DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 4961

Application
- [x] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [x] Project summary (final)
- [ ] Work Completed analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No._____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

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

Folders No._____: Maps (Use pocket folder or envelope)

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

ORIGINAL FILE COPY
DMEA
RECEIVED MAR 17 1958
DATE | NO. | CODE

224 New Customhouse
Denver 2, Colorado

March 14, 1958

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA aid (Uranium) Stanley Woodward (Sisk Property) Boulder County, Colorado

Enclosed are the original and two copies of the subject application in the amount of $8,605.76. One copy of the application is being retained in our file.

The application has been well prepared and appears to be complete, including three bids for diamond drilling.

W. H. King

W. H. King

Form MF–103
Revised Oct. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42–R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

Stanley Woodward
3009 N Street, N. W.
Washington, D. C.

DMEA
DEPARTMENT OF THE INTERIOR
MAR 13 1958
REGION III
DENVER, COLORADO

APPLICANT NOT TO USE THIS BLOCK

Docket Number	4961
Date Received	3-17-58
Government Participation %	50
Region	III
Division Code	700

BUSINESS ORGANIZATION (Check one)

- Individual [X]
- Corporation [ ]
- Partnership [ ]
- Other (Specify) [ ]

State in which firm is organized

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title

Mineral(s) for which you wish to explore: Uranium

Estimated Cost of Project: $8,605.76

LOCATION OF PROPERTY

Name	County	State
Sisk	Boulder	Colorado

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order–I, Revised, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals,* of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

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.

March 7, 1958
Dated

Stanley Woodward
BY *(Signature)*

Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. *(Note* – If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

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)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Revised.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 25960

S. FILLMORE PEAVEY
MINING ENGINEER
COLORADO PROFESSIONAL ENGINEER No. 3080

1745 GLENWOOD AVENUE
GRAND JUNCTION, COLORADO

PHONE
GRAND JUNCTION CHAPEL 3-0591

LYONS, COLORADO

March 13, 1958

Defense Minerals Exploration Administration
New Custom House
Denver, Colorado

Dear Sirs:

At the request of Mr. Stanley Woodward, 3009 N. Street, N.W., Washington, D. C., I am submitting the four enclosed copies of the D.M.E.A. Form #M.F. 103, Application For Aid in an Exploration Project, filed by Mr. Stanley Woodward with respect to the Sisk Property, Boulder County, Colorado.

Also attached to this application is the information called for by Form M.F. 103 which I have prepared and discussed with Mr. W. H. King of the D.M.E.A. office, Denver, Colorado, on February 14, 1958.

I am employed by Mr. Stanley Woodward as Mining Engineer and also as Mining Contractor at the Sisk Mine.

If any additional information is needed I can be reached by mail C/o Mrs. H. C. Bloomfield, Lyons, Colorado, or at my home, 1745 Glenwood Avenue, Grand Junction, Colorado, telephone (call collect) Grand Junction, Chapel 3, 0591.

Respectfully submitted,

S. Fillmore Peavey

S. FILLMORE PEAVEY

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 17 1958

DATE	INITIALS	CODE

I N D E X

1. Name of the Property, Location, Accessibility, Man power and Supplies.

2. a) Copy of Legal Description of property.

   b) Copy of the Mining Lease.

   c) Copy of description of three Sisk Lode Mining Claims.

   d) Copy of Affidavit of Value of Labor and improvements to the three Sisk Lode Mining Claims for 1957.

   e) Copy of Assignment of the Mining Lease to Mr. Stanley Woodward.

3. Physical Description.

   a) Description of the preliminary phase of the exploratory drilling program completed August 1956.

   b) Description of second phase core drilling done November 1956.

   c) Description of the exploratory Incline sunk April 1957.

   d) Description of additional underground exploratory work done in 1957.

   e) Description of mining machinery used and now installed at the Mine.

   f) Geologic Examinations, ~~Copy of Allen Bird's report attached.~~

4. Geology.

5. Proposed Exploration Work.

   a) Three independent contract Drilling Bids, copies attached.

   b) Description of additional cost.

6. Cost Estimate of Diamond Core Drilling.

7. List of Personnel.

8. Estimate of Cost of building an Access Road for Drill Sites above Sisk Mine Portal.

9. Estimated Cost of driving 50 feet of Crosscut, South of the Incline Station, Sisk Mine.

10. Samples and Assays.

11. Maps.

LAW OFFICES

DAWSON, NAGEL, SHERMAN & HOWARD

(PERSHING, BOSWORTH, DICK & DAWSON)

EQUITABLE BUILDING

DENVER 2, COLORADO

TELEPHONE ACOMA 2-1611

CLYDE C. DAWSON
FRITZ A. NAGEL
SAMUEL S. SHERMAN, JR.
WINSTON S. HOWARD
HAROLD E. POPHAM
MICHAEL E. REIDY
ROBERT M. JOHNSON
ARTHUR K. UNDERWOOD, JR.
HOVER T. LENTZ
JOHN W. LOW
RICHARD S. KITCHEN

VALENTINE W. LOGAN
WILLIAM F. VOELKER
THOMAS B. FAXON
ROBERT A. LEHMAN
WARREN O. MARTIN

JAMES H. PERSHING, (1863-1948)
ROBERT G. BOSWORTH, (1888-1954)
LEWIS A. DICK, (1889-1954)

April 3, 1956

Stanray Mining Company
P. O. Box 1911
Grand Junction, Colorado

Gentlemen:

PARCEL 1

That part of the SE¼ of Sec. 10 lying north of the center line of Colorado Highway #66; that part of the S½ N½ of Sec. 10 lying north and east of Colorado Highway #66; that part of the S½ NW¼ of Sec. 11 lying west of the center of Colorado Highway #66; that part of the SW¼ of Sec. 11 lying north and west of the center line of Colorado Highway #66; all in Twp. 3 N., Rge. 71 West of the 6th P.M.

PARCEL 2

The S½ SE¼ and the E½ SW¼ of Sec. 3, Twp. 3 N., Rge. 71 West of the 6th P.M.

The W½ SW¼, SE¼ SW¼, N½ NW¼, SW¼ NW¼ and NW¼ NE¼ of Sec. 2, Twp. 3 N., Rge. 71 West of the 6th P.M.; NE¼ NE¼, also the N½ SE¼ NE¼ of Sec. 3; N½ NE¼ and NE¼ NW¼ of Sec. 10; N½ NW¼, less the Carvell Subdivision, in Sec. 11, Twp. 3 N., Rge. 71 West of the 6th P.M.

The W½ NE¼; the NW¼ SE¼, and all of the W½ of Sec. 1; the E½ NE¼; and SW¼ NE¼; and SE¼ NW¼; the NE¼ SW¼ and all of the SE¼ of Sec. 2; and all that portion of the NW¼ of Sec. 12, and of the N½ NE¼ of Sec. 11, lying north of the Lyons-Estes Park Highway (Colorado Highway #66), except such small tracts in said Sec. 11 as have been heretofore conveyed as shown by deeds of record, in Twp. 3 N., Rge. 71 West.

PARCEL 3

Lot 14 of Sec. 3, in Twp. 3 N., Rge. 71 West of the 6th P.M. (S½ SE¼ NE¼) patented as Granite Placer Mining Claim).

all in Boulder County, Colorado.

THIS IS TO CERTIFY that we have examined the instruments hereinafter described relating to the above described property, and from our examination thereof, we submit the following opinion:

Instruments Examined:

1. Owners Title Insurance Policy to C. D. Sisk and Esther May Sisk dated January 4, 1952 at 7 o'clock A.M. by The Title Guaranty Company covering the property described in Parcel 1. Also supplemental abstract of title covering the same property from January 4, 1952 at 7 o'clock A.M. to September 27, 1955 at 7 o'clock A.M. issued by The Boulder County Abstract of Title Company.

2. Abstracts of title covering the property described in Parcel 2, some of which are certified to September 27, 1955 at 7 o'clock A.M. and another certified to March 20, 1956 at 7o'clock A.M. by The Boulder County Abstract of Title Company.

3. Abstract of title last certified to March 9, 1956 at 7 o'clock A.M. by The Boulder County Abstract of Title Company covering the property described in Parcel 3.

4. Three lode mining claim location certificates, one each for the Sisk No. 1, Sisk No. 2 and Sisk No. 3 lode mining claims dated July 22, 1955 and recorded the same day in Book 985, Pages 535, 537 and 539 respectively.

5. Three amended lode mining claim location certificates, one each for the Sisk No. 1, Sisk No. 2 and Sisk No. 3 lode mining claims recorded October 22, 1955 in Book 994, Pages 433, 434 and 435 respectively.

6. Certified copy of Decree of Heirship in the determination of interests in the lands and tenements of David E. Roberts, deceased, in the County Court of Boulder County, Colorado dated June 4, 1934 and recorded September 30, 1955 in Book 992 at Page 409.

7. Certified copy of Decree of Heirship in the determination of interests in lands and tenements of Mary Roberts, deceased, in the County Court of Boulder County, Colorado dated June 4, 1934 and recorded September 30, 1955 in Book 992 at Page 408.

8. Certain records in the County Clerk and Recorder's Office of Boulder County, Colorado and in the County Court of Boulder County, Colorado.

TITLE

Title to the property described in Parcel 1 is in C. D. Sisk and Esther May Sisk, as joint tenants.

Title to the property described in Parcel 2 is in C. D. Sisk and Esther May Sisk, except the NE¼ SW¼ of Sec. 2, title to which is vested as follows:

Surface:	C. D. Sisk and Esther May Sisk
Minerals:	United States of America (See No. 2 of "Comments").

Title to the property described in Parcel 3 is in C. D. Sisk.

COMMENTS

1. The property is subject to the 1955 general taxes payable in 1956 unless they have been paid.

2. Patent for the NE¼ SW¼ of Sec. 2, Twp. 3 N., Rge 71 W. was issued March 19, 1923 to Lois T. Lamb all coal and other minerals being reserved in the patent to the United States. To cover this situation

C. D. Sisk has located the Sisk Lode Mining Claims Nos. 1, 2 and 3 to cover this land. These mining claims are located under the mining laws of the United States which require that $100.00 worth of work shall be done upon or for the benefit of each claim for each year expiring July 1st. It will, therefore, be necessary that this work, which is usually designated as annual labor, be performed by July 1, 1956.

3. Right of way for pipeline of the Town of Lyons at entry 29 of abstract 1 in red indicates that the pipeline goes over the S½ SW¼ of Section 1 and the NE¼ NW¼, W½ NE¼ and W½ SE¼ of Section 12, recorded in Book D, Page 127.

4. Right of way to the Mountain States Telephone and Telegraph Company shown at entry 68 of abstract 1 in red over E½ NE¼ and NW¼ NE¼ of Section 11 and the N½ NW¼ and SW¼ NW¼ of Section 12, recorded in Book 641, Page 254.

5. After the description in Parcel 2 is found this language: "except such small tracts in said Sec. 11 as have been heretofore conveyed as shown by deeds of record, in T. 3 N., R. 71 W." Entry 7 of abstract 1 in red apparently is one of these deeds, dated November 15, 1917 and recorded in Book 416, Page 207 from John B. Hall to L. A. Manwell and C. R. Spencer. This deed contains two descriptions -- one in Section 11 and one in Section 2 described as follows:

> That portion of NE¼ of Sec. 11, T. 3 N., R. 71 W. of 6th P.M., bounded and described as follows: Beginning at a point 200 ft. S of NW cor. of NE¼ of said Sec. 11, thence S along W line of said NE¼ for a distance of 138 ft., thence E to the middle of North St Vrain Creek, thence in a Nly direction along the middle line of said North St Vrain Creek to a point 200 ft S of the N boundary line of said Sec. 11, thence W to point of beginning.

> Also that portion of SE¼ of Sec. 2, T. 3 N., R. 71 W. of 6th P.M. bounded and described as follows: Beginning at the SW cor. of said SE¼ of Sec. 2, thence E along S line of said quarter section to the middle of North St Vrain Creek, thence Nly along the middle line of said creek to a point 100 ft N of S line of said SE¼, thence W to W line of said SE¼, thence S along said W line 100 ft. to point of beginning.

At entry 8 of abstract 1 in red appears apparently another one of said deeds, dated November 15, 1917 and recorded in Book 416, Page 201 from John B. Hall to Elijah E. Williss, which tract is described as follows:

> That portion of NE¼ of Sec. 11, T. 3 N., R. 71 W. of 6th P.M. bounded and described as follows: Beginning at a point 338 ft S of NW cor. of NE¼ of said Sec. 11, thence S along W line of said NE¼ for a distance of 125 ft., thence E. to the middle of North St Vrain Creek, thence in Nly direction along the middle line of said North St Vrain Creek to a point 338 ft S of the N boundary line of said Sec. 11, thence W to point of beginning.

At entry 92 of abstract 1 in red appears another deed of a tract 125 feet by 225 feet. The deed is dated October 8, 1952 and recorded in Book 927, Page 37 and is from C. Dean Sisk and Esther May Sisk to Roy L. Ward and Anna Louise Ward. This tract is described as follows:

> A tract of land in the SE¼ of Section 2, and the NE¼ of Section 11, T. 3 N., R. 71 West, described as follows: Beginning at the northeast corner of headwall of double culvert from which point the quarter

corner of Sections 2 and 11 bears north 86° 53' west a distance of 743 feet; thence north 11° 00' east a distance of 225 feet; thence south 61° 00' east a distance of 125 feet; thence south 11° 00' west a distance of 225 feet; thence north 61° 00' west a distance of 125 feet to the point of beginning, and containing six tenths of one acre, more or less.

We are not sure whether this tract lies north or south of the highway.

6. Your mining lease from C. D. Sisk and Esther May Sisk has not yet been recorded and therefore does not show on the abstracts.

REMARKS

1. We have made no investigation of and make no report on the following: (a) The zoning ordinances affecting this property; (b) Any state of facts an accurate survey would show concerning the property; (c) The rights of persons in possession; and (d) The liens, if any, of mechanics and materialmen now shown of record.

Very truly yours,

Dawson, Nagel, Sherman + Howard

HEP-BBR

Recorded 1:35 P.
Reception No. 584397 Milton E. Isch[illegible]

MINING LEASE

THIS AGREEMENT, entered into this 24th day of August, 1955, by and between C. D. Sisk and Esther May Sisk of Boulder County, Colorado, parties of the first part, hereinafter collectively referred to as "Sisk", and Stanray Mining Company, a Utah corporation, with its principal office at Grand Junction, Colorado, with a mailing address of Post Office Box 1911, Grand Junction, Colorado, party of the second part, hereinafter called "Stanray",

WITNESSETH, that

The said Sisk, being the owner of the premises, for and in consideration of Ten Thousand Dollars ($10,000), the receipt whereof is acknowledged, and the covenants and agreements hereinafter expressed as on the part of Stanray to be kept and performed, has granted, demised and let and by these presents does hereby demise, grant and let unto Stanray those certain premises situate in Boulder County, State of Colorado, specifically described in Exhibit A attached hereto and made a part hereof.

TO HAVE AND TO HOLD the same, together with all easements, rights of way, ~~water rights,~~ and other appurtenances thereto, unto Stanray for the purpose of mining for a term of 10 years from this date (hereinafter called "Primary Term") and as long thereafter as uranium or other ores of any character, or other minerals, except oil, gas or caseheading gas, or either or any of them is produced therefrom; or as much longer thereafter as Stanray in good faith shall conduct exploratory or mining operations thereon, and should production result from such exploratory or mining operations, this lease shall remain in full force and effect as long as the above described minerals, or any of them, except oil, gas or caseheading gas, shall be produced therefrom.

OFFICIAL RECORD
RECORDED 17 1959
CODE

FOR AND IN CONSIDERATION OF SAID LEASING, STANRAY HEREBY COVENANTS AND AGREES WITH SISK AS FOLLOWS, TO-WIT:

1. To enter immediately upon said premises and to pursue diligently a program of prospecting and exploring for minerals and developing ore bodies upon the said premises. Such prospecting and exploration work shall be performed with reasonable diligence, and Stanray agrees to spend not less than Three Thousand Dollars ($3,000.00) for such purpose. Stanray shall disclose to Sisk the results of all such prospecting and exploratory work at reasonable times during and after the completion thereof.

2. On behalf of Sisk and at the sole expense of Stanray, to do and perform all assessment work upon the mining claims described in Exhibit A as may be necessary to maintain good and marketable possessory title to the said claims in Sisk during the life of this agreement to make and file all affidavits of labor and assessment work performed in due time and proper form as may be required under the laws of the United States of America or the State of Colorado.

3. During the Primary Term of this lease and any extension thereof as hereinabove provided, to pay to Sisk as royalty 1/8th of the value of all ores or minerals extracted, saved and marketed from the premises demised. The value upon which royalty shall be paid shall be computed on the amount received from the Atomic Energy Commission bonus and from the ore buyer less any government mining development allowance and plus any government haulage allowance, and less the actual cost to Stanray of hauling the ore to the buying station. All royalties shall be paid directly to Sisk by the ore buyer and the Atomic Energy Commission.

3.a. Stanray shall pay to Sisk on or before August 25th, 1960, a minimum royalty of One Thousand Dollars ($1,000.00) and shall further pay a minimum royalty of One Thousand Dollars ($1,000.00) on or before August 25th of each year thereafter during the Primary Term and any extension of this lease. Any royalty payable during any such rental year after the due date of such payment shall be credited as paid until such time as the royalty payable for the production in such year shall be equal to the amount of the minimum royalty paid for that year.

