from the portal. It is from 2 to 3 feet thick, strikes northwest, and dips 70° northeast. It contains ore-grade uranium on the Minnesota and Charlie tunnel levels, but where it crosses the Flat vein, just below the Ralston Creek tunnel level, it is a narrow barren fault.

The Nebraska vein is cut in the Minnesota tunnel, 320 feet from the portal, and in the Charlie tunnel about 420 feet from the portal. It has been stoped from the Minnesota to the Ralston Creek tunnel level, and drifted on for about 130 feet. It probably junctions with

the Flat vein a short distance beyond the breast of the Ralston Creek tunnel. The vein strikes south-southeast and dips about 50° east. The vein is as much as 6 feet wide. Two other veins, the Illinois and the Washington, have been encountered recently by the applicant. The Illinois vein is as much as 10 feet wide where it is exposed in the Charlie tunnel. The vein occupies, in part, a fault, but it branches from the fault north of the adit. The breccia fault strikes northwest and dips 70° southwest. The Washington vein, so far exposed only by trenches and in the portal of the Charlie tunnel, strikes northwest and dips about 55° southwest. It is a breccia fault.

Of the known uranium-bearing breccia faults, the Colorado and Illinois veins are the more persistent; they have been traced along the surface for more than 1,500 feet. At the surface, and in the mine workings, ore-grade material is confined to the zone of garnetiferous rock, but these and other veins can be expected to be ore-bearing down dip, and along their strikes through the favorable host rocks beyond the mine area. Previous exploration of the mine area has indicated the presence of additional mineralized breccia faults, both to the southwest and northeast of the mine area, and further exploration for uranium ore beyond the present mine area is warranted.

ORE RESERVES

Inferred reserves of the Ralston Creek mine were estimated to be 25,800 tons of uranium ore containing 0.5 percent U_3O_8 as stated in the final report on the Ralston Creek mine (DMEA 2888, contract Idm-E 595). The uranium-producing potential of the property is believed to be several times this amount.

APPLICANT'S PROPOSED EXPLORATION AND COSTS

The applicant originally proposed to drive 1,000 feet of 8- by 7-foot crosscut adit about 220 feet below the lowest mine workings which were on the Minnesota adit level (altitude 6,770 feet). The applicant's estimate of costs is $63,136 or $63.14 per foot, as follows:

General:

The proposed crosscut adit will be advanced an average of 40 feet a week. Three miners will be used for the first 200 feet of advance and four for the remaining 800 feet. Hourly pay rate is $2.

Items		Cost	Cost per foot
Labor and Supervision			
Labor			
3 miners for 5 weeks	$1,560.00		
4 miners for 20 weeks	8,320.00		
		$9,880.00	$9.88
Supervision			
Manager at $1,000/mo.		6,000.00	6.00
Technical Services			
Engineering and consulting at $1,000 per month		6,000.00	6.00
Operating Materials and Supplies:			
Timber	$ 500.00		
Explosives and accessories	9,420.00		
Pipe Nylon-burlap ventilation	1,600.00		
Pipe air and water	1,725.00		
Track (20 lb.) and accessories	1,850.00		
Hoses Air and water	400.00		
Fuel and lubricants	1,200.00		
Coromant integral drill steel	2,900.00		
Miscellaneous	295.00		
		19,890.00	19.89

Items		Cost	Cost per foot
Operating Equipment:			
Rental			
1 Chev. pickup truck at $5/day	$ 750.00		
1 365 c.fm. compressor, 6 months at $350 per month	2,100.00		
1 Generator at $5 per week	125.00		
		$2,975.00	$2.975
Purchase			
4 Jackleg drills (Copco Pac. Ltd.) with oilers $800 ea.	3,200.00		
4 20 cu. ft. mine cars	1,000.00		
1 Tramaire locomotive	2,000.00		
1 Sutorbilt ventilation fan	750.00		
1 Water pump	300.00		
2 150-gallon water tanks	200.00		
1 mucking machine, GD-9	1,250.00		
4 Edison electric lamps	160.00		
1 Lamp charger	80.00		
1 Blasting machine	50.00		
1 Stove	25.00		
		9,015.00	9.015
New Buildings, Improvements, etc.:			
1 12- by 20-foot office and warehouse	850.00		
1 12- by 25-foot changehouse	700.00		
1 Waste dump trestle	100.00		
		1,650.00	1.65

Items		Cost	Cost per foot
Miscellaneous:			
Repairs to equipment		$2,500.00	$2.50
Sampling and analyses 50 assays for U_3O_8 at $5 each		250.00	.25
Payroll taxes	$ 320.00		
Workmen's compensation	400.00		
Insurance	500.00		
Accounting	750.00		
		1,970.00	1.97
Contingencies:		3,006.50	3.01
Totals		$63,136.00	$63.14

RECOMMENDED EXPLORATION AND COSTS

After several conferences between Denver-Golden Oil and Uranium Company officials and the writers, the applicant's plan was discarded and a substitute program of exploratory drilling was agreed upon.

The following two-stage drilling program is designed to explore, laterally and at depth, breccia faults known to be ore bearing in the Ralston Creek mine, and to explore for additional ore-bearing structures outside the mine area.

Stage I

Stage I is designed to explore at depth and laterally known veins within favorable and semi-favorable host rocks, and to explore for

additional veins, southwest of existing workings, whose presence is inferred from ore in widely spaced drill holes. It is recommended that Stage I consist of nine AX-size holes to be core-drilled from surface and underground locations, approximately as shown on figures 4 and 5, and estimated to require 3,500 feet of drilling. Information on the holes to be drilled is tabulated as follows:

Hole No.	Bearing of hole	Inclination of hole	Estimated depth of hole	Location	Objectives
1	---	Vertical	300 feet	Drill from surface, near site of old hole RC-13.	Lateral extensions of Illinois and Washington veins; Colorado vein at depth.
2	---	Vertical	400 feet	Drill from surface near site of old hole RC-12.	do.
3	N.45°E.	-50°	400 feet	Drill from underground station in Charlie tunnel, 360 feet in from portal.	Illinois and Washington veins at depth.
4	---	-90°	500 feet	Drill from underground station in Charlie tunnel, 440 feet in from portal.	NE dipping veins inferred from FFC hole no. 2, Newmont Hole No. K, and RC No. 11.
5	S.45°W.	-30°	400 feet	Drill from underground station in Charlie tunnel, 440 feet in from portal.	do.
6	S.45°W.	-10°	200 feet	Drill from breast of Minnesota tunnel.	do.
7	---	Vertical	500 feet	Drill from surface, 200 feet S.45°W. of drill hole no. 1.	Lateral extension of Colorado vein and Illinois vein at depth.
8	---	Vertical	500 feet	Drill from surface, 200 feet S.45° W. of drill hole no. 2.	Lateral extensions of the Walder and Colorado veins.
9	---	Vertical	300 feet	Drill from surface, 400 feet S.45°W. of drill hole no. 7.	Lateral extension of Nebraska vein.
Total - Stage I drilling			3,500 feet		

The time required for completion of Stage I drilling (based on the use of one drill, one shift per day, and 25 working days per month) is 100 to 150 days.

The costs of Stage I exploration are as follows:

Core drilling (AX size) 3,500 feet at $5.50 per foot (Compressed air to be furnished by applicant)	$19,250.00	
Preparing two underground drilling stations	200.00	
Preparation of five surface drill sites	100.00	
Compressed air and water for drilling (furnished by applicant) at 10¢ per foot	350.00	
Core boxes	150.00	
40 chemical analyses for U_3O_8 at $3.50 each	140.00	
Supervision-1 geologist part time at $500 per month for 1 month	500.00	
Total cost		$20,690.00
Total cost less analyses		$20,550.00
Total cost per foot less analyses		5.87
Total cost per foot		5.91

Stage II

Favorable host rocks are known to extend several hundreds of feet beyond the narrow zone being exploited through the present Ralston Creek mine workings; also, some of the uranium-bearing fault breccias have been traced on the surface for considerable distances

beyond the mine area. A second stage of core drilling is recommended to explore these ore-bearing fault breccias in and about favorable host rocks and to supplement Stage I exploration. It is estimated that second-stage exploration will require 7,000 feet of AX size core drilling. The location, inclination and direction of the holes will depend upon the results of Stage I drilling and should require prior approval by the Government.

