DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 4944

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- [ ] Withdrawn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

- [ ] 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
- [ ] 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. 2 : Maps (Use pocket folder or envelope)
+ Rpt on Prelm' drilling

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

17963

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25 D.C.
224 New Customhouse
Denver 2, Colorado

April 29, 1958

EXTRA COPY
DMEA
RECEIVED MAY 6 1958

DATE	INITIALS	CODE
		400

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Status of DMEA Applications, Region III

As of this date, the following applications have been referred to the field for which no reports of examination have been forwarded to Washington; their status is as follows:

Uranium

DMEA 4603 - Atomic Resources Corporation (Waterfall group), San Juan County, Utah. After repeated delays, the applicant has been given until May 1, 1958, to submit revised exploration program and required supporting data. Approval of some exploration by drilling is indicated.

DMEA 4714 - Strategic Minerals Exploration Company (Goose-pimple claims Nos. 1-10), San Juan County, Utah. Applicant requested that action be deferred pending completion of private drilling. Drilling apparently completed but applicant has not informed DMEA of results or his wishes regarding further action on his application - possible approval.

DMEA 4815 - Wallace R. O'Keefe Associates-Mystery Sniffer Mines, Inc. (Mystery Sniffer claims), Beaver County, Utah. Examined April 22, 1958; denial report in preparation.

DMEA 4919 - United Western Minerals Company, Teller, Fremont, and Park Counties, Colorado. Reconnaissance examination made March 4, 5, and 6, 1958. Detailed examination of potentially good areas impossible due to heavy snow on afternoon of March 6, 1958. Applicant, by letter of April 8, 1958, informed DMEA that Newmont had agreed to explore the property and requested delaying action until after

November 1958. Applicant by letter of April 16, 1958, requested DMEA to proceed with action on request. Examination to be made April 28 and 29, 1958. Approval of limited program indicated.

DMEA 4929 - Lewis N. Larson and Jerry Phillips (Orr et al. claims), Moffat County, Colorado. Examined April 8, 1958. Denial without prejudice indicated.

DMEA 4934 - (Uranium-cobalt), Frank Hallick (Laura Mae claims), Beaver and Piute Counties, Utah. Attempted to examine April 21, 1958. Inaccessible due to snow. May be accessible late May or early June 1958. Field examination necessary - denial probable.

DMEA 4935 - Texas-Arizona Minerals Co., Inc., (Lone Star et al. claims), Yavapai and Yuma Counties, Arizona. This property was examined April 8, 1958, and a report recommending denial without prejudice is to be prepared.

DMEA 4943 - (Uranium-thorium and rare-earths) James Martin (Promise, et al. claims), Lawrence County, South Dakota. Examination scheduled for April 29 deferred because of snow. To be examined about May 6, 1958; denial probable.

DMEA 4961 - Stanley Woodward (Sisk property), Boulder County, Colorado. Examined April 11, 1958. Denial report to be prepared.

DMEA 4965 - Battle Axe Mining Company (Night Owl property), Albany County, Wyoming. Examined April 15, 1958. Denial report in preparation.

Base Metals

DMEA 4612 - (Lead-zinc) McGaulley Mining Company, Inc. (Samual J. Tilden property), Chaffee County, Colorado. Property not accessible due to snow; applicant requested to notify Denver Office when accessible. May be accessible latter part of June 1958. Data available indicates this property is on outer margin of a fair lead-zinc producing area, but that veins will be narrow and ore shoots, if any, will be insignificant. Application poor, examination necessary - denial probable.

DMEA 4866 - (Lead-zinc-copper) Roderick L. Reed, Sr. (Prince Lode claims), Ouray County, Colorado. Property not accessible due to snow; applicant requested to notify Denver Office when accessible. May be accessible latter part of May 1958. General data on area is inconclusive. Application poor, examination necessary. Approval possible but not probable.

DMEA 4900 - (Lead-zinc-copper) Jerome T. Jones (Cinderella et al. claims), Chaffee County, Colorado. Property not accessible due to snow; applicant requested to notify Denver Office when accessible. May be accessible early part of May 1958. This area has been explored with little success. Application poor, examination necessary - denial probable.

DMEA 4933 - (Lead-copper) Brush Creek Mining Company (Four groups of claims), Gunnison County, Colorado. Property inaccessible due to snow; applicant requested to notify Denver Office when accessible, probably about June 15, 1958. Property in area of small ore pods but few significant ore bodies. Application poor, property must be examined - denial probable.