4. To allow Sisk, from time to time and at all reasonable hours, at their own risk and when accompanied by a

representative of Stanray, to enter upon and into all parts of said leased premises for the purpose of inspection, surveys, or taking samples therefrom, and to render Sisk all proper assistance in connection therewith.

5. To allow Sisk access, at all reasonable times, to the records of production from said premises and all such other records of Stanray as relate to compliance on the part of Stanray with the provisions of this agreement.

6. To pay all ad valorem taxes assessed against the mineral interest in the leased premises and against all improvements placed thereon by Stanray.

7. To pay promptly for all labor, services, and materials performed, done, or furnished to or for said premises during the term of this agreement. Stanray shall not allow any claim of lien for any such labor, services, or materials to be effectually made or asserted against said premises or against Sisk.

8. To comply with all provisions of the Workmen's Compensation Act of Colorado and the Colorado Occupational Disease Disability Act; promptly to pay all premiums and assessments thereunder; to comply with all other legislation, Federal or State, applicable to the operation of the premises; and to save Sisk harmless at all times from any cost, liability, or charge arising under such laws by reason of the operations of Stanray hereunder. Evidence of compliance with Workmen's Compensation and Occupational Disease laws shall be available to the inspection of Sisk.

9. To save Sisk harmless from all claims or demands arising out of any accident or injury occurring to any of Stanray's employees, licensees, agents, associates, or visitors or their property upon the demised premises or in being conveyed to or from

the demised premises by Stanray, its agents, servants, or employees, or to any other persons, except Sisk, their agents or visitors and those persons acting for them. If Sisk considers it to be necessary for their protection and in writing requests it, Stanray shall forthwith post and keep posted at the main workings upon the premises a conspicuous notice stating in substance that the premises are leased to Stanray and Sisk will not, under any circumstances, be liable for damages on account of any injury to any persons or their property occurring on the premises.

10. To indemnify and save harmless Sisk from any claims which may or might arise by reason of the operation by Stanray of the mine, and particularly with reference to any proceedings for damages or injunctions.

11. To conduct all mining operations hereunder in a workman like manner; insofar as the same may be reasonably necessary in accordance with good mining operations, to keep any workings securely timbered, drained, and clear of unreasonable hazard; and upon termination of this agreement, to surrender the premises in safe condition.

12. Except as prevented therefrom or hindered or delayed therein by strikes, labor troubles, hostilities whether by declared war or otherwise, acts of God or of the public enemy, force majeure, or any other causes or conditions beyond the reasonable control of Stanray, to perform in due time and season all of the covenants herein assumed by it.

13. To deliver to Sisk the said premises with the appurtenances and all improvements, without demand or further notice, on the termination of this agreement; provided, however, that Stanray shall be privileged, for a period of six months after termination, to remove tools, shop equipment, machinery, supplies, and all equipment not permanently attached to the premises, such as compressors, transformers, motors, hoisting or

lowering equipment, and all other personal property placed upon the leased premises by Stanray during the life of this lease, leaving thereon only pipe, track, and timbers in place. Such period shall be extended by such time as Stanray may be hindered by weather conditions from proceeding with such removal.

14. To occupy and hold as the property of the lessor all cores and parallel lodes, spurs and mineral deposits of every kind which may be uncovered, disclosed or discovered within said leased ground by the Stanray or any person or persons under or in privity with Stanray with privilege from Stanray to work and mine the same as part and parcel of said premises.

IN CONSIDERATION OF THE COVENANTS AND AGREEMENTS MADE BY STANRAY, SISK COVENANTS AND AGREES WITH STANRAY AS FOLLOWS, TO WIT:

15. That Sisk is the owner in fee simple of marketable title to the property described in Exhibit A, free and clear of liens and encumbrances, except ad valorem taxes assessed for the year 1955, which Sisk will pay, and except that as to the mining claims described in Exhibit A, Sisk is the owner of good and marketable possessory title under the mining laws of the United States of America and the State of Colorado.

16. As to property in the immediate vicinity of the premises demised, owned or controlled by Sisk, to assure Stanray effective ingress and egress to and from the property demised by granting unto Stanray such rights of way and easements for roadway and waterworks as may be reasonably necessary or convenient for the operation thereof as a mine.

IT IS FURTHER MUTUALLY AGREED BY THE PARTIES HERETO AS FOLLOWS:

17. Stanray shall have the right to cut such timber on the demised premises and to use such other materials found thereon

and to make such physical alteration of the surface thereof as may be necessary or convenient for building purposes or for timbering the mine workings or for any other purpose connected with its mining operations on said premises.

18. Any failure upon the part of Stanray to perform each or any or all of the covenants and conditions of this lease incumbent upon it to be performed shall constitute a default hereunder. Sisk's sole right by reason thereof shall be to declare a forfeiture of all rights of Stanray under this lease. Such declaration of forfeiture shall be made in the following manner: Notice of any such claimed default shall be given to Stanray in writing, specifying the particulars in which it is claimed that Stanray is in default, and further notifying Stanray that its failure to remedy such default will result in the termination of this agreement by forfeiture at the expiration of thirty days from the date of receipt by Stanray of such notice. Strikes, labor troubles, hostilities whether by declared war or otherwise, acts of God or of the public enemy, force majeure, or any other causes or conditions beyond the control of Stanray, whether or not of the nature aforesaid, hindering it in its efforts to cure such default shall cause the thirty-day period to be extended by the number of days Stanray is so hindered. Thereupon Stanray shall have thirty days from the receipt of said notice in which to cure any such default. If such default be cured within said period, no forfeiture shall result. If such default be not cured within such period, this lease and the rights of Stanray thereunder shall terminate after the expiration of said period, immediately upon written notice from Sisk to Stanray to that effect. Upon any forfeiture hereunder and upon the termination thereby of the rights of Stanray hereunder, Sisk shall be entitled to re-enter and retake possession of the premises and property hereby leased as and in their first and former estate, dispossessing

any and all persons occupying the leased premises or any part thereof, or, after demand for possession Sisk may proceed against Stanray or anyone in possession of the leased premises or any part thereof as persons guilty of unlawful detainer. In the event of forfeiture as in this paragraph provided, all payments of royalty or rentals made by Stanray to Sisk shall be retained by Sisk as their sole property.

19. Stanray, provided it be not then in default hereunder, shall have the right to surrender this lease at any time upon giving Sisk thirty days' written notice of its intention so to do. Upon the expiration of the said thirty-day period, all obligations of Stanray hereunder shall cease, terminate, and be at an end, except that upon such termination, Stanray shall furnish Sisk all information and documents it has concerning minerals in or upon the premises demised.

20. Stanray shall have the privilege, but not the obligation, to proceed to apply for patent of any of the mining claims affected by this agreement, such patent to be obtained in the name of Sisk at the sole cost and expense of Stanray. Sisk may, at any time and at their own expense, proceed to apply for and obtain patent in their names of any and all of said claims. If at any time during the term of this agreement Stanray shall determine, in its discretion, that any or all of the said mining claims have no value to Stanray for the purpose of mining, Stanray shall have the right and option, upon giving Sisk ninety days written notice thereof, to surrender this lease as to any or all of such mining claims, retaining this lease in full force and effect as to the property not included in the notice. Thereupon Stanray shall have no further obligations as to such mining claim or claims under this agreement.

21. It is mutually agreed that Sisk may continue to use the surface of the premises herein demised for the purpose of

farming and ranching at their own risk and Stanray shall not be liable to any person or persons, including Sisk, for any injury to persons or property resulting from such use. Sisk reserves the right to use, operate, lease, sell, encumber or dispose of the surface of the lands embraced within this lease subject at all times to the right of Stanray to use so much of the surface as may be reasonably necessary for the purpose of mining in accordance with this lease.

22. All express and implied covenants of this lease shall be subject to all federal and state laws, executive orders, rules and regulations, and this lease shall not be terminated, in whole or in part, nor lessee held liable in damage for failure to comply therewith if compliance is prevented by or if such failure is the result of any such law, order, rule or regulation, or if such compliance is prevented by or failure is the result of inability of lessee through no fault of its own, to obtain sufficient and satisfactory material and equipment to justify the commencement of drilling or digging operations or to continue production from the leased premises.

23. It is further expressly agreed that the parties hereto have this day executed a certain oil and gas lease which said lease is attached hereto, marked Exhibit B, and made a part hereof. Stanray agrees to conduct its mining operations under this agreement in such a manner that the oil and gas lessee, under Exhibit B, shall have the right to share in the possession of the premises herein demised for the purpose of exploring and drilling for oil and gas and of producing the same.

24. All notices required or committed to be given hereunder shall be sent by registered mail to Stanray at its address first above set forth and to Sisk at Lyons, ~~Boulder~~, Colorado, unless notice of change of address be given in writing.

BOOK 1029 PAGE 583

25. All payments to be made to Sisk hereunder shall be made to the First National Bank of Longmont, Colorado, for the account of Sisk and copies of all notices provided for herein shall simultaneously be sent to said Bank.

26. This Lease shall inure to the benefit of, and be binding upon, the heirs, executors, administrators, and assigns of Sisk and of the successors and assigns of Stanray.

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

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 17 1956
DATE | INITIALS | CODE

C. D. Sisk
C. D. Sisk

Esther May Sisk
Esther May Sisk

STANRAY MINING COMPANY

By Ray Carpenter
Vice President

STATE OF COLORADO, }
COUNTY OF BOULDER, } ss.

The foregoing instrument was acknowledged before me this 24th day of August, A. D. 1955, by C. D. Sisk and Esther May Sisk.

My commission expires July 22nd, 1959.

Witness my hand and official seal.

Notary Public.

STATE OF COLORADO
COUNTY OF Boulder } ss.

BOOK 1029 PAGE 509

I, Laurence B. Flanders, a Notary Public in and for the said County in the said State do hereby certify that Ray Carpenter personally known to me to be the person whose name is subscribed to the foregoing instrument as having executed the same as Vice President of Stanray Mining Company, a corporation, and known to me to be the said officer, appeared before me this day in person and acknowledged that the foregoing instrument was subscribed with the corporate name by the authority of said corporation; that he is Vice President of said corporation; that by the authority of said corporation he subscribed his name thereto as Vice President; and that he signed and delivered the said instrument as his free and voluntary act and deed and as the free and voluntary act and deed of said corporation for the uses and purposes therein set forth.

Given under my hand and seal this 24th day of August, A. D. 1955.

My commission expires April 29th, 1958.

Laurence B. Flanders
Notary Public

OFFICIAL FILE COPY
DWEA
RECEIVED MAR 17 1958
DATE | NOTES | CODE

Filed for record the ____ day of ____, A. D. 19____, at ____ o'clock ____ M.

Reception No. ____

MILTON E. TSCHICHE RECORDER

STATE OF COLORADO,
BOULDER County. } ss.

Before me, the subscriber, personally appeared S. F. Peavey who being duly sworn, saith that at least One Hundred and no/100 Dollars' worth of work or improvements were performed or made upon each of the following claims:

Sisk Number 1 Lode, Location Certificate recorded in the records of said County, Book 994 Page 433

Sisk Number 2 Lode, Location Certificate recorded in the records of said County, Book 994 Page 435

Sisk Number 3 Lode, Location Certificate recorded in the records of said County, Book 994 Page 437

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

____ Lode, Location Certificate recorded in the records of said County, Book ____ Page ____

situated in ____ Mining District, County of BOULDER State of Colorado, such expenditure made by or at the expense of C. D. Sisk

____ owners of said claims, for the year ending 12 o'clock meridian July 1st., 19 57, and for the purpose of holding said claim. Such expenditure made between 1st day of July 19 56, and 22nd day of May 19 57.

S. F. Peavey

Subscribed and sworn to before me, this 22nd day of May A. D. 19 57

Lois L. Markham
Deputy County Clerk & Recorder

817-CP AFFIDAVIT OF VALUE OF LABOR AND IMPROVEMENTS—Out West Printing and Stationery Co., Colorado Springs, Colo.

OFFICIAL FILE COPY

EXHIBIT "A".

The following described property situate in the County of Boulder and State of Colorado, to-wit:

That part of the SE¼ of Sec. 10 lying north of the center line of Colorado Highway #66; that part of the S½ of the N½ of Sec. 10 lying north and east of Colorado Highway #66; that part of the S½ of the NW¼ of Sec. 11 lying west of the center of Colorado Highway #66; that part of the SW¼ of Sec. 11 lying north and west of the center line of Colorado Highway #66; all in T. 3 N., R. 71 W. of the 6th P. M.

The S½ of the SE¼ and the E½ of the SW¼ of Sec. 3, T. 3 N., R. 71 W. of the 6th P. M.

The W½ of the SW¼, SE¼ of SW¼, N½ of NW¼, SW¼ of NW¼ and NW¼ of NE¼ of Sec. 2, T. 3 N., R. 71 W. of the 6th P. M.; NE¼ of the NE¼, also the N½ of the SE¼ of the NE¼ of Sec. 3; N½ of NE¼ and NE¼ of NW¼ of Sec. 10; N½ of NW¼, less the Carvell Subdivision, in Sec. 11, T. 3 N., R. 71 W. of the 6th P. M.

The W½ of the NE¼; the NW¼ of the SE¼, and all of the W½ of Sec. 1; the E½ of the NE¼, and SW¼ of said NE¼; and SE¼ of the NW¼; the NE¼ of the SW¼ and all of the SE¼ of Sec. 2; and all that portion the NW¼ of Sec. 12, and of the N½ of the NE¼ of Sec. 11, lying north of the Lyons-Estes Park Highway (Colorado Highway #66), except such small tracts in said Sec. 11 as have been heretofore conveyed as shown by deeds of record, in T. 3 N., R. 71 W.

Lot 14 of Sec. 3, in Twp. 3 N., of R. 71 W. of the 6th P. M.

Together with the following unpatented lode mining claims located in the North St. Vrain Mining District, in said County and State:

	Recorded in said Boulder County Book	Page
Sisk Lode Number One	985	535
Sisk Lode Number Two	985	537
Sisk Lode Number Three	985	539

covering the NE¼ of the SW¼ of Sec. 2, T. 3 N., R. 71 W. of the 6th P. M.

It being the intention hereof to lease unto lessee all of the land owned by Sisk (lessor) lying northerly from Colorado Highway #66, being the main road from Lyons to Estes Park, Colorado, and situate in Boulder County, Colorado.

DMEA
RECEIVED 1958
DATE CODE

Recorded NOV 14 1956 at 1:36 O'clock P. M
Reception No. 584398 Milton E. Tschiche, Recorder

ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS:

STANRAY MINING COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Utah and duly authorized to do business in the State of Colorado, in and for the consideration of $10.00 and other valuable consideration, does by these presents, sell, set over and assign to Stanley Woodward, Sr., all of its right, title and interest in and to that certain Mining Lease wherein C. D. Sisk and Esther May Sisk of Boulder County, Colorado are named as Lessors and Stanray Mining Company, is named as Lessees, entered into on the 24th day of August, 1955 covering the mineral rights in and to the following described real property in Boulder County, State of Colorado:

That part of the SE$\frac{1}{4}$ of Sec. 10 lying north of the center line of Colorado Highway #66; that part of the S$\frac{1}{2}$ of the N$\frac{1}{2}$ of Sec. 10 lying north and east of Colorado Highway #66; that part of the S$\frac{1}{2}$ of the NW$\frac{1}{4}$ of Sec. 11 lying west of the center of Colorado Highway #66; that part of the SW$\frac{1}{4}$ of Sec. 11 lying north and west of the center line of Colorado Highway #66; all in T. 3 N., R. 71 W. of the 6th P.M.

The S$\frac{1}{2}$ of the SE$\frac{1}{4}$ and the E$\frac{1}{2}$ of the SW$\frac{1}{4}$ of Sec. 3, T. 3 N. R. 71 W. of the 6th P.M.

The W$\frac{1}{2}$ of the SW$\frac{1}{4}$, SE$\frac{1}{4}$ of SW$\frac{1}{4}$, N$\frac{1}{2}$ of NW$\frac{1}{4}$, SW$\frac{1}{4}$ of NW$\frac{1}{4}$ and NW$\frac{1}{4}$ of NE$\frac{1}{4}$ of Sec. 2, T. 3 N., R. 71 W. of the 6th P.M.; NE$\frac{1}{4}$ of the NE$\frac{1}{4}$, also the N$\frac{1}{2}$ of the SE$\frac{1}{4}$ of the NE$\frac{1}{4}$ of Sec. 3; N$\frac{1}{2}$ of NE$\frac{1}{4}$ and NE$\frac{1}{4}$ of NW$\frac{1}{4}$ of Sec. 10; N$\frac{1}{2}$ of NW$\frac{1}{4}$ less the Carvell Subdivision, in Sec. 11, T. 3 N., R. 71 W. of the 6th P.M.

The W$\frac{1}{2}$ of the NE$\frac{1}{4}$; the NW$\frac{1}{4}$ of the SE$\frac{1}{4}$, and all of the W$\frac{1}{2}$ of Sec. 1 the E$\frac{1}{2}$ of the NE$\frac{1}{4}$; and SW$\frac{1}{4}$ of said NE$\frac{1}{4}$; and SE$\frac{1}{4}$ of the NW$\frac{1}{4}$; the NE$\frac{1}{4}$ of the SW$\frac{1}{4}$ and all of the SE$\frac{1}{4}$ of Sec. 2; and all that portion the NW$\frac{1}{4}$ of Sec. 12, and of the N$\frac{1}{2}$ of the NE$\frac{1}{4}$ of Sec. 11, lying north of the Lyons-Estes Park Highway (Colorado Highway #66) except such small tracts in said Sec. 11 as have been heretofore conveyed as shown by deeds of record, in T. 3 N., R. 71 W.