The time required for completion of Stage II drilling (based on the use of one drill, one shift per day, and 25 working days per month) is 200 to 300 days.

The costs of Stage II exploration are as follows:

Core drilling (AX size) 7,000 feet at $5.50 per foot (air to be furnished by applicant)	$38,500.00	
Preparation of surface drill sites	100.00	
Compressed air and water for drilling (furnished by applicant) at 10¢ per foot	700.00	
Core boxes	250.00	
60 chemical analyses for U_3O_8 at $3.50 each	210.00	
Supervision-1 geologist part time at $500 per month for 2 months	1,000.00	
Total cost		$40,760.00
Total cost less analyses		$40,550.00
Total cost per foot less analyses		5.79
Total cost per foot		5.82

Recapitulation

Cost of Stage I drilling	$20,550.00		
Chemical analyses	140.00		
Total cost of Stage I		$20,690.00	
Cost of Stage II drilling	$40,550.00		
Chemical analyses	210.00		
Total cost of Stage II		$40,760.00	
Total exploration costs (Stages I and II)			$61,450.00

Three bids by local drilling firms are attached.

CONCLUSIONS AND RECOMMENDATIONS

Vein deposits of pitchblende associated with base-metal sulfides are being mined at the Ralston Creek mine. The deposits are in fault breccias in a band of garnetiferous gneiss that forms the contact zone between Precambrian mica schist and amphibolite.

Inferred ore reserves are estimated at 25,800 tons containing 0.5 percent U_3O_8. It is concluded that these reserves can be increased several fold by further exploration.

It is considered probable that the presently exposed ore-bearing structures will continue to contain ore for several hundred feet down dip within the favorable garnetiferous gneiss host rock.

It is further believed that significant ore bodies are likely to be found where fault breccias intersect the favorable host rock beyond the present limits of the mine area.

The applicant's original proposal to explore for uranium by driving a 1,000-foot crosscut adit, 100 feet below the Charlie level, cannot be considered as valid exploration under DMEA but is in fact largely mine development.

Because of the position of the mine workings in relation to the ore-bearing fault breccias and the favorable host rock, it is concluded that the most effective exploration can be done by underground and surface core drilling.

The applicant is aware that royalty payments will be collected on all ore produced from the property during the life of the contract and for a 10-year period should a certification of discovery be issued.

The examining team recommends a short form contract be prepared to provide for an exploration program consisting of 10,500 feet of core drilling in two stages, estimated to cost $61,450. The Government's share at 75 percent would be $46,087.50.

224 New Customhouse
Denver 2, Colorado

November 9, 1956

Mr. G. H. Brodie, Vice-President
Denver-Golden Oil and Uranium Co.
760 Denver Club Building
Denver 2, Colorado

Re: Docket DMEA 4311 (Uranium)
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Brodie:

Returned herewith are the executed copies of a Power of Attorney which have been reviewed by the Solicitor for the Washington Office, DMEA, who had the following comment:

> "The Power of Attorney does not authorize the Denver-Golden Oil and Uranium Company to execute a contract in behalf of the persons therein listed, but rather authorizes it to act as agent in all matters connected with the application and that, should a contract be executed, to submit reports and to receive and receipt for monies due thereunder. Accordinly, if the parties intend that the applicant be authorized to sign a contract by authority of the Power of Attorney same should be revised to specifically so state.
>
> "Please advise the applicant of our comments and obtain a revised Power of Attorney if the parties wish the agent to sign the contract, should one be entered into."

In accordance with the above, we are enclosing a copy of a proposed Power of Attorney which includes the right of the designated Agent to sign the DMEA contract. If this proposed Power of Attorney reflects the true intent, will you please obtain the required signatures and return the executed copies of this new Power of Attorney to this office, so that we may continue to process this application.

Yours very truly,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
HMC:ytl
cc
Sec. Op. Comm. (2)
Harshman

Docket 4311
Chron.

POWER OF ATTORNEY

We, the undersigned, members of a Joint Venture consisting of:

Madge Johnston
Gordon C. Johnston
Carl von Bibra
M. O. Johnston
A. H. Bernstein

E. C. Johnston, Jr.
J. Glenn Johnston
Edward Koppelman
Harry Cohen
Denver-Golden Oil and Uranium Company, a Colorado Corporation

RECEIVED
NOV 16 1956
D.M.E.A.

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to sign the contract, submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 4311.

Executed this _____ day of _____, 1956

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

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

Ching
Ellis
Martin
Hoffman
McKendry

JUN 25 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
22h New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Co.
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Traver:

In connection with your memorandum of June 11, 1956, the Power of Attorney which you had enclosed was submitted to the Solicitor's Office for legal review.

By memorandum, we were informed that the Power of Attorney does not authorize the Denver-Golden Oil and Uranium Company to execute a contract in behalf of the persons therein listed, but rather authorizes it to act as agent in all matters connected with the application and that, should a contract be executed, to submit reports and to receive and receipt for monies due thereunder. Accordingly, if the parties intend that the applicant be authorized to sign a contract by authority of the Power of Attorney same should be revised to specifically so state.

Please advise the applicant of our comments and obtain a revised Power of Attorney if the parties wish the agent to sign the contract, should one be entered into.

Reviewed by
DMEA OPERATING COMMITTEE
6-22-56
(date)

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

APPROVED:

P. F. Yopes
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

MChing/ai/eaf
6/22/56
cc to: Operating Comm.
Docket
Admr. Reading File
Messrs: THKiilsgaard, Rm. 5224
JEBrumford, Rm. 3643
JCHosted, Rm. 3210, GSA
RPDwyer, Rm. 7343
Code 700 - Mr. Ching

[redacted] connection with your memo of June 11, 1956, Power of Atty, which you had [redacted] closed, was submitted to Solicitor's Office for legal review.

By memo, we now inform this that the Power of Atty does not authorize the Denver-Golden Oil & Gas Co. to execute a contract in behalf of the persons therein listed, but rather authorizes it to act as agent in all matters connected with the application, ~~[illegible]~~ and that a contract be executed to submit reports & to receive & receipt for monies due thereunder. Accordingly, if the parties intend that the Applicant be authorized to sign a contract by authority of the Power of Atty, same should be revised to specifically so state.

Please advise the Applicant of our comments & obtain a revised Power of Atty, if the parties wish the agent to sign the contract, ~~should one~~ be entered into.

Surname copy

Ching illis

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

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Co.
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Traver:

In connection with your memorandum of June 11, 1956, regarding a suggested Power of Attorney we are enclosing two copies of a memorandum to the Administrator, dated June 20, 1956, from the Associate Solicitor, Division of Mineral Resources.

We assume that a Joint Venture is, in fact, involved, since the suggested Power of Attorney so states.

Your attention is called to the last paragraph of the enclosed memorandum. If satisfactory to the parties concerned it is suggested that the Power of Attorney also authorize the Agent to sign the contract, if one is entered into.

Sincerely yours,

Chairman, Operating Committee

Enclosure

MChing:ai
6/22/56
cc to: Operating Comm.
Docket
Admr. Reading File
Messrs. THKiilsgaard, Rm. 5224
JECrawford, Rm. 3643
JOHosted, Rm. 3210, GSA
Code 700
Mr. Ching

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

6-26-56

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

RECEIVED
JUN 25 1956

June 21, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman, Operating Committee, DMEA

From: Field Team, Region III

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Company, (Ralston Creek Mine), Jefferson County, Colorado

This has further reference to your letter of June 6, 1956 on the subject docket. Enclosed are two copies of an executed Power of Attorney for the Denver-Golden Oil and Uranium Company to act as the agent for all parties in the Joint Venture.

The original signed copies of the Power of Attorney are being retained in this office so that in the event this docket should go to contract, more copies of the Power of Attorney can be made.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

DMEA
Date Rec'd.
JUN 20 1956
BUREAU OF MINES
Denver, Colorado

POWER OF ATTORNEY

We, the undersigned, members of a Joint Venture consisting of

Madge Johnston
Gordon C. Johnston
Carl von Bibra
M. O. Johnston
A. H. Bernstein

E. C. Johnston, Jr.
J. Glenn Johnston
Edward Koppelman
Harry Cohen
Denver-Golden Oil and Uranium Company, a Colorado Corporation

RECEIVED
JUN 25 1956

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 4311.