DMEA 4981 - (Copper-lead-zinc) New Park Mining Company (Mayflower mine), Wasatch County, Utah. Examined April 23, 1958. Approval report in preparation.

Ferro-alloys

✓ DMEA 4957 - (Manganese-fluorspar) Francis Consolidated Mining and Milling Corporation (Francis Mining Tract), Ouray County, Colorado. Property not accessible due to snow; applicant requested to notify Denver Office when accessible. May be accessible latter part of May 1958. Poor application, field examination necessary. Manganese possibilities appear nil and fluorspar possibilities at best only fair.

DMEA 4979 - (Manganese) Magdalena Mining and Milling Company (Black Goose and Mangum claims), Socorro County, New Mexico. Examined April 15, 1958; denial report in preparation.

The following applications were filed in the Regional Office, transmitted to Washington but have not been referred to the field by the Washington Office:

✓ DMEA 4944 - (Manganese) United States Manganese Corporation (Treasure Mountain area), San Juan County, Colorado. The property is inaccessible due to heavy snow; may be accessible in late June 1958. Memorandum reviewing application forwarded to Chairman on March 28, 1958. Approval of some exploration can be recommended without field examination. GSA decision on acceptance of rhodonite as manganese ore requested by Washington Office.

DMEA 4986 - (Lead-zinc) Harold George Horn and M. L. Burger (Wellington mine), Summit County, Colorado. Examined April 21, 1958. Approval report in preparation.

DMEA ____ - (Uranium) San Mateo Dome Project (E½ sec. 32, T. 14 N., R. 8 W.), McKinley County, New Mexico. Field examiners are familiar with property and approval will probably be recommended without field examination.

DMEA ____ - (Uranium) P-C Mining Corp. (Shawver group), Fremont County, Wyoming. Weather permitting, will be examined about May 8, 1958. Possible approval indicated.

DMEA ____ - (Lead-zinc) United Park City Mines Company (Daly West) Summit and Wasatch Counties, Utah. Conferred with applicant April 25, 1958. Approval report to be prepared.

E. W. Haratman

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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RECEIVED FEB 24 1958
DATE

224 New Customhouse
Denver 2, Colorado

February 21, 1958

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA aid (Manganese) United States Manganese Corporation (Treasure Mountain Area) San Juan County, Colorado

Enclosed are three copies of the subject application, three copies of the applicant's letter of transmittal and three copies of a memorandum from E. N. Harshman. One copy of the application is being retained in our file.

Only two copies of the application contained signed forms MF-103 and both of these copies are enclosed. The application is well prepared.

W H King
W. H. King
Executive Officer

IN REPLY REFER TO:

DMEA
DEPARTMENT OF THE INTERIOR
FEB 21 1958
REGION III
DENVER, COLORADO

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

February 20, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket ____ (Manganese), United States Manganese Corp. (Treasure Mountain area), San Juan County, Colorado

Enclosed are four copies of an application for DMEA exploration assistance received today from the subject corporation.

Mr. C. Sheer, Vice-President of the U. S. Manganese Corporation, spent several hours last fall discussing with me the proposed project and the new process Vitro Minerals Corporation has developed for the recovery of manganese from rhodonite ore.

In my opinion there are large reserves of rhodonite in the Silverton area, and the claims included in this application are favorably located with respect to rhodonite-bearing veins. From the geological point of view, the probability of discovering large tonnages of rhodonite are good.

It appears, however, that geological considerations may be secondary to metallurgical considerations in evaluating the proposed program of exploration.

A field decision on the proposed exploration program, if one is requested, can be made only after data are furnished by the Operating Committee regarding the propriety of considering rhodonite as a manganese ore.

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DMEA
RECEIVED FEB 24 1958

DATE	INITIALS	CODE

E. N. Harshman

E. N. Harshman
Member, Field Team

Wdk
HMC

Mn

UNITED STATES MANGANESE CORPORATION

261 MADISON AVENUE, NEW YORK 16, NEW YORK · MURRAY HILL 2-5700

February 14, 1958

DMEA
DEPARTMENT OF THE INTERIOR
FEB 20 1958
REGION III
DENVER, COLORADO

Mr. Nelson Harshman
Acting Executive Officer, Region III
Defense Minerals Exploration Administration
Federal Center
Denver, Colorado

Dear Mr. Harshman:

Enclosed are five (5) copies of an application for DMEA aid in an exploration program for rhodonite ore on United States Manganese Corp. property in the San Juan County of Colorado.