Lot 14 of Sec. 3, in Twp. 3 N., of R. 71 W. of the 6th P.M.
Together with the following unpatented lode mining claims located in the North St. Vrain Mining District, in said County and State:

	Recorded in said Boulder County	
	Book	Page
Sisk Lode Number One	985	535
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Sisk Lode Number Three	985	539

CRITCHLOW, WATSON & WARNOCK
ATTORNEYS AT LAW
1220 CONTINENTAL BANK BUILDING
SALT LAKE CITY 1, UTAH

covering the NE¼ of the SW¼ of Sec. 2, T. 3 N., R. 71 W. of the 6th P.M.

Dated this 13th day of ~~October~~ November 1956.

STANRAY MINING COMPANY

By Ray Carpenter

STATE OF Colorado)
) SS
COUNTY OF La Plata)

I, Claudia Burleigh a Notary Public in and for the said County in the said State do hereby certify that Ray Carpenter personally known to me to be the person whose name is subscribed to the foregoing instrument as having executed the same as Vice-President of Stanray Mining Company, a corporation, and known to me to be the said officer, appeared before me this day in person and acknowledged that the foregoing instrument was subscribed with the corporate name by the authority of said corporation; that he is Vice-President of said corporation; that by the authority of said corporation he subscribed his name thereto as Vice-President; and that he signed and delivered the said instrument as his free and voluntary act and deed and as the free and voluntary act and deed of said corporation for the uses and purposes therein set forth.

Given under my hand and seal this 13th day of October, A.D. 1956.

My Commission expires Dec. 2 1956

Claudia Burleigh
Notary Public

CRITCHLOW, WATSON & WARNOCK
ATTORNEYS AT LAW
1320 CONTINENTAL BANK BUILDING
SALT LAKE CITY 1, UTAH

COMPARED

584398

ASSIGNMENT

STANRAY MINING COMPANY

TO

STANLEY WOODWARD, SR.

STATE OF COLORADO }
COUNTY OF BOULDER } SS.

I hereby certify that this instrument

was filed in my office at 1:36

o'clock P.M., Nov. 14th, 1956,

and is duly recorded in book 1029

page 511.

Milton E. Tschiche
Recorder

By Elma C. Banner
Deputy

Fees, $ 2.50 ck

MR. NED WARNOCK
CRITCHLOW WATSON + WARNOCK
CONTINENTAL BANK BLDG.
SALT LAKE CITY, UTAH

PROPOSED DIAMOND CORE DRILLING PROGRAM

AT THE

SISK MINE

LYONS, COLORADO

JANUARY 1958

'Location, Accessibility, Manpower, Supplies.'

The Sisk Uranium Mine is located in Section 2, Township 3N, Range 71 W, Boulder County, Colorado. It is on the Sisk ranch, some 1,845 acres more or less, under lease to Mr. Stanley Woodward Sr., 3009 N Street, N.W., Washington, D.C., the present lessee and operator of the mine(See the attached copy of the lease and list of mining claims included.)

The mine is three miles northwest of Lyons, Colorado; one quarter mile north of the paved, Colorado highway #66 which connects Lyons with Estes Park, Colorado. The mine access road which connects the mine and highway #66 is a one lane, dirt road of good grade which has been maintained in the last year by a D-7 Caterpillar tractor bulldozer.

Lyons is a railhead for the Burlington Railroad which maintains two truck loading ramps on a siding west of the Lyons Depot. The Burlington Railroad station agent at Lyons, Mr. C. M. Ketler, says that cars are delivered or pulled from Lyons on Mondays, Wednesdays and Fridays.

The Golden Transfer Co., Longmont, Colorado, local trucking contractors, say that they are equipped to haul any ore mined at the Sisk mine to the railhead at Lyons. Their rough estimate for this work was $1.83 / ton based on a 50 ton lot.

The black pitchblende type ore occurring at the Sisk mine would be shipped by rail from Lyons to the Vitro

Chemical Corporation's mill at Salt Lake City, Utah.

There is a small stream running nearby the mine which furnishes adequate water for drilling. Mine timber and track ties are purchased at a local sawmill operated by Dale Billings, Lyons Colorado. Materials and supplies are readily obtained at nearby Boulder, Colorado, or in Denver, Colorado, which is 45 miles from the Sisk mine.

Mining is done by experienced Boulder County hard-rock miners who are familiar with the underground conditions found in the Sisk mine.

A survey was made to determine whether or not Electric Power is available for the Sisk mine. The Poudre Valley Rural Electric Association Inc., a division of the R. E. A. with offices at Fort Collins, Colorado, W. A. Besel, Manager, has a single phase electric power line running southeast along highway #66 to Ward's house in Sec. 2, Township 3N, Range 71W, on highway #66. A single phase power line could be run north from this point to the mine.

The surface and underground workings at the Sisk mine are accessable for examination purposes. The mine machinery is in good working condition and any accumulated underground water can be pumped out on short notice to permit easy access to all the working places.

Physical Description

The preliminary phase of the exploratory drilling on the C.D.Sisk ranch was completed in August 1956. This consisted of drilling plug holes(an open hole which can be probed) beginning approximately 140 feet east from the "Hot Spot".(See drawing #1.). This plug drilling was completed with a Reich 200 rotary drill, using AX drill stem and a spadeheaded,carbide inserted bit.

Hole #1 was collared in the Idaho Springs Formation outcropping east of the "Hot Spot"and was drilled forty feet deep at which point a quartz biotite schist was encountered. This quartz biotite schist could not be drilled with the tools being used.

Holes nos. 2,3,4,5,6,7,&8 were collared in the Idaho Springs Formation outcrop and were bottomed in granite pegmatite All these plug holes were offsetting Hole #1.

Hole #1 had a five foot average thickness of radioactivity which averaged .13 of 1% U_3O_8 on the probe reading. Holes #2-8 had high background counts, but no measured radioactivity to indicate the presence of commercial ore.

The second phase of the exploratory drilling was the diamond coring, from top to bottom of the hole of the formation near the "Hot Spot"in the bottom of the wash. This diamond core drilling was done with a Chicago Pneumatic Model#8 portable rig using conventional AX drill stem and a Damco BX core barrel and bit.

The first core hole, #9, was drilled fifteen feet south of the "Hot Spot" at an angle of 45 degrees with a bearing of N40 degrees W. The reason for drilling at this angle and bearing was to intersect the apparent southwesterly trend of the radioactive granite pegmatite exposed at the "Hot Spot".

Radioactivity was encountered at a depth of 40 feet which seemed to indicate that the values present in the "Hot Spot" continued through the formation to the southwest.

This first diamond core hole #9, was completed to a depth of 62.5 feet at which point a non-radioactive garnet biotite gneiss was penetrated.

The next #10, was drilled 30 feet south of the "Hot Spot" along the roadway at 45 degrees with a northwest bearing to a depth of 15 feet. At the 15 feet depth the hole caved and it was abandoned.

Hole # 11 was drilled 27 feet south of the "Hot Spot" at 45 degrees with a bearing of N 70 degrees W to determine whether or not the radioactivity in the "Hot Spot" and hole #9 continued to the southwest and in depth. Radiometric count was recorded 46 feet deep which indicated the radioactivity continues from hole #9 to hole #11. This hole was drilled to a depth of 85.5 feet at which point a non-radioactive granite pegmatite was encountered.

A chemical assay of the core recovered in hole #9 from 45 feet to 47 feet by Root and Simpson, 1310 E. 17 th Ave., Denver, Colorado showed .87 of 1 % U_3O_8.

The ore apparently lay in a zone which extended from the " Hot Spot" on surface downward in a southwesterly

direction through hole #11 at a hole depth of 46 feet.

It was decided to sink an exploratory incline to open up and prospect the ore trend encountered in the diamond core holes. A 45 degree, 5 feet wide by 7 feet high incline was collared in April 1957, twenty feet south of the " Hot Spot" with a bearing of N 65 degrees W and was sunk to an inclined depth of 40 feet. This mining work was done by C. D. Sisk as contractor.

The broken rock in the muck pile of each round drilled and blasted, while sinking the incline, was checked with a Geiger Counter. At a point 16 feet in from the incline collar high radioactivity was found. Channel samples containing pitchblende were taken from the fresh face and ribs of the incline. Grab samples were saved from the muck piles. These uranium ore samples were assayed by C. O. Parker, assayer 2114 Curtis Street, Denver, Colorado and were also assayed by the above mentioned Root and Simpson, assayers.

Copies of these assays are attached to this report with a description of the points in the mine from which each sample was taken.

The incline was completed in the latter part of April 1957 and bottomed in a hard granite pegmatite at which point one crack on the right rib showed radiometric count. Uranium ore found 16 feet in from the collar of the incline was deposited in a two feet thick vein which extended northwest and southeast on the strike and dipping toward the southwest in depth. It was decided to cut a 10 feet long by 15 feet wide station at the bottom of the incline and to drive two exploration drifts off this station along the ore trend.

While this work was in the planning stage the mine was inspected by Norman R. Blake, Inspector of Mines, State of Colorado. The underground work was contracted by S. F. Peavey of Grand Junction, Colorado, as mining contractor and was started May 28, 1957. In conjunction with underground mining work the mining contractor agreed to level and improve the road and access to the mine, install mining machinery and do the assessment work on the nearby minimg claims, The Sisk Lode #1, #2, & #3.

The mining contractor carried on his work covered by Workmen's Compensation Insurance in compliance with the laws of the state of Colorado, and was also covered by Comprehensive Public Liability and Property Damage Insurance for 50,000 dollars. This policy was written by the Travelers Insurance Company, Hartford, Connecticut. To date the mine has operated without a single accident.

The incline station, or room, was completed using a rented double drum Gardner Denver slusher and Pacific slusher bucket to remove the broken material. This equipment was returned after the station work was finished.

Compressed air was and is supplied by a Sehramm 105 cubic feet per minute, gasoline powered compressor. A J-50, Ingersoll Rand jackhammer and four feet Thor jackleg using one inch diameter Sandvik- Coromant carbide insert drill steel; Hercules Gelamite 2X dynamite, #6 blasting caps and black monarck fuseor, in wet ground,

#6 electric blasting caps, are used in drilling and blasting.

The mine water is removed with a Gardner Denver VP-4 Pneumatic Sump Pump. Ventilation is supplied with an eight inch Buffalo Forge centrifugal fan and an eight inch galvanized sheet iron ventilation line.

After the incline station was completed the incline portal vicinity was drilled and blasted, where necessary, and graded with a rented D-7 Caterpillar Tractor bulldozer. Surface track was laid to the mine dump and to an ore stockpile area. The stockpile area was levelled and planked with 3" X 12" native pine planking.

A one ton rope pull, gasoline powered hoist was placed fifty feet from the incline portal. It hoists a Card Iron Works 16 cubic feet capacity mine car. A two ton capacity explosives magazine was built on the mine access road, 800 feet north of the incline portal. A 27 feet, 1949 Pan American Trailer House is parked near the hoist and serves as a change house, store room and mine office.

When all the above surface and incline deadwork was completed a drift following the ore trend was run off the incline station to the northwest using hand labor for mucking.

As the northwest drift developed the geology of the section shaped up. The ore found at the 16 feet point continued downward. However, in the station and along the north rib of the northwest drift it pinched down to a small one inch stringer.

This stringer was followed for 15 feet with

the drift. The left rib of the drift is a soft, sheeted shear zone, running parallel to the drift and dipping to the southwest. The right rib of the drift is an intermixed granite pegmatite and garnet biotite gneiss. Pitchblende was found in the cracks and fractures of the granite pegmatite but none was noticed in the garnet biotite gneiss.

A 10 feet long crosscut was driven south from the station to explore the shear zone in cross section and to find out if it's hanging wall carried any Uranium values. This crosscut work was discontinued when a hard garnet biotite gneiss was found on the shear zone hanging wall. The shear zone section exposed by the crosscut had very little radioactive count.

Next a raise was driven off the end of the northwest drift to reach an intermediate point on a level with the ore found in the incline. At this point an intermediate drift was driven south~~west~~ EAST from the top of the raise to the ore found in the incline. Slight radioactivity was encountered in this drift. A small showing of pitchblende was found along the walls of the raise with the geiger counter and with a mineral light.

Next the ore in the back of the incline was stoped to see if it continued upward. 30 to 40 tons of commercial ore were removed from this section and stored on the stockpile. The ore bearing formation here continued upward but its uranium content decreased and graded into a graphite, molybdenum bearing rock.

The work, to date, had shown the presence of uranium ore in the back of the incline and in the stringers exposed by the northwest drift, the raise and its intermediate drift. It was decided to drive a drift southeast from the room to intersect the downward trend of the radioactive zone explored previously with the plug holes Nos. 1-8 southeast of the incline portal.

The drift was driven 130 feet southeast from the incline station paralleling the shear zone exposed by the northwest drift and the south crosscut. Radioactivity was found in the cross jointing 75 feet in from the station The drift was discontinued when a highly oxidized, low radiometric count section was opened.

The surface " Hot Spot " outcrops and the formation exposed by the underground openings were then examined by Allen Bird, Mine Geologist, Denver Golden Oil& Uranium Corp.. One of his recommendations was that a 10 feet long crosscut be driven south in the south east drift at the point 75 feet in from the station where radioactivity was found in the rock cross jointing.

A 10 feet deep crosscut was driven at this point south to crosscut the vein or shear zone. No commercial ore was found with this work.

In addition to the mine examination work done by Allen Bird the mine has been visited by E. L. Grossman, Geologist, Denver Area Office, Atomic Energy Commission. It was also visited by Earl G. Sweeney, Wah Chang Corp., Boulder, Colorado.

Grossman was very helpful in checking samples taken from sections of the mine showing radiometric count. On June 11,1957 he took a sample of a black mineral from the shear zone which was identified as molybdenite. Since there appeared to be a large quantity of this mineral, the mine was examined by Earl Sweeney, Two samples cut during this examination were spectrographed by Merlyn T. Salmon, 718 Sherman Street, Denver, Colorado.

The results of this Spectographic analysis showed a low Molybdenum content, too low to be used as ore in the Wah Chang Concentrating Mill at Boulder, Colorado. A later chemical analysis of a similar sample by C. O. Parkershowed .02% molybdenum. Parker identified the black mineral as graphite.

Geology.

The geology of the Sisk mine is best summed up by quoting the following from Allen Bird's report on the mine, dated October 29,1957.

" The Uranium bearing veins of the Sisk mine are steeply dipping fissure veins which contain uranium mineralization of hydrothermal origin. The veins trend roughly parallels the foliation of the Pre Cambrian metamorphic rocks of the Idaho Springs formation. The two rock forms exposed in the mine are quartz rich garnet biotite gneiss and a course grained, pink granite. Granite is the predominant rock exposed in the region surrounding the mine. Local bands of dense blue-black hornblende gneiss crop out in the large area of granite. Associated with the hornblende gneiss is a relatively thin layer of garnet biotite gneiss, the rock type in which the uranium mineralization appears to be localized. Surface outcrop exposures of the garnet biotite gneiss suggest that the average thickness of this layerwill be 30 feet.

It is of particular interest that this identical rock type also forms the host rock for the uranium ore bodies at the Schwartzwalder, Ladwig, and Yellow Queen uranium mines in Jefferson County, Colorado. All the radioactivity found at the Sisk mine has been restricted to this particular rock type, a few exceptions are found in the highly fractured granite immediately adjacent to the garnet bearing gneiss.

For the most part, the veins are parallel to the trend of the layering in the gneiss. This parallelism has resulted in slippage along the veins without extensive

fracturing of the wall rock adjacent to the veins. This type of movement produces a relatively tight, gouge filled (clay resulting from milling of the rocks along the plane of movement) veins. The presence of gouge within the veins tends to seal the veins and prevent the passage of uranium bearing solutions through the gouge filled portions .

Consequently, the uranium mineralization thus far encountered in the Sisk mine has been localized within a small area of highly crushed and fractured rock which has formed at a point along the vein in which the vein has split into two segments. This area was more permeable to the ascending uranium bearing solutions and therefore uranium, in the form of the mineral, pitchblende, was deposited."

It seems that the excellent mineralization in the Schwartzwalder mine was aided by the cross faulting of the Idaho Springs formation. When this faulting occurred at right angles to the foliation of the Idaho Springs formation, large Breccia filled fissures were formed. These rubble filled fissures acted as a trap for the uranium bearing solutions. When the faulting occurred parallel to the formation foliation little uranium was deposited.

It is now practical to drill in and near the Sisk mine.

Proposed Exploration Work

Sisk Mine

The underground and surface exploration work which has already been done at the Sisk Mine has shown that the Uranium bearing formation exposed has a downward rake toward the south.

So far the ore found in the incline has been mined out and stockpiled. There may be more ore above the mine workings. However, the more favorable trend seems to be downward. After the mine was examined by Allen Bird and by Proffesor Paul H. Keating, Colorado School Of Mines, it was decided to explore deeper using a Diamond Core Drill.

This core drilling would be done in two or three stages. The first stage would consist of the core drilling of eight holes from an underground diamond drill station located in the crosscut south of the incline station. Six of these holes would be drilled below the track. One would be drilled horizontally north of the station and one would be drilled horizontally south of the station.(See the attached map of the mine workings and these proposed holes).

If the core recovered from these eight holes shows that commercial ore is present in depth, it is proposed that four additional core holes be drilled from two drill sites on the surface near the incline portal. The deepest hole drilled in this next stage would be 200 feet deep and would intersect the downward trend of the ore showing

in the mine workings, at a point 100 feet below the track level.(See the attached map of these holes).