Executed this _____ day of _____, 1956

(Signed) Harry Cohen
(Signed) _____
(Signed) _____
(Signed) _____
(Signed) _____
(Signed) Denver-Golden Oil & Uranium Co
(Signed) by A. H. Brodie
(Signed) Vice Pres. & Gen. Manager
(Signed) _____
(Signed) _____

Attest: Barney Snow
Acting Secretary

DMEA
Date Rec'd.

JUN 20 1956

BUREAU OF MINES
Denver, Colorado

POWER OF ATTORNEY

We, the undersigned, members of a Joint Venture consisting of

RECEIVED
JUN 25 1956

Madge Johnston
Gordon C. Johnston
Carl von Bibra
M. O. Johnston
A. H. Bernstein
E. C. Johnston, Jr.
J. Glenn Johnston
Edward Koppelman
Harry Cohen
Denver-Golden Oil and Uranium Company, a Colorado Corporation

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 4311.

Executed this 13th day of June, 1956

Carl von Bibra
Carl von Bibra

Edward Koppelman
Edward Koppelman

DMEA
Date Rec'd.

JUN 20 1956

BUREAU OF MINES
Denver, Colorado

POWER OF ATTORNEY

We, the undersigned, members of a Joint Venture consisting of

Madge Johnston
Gordon C. Johnston
Carl von Bibra
M. O. Johnston
A. H. Bernstein

E. C. Johnston, Jr.
J. Glenn Johnston
Edward Koppelman
Harry Cohen
Denver-Golden Oil and Uranium Company, a Colorado Corporation

RECEIVED
JUN 25 1956

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 1311.

Executed this _____ day of _____, 1956

_____
M. O. Johnston

_____

_____

_____

DMEA
Date Rec'd.

JUN 20 1956

BUREAU OF MINES
Denver, Colorado

POWER OF ATTORNEY

We, the undersigned, members of a Joint Venture consisting of

Madge Johnston
Gordon C. Johnston
Carl von Bibra
M. O. Johnston
A. H. Bernstein

E. C. Johnston, Jr.
J. Glenn Johnston
Edward Koppelman
Harry Cohen
Denver-Golden Oil and Uranium Company, a Colorado Corporation

RECEIVED
JUN 25 1956

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 4311.

Executed this 12th day of June, 1956

A. H. Bernstein

A. H. Bernstein

POWER OF ATTORNEY

BUREAU OF MINES
Denver, Colorado

We, the undersigned, members of a Joint Venture consisting of

Madge Johnston
Gordon C. Johnston
Carl von Bibra
M. O. Johnston
A. H. Bernstein

E. C. Johnston, Jr.
J. Glenn Johnston
Edward Koppelman
Harry Cohen
Denver-Golden Oil and Uranium Company, a Colorado Corporation

RECEIVED
JUN 25 1956

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 4311.

Executed this 15-25 day of June, 1956

Madge Johnston
Madge Johnston

Gordon C. Johnston
Gordon C. Johnston

E. C. Johnston Jr.

J. Glenn Johnston

6/21/56
a.l.

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

JUN 20 1956

Memorandum

To: Administrator, DMEA
Attention: Chief, Rare and Miscellaneous Metals

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Company
Ralston Creek Mine
Jefferson County, Colorado

As requested in a reference slip dated June 14, 1956, from Mr. Ching, we have reviewed the copy of a Power of Attorney attached to the Executive Officer's memorandum dated June 11, 1956, to the Operating Committee. We have been asked whether the Power of Attorney is adequate.

We find nothing in the docket to indicate, as was stated in the letter dated June 6, 1956, from the Operating Committee to the Executive Officer, that the Applicant is a joint venture. The application was made in the name of Denver-Golden Oil and Uranium Company and the papers in the docket indicate that after said corporation acquired the land in question from Paul R. and Anna Lee White, it transferred all its interest therein to parties listed in a deed of February 15, 1956, as their interests may appear therein (reserving a 1/5th interest).

However, should the application in fact be in behalf of the joint venture, it appears that the Power of Attorney does not authorize the Denver-Golden Oil and Uranium Company to execute a contract in behalf of the persons listed in the Power of Attorney, but rather authorizes it "to act ... in all matters connected with an application on Form MF-103 ... and should the Applicant enter into a contract ... as a result of said application, said Agent is authorized to submit ... reports ... and to receipt for, any monies ..." Therefore, if it is intended that the agent be authorized to sign the contract, the Power of Attorney should specifically so state.

Robert P. Dwyer

RECEIVED
JUN 1 5 1956

June 12, 1956

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Superintendent, Denver Experiment Station, R g. III

Subject: Docket DMEA 4311 (Uranium), Denver Golden Oil and Uranium Company (Ralston Creek mine), Jefferson County, Colorado

The application for Denver Golden Oil and Uranium Company, in the amount of $63,136.00 was received in this office on June 12.

A field examination will be made and suitable report prepared by an engineer from the Denver office.

JOHN F. SHAW

John F. Shaw

cc: W. M. Traver (2)
E. H. Karshman
J F. Shaw
Sec. Op. Com (2)

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

RECEIVED
JUN 13 1956

June 11, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw (2) (With brochure)
E. N. Harshman

From: Field Team, Region III

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Company (Ralston Creek Mine), Jefferson County, Colorado

Enclosed is the subject application in the amount of $63,136.00. A field examination and suitable report are requested.

Also enclosed for your information is a copy of a letter from the Chairman, Operating Committee with attached memoranda of review of the application by John H. Crawford and N. E. Nelson.

Please return the brochure with the Report of Examination.

DMEA Field Team, Region III

W. M. TRAVER,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

DMT:ab

cc: Docket 4311
Chair. Op. Comm. (2)
Chron.

6-13-56

RECEIVED

JUN 12 1956

DENVER-GOLDEN OIL AND URANIUM CO.
760 ~~374~~ DENVER CLUB BUILDING
DENVER 2, COLORADO

TELEPHONE AC 2-0841

June 11, 1956

U. S. Department of the Interior
Defense Minerals Exploration
Administration
Washington 25, D. C.

Attention: Mr. C. O. Mittendorf
Administrator

Gentlemen:

Re: Docket No. DMEA-4311 (Uranium)
Ralston Creek Mine
Jefferson County, Colorado

Thank you for your letter of June 6th regarding our above-captioned application for assistance in exploring the Ralston Creek Mine, Jefferson County, Colorado.

We regret that we overlooked dating and signing our application, and we are enclosing it herewith, fully executed as of May 21st, 1956.

Yours very truly,

DENVER-GOLDEN OIL AND URANIUM CO.

By: G. H. Brodie
G. H. Brodie
Vice President

Encl.

cc: Mr. W. M. Traver
Denver2, Colorado.

6/14/56 gla

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

RECEIVED
JUN 14 1956

June 11, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman, Operating Committee, DMEA

From: Field Team, Region III

Subject: Docket DMEA 4311 (Uranium) Denver-Golden Oil and Uranium Company, (Ralston Creek Mine), Jefferson County, Colorado

Reference is made to your letter of June 6, 1956 on the subject docket. The President of the Denver-Golden Oil and Uranium Company came to this office today and stated that he had signed and returned to your office the copy of Form MF-103 which you had forwarded him.

Enclosed are two copies of a suggested Power Of Attorney we gave the Applicant to obtain the signatures of all members of the Joint Venture.

Will you please advise if our suggested Power of Attorney is satisfactory to you.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

JUN 14 1956

POWER OF ATTORNEY

We, the undersigned, members of a Joint Venture consisting of

Madge Johnston	E. C. Johnston, Jr.
Gordon C. Johnston	J. Glenn Johnston
Carl von Ribra	Edward Koppelman
N. O. Johnston	Harry Cohen
A. H. Bernstein	Denver-Golden Oil and Uranium Company, a Colorado Corporation

do hereby appoint Denver-Golden Oil and Uranium Company to act as the Agent of said Joint Venture in all matters connected with an application on Form MF-103, "Application For Aid In An Exploration Project", under the United States Department of the Interior, Defense Minerals Exploration Administration Program which has been docketed DMEA No. 4311, and should the Applicant enter into a contract with the Government as a result of said application, said Agent is authorized to submit all necessary reports and information required, to receive, and to receipt for, any monies that are now or may hereafter become due to said Joint Venture by reason of said Docket No. DMEA 4311.