Our plans involve a comprehensive drilling program divided into three phases, each to be carried out during three successive summer seasons. Weather conditions prevailing in the San Juan area limit the exploration season to the period between June and October. The entire exploration project would therefore require three years for consummation. For this reason we hope that consideration of the enclosed application can be accomplished in time to initiate the proposed program during the 1958 season.

If there is any further information you require, please do not hesitate to call on me.

Very truly yours,

UNITED STATES MANGANESE CORPORATION

Charles Sheer

C. Sheer
Vice President

CS:bfs
Enclosures (5)

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DMEA
RECEIVED FEB 24 1958

DATE	INITIALS	CODE

Form MF–103
Revised Feb. 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)

United States Manganese Corporation

DMEA
DEPARTMENT OF THE INTERIOR
FEB 20 1958
REGION III
DENVER, COLORADO

APPLICANT NOT TO USE THIS BLOCK

Docket Number	4944
Date Received	2-24-58
Government Participation %	
Region	III
Division Code	400

BUSINESS ORGANIZATION (Check one)

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

State in which firm is organized: Delaware

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
J. R. Dunning	261 Madison Ave, N. Y. C.	Chairman of Board
F. B. Jewett	" " "	President
C. Sheer	" " "	Vice-President
A. M. Garbade	" " "	Vice-President
J. M. Hopkins	" " "	Secretary
H. J. Nullmeyer	" " "	Treasurer

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

Estimated Cost of Project: $ 566, 372. 02

LOCATION OF PROPERTY

Name	County	State
Treasure Mountain Area	San Juan	Colorado

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order–I, Amended, "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.

February 10, 1958
Dated

Charles Sheer
BY *(Signature)*

Vice-President
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, Amended.

(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. 15539

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 24 1958

DATE	INITIALS	CODE

INFORMATION IN SUPPORT OF APPLICATION FOR FINANCIAL AID IN EXPLORATION FOR RHODONITE ORE

Submitted to

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

by

U. S. Manganese Corporation
261 Madison Avenue
New York 16, New York

Approved by C. Sheer
C. Sheer
Vice President

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I. APPLICANT'S PROPERTY RIGHTS

A. The mining properties of United States Manganese Corporation are situated in the Animas, Eureka, and Uncompaghre Mining Districts of San Juan County, Colorado. These consist of 187 patented lode claims and 60 unpatented locations. Of the 187 patented claims, 175 are fully owned and 12 partially owned by the applicant. A list of the patented claims with corresponding U. S. Mining Survey numbers is given in Table I. Unless specifically designated otherwise, the claims listed in Table I are owned 100% by the applicant.

Table II is a list of the unpatented claims with corresponding book and page numbers of original and amended recorded location notices in each case. All these locations are recorded in the Recorder's Office, County Courthouse Building, Town of Silverton, San Juan County, Colorado.

The exact location of all property owned or controlled by the applicant is shown in Map I. Metes and bounds with respect to neighboring U. S. Mining Monuments are obtainable from this map. Table III is a list of claims which should be excluded from Government lien because they do not form part of the geological structure prevailing in the exploration area. This property is sufficiently remote from the project site so that the results of the proposed exploration could not possibly yield any information as to its mineral content.

B. The names presented in Table I and II are the only ones known to the applicant for this property. Ownership or control of this property was transferred from the Great Divide Mining and Milling Corporation to U. S. Manganese Corporation by an agreement dated October 29, 1956 and recorded in San Juan County, Colorado on March 7, 1957, book 178, page 556.

C. The applicant owns 100% interest in the patented claims listed in Table I except as specifically indicated.

D. None

II. PHYSICAL DESCRIPTION

A. The exploration work carried on thus far on applicant's property consists of the following:

1. Reconnaissance Survey

This was carried out during the summer of 1957 to locate areas of extensive manganese mineralization. Prominent outcroppings of rhodonite were found in the Treasure Mountain area between Picayune Gulch and Placer Gulch. During this survey the veins were mapped for this area and a number of surface samples were taken for assay. The most promising area involves 14 patented and 12 unpatented claims, nearly all of which are contiguous. A vein map, showing claim boundaries, access road, sampling points, etc., is presented in Map II. A list of the applicants claims in this area is presented for convenience in Table IV. Assay data for six surface samples, taken at sites indicated on Map II, is presented in Table V. A copy of the assay certificate for these samples is included in Exhibit A.