An estimate has been made to determine the cost of building an access road and drill sites on the hill above the incline portal. The cost of this work and the additional hole footage required to reach the required depth below the track level does not make drilling from above the mine too attractive.

An estimate has been made to determine the cost of driving a 50 feet long drift south of the incline station in order to drill the second stage holes from an underground drill station. This plan has merit because a maximum depth below the track level could be reached with the shortest possible hole. However the saving in hole length does not offset the cost of driving the drift south of the station. In addition the holes drilled from an underground station south of the incline station would tend to parallel the dip of the downward ore trend instead of intersecting it.

Three bids were obtained from The Golden Drilling Company, Golden, Colorado, George Marshall,Drill Contractor, Idaho Springs, Colorado, and Sprague and Henwood,Inc., Grand Junction, Colorado for the proposed drilling listed above. Copies of these bids are attached to this estimate.

There would be an additional cost for, Enlarging the crosscut south of the station to make a drill station,

Pump water from the stream near the mine to the water tank above the incline portal, Purchase core boxes,,Maintain the Precision Model 120 probe with 200 feet of probe cable Pay $5.00 per Assay for an estimated 40 assays, Rent and transport from Denver to the Sisk Mine an Air Compressor, Build the surface drill sites for the drilling in stage #2 and pay for Supervision, Mine Insurance and the Mine Pickup. The estimate of these costs is listed separately.

Hole #2C which will cut 40 feet of the north wall horizontally may uncover ore below the "Hot Spot". If so a third stage should be planned to drill the formation north of the incline both horizontally and in depth. This work could be done using the incline station as an underground diamond drill station.

The drilling pattern would depend on the information gathered by drilling hole #2C and hole #1Aand #2A.

If these holes cut ore then 500 feet additional drilling should be done in the north wall.

Cost Estimate of Diamond Core Drilling
Sisk Mine

The following cost estimate for core drilling at the Sisk mine , located in Boulder County, Colorado, Sec. 2, T 3 N , R 71 W., was made by S. F. Peavey, registered mining engineer in the State of Colorado. S. F. Peavey has been employed as mining engineer and also as mining contractor at the Sisk Mine by Mr. Stanley Woodward for whom he is submitting this estimate.

S. F. Peavey resides at 1745 Glenwood Ave., Grand Junction, Colorado and is stationed at Mrs. Bloomfield's Hotel , Lyons, Colorado when he is working at the Sisk Mine. His business mailing address for correspondence concerning the Sisk Mine is % Mrs. Bloomfield, Lyons, Colorado.

Three Bids were obtained for the proposed diamond core drilling at the mine. The copies of the three bids are attached to this estimate.

Before submitting their bids the mine was visited by Mr. W.E. Matthews, Golden Drilling Company; by Mr. R. R. Carver, Sprague and Henwood, Inc., Grand Junction, Colorado and by Mr. George Marshall, Diamond Drill Contractor, Idaho Springs, Colorado. These Three men were accompanied by S. F. Peavey who showed them the property and answered their questions concerning the mine.

The bid submitted by George Marshall is the lowest. He says that he has a core rig available to do the proposed work.

While the Core drilling work is being done S. F. Peavey will be at the mine as company representitive,supervisor and engineer.

The company's books and records are kept at the mine by S. F. Peavey and by Mr. Philip Pear,1104 Vermont Ave., N.W., Washington,D.C.,who is retained by Mr. Stanley Woodward as bookkeeper and auditor.

A record of the work progress and cost will be kept in any form or manner agreeable to the D.M.E.A. authorities.

Cost Estimate of Diamond Core Drilling
Sisk Mine.

Stage #1.

Enlarge Crosscut South of incline station
to make a diamond drill station
Equivalent to one drift round
5 feet @ $40.00/ft. $200.00

Core drilling

460 feet AX Core- 1 1/8" core
@$4.50/foot $2070.00

Case collar of each of 6 vertical holes
6 holes X 10' @$1.00/foot $ 60.00

Probe 8 holes @ 1 hour/hole standby time
8 holes X 1 hour X $5.00/hour $ 40.00

Core Boxes
Love Box Company, Denver, Colorado
Damco Supply Company, Grand Junction, Colorado
46 boxes @$1.25/box $ 57.50

Geiger Counter and 200 feet probe
Precision Model 120 @$10.00/mo. $ 10.00

Assays
20 U308 assays @$5.00/assay $ 100.00
assayers
C. O. Parker, Denver, Colorado
Root and Simpson, Denver, Colorado

Compressor Rental
Western Machinery- Hal Miller
2400 W 7 Ave., Denver, Colorado

Jaeger Diesel Rotary Air Compressor
615 cfm. $615.00/mo.

Jaeger Diesel Air Compressor
250cfm. $355.00/mo.

Air Rentals, Inc., Bob Seydell
3301 Walnut Street, Denver, Colorado

Gardner Denver Air Compressor, Diesel
315cfm. $465.00/mo.
$155.00/wk.

210 cfm. $360.00/mo.
$120.00/wk.

Rent the 210 or the 250 for one
month @$360.00/mo. $ 360.00

Compressor Rental	
Haul the Compressor to and from the Mine to Denver w/ Company Pickup 50 miles @ 25¢/mile 2 ways	$ 25.00
Equipment	
Pump Mine Water	
Gardner Denver V P-4 Pneumatic Sump Pump $61.20/mo.	$ 61.20
Mine Lamps	
6- Edison Model P Electric Mine Lamps w/ Charger @ $6.00/mo.	$ 6.00
Charge mine lamps	$ 1.00
Trailer House and Hand Tools @ $ 150.00/mo.	$ 150.00
Pickup	
1956 Dodge 3/4 ton @ $50.00/mo.	$ 50.00
Pickup Maintenance	$ 15.00
License and Insurance	$ 9.50
Hoist and Mine Car	$ 17.20
Ventilation	
3" Buffalo Fan And Fan Line	$ 10.00
Supplies not included above	
Gasoline and Oil	
250 gals. gasoline @27¢/gal.	$ 67.50
40 gals. heating fuel @ 20¢/gal.	$ 8.00
10 gals. lube oil @ $ 1.00/gal.	$ 10.00
1100 gals. diesel @ $ 20¢/gal.	$ 220.00
1 lb. grease @ 60¢/lb.	$ .60
Supervision and Engineering	
Salary and Room & Board	$ 580.00
Insurance	
Public Liability, $ 50,000.00	$ 3.73
Telephone, Office, Postage	$ 10.00
Total	$4142.53

Cost Estimate of Diamond Drilling
Sisk Mine

Stage #2

Prepare two Drill Sites, one 90 feet south of the incline portal and one 160 feet south of the incline portal.
One shift, Supervisor and Helper
8 hours @ $1.50/hr. $ 12.00

Core Drilling

660 Feet A X Core - 1 1/8 " Core
@ $ 5.00/foot $3300.00

Case collar of each of four core holes
4 holes X 10' @ $ 1.00/ft. $ 40.00

Probe four holes @ 1 hour/hole standby
time - 4holes X 1 hr. X $ 5.00/hr. $ 20.00

Core boxes
66 Boxes @ $ 1.25/box $ 82.50

Geiger Counter and 200 feet Probe
Precision Model 120 @ $ 10.00/mo. $ 10.00

Assays
20 U308 assays @ $ 5.00/assay $ 100.00

Equipment

Trailer House and Hand Tools
@ $ 150.00/mo. $ 150.00

Pickup
@ $ 50.00/mo. $ 50.00
Pickup Maintenance $ 15.00
License and Insurance $ 9.50

Supplies not included above

Gasoline and Oil
250 gals. gasoline @ 27¢/gal. $ 67.50
40 gals. heating fuel @ 20¢/gal. $ 8.00
5 gals. lube oil @ $ 1.00/gal. $ 5.00

Supervision and Engineering
Salary and Room & Board $ 580.00

Insurance
Public Liability, $ 50,000.00 $ 3.73

Telephone, Office, Postage $ 10.00

Total $4463.23

MANUFACTURERS OF
DIAMOND DRILLS,
DRILLING EQUIPMENT
DIAMOND BITS

BRANCH OFFICES
NEW YORK · PITTSBURGH
PHILADELPHIA
GRAND JUNCTION, COLO.

EXECUTIVE OFFICES & PLANT
221 W. OLIVE STREET
SCRANTON, PA.

SPRAGUE & HENWOOD, INC.

SINCE 1883

CONTRACTORS FOR
DIAMOND DRILLING
SHOT DRILLING · SOIL SAMPLING · PRESSURE GROUTING
WATER WELLS & CHURN DRILLING

PLEASE REPLY TO
P. O. BOX 645
GRAND JUNCTION, COLO.
TELEPHONE CHapel 2-0444

DMEA
RECEIVED MAR 17 1958
DATE | INITIALS | CODE

December 27, 1957

Mr. S. F. Peavey
1745 Glenwood Avenue
Grand Junction, Colorado

Dear Sir:

In response to your request we herewith submit our proposal for core drilling on the Sisk Property near Lyons, Colorado.

Item 1- Underground Drilling . . . . . $7.50/ft.

Item 2- Surface Drilling . . . . . $8.50/ft.

This proposal is subject to the following conditions:

1. For underground drilling, compressed air and water of sufficient volume and pressure for drilling will be supplied at drill hole location by customer at no cost to Sprague & Henwood.

2. Any underground work required for preparation of drill station will be furnished by customer at no cost to Sprague & Henwood.

3. Cores will be delivered at drill hole locations, and storage and preservation of cores will be the responsibility of the customer.

4. Payments are to be made monthly based on completed holes, within 15 days after date of invoice. Should payments not be made within the specified period than Sprague & Henwood, Inc. reserves the right to terminate operations. Credit arrangements satisfactory to Sprague & Henwood, Inc. must be made prior to commencement of work.

5. The above proposal is based on a minimum underground drilling program of 450 feet and a minimum surface drilling program of 500 feet.

We thank you for the opportunity of submitting this proposal.

Very truly yours

SPRAGUE & HENWOOD, INC.

Robert R. Carver
Western Manager

RRC: nr

GOLDEN DRILLING COMPANY

DIAMOND DRILLING CONTRACTORS

2301 EAST STREET

GOLDEN, COLORADO

PHONE CRestview 9-1371

Jan. 1, 1958

The Golden Drilling Company's estimate for diamond core drilling approximately eleven hundred feet (1100 ft.) for the operators of the Sisk Mine, located in Boulder County, three miles west of Lyons, Colorado is as follows:

Underground drilling

AX Size core bit ----------	$ 5.50 per. ft.
Reaming and casing ----------	3.25 " " .
Cementing and drilling out -----	3.00 " " .

Holes not to exceed 200 ft.
Air for drilling to be furnished by Sisk Mining Company.

Surface drilling

AX Size core bit ----------	$ 6.00 per. ft.
Reaming and casing ----------	3.25 " " .
Cementing and drilling out ----	3.00 " " .

Holes not to exceed 250 feet.

Stand-by time for probing holes, etc. $ 7.50 per hour.

ORIGINAL FILE COPY
DMEA
RECEIVED MAR 17 1958
DATE | MINING | CODE

W E Matthews
GOLDEN DRILLING COMPANY.

GEORGE MARSHALL

DIAMOND DRILL CONTRACTOR

SURFACE AND UNDERGROUND WORK

MAXIMUM CORE RECOVERY

PHONE 40

IDAHO SPRINGS, COLORADO

December 26, 1957

OFFICE COPY
DMEA
RECEIVED DEC 27 1957

Mr. S. F. Peavey
1745 Glenwood Ave.
Grand Junction, Colorado

Dear Mr. Peavey:

At your invitation I submit the following bid on 460' of underground AX core drilling, with your company furnishing compressed air suitable to run drill, at the Sisk Mine in Boulder County. I will do this drilling at $4.50 per foot.

On 660' of surface drilling consisting of four holes, none to exceed 200', I submit a bid of $5.00 per foot.

If it becomes necessary to case hole because of caving condition, an additional charge of $1.00 per foot will be made.

For any time lost through no cause of mine, a charge of $5.00 per hour will be made.

Core boxes to be furnished by your company.

Very truly yours,

George Marshall

George Marshall

GM:tm

Estimate Cost of building An Access Road for
Drill Sites above Sisk mine Portal.

The Access Road would start at a point 200feet north of the mine portal on the mine road and would run up and a around the hill. The hill above the portal has a slope of 33 degrees . The access road would be 160 feet above the portal measuring along the slope. The road would be a minnimum 600 feet in length.

Drilling, Blasting ,Bulldozing.

Equipment

Air Compressor Schramm 105 gasoline powered Jackhammer Ingersoll Rand J-50 1" chuck Hoses & Oiler All on rental Purchase $35.00/week	$35.00
Drill Steel @ $ 7.75/week	7.75
Trailer House & Hand Tools	37.50
Fuel Oil	2.25
Pickup	12.50
Bulldozer Owner operator,Foster Silbaugh, Longmont,Colorado @$12.50/hour no charge for moving 2 days@8hrs./day @$12.50/hr.	200.00

Supplies

Gasoline 200 gals. @ 27¢/gal	54.00
Oil 6 qts.@ 25¢/qt. machine oil	1.50 1.25
Dynamite 150# Hercules Gelamite 2X 1"X8"	41.50
Caps, Fuse,Spitter	11.35

Magazine Storage	$2.00
Labor	
4 shifts@ 8 hrs./shift/2 men@ $2.00/hour	128.000
Supervision	145.00
Insurance	13.77
Office	2.00
Total	$695.37

Estimated Cost

Drive 50 feet of Crosscut

South of the incline station Sisk mine.

Average 2.5'/ day. Hand Mucking.

$\frac{50'}{2.5'}$ = 20 working days

@ 40 hour week 5 shift week

Equipment.

Air Compressor.

Schramm 105 Gasoline powered

Rental purchase @ $35.00/week

$35.00 X 4 weeks $140.00 $140.00

Jackhammer

Ingersoll Rand J-50 1"chuck

Rented with the Compressor.

Jackleg

Thor- 4' w/ Y hose

@$10.20/month $10.20

Pipe, Hoses(Air Line)

1½"- 2" pipe-3/4" rubber hose

Rented with Compressor

Water Line

3/4" rubber with 400 gal. water tank $2.00

Hoist

One ton rope pull

$\frac{\$364.07}{36 \text{ months}}$ = $10.10/month $10.10

Mine Car

16 cu. ft. 18" gauge

Card Iron Works End Dump

$\frac{\$255.00}{36 \text{ months}}$ = $7.10/month $7.10

Equipment

Ventilation

8" Buffalo Forge Fan
1 hp. Gasoline engine
100'-8" Sheet iron Vent Pipe
90'-Fabric Vent Pipe

@ $10.00/month $10.00

Trailer House- Hand Tools

@ $150.00/month $150.00

Pickup

1956 Dodge 3/4 ton

@$50.00/month $50.00

Supplies

Dynamite

Hercules Gelamite 2x 1"x8"
Price 9/25/57 $27.49/cwt.

8#/ft.X $.275/# X 50ft. $110.00 $110.00

Fuse

Black Monarck
Price 9/25/57 $13.25/1000feet

24'fuse/foot drift
24'X 50'driftX .013/ft. $15.90 $15.90

Caps

Hercules #6 blasting caps

Price 9/25/57 $29.50/1000

3caps/ft.X 50'X$.0295/cap $4.43 $4.43

Ties, Track, Track Switch ,

Ties
30 ties @$.10/tie $3.00 $3.00

Track
100'-20#rail@$120.00/ton
$40.00 $40.00

Equipment

Track Spikes
30tiesX4spikes/tieX $.04 $4.80 $4.80

Splice Bars, Bolts
6 sets @$.85/set $5.10 $5.10

Switch

One 20# switch @$10.00/switch $10.00 $10.00

Dump Track

10' Track	$8.00	
5 Ties	$ .50	
2sets bars	1.70	
20 spikes	.80	
	$11.00	$11.00

Drill Steel

75' drift/6'steel
Sandvik-Coromant 1" @$23.97
$23.97
75' = $.319/ft $15.95
$.319X 50' $15.95
Sharpen 5X $.75 $3.75 $3.75

Gasoline, Oil, Fuel
Gasoline
500 gals./month
500X$.27/gal $ 135.00
Oil
10 gals./month
10X $1.00/gal. $10.00
5 gals. machine oil
5X $1.25 $6.25
40 gals. fuel oil
40X $.20 $8.00
$24.25 $24.25

Magazine Storage $2.00 $2.00

Stationery, Stamps $5.00 $5.00

Labor

20 daysX 8hr./dayX2menX$2.00/hr.
$640.00 $640.00

Supervision		
	$ 500.00/mo.	
Board	$ 80.00/mo.	$ 580.00
Insurance		
Public Liability		$ 3.73
State Compensation Insurance Fund		$ 49.40
Pickup		
Public Liability		$ 2.80
Collision		$ 3.85
Office, Payroll, Miscellaneous		$ 25.00
	Total	$2074.36

$$\frac{2074.36}{50 \text{ ft.}} = \$41.49/\text{ft.}$$

Samples and Assays

#1. At 16' depth in the Sisk Incline 19" thick south rib to 26" thick north rib. Grab Sample 30# in sack.

#2. Channel Sample @ 30' in depth in Sisk Incline, cut across vein at right angles to the strike 10" wide and 19" in length

#3. Grab Sample in north half of Sisk incline face at 40' . Granite and streak of Pitchblende.

#4. Channel Sample in Shear Zone south rib of Sisk incline @ 16' depth 10" wide and 19" across the face at right angle to the strike of the shear.