Executed this _____ day of _____, 1956

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

(Signed) _____

700 FILE COPY
Surname: Ching, Martin

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

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

JUN - 6 1956

Re: Docket No. DMEA-4311 (Uranium)
Denver-Golden Oil and Uranium Co.
Ralston Creek Mine
Jefferson County, Colorado

Dear Mr. Traver:

The subject application is being referred to you for investigation, a field examination if warranted, and recommendations. A copy of the application was retained by your office.

Copies of memoranda, dated May 29 and 31, 1956, by John E. Crawford, USBM, and N. E. Nelson, USGS, respectively, relating to the application, are enclosed for your information.

Your attention is called to the fact that, while a joint venture is involved, the application is made out in the name of Denver-Golden Oil and Uranium Company, one party of a joint venture group of ten parties. A Power of Attorney to act for all parties should be supplied by Denver-Golden.

None of the application forms (MF-103) received in Washington were signed by the Applicant. We are, therefore, returning one copy directly to the Applicant for signature.

You will note that this application covers the same property explored under the Fred Schmartawalder project, Docket No. DMEA-2888, which was certified as a discovery. The amount of the Government's participation has been repaid in full. Since the Field Team's final report on the completed project has not been made, this would be an opportune time for presentation of such report, if that can be arranged.

In the event the Field Team recommends a contract, a Subordination Agreement would be required of Paul R. White and Anna Lee White.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

Enclosures
APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

cc to: Docket code 700
Mr. Ching
Admr.'s Reading File
Operating Committee
~~DMEA Field Team, Reg. III (2)~~
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

EHing/izm 6-5-56

700

FILE COPY
Surname:
Ching
Kalgaard
Miller
Martin
Eppleman

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

JUN 4 1956

Denver-Golden Oil and Uranium Company
760 Denver Club Building
Denver 2, Colorado

Re: Docket No. DMEA-4311 (Uranium)
Ralston Creek Mine
Jefferson County, Colorado

Gentlemen:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to:

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you in regard to your project if additional information is required.

No doubt, through an oversight, your application was not dated and signed by an authorized officer of your corporation. We are enclosing the original application (Form MF-103) for such dating and signing; after which, please return to this office promptly.

Sincerely yours,

G. O. Mittendorf

Administrator

MChing/izm 6-5-56
cc to: Docket
Code 700
Mr. Ching
Admr.'s Reading File
DMEA Field Team, Reg. III (2)

R.C.S.

6-1-56

IN REPLY REFER TO:

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

RECEIVED
MAY 31 1956

May 31, 1956

Re: DMEA 4311
Denver-Golden Oil & Uranium Co.
Ralston Creek Mine (Schwartwalder)
Jefferson County, Colorado
$63,136.00 - Uranium

Memorandum

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

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

Subject: Review of application.

The applicant requests assistance in searching for veins in garnetiferous biotite-hornblende gneiss, by a long low level crosscut adit. The veins to be sought are the projections of veins cut in diamond drill holes, or the projections of veins known at the surface or in higher workings.

Considerable work has been done in prospecting for veins and in following up good diamond drill hole intersections. Two levels, a raise, a winze and a stope together with 18 diamond drill holes (5,877 feet) have been driven and drilled. Shipments totaling 1,561 tons of 0.70 U_3O_8 and 963 tons of approximately 0.55% U_3O_8 have been made and shipments are continuing at the rate of about 500 tons monthly.

The uranium occurs as pitchblende, torbernite, autunite, sooty uraninite and uranophane, in veins where certain veins are in garnetiferous biotite-hornblende gneiss. The gneiss, a member of a series of metamorphic rocks, is the most favorable host rock and the purpose of the long adit is to prospect a long stretch of the gneiss for possible veins and to investigate in particular the possible downward and upward extensions of ore intersected in at least five diamond drill holes. As shown on the cross section only one important intersection is at the level of the proposed adit, but the intersections in holes RC 11, 12 and 13 and DDH K are within projecting distance.

Most of the possible projections of known ore and ore in the drill holes should be in the outer 600 feet of the proposed adit and the remaining 400 feet would be prospective in nature. Perhaps the proposed footage should be changed accordingly.

Referral to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

5/29/56 gla

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

RECEIVED
MAY 29 1956

May 29, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for Assistance, DMEA Docket No. 4311, Denver Golden Oil and Uranium Co., Jefferson County, Colorado

I have reviewed the attached application for assistance, DMEA Docket 4311, Denver Golden Oil and Uranium Co., Jefferson County, Colorado, dated May 25 and received in this office May 28, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The applicant is desirous of exploring for uranium in the Schwartzwalder mine by driving a crosscut adit for a distance of 1,000 feet from the portal in order to intersect the downward extensions of the vein structures known in the upper workings and on the surface. The total estimated cost, which appears to be exceedingly high, is $63,136.

It should be noted that the Schwartzwalder mine was the subject for DMEA exploration work under Contract No. Idm-E595, DMEA Docket 2888. Under this contract the project was certified as a discovery. Subsequent work resulted in removal of the ore and repayment of the DMEA loan.

Notes

The proposed crosscut is expected to intersect known ore channels and drill holes which indicate presence of ore.

As presented the project appears to be one of development, and attention should be directed to the fact that such work should not be substituted for exploration.

John E. Crawford
John E. Crawford

Attachment

May 25, 1956

Denver-Golden Oil and Uranium Co.
760 Denver Club Building,
Denver 2, Colorado

Subject: DMEA - 4311
Re: Exploration Assistance
Ralston Creek Mine and/or
Schwartwalder Mine

Gentlemen

The receipt of your application dated (undated) for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA - 4311 and referred to the Rare & Misc. 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

May 25, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region III.

DMEA
- 4311 Denver-Golden Oil and Uranium Co.

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

Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D.C.