2. Preliminary Drilling Program

During September and October 1957, six exploratory holes were drilled into the Silver Chord Vein. Referring to Map II, the location of the drill sites designated as Hole No. 1 to Hole No. 6 may be found on the Silver Lion, Jenny R., and Silver Chord claims. These holes intersected the vein at an average depth between 175 and 215 feet below the outcrop, and extended for a horizontal distance of 2400 feet along the strike. Assay certificates for the drill core samples of the vein matter for each of the six holes are included in Exhibit A. A report describing this drilling operation in detail and containing a surface map of the vicinity is included as Supplement I.

There are no existing mine workings or buildings on the land in question. Several small abandoned shafts and pits have been found on these veins in the locations indicated on Map II. No records could be found, however, giving information on these earlier workings.

B. All exploration described in II A, above, was carried out entirely by the U. S. Manganese Corporation.

C. There has been no production from the property in question except for scattered surface workings of apparent early date and for which no records could be found.

D. No accurate statement as to the ore reserves on the property can be made at this time by the applicant since no exploration work has been done on the property for manganese ore with the exception of the six drill holes described in II A above. These are too few in number and are too widely spaced to permit estimating reserves. However, they do permit the inference of considerable potential for a large tonnage of rhodonite. A discussion of the possible magnitude of ore tonnage indicated by the preliminary drilling is given in the report (Supplement I) pages 5-7.

E. Geological Description

The property under consideration is located in the northeastern part of the Silverton volcanic center. The geological features of this region has been described in considerable detail by Mr. W. S. Burbank in the Proceedings* of the Colorado Scientific Society. The rock formations exposed in the area are of volcanic origin, of the middle Tertiary Age (the Silverton volcanic series), resting on a buried basement of Pre-Tertiary sedimentary and Pre-Cambrian metamorphic rocks.

There are two fault systems in which the veins occur: a northeasterly striking system parallel to the Sunnyside and Toltec faults, and a younger northwesterly striking system. The veins are the typical banded San Juan veins and the mineralization appears to have taken place by successive fissure filling. The vein matter in this area consists of banded quartz and rhodonite with varying amounts of calcite. The gangue materials contain minor amounts of the sulfides of lead, zinc, and iron.

Rhodonite is the principal manganese mineral found in these structures. There are, however, lesser amounts of other manganese silicates and carbonates.

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* Burbank, W. S., "The Sunnyside, Ross Basin, and Bonita Fault Systems and Their Associated Ore Deposits, San Juan County, Colorado"; Colorado Scientific Society Proceedings, Vol. 15, No. 7, P. 285 (1951).

F. The reasons for expecting to find a considerable tonnage of rhondonite ore in this area are the following:

1. Surface examination has indicated strong fissure veins of considerable width throughout this area. Outcrops of these veins are 40 feet or more in width and may be followed along the strike for linear distances totaling several miles. Where outcrops are visible, the rocks are often characterized by the typical black stain due to weathered manganese mineral. The assays of the outcrop samples (Table V) show the presence of considerable manganese.

2. The six diamond drill holes, mentioned in II A above, which pierce the vein at a depth of ~200 feet, have demonstrated the persistence at this depth of considerable rhodonite in the vein matter, over a linear distance of 2400 feet along one of the major veins. The assay results of the core samples taken from the drill holes were used to calculate the approximate vein composition with regard to the principle gangue materials. This is summarized in Table VI. Averaged over the six holes, a rhodonite content of approximately 23% of the vein matter is indicated. The occurrence habit of the gangue materials, judging from visual inspection of the cores, appears to be in the form of alternating bands with relatively coarse intergrowth. Some of these bands were several feet or more in thickness, so that the recovery of a high grade rhodonite from the vein matter would appear feasible. It is significant that at the 200 foot depth, the vein width, as determined from the drilling log, averaged 25 feet.

3. Rhodonite is known to occur massively in the adjacent Sunnyside Mine located at 0.9 mile from the property to the west. Large tonnages are indicated by the prominent showings in the No Name, Sunnyside, and Washington veins of this mine. In particular, a dyke of almost solid rhodonite has been exposed in the Washington ore body measuring about 25 feet in thickness where it is intersected by the Terry Tunnel. This structure has been followed for a vertical distance of 1000 ft with no evidence of pinching off at the lowest level of exposure and appears to continue along the strike for at least 900 ft. Similarly at 0.4 mile to the east, in the Sandiago tunnel, a considerable showing of rhodonite was exposed at a depth of 800 feet, consisting of alternating rhodonite and quartz bands in a vein 45 feet in thickness. About 1/3 of the vein matter in this showing was high grade rhodonite.

G. The applicant has made no independent detailed geological studies of his property because this area has been exhaustively studied and reported in the published literature. We have used for our work the following reports:

1. Ransome, F. L., "A Report on the Economic Geology of the Silverton Quadrangle, Colorado", U. S. Geological Bulletin No. 182, USGPO (1901).