#5. Picked Sample Granite Schist with Pitchblende 10# Sample taken from foot wall at 30' depth in Sisk incline

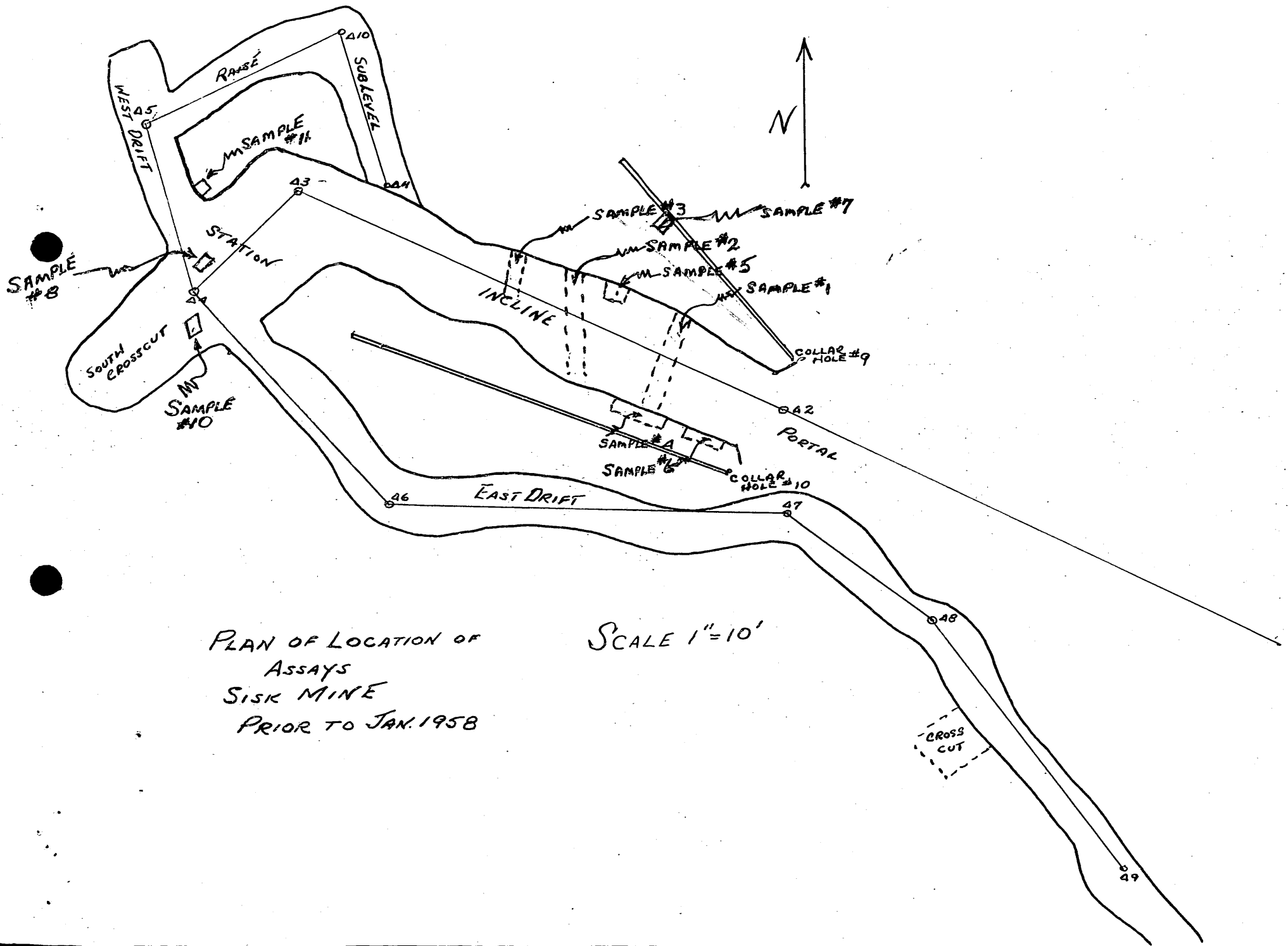
#6. Graphite Slickenside found along Shear Zone, south rib of the Sisk incline.

#7. Assay on a fragment of the core recovered from Core Hole #9 from 45' to 47'.

#8 Assay on a grab sample taken from the ore stock-piled at the Sisk Mine. Also an assay of a piece of rock from the mine showing traces of molybdenum.

#9 & 10. Spectrograph Analysis taken on two samples, one in the shear zone and one in the stock pile at the Sisk Mine.

#11&12. Sample analysis run by the A.E.C.



PLAN OF LOCATION OF
ASSAYS
SISK MINE
PRIOR TO JAN. 1958

SCALE 1" = 10'

2114 CURTIS STREET

TELEPHONE MAin 3-1852

[redacted]

CHEMISTS • ASSAYERS • ENGINEERS

DENVER 5, COLORADO

Folio 7059

Date Sept. 3, 1957.

S. F. Peavy,
Lyons,
Colorado.

SAMPLE # 8

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	URANIUM OXIDE U_3O_8	VANADIUM PENTOXIDE V_2O_5	LIME $CaCO_3$	RADIOMETRIC EQUIVALENT eU	THORIUM OXIDE ThO_2	TOTAL RARE EARTHS	COMBINED COLUMBIUM TANTALUM OXIDES
Stockpile:	0.325%						
Specimen:							

Molybdenum: 0.02% (Material is graphitic)

RECEIVED
MAR 17 1958
D.M.E.A.

PLEASE PAY FROM THIS INVOICE AS NO OTHER STATEMENT WILL BE MAILED. THANK YOU.

Charge $ paid.

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

FLUO RESCENT
X RAY
SPEC TROGRAPHIC
Analytical Laboratory

718 Sherman Street (rear)
Denver 3, Colorado
Phone ALpine 5-9396
Merlyn L. Salmon, Manager

Sample taken across 10 ft in shear zone.

SAMPLE #10

XXXX QUALITATIVE
_____ SEMI-QUANTITATIVE
_____ QUANTITATIVE

RECEIVED MAR 27 1958 D.M.E.A.

ANALYTICAL REPORT

Lyons Deposit

Job Number 1208
Page 2 of 2 Pages
Date 23 August 1957

TO: Wah Chang Corporation

NOTE: The values below are estimated percentages for the oxide equivalent of the indicated elements. No check was made for elements with atomic numbers less than 22 (below titanium).

SAMPLE: 127

Copper	0.03	Iron	15	Lanthanum	
Silver		Cobalt		Cerium	
Gold		Nickel		Praseodymium	
Zinc	0.03	Cesium		Neodymium	
Cadmium		Rubidium	0.06	Samarium	
Mercury		Barium	0.4	Europium	
Gallium		Strontium	0.01	Gadolinium	
Indium		Titanium	1	Terbium	
Thallium		Zirconium	0.05	Dysprosium	
Germanium		Hafnium		Holmium	
Tin		Thorium		Erbium	
Lead	0.01	Vanadium		Thulium	
Arsenic		Columbium		Ytterbium	
Antimony		Tantalum		Lutetium	
Bismuth		Chromium		Yttrium	0.02
Selenium		Molybdenum	0.03		
Tellurium		Tungsten			
Bromine		Uranium			
Iodine		Manganese	0.3		

By Merlyn L. Salmon

NOTE: A PORTION OF THE REPORTED SAMPLES WILL BE RETAINED ON FILE FOR A PERIOD OF FIVE YEARS FROM THE ABOVE DATE. THE REMAINDER OF THE SAMPLE WILL BE RETAINED FOR THIRTY DAYS PENDING RECEIPT OF WRITTEN INSTRUCTIONS FOR DISPOSAL FROM THE ADDRESSEE ABOVE.

ROOT & SIMPSON, Inc.

TEL. CHERRY 4-3223 METALLURGICAL CHEMISTS AND ASSAYERS P. O. BOX 169

DENVER 1, COLORADO

SPECIMEN ASSAY

ASSAYED FOR	MARKS
Stanray Mining Co.	Rock SAMPLE #7

GOLD OZS. PER TON	SILVER OZS. PER TON	WET LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	U_3O_8 PER CENT	V_2O_5 PER CENT	PER CENT	PER CENT
					0.87			

DATE 1/8/57 CHARGES $5.00

Paid

Root & Simpson, Inc.

ROOT & SIMPSON, Inc.

TEL. CHERRY 4-3223 METALLURGICAL CHEMISTS AND ASSAYERS P. O. BOX 2069

DENVER 1, COLORADO

SPECIMEN ASSAY

ASSAYED FOR	MARKS
Stanray Mining Co.	

GOLD OZS. PER TON	SILVER OZS. PER TON	WET LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	U_3O_8 PER CENT	V_2O_5 PER CENT	PER CENT	PER CENT
				#4	0.14			
				#5	2.145			
				#6	0.06			

RECEIVED MAR 17 1958 M.E.A.

DATE 4/30/57 CHARGES $ 15.00

Paid C.H.R. Root & Simpson, Inc.

ROOT & SIMPSON, Inc.

TEL. CHERRY 4-3223 METALLURGICAL CHEMISTS AND ASSAYERS P. O. BOX 169

DENVER 1, COLORADO

SPECIMEN ASSAY

ASSAYED FOR	MARKS
Stanray Mining Co.	

GOLD OZS. PER TON	SILVER OZS. PER TON	WET LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	U_3O_8 PER CENT	V_2O_5 PER CENT	PER CENT	PER CENT
				#1	0.68			
				#2	1.90			
				#3	1.305			

RECEIVED APR 15 1957 U.M.E.A.

DATE 4/30/57 CHARGES $15.00

Paid C.H.R. Root & Simpson, Inc.

UNITED STATES
ATOMIC ENERGY COMMISSION
DENVER AREA OFFICE
BUILDING 40, DENVER FEDERAL CENTER
DENVER 2, COLORADO

IN REPLY REFER TO: DAO:ELG:ge

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DMEA
NOVEMBER 17 1958
DATE | INITIALS | CODE

August 14, 1957

SAMPLE #11 & #12

Mr. S. F. Peavy
Mrs. Bloomfield's Boardinghouse
Lyons, Colorado

Dear Mr. Peavy:

Results of analysis of two samples taken by me on July 12, 1957 from the C. D. Sisk Ranch are as follows:

Field No.	Radiometric % eU_3O_8	Chemical % U_3O_8	Remarks
F-44798	0.16	0.20	1.5' channel across vein
F-44799	0.25	0.32	Grab of small ore pile

Sincerely yours,

Eugene L Grossman

E. L. Grossman, Geologist
Colorado Branch Office
Denver Area Office

FLUO RESCENT
X RAY
SPEC TROGRAPHIC
Analytical Laboratory

718 Sherman Street (rear)
Denver 3, Colorado
Phone ALpine 5-9396
Merlyn L. Salmon, Manager

chipped sample from stockpile of Moly ore.

SAMPLE #9

XXX QUALITATIVE
_____ SEMI-QUANTITATIVE
_____ QUANTITATIVE

ANALYTICAL REPORT

Job Number 1208
Page 1 of 2 Pages
Date 23 August 1957

TO: Wah Chang Corporation

Tyons Deposit

NOTE: The values below are estimated percentages for the oxide equivalent of the indicated elements. No check was made for elements with atomic numbers less than 22 (below titanium).

SAMPLE: 126

Copper	0.03	Iron	13	Lanthanum	
Silver		Cobalt		Cerium	
Gold		Nickel		Praseodymium	
Zinc		Cesium		Neodymium	
Cadmium		Rubidium	0.05	Samarium	
Mercury		Barium	2	Europium	
Gallium		Strontium	0.02	Gadolinium	
Indium		Titanium	1	Terbium	
Thallium		Zirconium	0.05	Dysprosium	
Germanium		Hafnium		Holmium	
Tin		Thorium		Erbium	
Lead	0.01	Vanadium		Thulium	
Arsenic		Columbium		Ytterbium	
Antimony		Tantalum		Lutetium	
Bismuth		Chromium		Yttrium	0.02
Selenium		Molybdenum	0.8		
Tellurium		Tungsten			
Bromine		Uranium	0.02		
Iodine		Manganese	0.3		

By Merlyn L. Salmon

NOTE: A PORTION OF THE REPORTED SAMPLES WILL BE RETAINED ON FILE FOR A PERIOD OF FIVE YEARS FROM THE ABOVE DATE. THE REMAINDER OF THE SAMPLE WILL BE RETAINED FOR THIRTY DAYS PENDING RECEIPT OF WRITTEN INSTRUCTIONS FOR DISPOSAL FROM THE ADDRESSEE ABOVE.

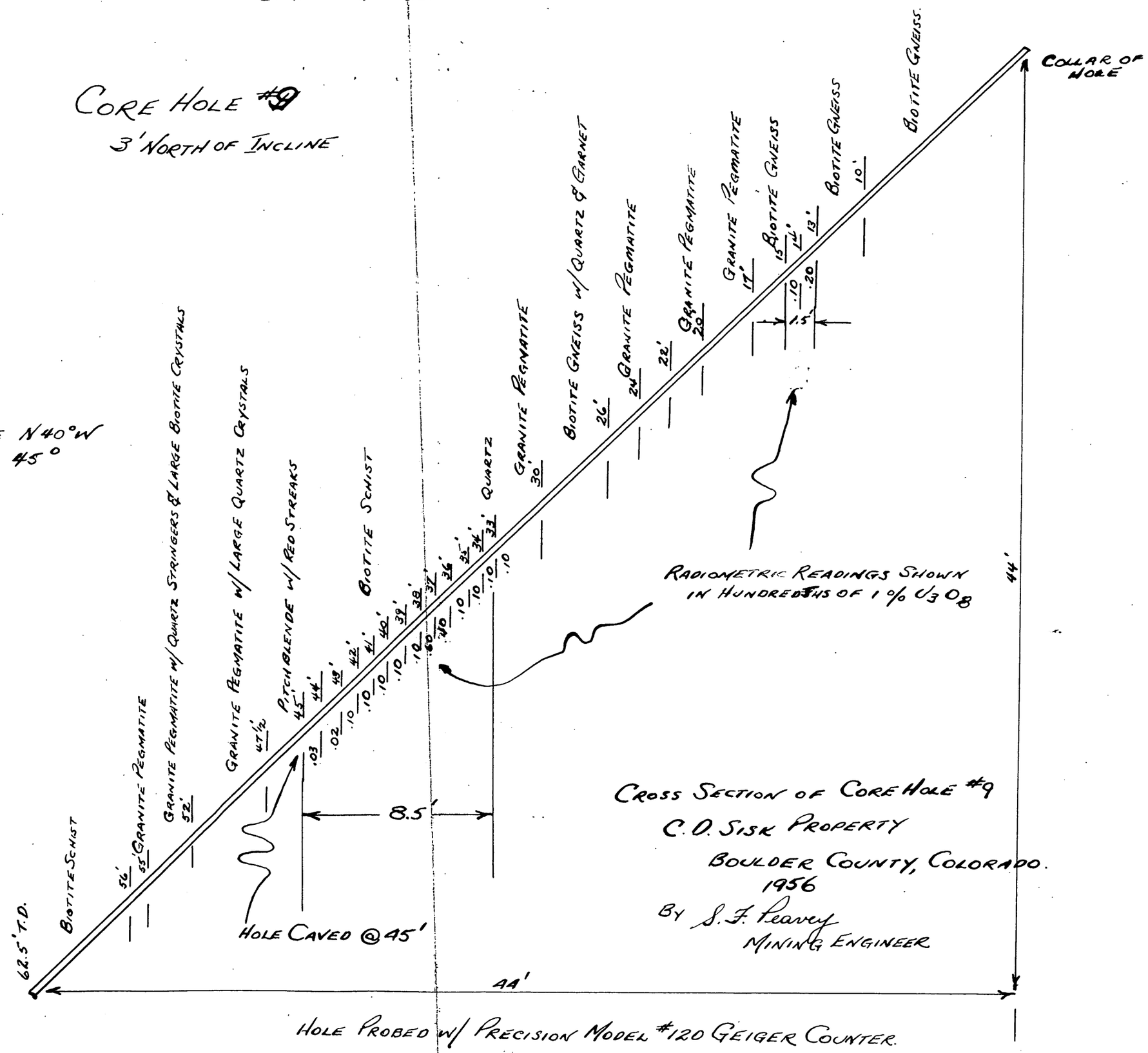
DRAWING #2.

CORE HOLE #9

3' NORTH OF INCLINE

SCALE 1" = 5'

BRUNTON BEARING OF HOLE N40°W
DIP OF HOLE 45°



CROSS SECTION OF CORE HOLE #9
C. O. SISK PROPERTY
BOULDER COUNTY, COLORADO.
1956
BY S. F. Peavey
MINING ENGINEER

HOLE PROBED W/ PRECISION MODEL #120 GEIGER COUNTER.