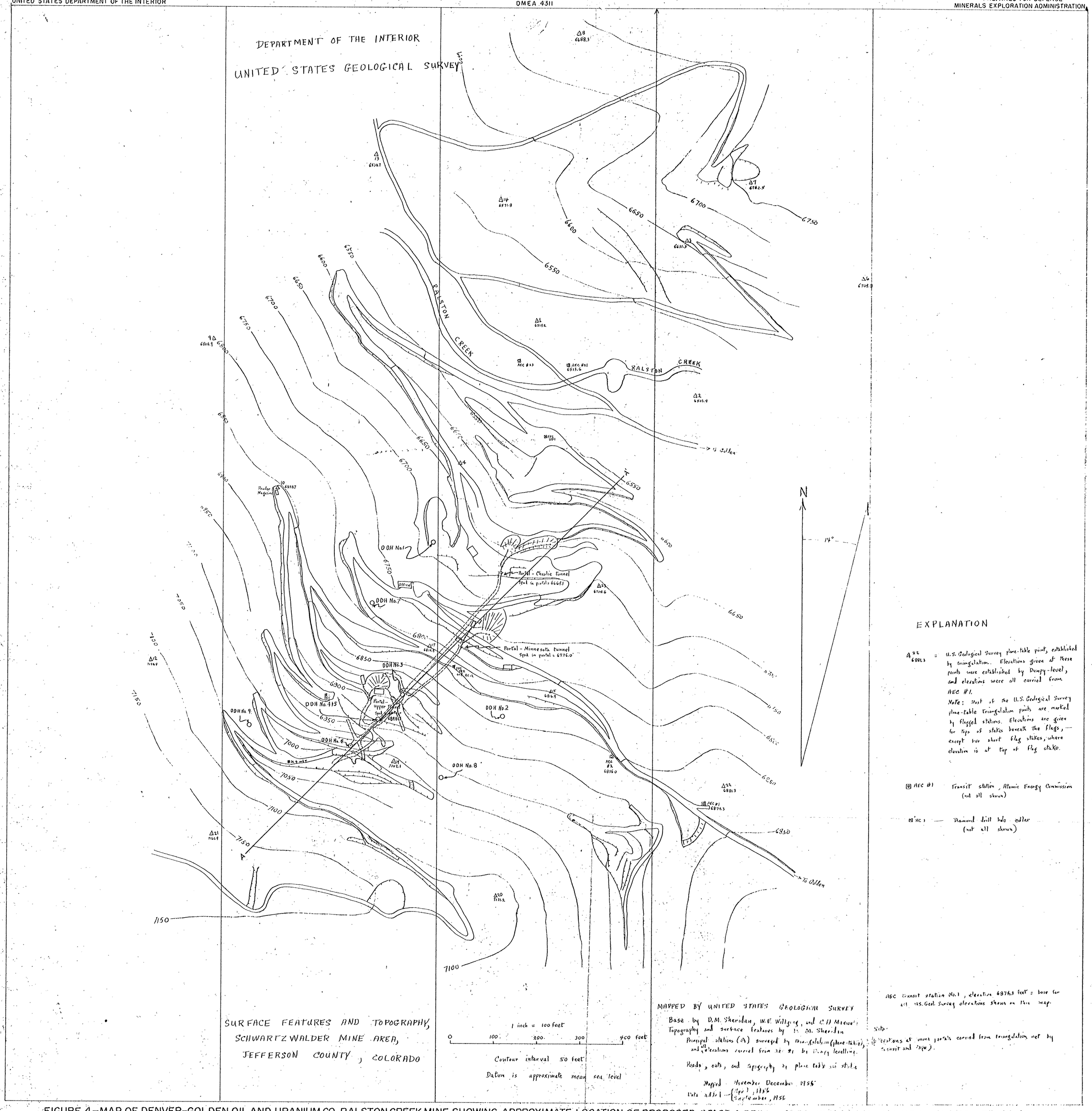


FIGURE 4.–MAP OF DENVER-GOLDEN OIL AND URANIUM CO., RALSTON CREEK MINE, SHOWING APPROXIMATE LOCATION OF PROPOSED STAGE I DRILL HOLES, JEFFERSON COUNTY, COLO. (DMEA 4311).

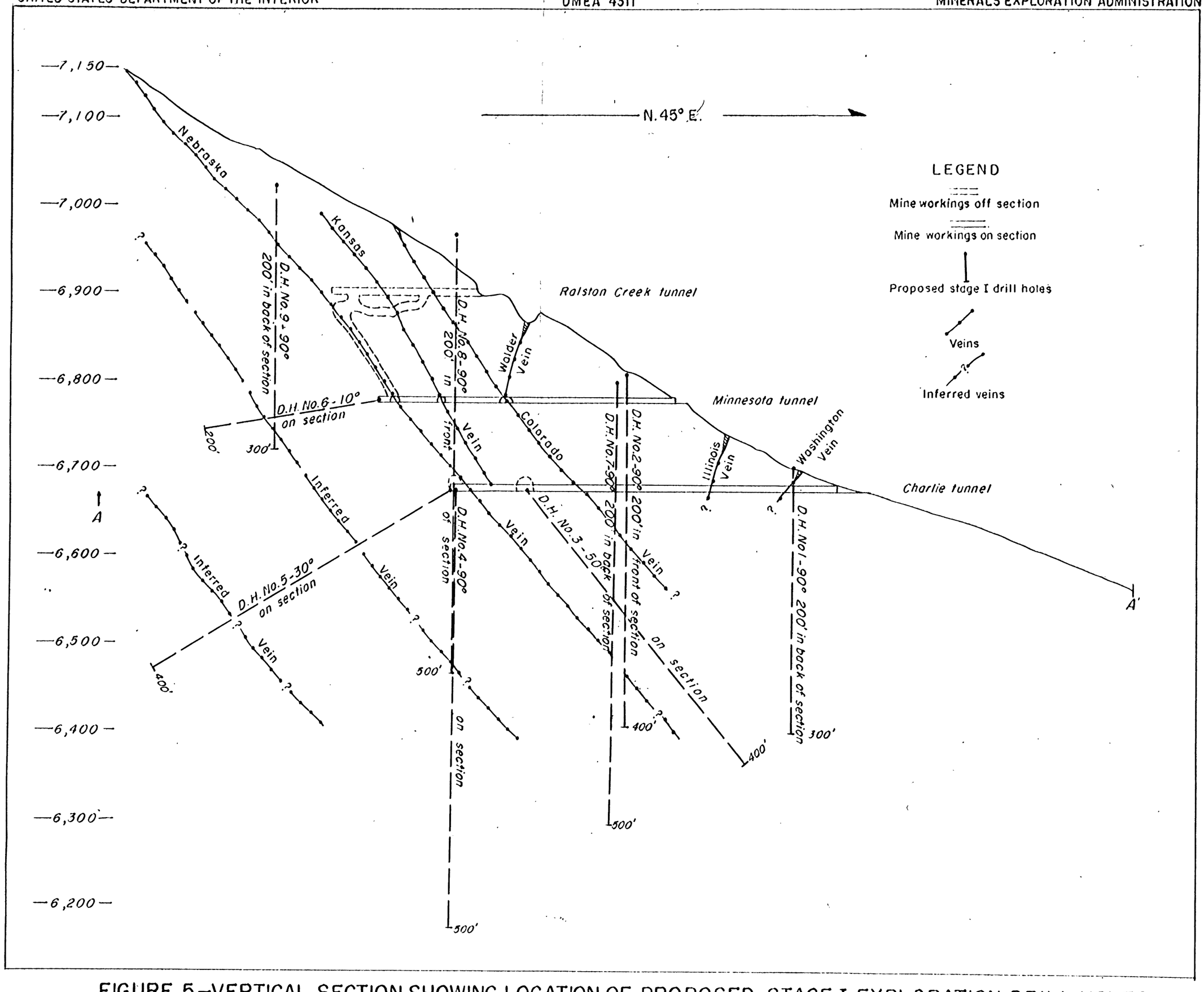


FIGURE 5.—VERTICAL SECTION SHOWING LOCATION OF PROPOSED STAGE I EXPLORATION DRILL HOLES, DENVER-GOLDEN OIL AND URANIUM CO., RALSTON CREEK MINE, JEFFERSON COUNTY, COLO. (DMEA 4311).