2. Purington, C. W., "Treasure Mountain, Colorado", Mining and Scientific Press, July 4, 1908.

3. Burbank, W. S., "Vein Systems of the Arrastre Basin and Regional Geologic Structure in the Silverton and Telluride Quadrangles, Colorado", Colorado Scientific Society Proceedings, Vol. 13, No. 5 (1933).

4. Kelley, V. C., "Geology, Ore Deposits, and Mines of the Mineral Point, Poughkeepsie, and Upper Uncompahgre Districts, Ouray, San Juan, Hinsdale Counties, Colorado", Colorado Scientific Society Proceedings, Vol. 14, No. 7, (1946).

5. Burbank, W. S., "The Sunnyside, Ross Basin, and Bonita Fault Systems and Their Associated Ore Deposits, San Juan County, Colorado"; Colorado Scientific Society Proceedings, Vol. 15, No. 7, (1951).

6. Larsen and Cross, "Geology and Petrology of the San Juan Region, Southwestern Colorado"; Geological Survey Professional Paper 258, USGPO, (1956).

III. ACCESSIBILITY OF PROJECT

A. The following persons are designated by the applicant to meet DMEA representatives and will be available to conduct them to the property for inspection.

1. Mr. S. Lawrence Martin, Field Representative of U. S. Manganese
   c/o Benson Hotel
   Silverton, Colorado
   Telephone: Dudley 7-9902

2. Mr. Fred S. Haley, Consultant Geologist
   3813 Mackland Avenue, N. E.
   Albuquerque, New Mexico
   Telephone: Amherst 8-2074

3. Directions for Property Inspection
   After notification of Mr. Martin and Mr. Haley, meet in Silverton at specified time at the Benson Hotel. Property is accessible by jeep or similar conveyance. Travel northeast on state highway from Silverton past the old site of the town of Eureka, up the Animas Canyon Road, 12 miles from Silverton. Turn left on Picayune Gulch Road which leads to the property 3 miles from the intersection.

B. Shipping and supply point for this perperty is Silverton, Colorado. The site is 15 miles from Silverton.

IV. THE EXPLORATION PROJECT

A. The proposed exploration project has been divided into three stages, all of which will consist of diamond drilling from the surface. The project plan involves proceeding with each of the three stages in sequence with the details of procedure for the later stages depending to some extent on the findings of the preceding stages. The following is the proposed work apportionment for the three stages.

Stage I

Stage I will consist of 30 holes totaling 10,925 feet of diamond drilling. These holes will be drilled with BX size bits through the overburden, and AX size through the veins. Twenty-seven of these holes are located in the Picayune Basin, and on Treasure Mountain to the north, and three in the Placer Gulch area. Their locations are shown on Map II and the details are listed in Table VII*. The general plan for Stage I is to drill 24 holes separated horizontally by approximately 500 feet at such angles as to intersect the veins about 200 feet below the outcrops. In addition, Stage I will include 6 holes to be drilled beneath the 6 holes drilled in 1957 and designed to intersect the vein at 500 feet below the outcrop.

Stage II

Stage II will consist of 33 holes totaling 27,420 feet of diamond drilling. The positioning of Stage II holds will be precisely determined at the end of Stage I. In general, however, 24 of these holes will be designed to intersect the veins at 300 feet below the shallower Stage I holes for a total depth of 500 feet below the outcrops; three will be drilled in the vicinity of certain Stage I holes, (D-17 to D-22 inclusive), so as to intersect the vein 1000 feet below the outcrops; finally, 6 holes are proposed on veins or parts of veins not drilled during Stage I, but where geological work in 1958 may indicate promise of good rhodonite content.

* It is not necessarily intended that the Stage I holes be drilled in the sequence presented in Table VII.

V. EXPERIENCE

United States Manganese Corporation is associated with the Vitro Minerals Corporation of Salt Lake City, Utah, through their joint affiliation with the Vitro Corporation of America, 261 Madison Avenue, New York, New York. The Vitro Minerals Corporation is engaged in exploration work and mining, as a major activity.

The proposed exploration project will be supervised by Mr. Fred S. Haley, 3313 Mackland Avenue, Albuquerque, New Mexico, who is geological consultant to U. S. Manganese Corporation.

Mr. Haley has had more than 14 years experience in exploration work, part of which has been spent in the Silverton area. In particular, he was specifically engaged for one full season and parts of some others in mapping rhodonite occurrences and estimating reserves in the same general area for the United States Mining, Smelting and Refining Co.