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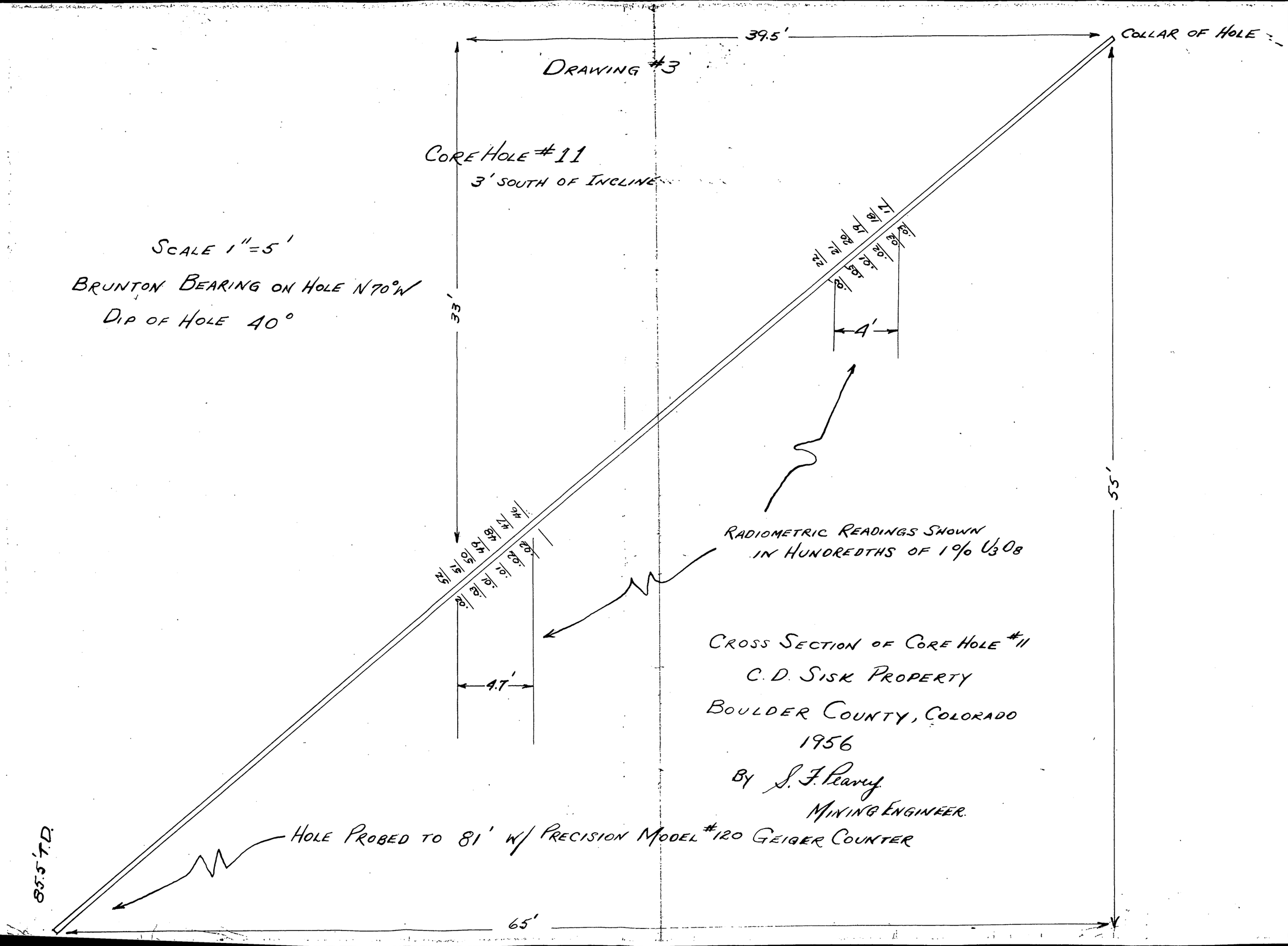

CROSS SECTION OF CORE HOLE #11
C. D. SISK PROPERTY
BOULDER COUNTY, COLORADO
1956
BY S. F. Peavy
MINING ENGINEER.

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DATE

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RECEIVED MAR 17
DATE

U.S. Government Messenger Envelope

Form No. 65 (Rev. 1957)
ed by Bureau of the Budget Circular A-33 (Rev.)

E (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
W. N. Chamberlain NEA	STOP		STOP
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OP only when messenger service between Government buildings in Washington, D. C., is required or wherever a STOP system is used.
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Docket copy

May 29, 1958

Murphy

Summary of Proposed Project

Object: Denial of application for exploration aid.

Docket No.: DMEA-4961

Commodity: Uranium

Amount of application: $8,605.76

Applicant: Stanley Woodward
3009 N Street, N. W.
Washington, D. C.

Property Rights: Lease on approximately 1,845 acres in secs. 1, 2, 3, 10, 11, and 12, T. 3 N., R. 71 W., Boulder County, Colorado. The Sisk Mine is located in sec. 2.

Date of application: March 7, 1958
Referred to Region III: March 27
Field Examination made: April 4 and 11
Field Team Report received: May 19

Work Proposed: Explore a shear zone by 1,120 feet of diamond core drilling from the surface and underground in two stages.

Estimated Costs:

Stage I, 460 feet core drilling 1/	$4,142.53
Stage II, 660 feet core drilling 1/	4,463.23
Total	$8,605.76

1/ Includes all costs, such as preparing access roads to drill sites, cutting underground station, core boxes, assays, drilling, etc.

Excerpts from Joint Report of Examination, by Frank B. Moore, USGS, and W. W. Winkel, USBM:

Rocks exposed in the vicinity of the property are chiefly schists and gneisses of the Idaho Springs series and pink granite. The granite occurs as a batholith which incloses the schist and gneiss; both types of rocks are Precambrian in age. In and near the mine, much of the gneiss is garnetiferous

and most of the granite is pegmatitic. Garnet-magnetite gneiss is considered a favorable host rock for uranium at many places along the Front Range foothills.

In August, 1956, 11 holes were drilled to explore the shear zone on the property. Eight holes were collared in the Idaho Springs formation and plug drilled to bottom in pegmatite granite, and three holes were core drilled. Some minor radioactivity was reported to have been encountered. One hole was reported to have 2 feet of 0.87% U_3O_8 material.

The Sisk Mine was started in April, 1957. It consists of a 40-foot incline bottoming in a hard granite pegmatite. From a station cut at the bottom, a 16-foot drift was driven northwest, with a short raise at the end. A drift was also driven 130 feet southeast paralleling a shear zone and was discontinued in a highly oxidized zone of very low radioactivity. A 10-foot crosscut was driven to cut the vein or shear zone at a point in the southeast drift about 75 feet from the station. About 10-12 tons of material, containing 0.15-0.2% U_3O_8, is estimated to have been produced from the above openings.

The production was from a small pod, encountered in the incline, at junctions of small subsidiary fractures within a favorable host rock. Other such pods can be expected but will probably be small and cannot be predicted. There is no evidence that the main shear, as such, is receptive to uranium deposition or that the shear has any extent laterally. In drilling for susidiary fractures, no specific target is presented nor can significant quantities of uranium ore be expected.

The field examiners and Field Team recommended that the application be denied.

Commodity Members' Comments:

In memoranda, dated May 22 and 27, 1958, James Paone, USBM, and N. E. Nelson, USGS, respectively, concur in the examiners' recommendation for denial.

Division of Rare and Miscellaneous Metals,
F. M. Murphy, May 29, 1958

I agree with the field examiners that there is little possibility that the exploration program proposed by the Applicant would result in the discovery of significant deposits of uranium ore.

Conclusions and Recommendations:

This Division agrees with the findings of the field examiners pertaining to favorability of the proposed project area, and therefore, concurs in their recommendations that application DMEA-4961 should be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis

DMEA Form 7
(12-56)

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Date	Surname	Code
5/28/58	Murphy	700
6/2	[illegible]	700
6/2	Sellards	230
6/3	[illegible]	110
[illegible]	[illegible]	100
6/3	N.G.	220
6/3	N.G.	225
6/2	Lamb	130
6/2	Kalsgaard	130

JUN 3 1958

Mr. Stanley Woodward
3009 N Street, N. W.
Washington, D. C.

Re: Docket No. DMEA-4961 (Uranium)
Sisk Property
Boulder County, Colorado

Dear Mr. Woodward:

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

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

Careful study of all our information, although noting some uranium mineralization on your property, indicates that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied.

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

Sincerely yours,

C. O. Mittendorf

Administrator

FMMurphy/gla
5-29-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Murphy
DMEA Field Team, Region III (2)

8623

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DMEA
RECEIVED MAY 28 1958
DATE
5/28 C 220
ic FMM 700
Complete

IN REPLY REFER TO:

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

May 27, 1958

Memorandum

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of Field Examination Report, DMEA Docket 4961 (Uranium) Stanley Woodward, Sisk Uranium Mine, Boulder County, Colorado

The examining team report that conditions on the applicant's property are not favorable for the occurrence of significant uranium ore deposits. Although old mine workings exist on the property, only one small pod of uranium ore estimated at 10 - 12 tons has been mined.

Uranium minerals on the property are associated with two shear zones. The shears, however, are very tight and do not have wide lateral extent. While other pods of ore similar in size and shape to the one which has already been mined can be expected, they will very likely be small and their location cannot be predicted. Seeking for the small mineralized seams would not appear to comprise a project appropriate for DMEA purposes.

Study of the field evidence leads me to agree with the Field Team's recommendation for denial of the application.

A. E. Nelson
for W. P. Williams

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5/22	C	220
5/23	JMM	700

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

Date May 22, 1958

DMEA Docket No. 4961
DMEA Contract No.
Commodity Uranium
Name of applicant Stanley Woodward
Name of property Sisk Uranium Mine
Location of property Boulder County, Colorado
Estimated cost of project

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: James Paone, Bureau of Mines Member
Uranium Commodity Committee

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

1. Date of subject document: 5/15/58. 2. Date received by reviewer: 5/21/58.

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)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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DATE		
5/19	C	220
5/21	2/B	130
5/21	C	220
5/22	FMM	700

224 New Customhouse
Denver 2, Colorado
May 15, 1958

Memorandum

To: Secretary to the Operating Committee

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

Subject: Docket No. DMEA 4961 (Uranium) Stanley Woodward (Sisk Uranium mine) Boulder County, Colorado - Joint Report of Examination

Enclosed are the original and two copies of the Joint Report of Examination on the subject property by Frank B. Moore, USGS, and W. W. Winkel, USBM.

The field examiners conclude that the probability for making a significant discovery is not sufficiently promising to justify Government participation. They recommend that the Application for DMEA assistance be denied. We concur in this recommendation.

E. N. Harshman

E. N. Harshman

Reviewed by
DMEA OPERATING COMMITTEE
5-21-58
(Date)

FOR GOVERNMENT USE ONLY

DMEA
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DATE
5/21 243 150 220

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA
DEPARTMENT OF THE INTERIOR
MAY 14 1958
REGION III
DENVER, COLORADO

DMEA 4961

Stanley Woodward

Sisk Uranium mine

Boulder County, Colorado

TRANSMITTED

~~Original signed by~~
~~E. N. HARSHMAN~~

MAY 15 1958

Uranium

Joint Engineering and Geologic Report

by

Frank B. Moore
Geological Survey

W. W. Winkel
Bureau of Mines

May 12, 1958

Reviewed by
DMEA OPERATING COMMITTEE
5-21-58
(date)

CONTENTS

	Page
Introduction and summary	1
Location, topography, and physical features	2
History, production, and ownership	2
Present status	4
Exploration and development	4
Mining equipment and other facilities	4
Geology and ore deposits	5
Ore reserves	6
Applicant's proposed program	6
Conclusions and recommendations	6

ILLUSTRATIONS

Figure	Follows page
1. Location map, Sisk Property, Boulder County, Colorado, DMEA 4961 - Stanley Woodward	2
2. Geologic map of the underground workings, Sisk property, Boulder County, Colorado	7

DMEA 4961

STANLEY WOODWARD
SISK URANIUM MINE
BOULDER COUNTY, COLORADO

INTRODUCTION AND SUMMARY

On March 7, 1958, Stanley Woodward, 3009 N Street NW, Washington, D. C., applied for DMEA assistance to explore for uranium at the Sisk property, Boulder County, Colorado. The operator proposes to explore a shear zone by 1,100 feet of diamond core drilling from the surface and from underground. The estimated cost is $8,605.76.

An examination, made April 4, 1958, by D. H. Richter, Geological Survey, and W. W. Winkel, Bureau of Mines, was restricted to the surface because of water in the drift. The underground workings were examined by F. B. Moore, Geological Survey, and Winkel on April 11, 1958.

Thin seams of pitchblende occur in subsidiary fractures on the footwall or northeast side of a northwest-striking shear. The shear cuts Precambrian Idaho Springs gneiss and pegmatitic Silver Plume granite. One small pod of "ore," estimated to contain about 10-12 tons, has been mined.

No field evidence can be found to indicate the possibility of significant tonnages of ore on the property. A denial of the application is recommended.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Sisk Uranium mine is located in sec. 2, T. 3 N., R. 71 W., Boulder County, Colorado. The mine is 3 miles northwest of Lyons, Colorado, a railhead for the Burlington Railroad, and one-quarter mile north of Colorado highway No. 66, on a one-way dirt road (fig. 1). The property is generally accessible throughout the year except after periods of very heavy snowfall.

The property is in the eastern part of the Colorado Front Range at an average altitude of about 6,500 feet above sea level. A number of prominent southward-trending ridges and valleys occupy the property. Relief is moderate, and drainage is southerly to St. Vrain Creek, an eastward-flowing tributary of the South Platte River.

Climate is moderate with cool summers and occasional sub-zero temperatures in winter. Snowfalls range from light to moderate, with the most rigorous winter weather during the period January to March.

Vegetation consists of grasses, pine, and spruce trees.

There are no unusual problems of supply, water, power, or labor.

HISTORY, PRODUCTION, AND OWNERSHIP

Preliminary exploratory drilling on the Sisk ranch was completed during August 1956. The first eight drill holes were collared in the Idaho Springs formation and plug drilled to bottom in granite pegmatite. Three core drill holes were also completed. Some minor showing of

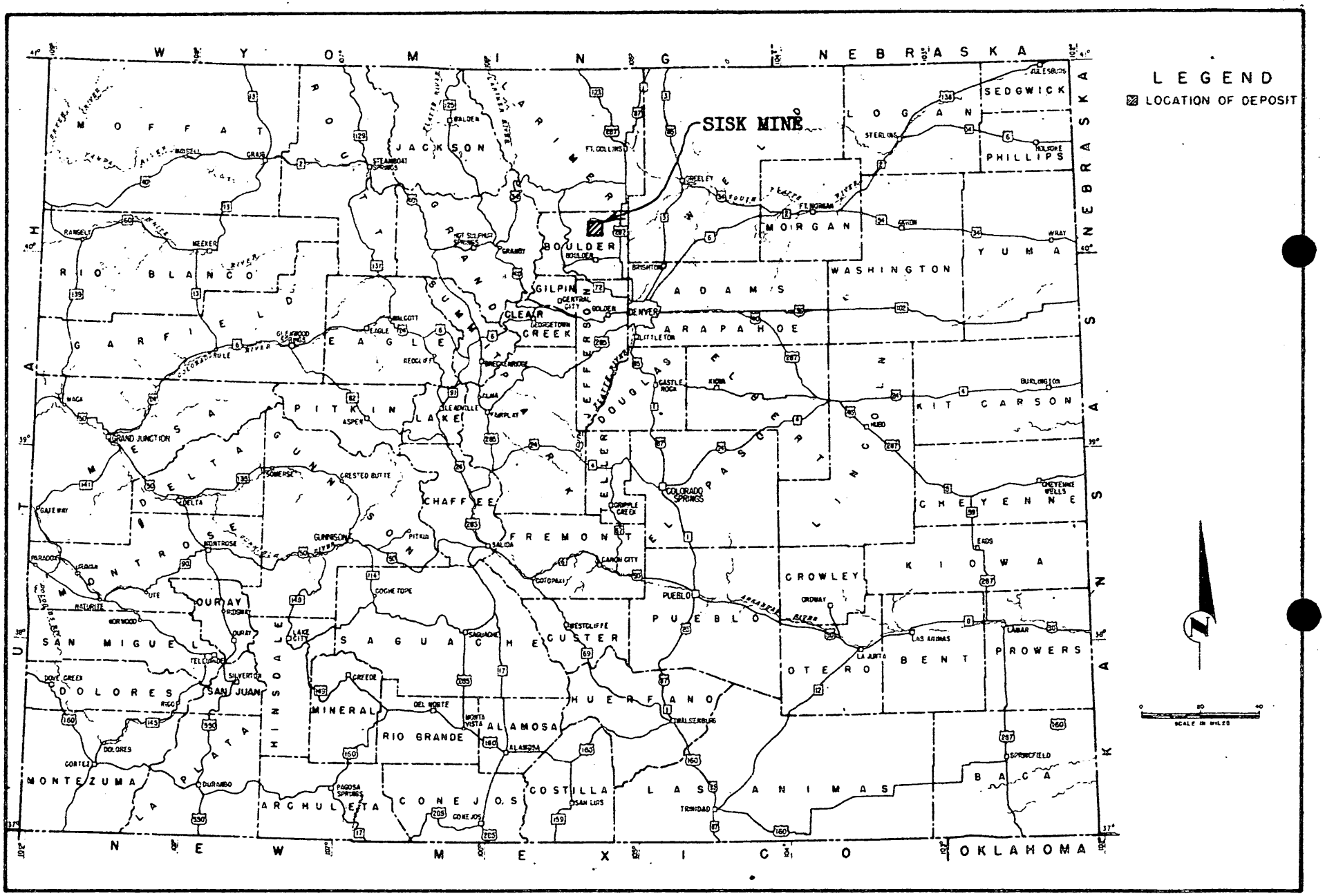

FIGURE 1 - LOCATION MAP, SISK PROPERTY, BOULDER COUNTY, COLORADO, DMEA 4961 - STANLEY WOODWARD

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DATE	INITIALS	CODE

radioactivity was noted as the result of this preliminary work. One drill hole was reported to have shown 2 feet of 0.87 percent of U_3O_8.

During April 1957 a 5- by 7-foot incline was started and sunk to an inclined depth of 40 feet, and bottomed in a hard granite pegmatite. A 10- by 15-foot station was cut at the bottom of the incline and drifts were driven in two directions along the trend of a fracture zone.

Production from preliminary sinking and drifting was estimated to be about 10-12 tons of 0.15-0.20 percent U_3O_8.