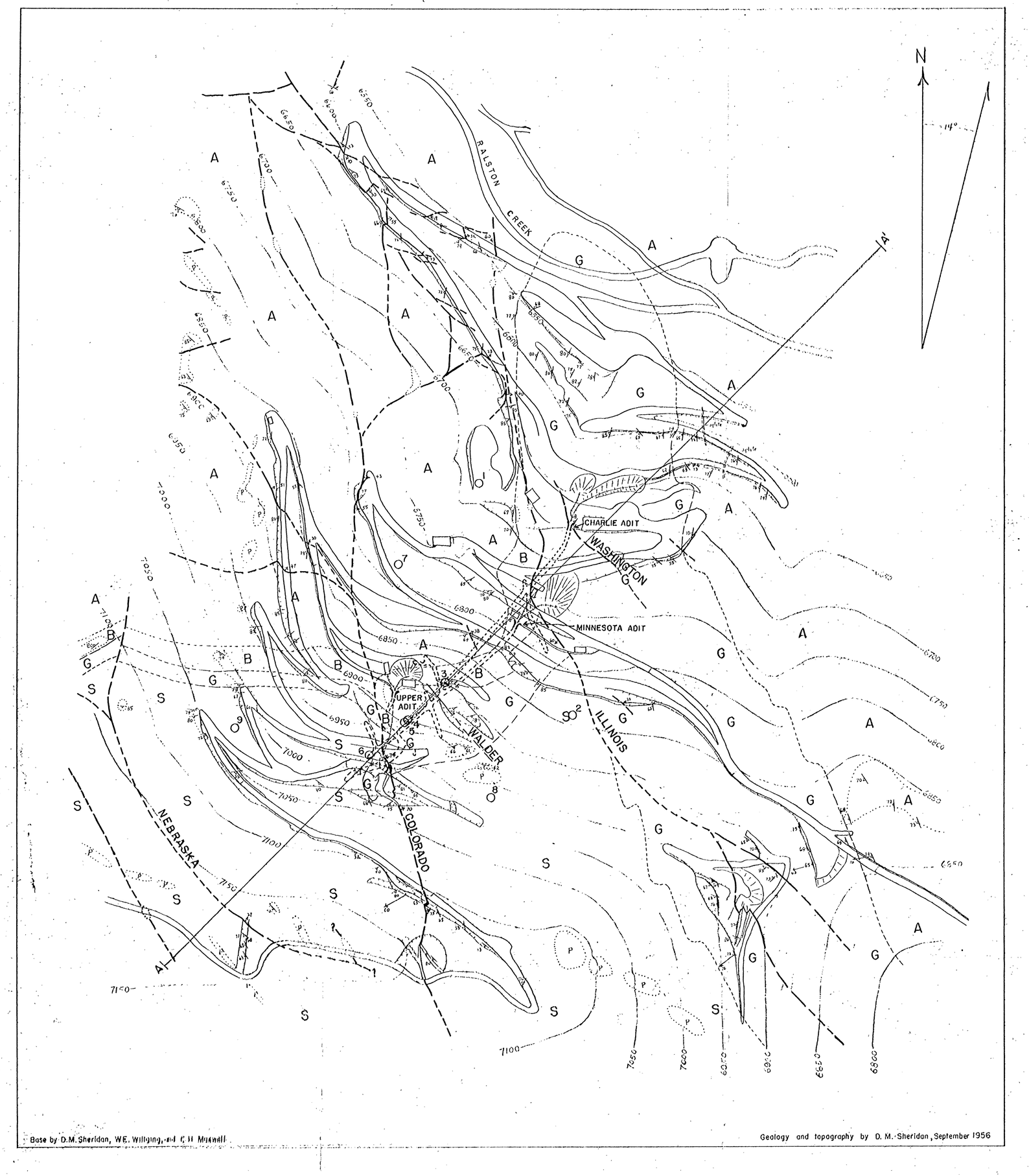
100 50 0 300 Feet

Field Team Report 1/6/56

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

DMEA 4311

PREPARED FOR THE
DEFENSE MINERALS EXPLORATION ADMINISTRATION



EXPLANATION

PRECAMBRIAN

- **A** — Amphibolite, layered lime silicate gneiss, and quartzite
- **G** — Garnetiferous biotite gneiss
- **B** — Fine-grained biotite-quartz-muscovite schist
- **S** — Muscovite-biotite-quartz schist

- **P** — Pegmatite

Contact
long dashes where approximate, short dashes where inferred

Fault, showing dip
long dashes where approximate, short dashes where inferred

Outcrops of fault breccia

Limit of outcrop

Strike and dip of foliation

Strike of vertical foliation

Bearing and plunge of lineation

Edge of cut

Road

Portal of adit

Proposed diamond drill hole

0 100 200 300 400 500 600 700 800 feet

Contour interval 50 feet

Datum is approximate mean sea level

FOR USE OF
U. S. GOVERNMENT
ONLY

R.U.KING, OCT. 1956

FIGURE 2.- PRELIMINARY GEOLOGIC MAP OF THE SCHWARTZWALDER MINE AND VICINITY, RALSTON BUTTES DISTRICT, JEFFERSON COUNTY, COLORADO. (DMEA 4311)

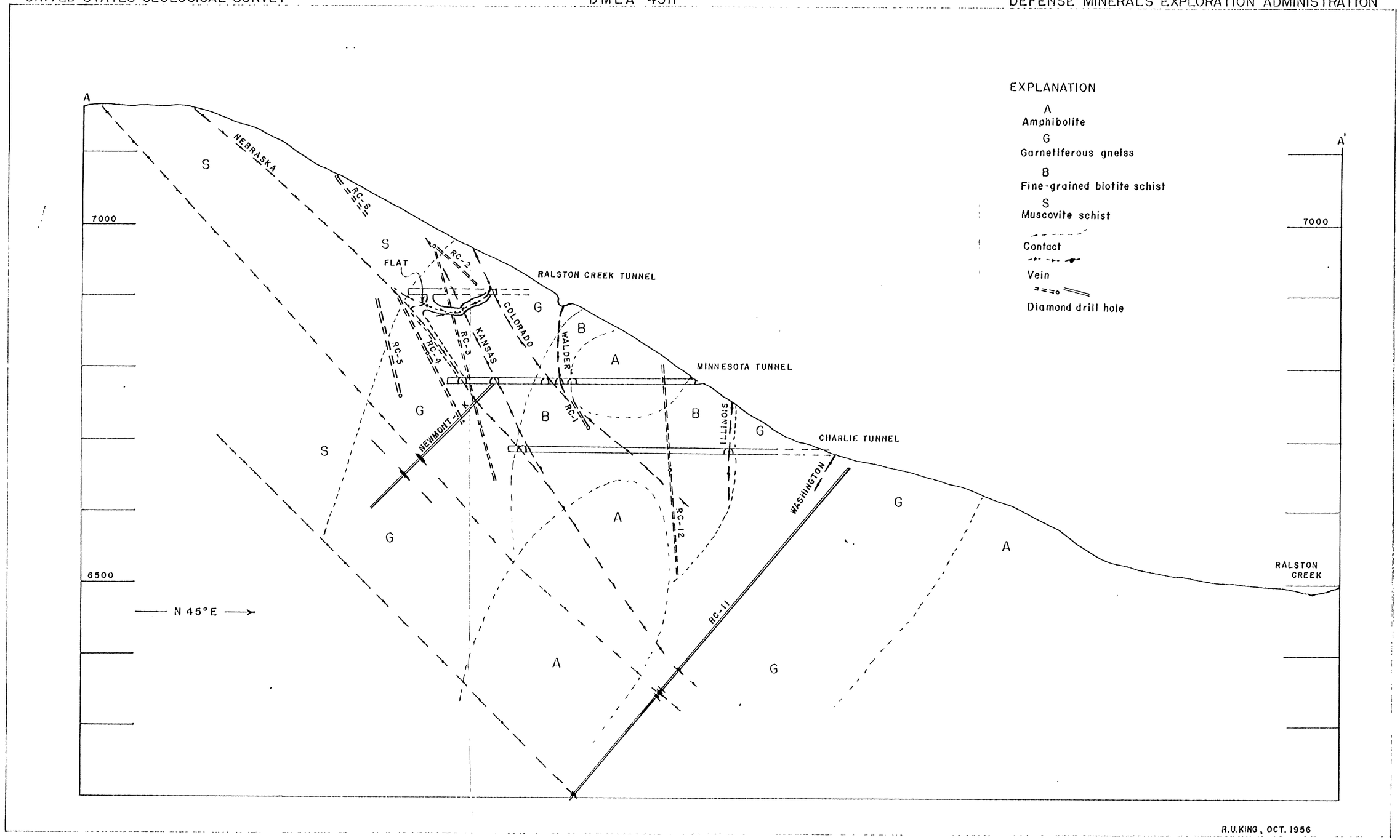


FIGURE 3.- VERTICAL LONGITUDINAL SECTION OF THE RALSTON CREEK MINE, JEFFERSON COUNTY, COLORADO. (DMEA 4311)