VI. ESTIMATE OF COSTS

A. Independent Contracts

It is the intention of U. S. Manganese to execute the proposed exploration project through independent contractors. Two such contracts are contemplated, one for the actual drilling, and one for management and technical services. The total estimated costs for each of these contracts is detailed in the following.

1. Drilling Contract*

Stage I

Core Size	Depth Range	Footage	Rate	Cost
BX	0-250 ft	300 ft	$5.70/ft	$ 1,710.00
AX	0-250	7,200	5.30	38,160.00
AX	250-500	3,425	5.75	19,693.75
Totals		10,925 ft		$59,563.75

Plus 30¢/ft for water haulage, reaming, casing, cementing, etc., = 30¢ x 10,925 = $3,277.50

Total drilling cost, Stage I $62,841.25

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* Quotations from drilling contractors are included in Exhibit B. The estimate of drilling costs is based on the lowest of these quotations, received from the Boyles Bros. Drilling Co., 1321 So. Main Street, Salt Lake City, Utah. (Letter dated Jan. 13, 1958 in Exhibit B). The Boyles Bros. Company were retained to do the preliminary drilling mentioned in Item II A above.

Stage II

Core Size	Depth Range	Footage	Rate	Cost
BX	0-250 ft	330 ft	$5.70/ft	$ 1,881.00
AX	0-250	7,920	5.30	41,976.00
AX	250-500	7,230	5.75	41,572.50
AX	500-1000	9,300	6.40	59,520.00
AX	1000-2000	1,950	7.30	14,235.00
Totals		26,730		$159,184.50

Plus 30¢/ft for water haulage, reaming, casing, cementing, etc., = 30¢ x 26,730 = $8,019.00

Total drilling cost, Stage II $167,203.50

Stage III

Stage III will consist of 18 holes totaling 25,470 feet of diamond drilling. The exact positions of Stage III holes will be determined at the end of Stage II, but in general, will be designed to intersect the veins at 500 feet below Stage II holes for a total depth of about 1000 feet below the outcrops.

The bulldozer work estimated for preparing drill sites and drill roads is 130 hours for each of Stages I and II, and 75 hours for Stage III. The average hole depth for the 24 shallow holes of Stage I is estimated at 330 feet, while the 6 deeper holes of Stage I will average 500 feet. For Stages II and III, the holes which intersect the veins at 500 feet below the outcrop, will average 825 feet in length, while those which intersect the veins at 1000 feet will average 1650 feet.

B. No access road is required for the proposed project since a good jeep road to the property is already in existence, as indicated in Map II.

C. The work on this project would commence on June 15, and extend to October 31, for each of three successive years, starting in 1958 and ending in 1960. It is planned to carry out each of the three stages, into which the exploration project is divided, during consecutive years. The dates chosen are dictated by average weather conditions in the area which are such as to preclude exploration work during the winter.

For Stage I holes, the anticipated average drilling progress for one eight hour shift is 18 feet per drill; for Stage II, 15 feet per drill shift is anticipated, while for the deeper Stage III holes, 12 feet per drill shift is the expected average. The project is planned on the basis of a double shift operation, in which 4 drill rigs would be employed during Stage I, 8 during Stage II, and 9 during Stage III. Therefore the anticipated average daily progress is as follows:

Stage I: 18 feet/drill x 4 drills/shift x 2 shifts/day
= 144 feet/day

Stage II: 15 feet/drill x 8 drills/shift x 2 shifts/day
= 240 feet/day

Stage III: 12 feet/drill x 9 drills/shift x 2 shifts/day
= 216 feet/day

Stage III

Core Size	Depth Range	Footage	Rate	Cost
BX	0-250 ft	18- ft	$5.70/ft	$ 1,026.00
AX	0-250	4,320	5.30	22,896.00
AX	250-500	4,500	5.75	25,896.00
AX	500-1000	7,950	6.40	50,880.00
AX	1000-2000	7,800	7.30	56,940.00
Totals		24,750 ft		$157,617.00

Plus 30¢/ft for water haulage, reaming, casing, cementing, etc.,
= 30¢ x 24,750 = $7,425.00

Total drilling cost for Stage III $165,042.00

Summary of drilling costs:

Stage I	$ 62,841.25
Stage II	167,203.50
Stage III	165,042.00
Total estimated cost of drilling contract.	$395,086.75

2. Management and Technical Services Contract

The following is a breakdown of the estimated costs for supervising the drilling operation and performing all technical services except the actual drilling, bulldozing, and assay work, these services to be supplied by independent vendors.