By an assignment, recorded November 14, 1956, the Stanray Mining Company in and for the consideration of $10.00 and other valuable considerations sold and assigned to Stanley Woodward, Sr., all of its rights, title, and interest in and to the Mining Lease wherein C. D. Sisk and Esther May Sisk of Boulder County, Colorado, are named as Lessors and Stanray Mining Company is named as Lessees, entered into on the 24th day of August 1955 covering the mineral rights to the Sisk Uranium mine located in sec. 2, T. 3 N., R. 71 W., Boulder County, Colorado. The mine under lease to Mr. Stanley Woodward, Sr., 3009 N Street, NW., Washington, D. C., is on the Sisk Ranch, some 1,845 acres more or less.

PRESENT STATUS

Exploration and development

The Sisk Uranium mine consists of a 40-foot incline and a 10- by 15-foot station, from which a 16-foot drift was driven northwest. A short raise was driven at the end of this drift which encountered some minor radioactive material which graded into a graphite, molybdenum-bearing rock. A drift was also driven 130 feet southeast paralleling a shear zone and was discontinued in a highly oxidized zone of very low radiometric count (fig. 2). At a point 75 feet from the station a 10-foot crosscut was driven to cut the vein or shear zone. No commercial material resulted from this work.

Mining equipment and other facilities

The following listed equipment is on the property:

1 Schramm # 105 Air Compressor

1 IR, J-50 Jackhammer

1 Thor - 4 ft. Jackleg

1 1-ton rope pull Hoist

1 End Dump, 16 cu. ft. Mine Car

1 8" Fan, w/1 H.P. Gasoline engine

1 3/4-ton, 1956 Pickup Truck

Small miscellaneous supply of pipe and rubber hose with one 400-gal. water tank.

Surface buildings consist of one Trailer House used as Supply Room, Change Room, and Office.

GEOLOGY AND ORE DEPOSITS

Rocks exposed in the vicinity of the Sisk prospect are chiefly schists and gneisses of the Idaho Springs series and pink granite which is called Silver Plume type by Boos (Boos, C. M., and Boos, M. F.: Tectonics of Eastern Flank and Foothills of Front Range, Colorado, AAPG Bull. v. 1A, no. 12, pp. 2603-2676, 1957). The granite occurs as a batholith which incloses the schist and gneiss; both types of rock are Precambrian in age. In and near the prospect, much of the gneiss is garnetiferous and most of the granite is pegmatitic. Garnet-magnetite gneiss is considered a favorable host rock for uranium at many places along the Front Range foothills.

At the property the foliation of the gneiss strikes northwest and dips 50 to 60 degrees southwest. Two shears explored by the workings are essentially parallel to the foliation in both strike and dip. The shears are 10 feet apart and consist chiefly of 6 inches to 1 foot of crushed rock with 1 inch of gouge and iron stain in places (fig. 2). Neither shear appears to be particularly receptive for the deposition of uranium; nearly all of the uranium encountered occurs in subsidiary fractures which crosscut the foliation on the footwall side of the footwall shear. Individual subsidiary features are tight. Pitchblende, in the seams, coats the surface of the fractures in places and, in one place, coats the footwall side of the footwall shear. The small pocket of "ore" encountered in the incline appears to be controlled by the junctions of a series of subsidiary features in the favorable garnetiferous gneiss.

The footwall shear, which is the one mostly followed by the workings, is exposed in a cut on the opposite side of the creek 60 feet east of the portal. The extension of the shears to the northwest or southeast is not evident on the surface possibly owing in part to the thin overburden. The footwall shear is so tight as to be nearly invisible in the northwest face of the workings.

ORE RESERVES

The small pod of uranium ore, estimated at 10-12 tons, encountered in the incline occurred at the fortuitous junctions of small subsidiary fractures within a favorable host rock. Other such pods can be expected but no significant quantities of uranium are to be expected.

APPLICANT'S PROPOSED PROGRAM

The applicant proposes to explore a shear zone by 1,100 feet of diamond core drilling from the surface and underground. The estimated cost is $8,605.76.

CONCLUSIONS AND RECOMMENDATIONS

The small pod of uranium ore, estimated at 10-12 tons, encountered in the incline occurred at the fortuitous junctions of small subsidiary fractures within a favorable host rock. Other such pods can be expected but will probably be small and cannot be predicted. There is no evidence that the main shear, as such, is receptive to uranium deposition or that

the shear has any considerable extent laterally. In drilling for subsidiary fractures, no specific target is presented nor can significant quantities of uranium be expected.

It is recommended that the application for DMEA assistance be denied.

2

224 New Customhouse
Denver 2, Colorado
March 31, 1958

4/3

Memorandum

To: E. N. Harshman w/enclosures 1-5
DMEA/DFC Att: Winkel w/enclosures 1-5

From: DMEA Field Team, Region III

Subject: Docket No. DMEA 4961 (Uranium) Stanley Woodward (Sisk Property) Boulder County, Colorado

Enclosed is the following material relating to the subject docket.

1. Copy of application for Government assistance in exploration work under the DMEA program.

2. Memorandum of Review by James Paone, USBM.

3. Memorandum of Review by N. E. Nelson, USGS.

4. Letter of transmittal of the foregoing to this office dated March 27, 1958, from the Chairman, Operating Committee, DMEA.

5. Routing Control sheet.

A field examination of the property and a joint report of findings and recommendations pertaining to the Applicant's work proposal are requested.

If the field examiners recommend Government participation in the proposed exploration program, please submit 11 extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries.

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer

HMC:dp

cc: Sec. Oper. Comm. (2)
Docket
Chron.

DMEA Form 7
(12-56)

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Date	Surname	Code
3/26	Murphy	900
3/26	[illegible]	700
3/26	[illegible]	730
"	Johnson	100
"	Hartenbach	100
		2/B
3/27	[illegible]	220
		900

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

MAR 27 1958

Re: Docket No. DMEA-4961 (Uranium)
Stanley Woodward
Sisk Property
Boulder County, Colorado

Dear Mr. King:

The captioned application is referred to Region III Field Team for review, a field examination if deemed advisable, and recommendations.

Enclosed are copies of memoranda, dated March 21 and 24, 1958, by James Paone, USBM, and N. L. Nelson, USGS, respectively, relating to the application. Also enclosed, for Field Team use, are two extra copies of the application.

In the event the Field Team recommends a project to explore the Sisk property, it should advise the Applicant that we will require five copies of form NF-205 signed by the owners C. D. Sisk and Esther May Sisk; also, five copies signed by Stanray Mining Company, the sub-lessors of the property.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (2/B)

Enclosures
APPROVED:

P. F. Yopes (2/B)
Member, Bureau of Mines

Thor H. Kiilsgaard (2/B)
Member, Geological Survey

FMMurphy/izm 3-25-58
cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

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(12-56)

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Date	Surname	Code
3/26	Murphy	700
3/26	King	700
3/26	Selfridge	130
"	Johnson	110
"	Gartendorf	100
		220
		700
3/26	Jones	130
3/26	Selfridge	(130)

MAR 27 1958

Mr. Stanley Woodward
3009 N Street, N. W.
Washington, D. C.

Re: Docket No. DMEA-4961 (Uranium)
Sisk Property
Boulder County, Colorado

Dear Mr. Woodward:

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

Mr. W. H. King
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.

Sincerely yours,

S. O. Harnett (fw)

Administrator

FMMurphy/izm 3-25-58
cc: Mr. Murphy
Admr.'s Reading File
DMEA FT Reg. 3 (2)

8623

IN REPLY REFER TO:

RECEIVED MAR 25 1958

DATE	INITIALS	
3/25	C	220
11	~~EWE~~	700
	FMM	
	~~Complete~~	

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

March 24, 1958
Re: DMEA 4961
Stanley Woodward
Sisk Property
Boulder County, Colorado
$8,605.76 - 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 exploring by drilling a so-called shear zone in the Idaho Springs, (Precambrian) formation. Within the 30-foot conformable shear zone are spots showing anomalous radioactivity and from a small 2-foot thick lense showing in an incline, 30 tons of material assaying 0.32% U_3O_8 has been mined.

In addition to the incline and 11 short drill holes, some 150 feet of drifting has been done in the zone and a short raise driven. Apparently no extensions of the ore body were found by such work. The eight underground drill holes proposed for Stage I, with 3 exceptions, would test the zone below and on the assumed plunge of the small ore shoot which is only 1 inch wide at the drift level. Two holes would crosscut the shear zone and one would tend to drift northerly in the zone.

Stage II drilling would consist of 4 holes from surface, drilled to test the zone below the down holes drilled from underground.

The proposed drilling would explore the zone for a length of 100 feet and a slope distance of 100 feet below the drift level. Unless the potential of the zone below the drift level is much greater than that above, the cost of the drilling plus the cost of development would be disproportionate to probable value of the ore that might be 'discovered'.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 24 1958

DATE	INITIALS	CODE
		220
"	Ellis	7A3
"	Murphy	

March 21, 1958

4961

Uranium
Stanley Woodward
Sisk Property
Boulder County, Colorado
$8,605.76

Ernest William Ellis, DMEA Member
Uranium Commodity Committee
James Paone, Bureau of Mines Member
Uranium Commodity Committee

Application

1. Date of [illegible] 3/14/58 Date [illegible] 3/21/58
2. [illegible] Yes [ ] No [ ]
3. [illegible] Yes [ ] No [ ]
4. Information [illegible] Yes [ ] No [ ]
5. Other political factors known to reviewers: Yes [ ] No [ ]
6. Explain items marked yes above:

7. Factors meeting special consideration:
   a. Location [ ]
   b. Commodity [ ]
   c. Evidence of mineralization [ ]
   d. Geology [ ]
   e. Proposed exploration method [ ]
   f. Alternate exploration method [ ]
   g. Costs [ ]
   h. [illegible] [ ]

8. Actions advised:
   a. Obtain information from applicant [ ]
   b. Refer to Field Team [x]
   c. Denial [ ]
   d. Agree with Field Team [ ]
      1. Consult with Mr [illegible]
   e. Disagree with [illegible] [ ]
   f. Request alternate [illegible] [ ]
   g. Request [illegible] [ ]
   h. Approval [ ]
   i. [illegible]

9. Remarks (Use back of page if necessary)

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

March 20, 1958

Mr. Stanley Woodward
3009 N Street, N. W.
Washington, D. C.

Subject: DMEA-4961

Dear Mr. Woodward:

Your application for exploration assistance, dated March 7, 1958 submitted to our office at Denver, Colorado has been assigned Docket Number DMEA-4961 and referred to the Rare & Miscellaneous Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

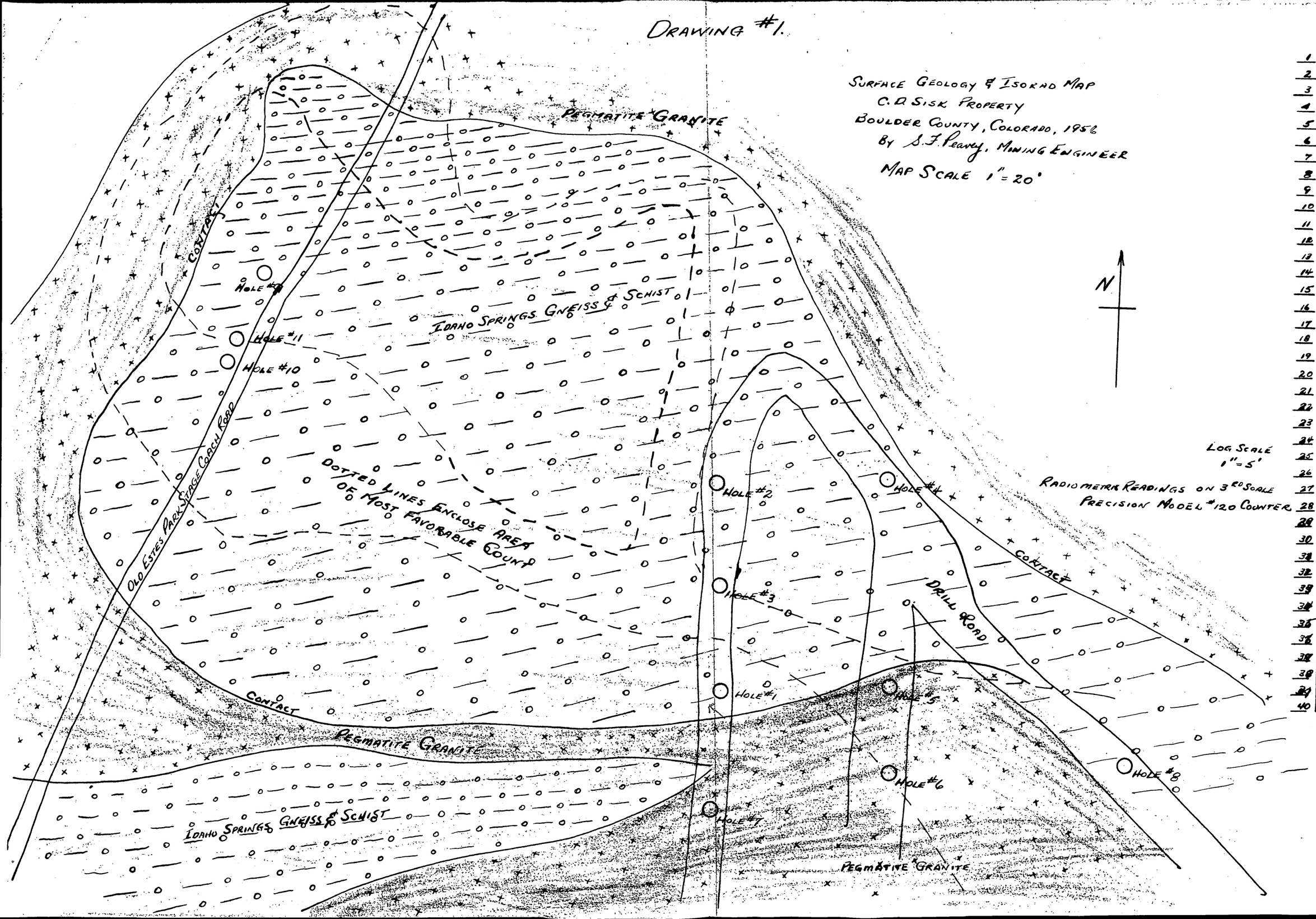
Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to: Region III

1
2
3
10
11
12

DRAWING #1.

SURFACE GEOLOGY & ISORAD MAP
C. A. SISK PROPERTY
BOULDER COUNTY, COLORADO, 1956
BY S. F. PEARY, MINING ENGINEER
MAP SCALE 1" = 20'



LOG SCALE
1" = 5'

RADIOMETRIC READINGS ON 3RD SCALE
PRECISION MODEL #120 COUNTER

1	.03
2	.03
3	.06
4	.05
5	.06
6	.03
7	.03
8	.03
9	.04
10	.05
11	.05
12	.05
13	.07
14	.14
15	.11
16	.14
17	.14
18	.14
19	.05
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25	.03
26	.03
27	.04
28	.02
29	.04
30	.03
31	.02
32	.03
33	.03
34	.02
35	.01
36	.01
37	.01
38	.01
39	.01
40	.02