100 0 100 Feet

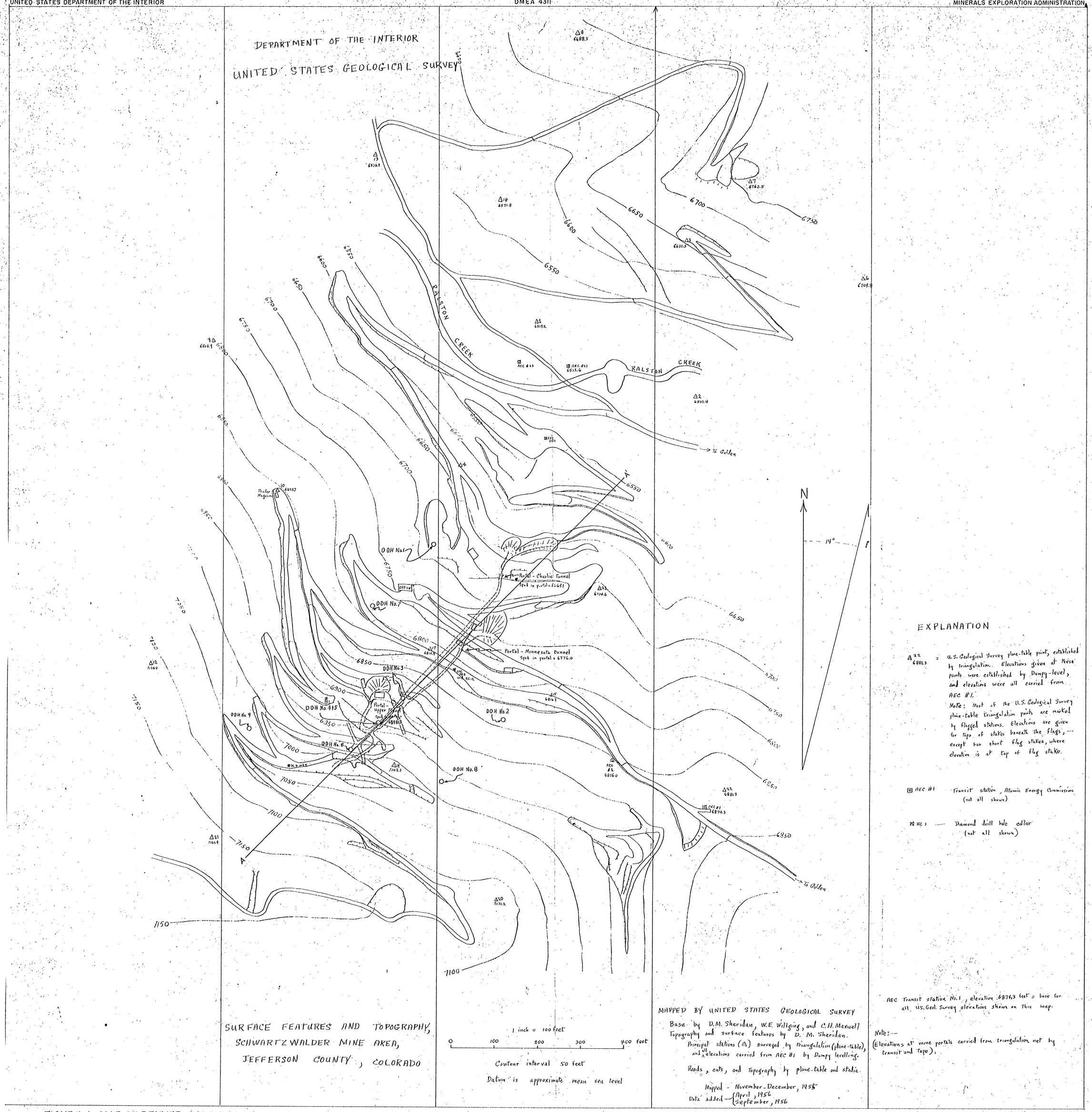


FIGURE 4.–MAP OF DENVER-GOLDEN OIL AND URANIUM CO., RALSTON CREEK MINE, SHOWING APPROXIMATE LOCATION OF PROPOSED STAGE I DRILL HOLES, JEFFERSON COUNTY, COLO. (DMEA 4311).

Field Inst Report 11/2/56

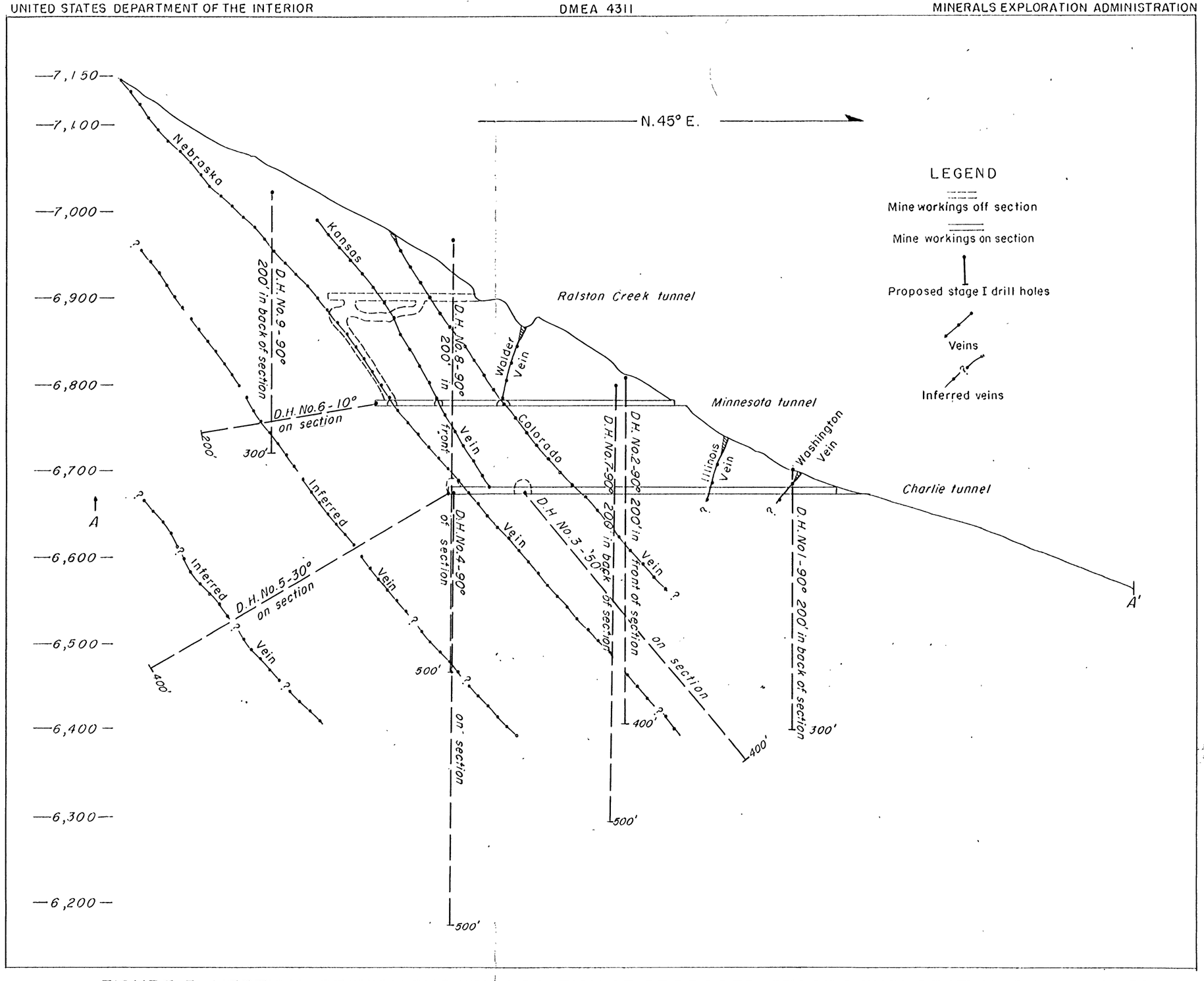
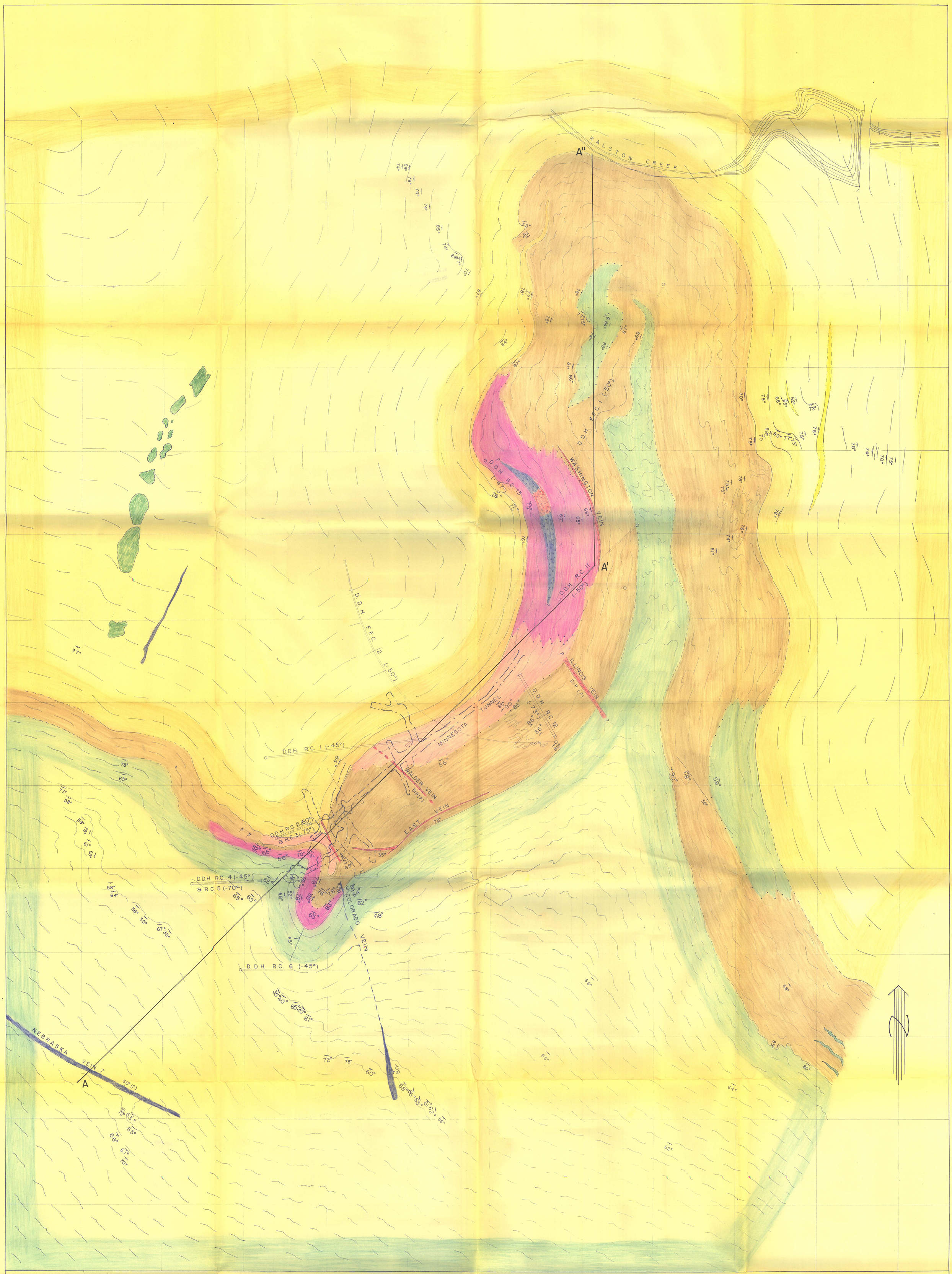