Stage I

Total footage for Stage I estimated at 10,925 ft.
Assume 4 drill rigs on two shift operation.
Therefore estimated drilling time is:

10,925 ÷ 18 ft/shift = 607 drill shifts
607 drill shifts ÷ 2 shifts/day = 304 drill days
304 drill days ÷ 4 drills = 76 days ÷ 26 days/mo. = 3 months

In addition to the technical manager it is estimated that 12 man-months of geologists' time plus 30 days for a surveying crew will be required for surveying, mapping, logging, and other necessary field work.

Personnel	Salary	Expenses
Geologists; 3 at $1,000/mo. x 2 months	$ 6,000.00	$1,980.00
2 at $ 750/mo. x 3 months	4,500.00	1,980.00
Surveying Crew; $100/day x 30 days	3,000.00	660.00
Samplers; 2 @ $104/wk. x 13 wks.	2,704.00	-
Draftsman; 1 @ $575/mo. x 5 months	2,875.00	1,500.00
Clerk-typist; 1 @ $290 x 4 months	1,160.00	-
Totals	$20,239.00	$6,120.00
Labor taxes, etc. @ 15%	3,035.84	
Total direct salaries	$23,274.84	
Expenses	6,120.00	
Total personnel cost	$29,394.84	

Operating Equipment

Jeep rental - 3 @ $275/mo. x 4 months	$ 3,300.00
Core splitter rental - 1 @ $25/mo. x 4 months	100.00
	$ 3,400.00

Operating Materials and Supplies

Jeep operation; gas, oil, maintenance @ 15¢/mi. x 3 jeeps x 70 mi./day each x 26 days/mo. x 4 months	$ 3,276.00
Core boxes: 560 boxes (20') x 40¢ ea.	224.00
Sample sacks: 40 @ 50¢ each	20.00
Misc.: drafting materials, office supplies, etc.	400.00
	$ 3,920.00

Miscellaneous Costs

Reproduction of maps and reports	$ 800.00
Local office rent @ $100/mo. x 4 months	400.00
Telephone, postage, freight on samples, etc.	500.00
	$ 1,700.00

Summary of Stage I Costs

Personnel	$29,394.84
Operating equipment	3,400.00
Operating materials and supplies	3,920.00
Miscellaneous	1,700.00
Total not including fee	$38,414.84
Management fee	17,000.00
Total cost for Stage I	$55,414.84

Stages II and III

Total footage for Stage II estimated @ 27,420 ft.
Assume 8 drill rigs on two shift operation.
Therefore estimated Stage II drilling time is:

27,420 ft ÷ 15 ft/shift = 1828 drill shifts
1828 drill shifts ÷ 2 shifts/day = 914 drill days
914 drill days ÷ 8 drills = 114 days ÷ 26 days/mo. = 4.4 mos.

Total footage for Stage III estimated @ 25,470 ft.
Assume 9 drill rigs on two shift operation.
Therefore estimated Stage III drilling time is:

25,470 ft ÷ 12 ft/shift = 2,122.5 drill shifts
2,122.5 drill shifts ÷ 2 shifts/day = 1,061 drill days
1,061 drill days ÷ 9 drills = 118 days ÷ 26 days/mo. = 4.5 mos.

For both Stages II and III, it is estimated that in addition to the technical manager, 5 man-months of geologists time will be required for logging, supervisory assistance, and incidental field work.

Since the drilling operation planned for Stages II and III are nearly identical, it is assumed that the costs will be the same. The following cost breakdown therefore applies to both.

Personnel	Salary	Expenses
Geologist: 1 @ $750/mo. x 5 months	$ 3,750.00	$1,650.00
Samplers: 4 @ $104/wk x 19 weeks	7,904.00	-
Draftsman: 1 @ $575/mo. x 3 months	1,725.00	900.00
Clerk-typist: 1 @ $290/mo. x 5 months	1,450.00	-
Totals	$14,829.00	$2,550.00
Labor taxes, etc. @ 15%	2,224.35	
Total direct salaries	$17,053.35	
Expenses	2,550.00	
Total personnel cost	$19,603.35	
Operating Equipment		
Jeep rental: 3 @ $275/mo. x 5 months	$ 4,125.00	
Core splitter rental: 1 @ $25/mo. x 5 months	125.00	
	$ 4,250.00	
Operating Materials and Supplies		
Jeep operation: gas, oil, maintenance, etc. @ 15¢/mi. x 3 jeeps x 70 mi./day x 120 days	$ 3,780.00	
Core boxes: 1380 boxes (20') @ 40¢ each	552.00	
Sample sacks: 50 @ 50¢ each	25.00	
Miscellaneous: drafting materials, office supplies, etc.	500.00	
	$ 4,857.00	
Miscellaneous Costs		
Reproduction of maps and reports	$ 800.00	
Local office rent @ $100/mo. x 5 months	500.00	
Telephone, postage, freight on samples, etc.	500.00	
	$ 1,800.00	