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DMEA
RECEIVED MAR 17 1958

DATE	INITIALS	CODE

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 17 1958

DATE	INITIALS	CODE

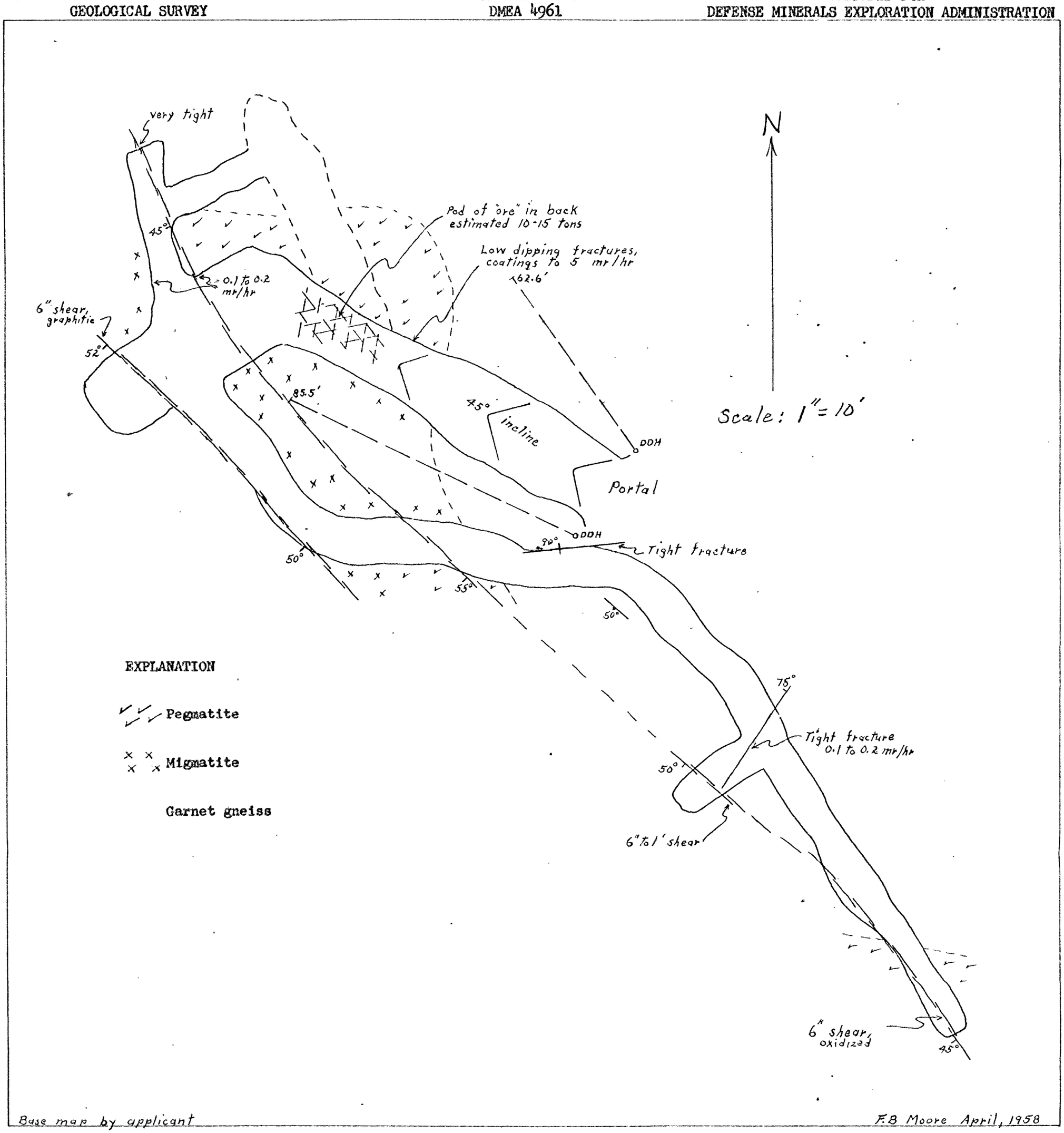
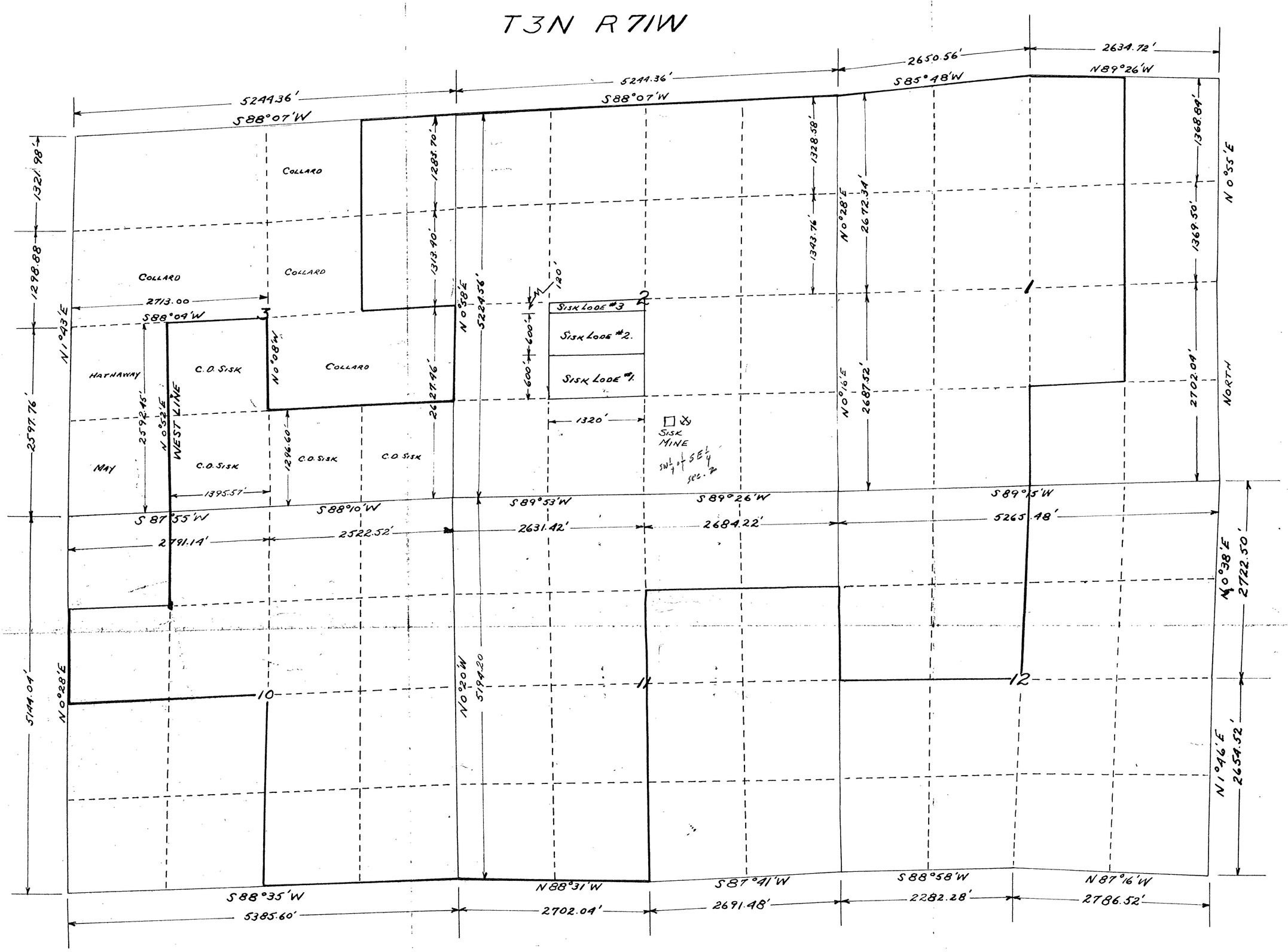


FIGURE 2.--GEOLOGIC MAP OF THE UNDERGROUND WORKINGS, SISK PROPERTY, BOULDER COUNTY, COLORADO

T3N R71W



SOME 1845 ACRES OWNED BY
C.D. & ESTER MAY SISK
LEASED FOR ALL MINERALS

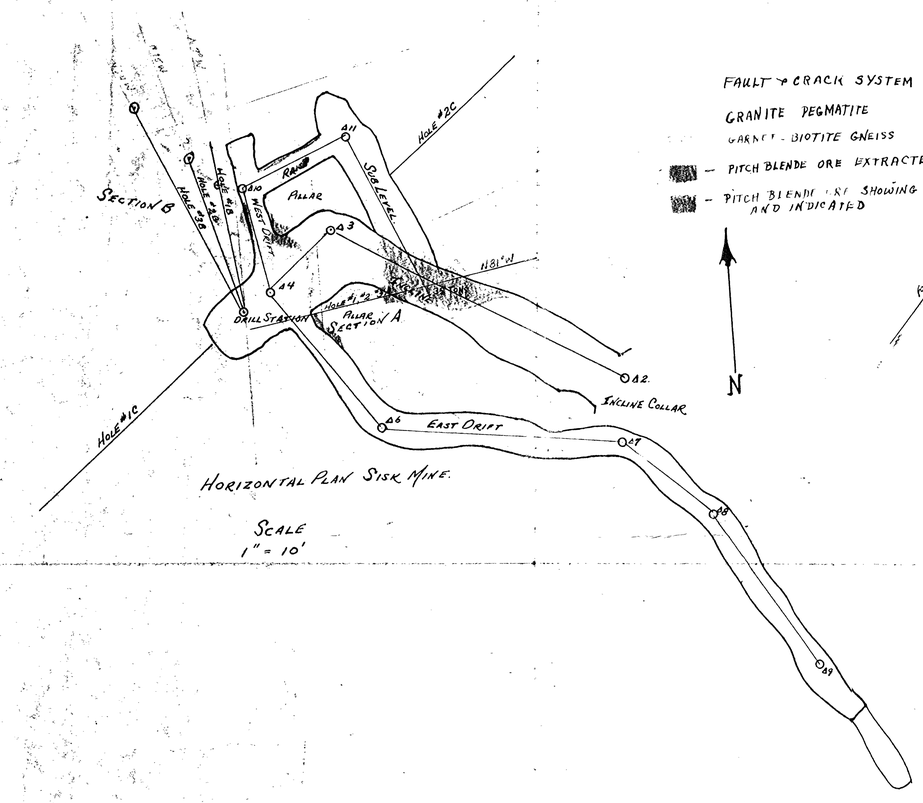
Bearings & Distances of sections taken from plat of dependent resurvey, sheet #2, T3N, R71W of the 6th principal meridian, Colorado, which is filed in the U.S. Surveyor General's Office, Denver, Colorado.

SISK PROPERTY
BOULDER COUNTY, COLO.
LEASED TO
STANLEY WOODWARD

Scale 1" = 880'

N
W E
S

March 29, 1957
S. F. Peavey, E.M.



Horizontal Plan Sisk Mine.

Scale
1" = 10'

Fault & Crack System

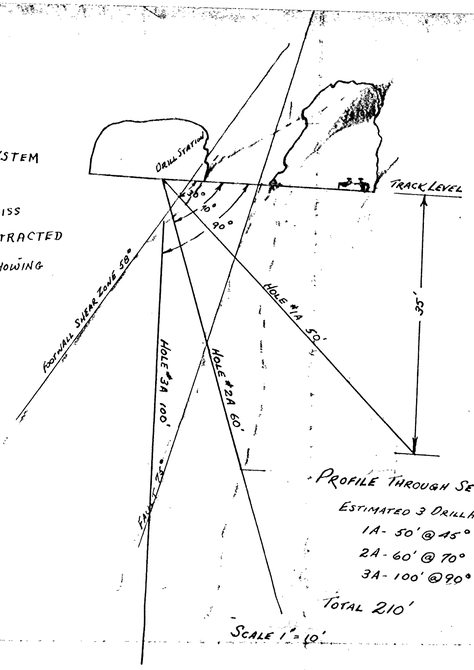
Granite Pegmatite

Garnet - Biotite Gneiss

— Pitch Blende Ore Extracted

— Pitch Blende Ore Showing and Indicated

N



Profile Through Section A

Estimated 3 Drill Holes

1A - 50' @ 45°

2A - 60' @ 70°

3A - 100' @ 90°

Total 210'

Scale 1" = 10'

Scale 1" = 10'

Vertical Diagram Section B

Estimated 3 Holes

1B 30' @ 50° ⊥L Sta. #3-#4 58°

2B 80' @ 58° ⊥L " " 67°

3B 80' @ 58° ⊥L " " 75°

Total 170'

Section C

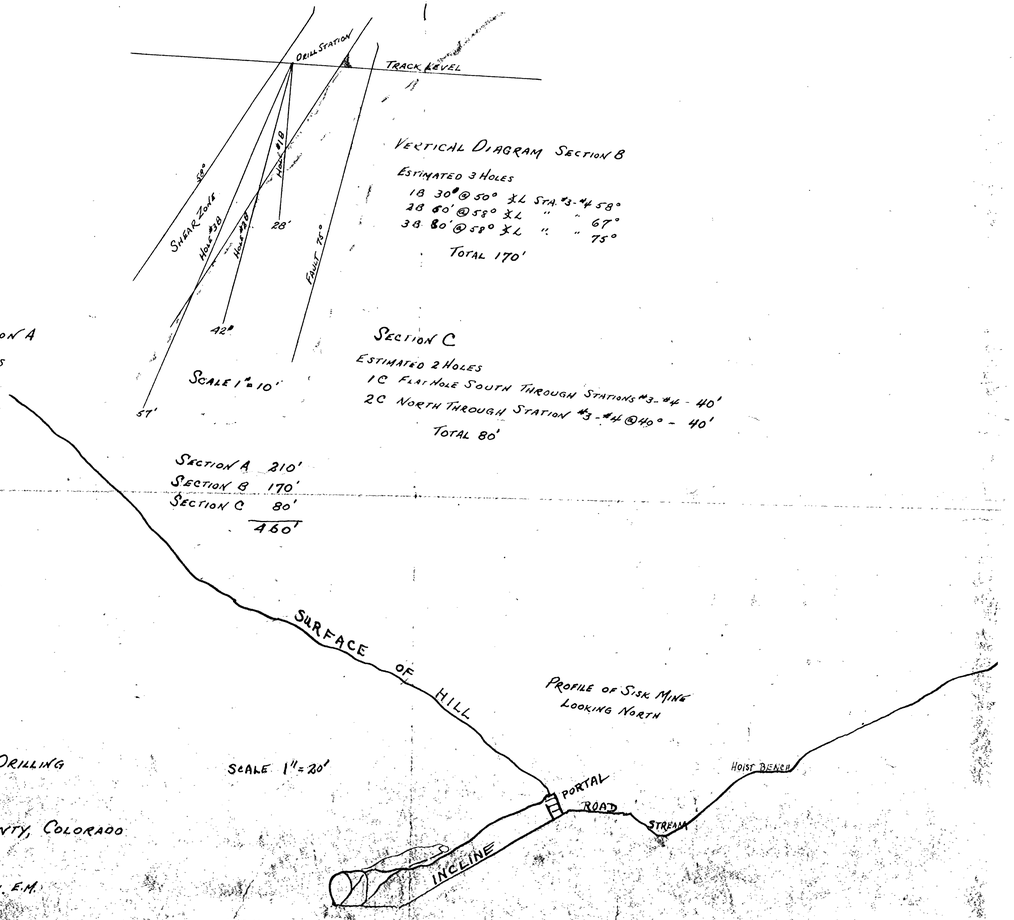
Estimated 2 Holes

1C Flat Hole South Through Stations #3-#4 - 40'

2C North Through Station #3-#4 @ 40° - 40'

Total 80'

Section A 210'
Section B 170'
Section C 80'
460'



Profile of Sisk Mine
Looking North

Scale 1" = 20'

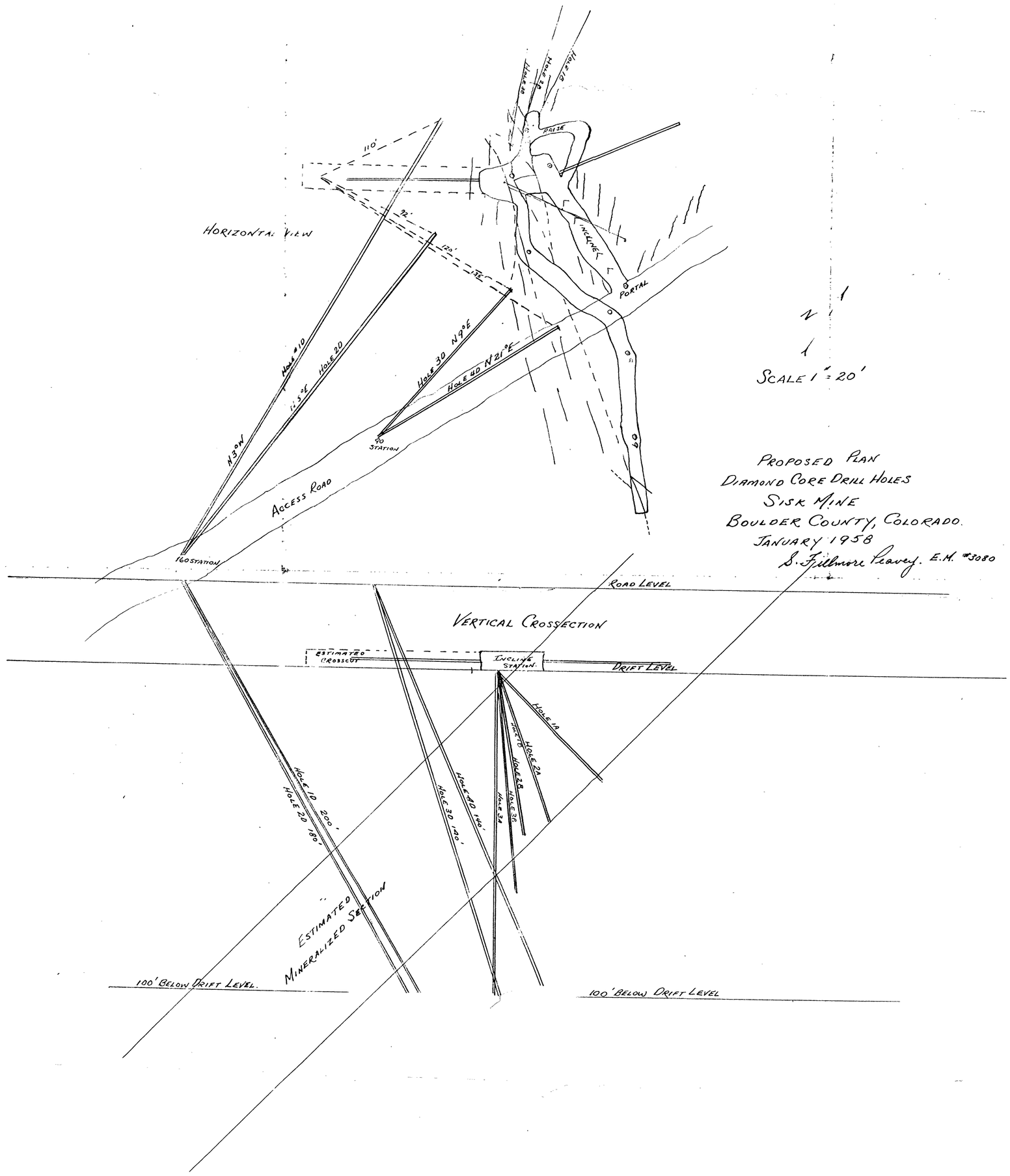
Proposed Exploration Core Drilling

Sisk Mine

Township 3 N Range 71 W, Boulder County, Colorado

December, 1957

S. Fillmore Peavy, E.M.



SCALE 1" = 20'

PROPOSED PLAN
DIAMOND CORE DRILL HOLES
SISK MINE
BOULDER COUNTY, COLORADO.
JANUARY 1958
S. Fillmore Peavey. E.M. #3080