FIGURE 5.—VERTICAL SECTION SHOWING LOCATION OF PROPOSED STAGE I EXPLORATION DRILL HOLES, DENVER-GOLDEN OIL AND URANIUM CO., RALSTON CREEK MINE, JEFFERSON COUNTY, COLO. (DMEA 4311).

100 50 0 300 Feet



LEGEND

- MUSCOVITE SCHIST
- GARNET-BIOTITE-HORNBLENDE GNEISS (SKARN)
- GARNET-MUSCOVITE SCHIST
- MUSCOVITE-BIOTITE SCHIST (FINELY CRYSTALLINE)
- BIOTITE-HORNBLENDE GNEISS
- SILICIFIED GNEISS & SCHIST
- LIME-SILICATE, AMPHIBOLITE
- QUARTZITE
- GRANITE PEGMATITE

DENVER GOLDEN OIL & URANIUM COMPANY

SCHWARTZWALDER MINE

A GEOLOGIC PLAN OF THE SURFACE IN THE MINE AREA
SHOWING THE POSITION OF THE MINE WORKINGS AND
THE SURFACE DIAMOND DRILL HOLES

JEFFERSON COUNTY, COLORADO

0' 30' 60' 90' 120'

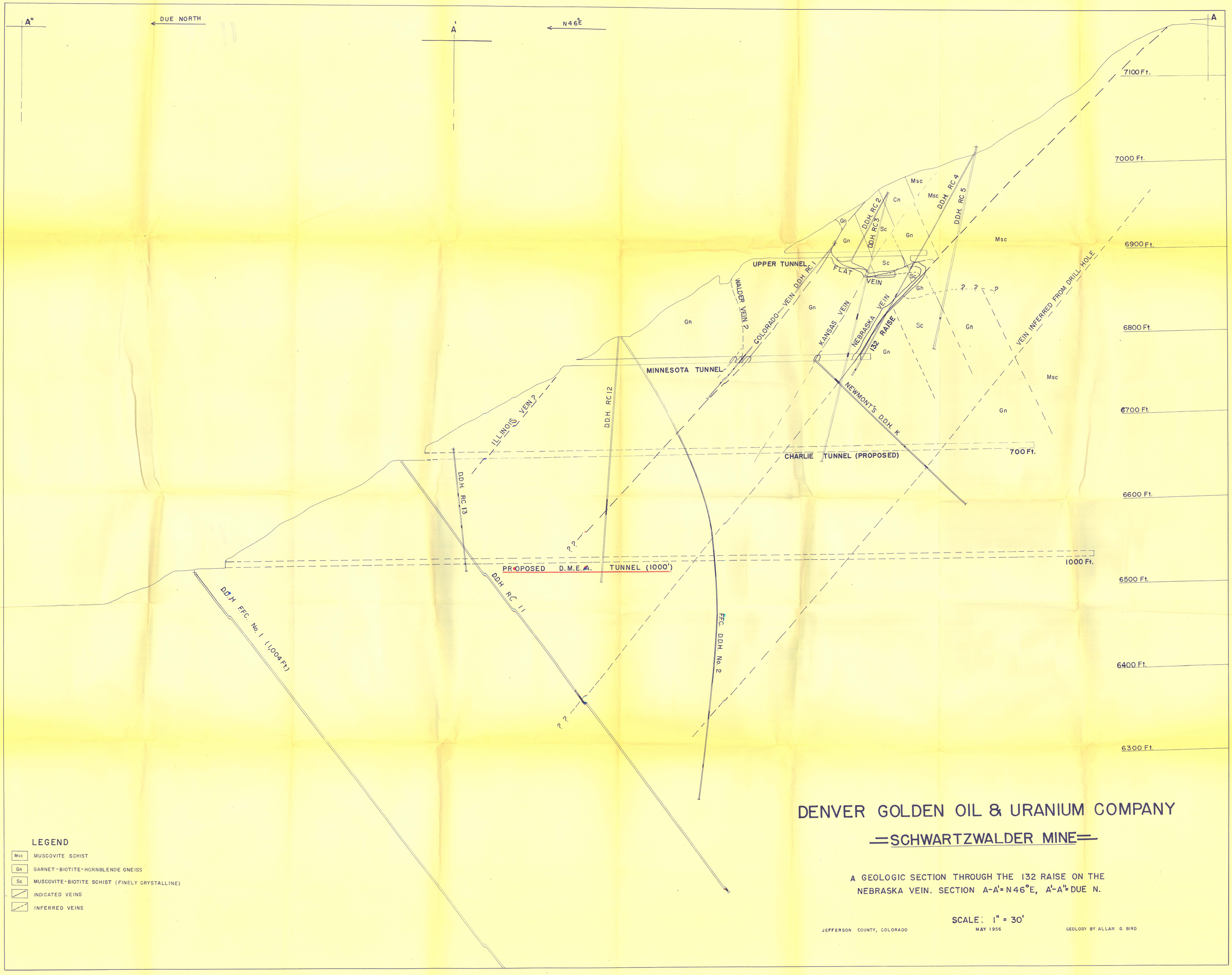
SCALE: 1" = 30'

MAY 1956

GEOLOGY BY ALLAN G. BIRD

LEGEND

- BRECCIATED FAULT (BARREN)
- BRECCIATED FAULT (MINERALIZED)
- SCHISTOSITY & FOLIATION SHOWING DIP
- FORMATIONAL CONTACT
- CONTACT OF FACIES CHANGE
- OUTLINE OF UPPER LEVEL
- OUTLINE OF MINNESOTA TUNNEL LEVEL
- DIAMOND DRILL HOLES
- INFERRED CONTACTS



DENVER GOLDEN OIL & URANIUM COMPANY

SCHWARTZWALDER MINE

A GEOLOGIC SECTION THROUGH THE 132 RAISE ON THE NEBRASKA VEIN. SECTION A-A' = N46°E, A'-A" = DUE N.

SCALE: 1" = 30'

JEFFERSON COUNTY, COLORADO — MAY 1956 — GEOLOGY BY ALLAN G. BIRD