Summary of Stage II or Stage III Costs

Personnel	$19,603.35
Operating equipment	4,250.00
Operating materials and supplies	4,857.00
Miscellaneous costs	1,800.00
Total not including fee	$30,510.35
Management fee	17,000.00
Total cost for Stage II, III	$47,510.35

Summary of Management and Technical Services Contract

Stage I costs	$55,414.84
Stage II costs	47,510.35
Stage III costs	47,510.35
Total estimated cost of management and technical services contract	$150,435.54

VI B Included in VI A

VI C Included in VI A

VI D Included in VI A

VI E None

VI F None

VI G The work not included in the two independent contracts described in VI A above, but necessary for the completion of the proposed project, falls into the two categories listed below. It is planned to secure these services by purchase orders placed with appropriate firms. The estimated costs for this work are as follows:

(1) Bulldozing for site preparation and construction of auxiliary drill roads:

Stage I	
130 bulldozer-hours @ $15/hr.	$ 1,950.00
Stage II	
130 bulldozer-hours @ $15/hr.	1,950.00
Stage III	
75 bulldozer-hours @ $15/hr.	1,125.00
Total for bulldozer work	$ 5,025.00

(2) Assay work for analysis of drill-core samples. The analytical work planned will involve the same determinations performed in the preliminary drilling and included in Exhibit A. It is estimated that an average of 15 assays per hole will be required, at a cost of $13.00 per sample.

Stage I	
30 holes x 15 assays x $13 per sample	$ 5,850.00
Stage II	
33 holes x 15 assays x $13 per sample	6,435.00
Stage III	
18 holes x 15 assay x $13 per sample	3,510.00
Total for analytical work	$15,795.00

Recapitulation of Estimated Costs

	Stage I	Stage II	Stage III
Drilling Contract	$ 62,841.25	$167,203.50	$165,042.00
Management and Technical Services Contract	55,414.84	47,510.35	47,510.35
Bulldozer Work	1,950.00	1,950.00	1,155.00
Analytical Work	5,850.00	6,435.00	3,510.00
Totals	$126,056.09	$223,098.85	$217,217.35

Total estimated cost of exploration project:

Stage I -	$126,056.09
Stage II -	223,098.58
Stage III -	217,217.35
Grand total	$566,372.02

VII.

A. The U. S. Manganese Corporation is prepared to furnish its share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order-I, Amended.

B. The U. S. Manganese Corporation proposes to furnish its share of the costs in the form of money payments to independent contractors and service companies.

TABLE I

List of Patented Mining Claims Owned By
United States Manganese Corporation
As of October 25, 1957

Name of Claim	U. S. Mining Survey Number	Mining District
Acherson	1718	Eureka
An Undivided 1/2 Acapulca	180	Uncompahgre
Adelia	510	"
Big Giant	505	"
Byron	419-A	Eureka
Byron Mill Site	419-B	"
Buffalo	509	Uncompahgre
Clara	506	"
Central	507	"
A. W. Hafer	508	"
Georgia	504	"
Hite Wing	511	"
Silver	512	"
Waldron	513	"
Acme	5671	Eureka
Roy	298	"
Rainbow	5671	"
Tempest	5671	"
Ben Bolt	994	"
Bountiful	2583	"
Boston Dip	1478	Uncompahgre
Brown	5140	Eureka
Bryan (Part)	15481	Uncompahgre
Bullion	352	"
Big Mountain	5073	"
Belcher	2121	Eureka and Uncompahgre
Bonanza No. 2	5121	Uncompahgre
Bannock Burne	1204	"
An Undivided 81/100 Bruce	19320	Eureka

Name of Claim	U. S. Mining Survey Number	Mining District
An Undivided 81/100 Little Julia	19320	Eureka
Braidalbine	2501	"
Blue Jacad	5398	Uncompahgre
Copper King	5120	"
Caesar	6715	Eureka
Canola	2101	"
Crescent	18238	"
Carbonate King	1175	"
Canon	1262	"
Custer	14438	"
Cleveland	5072	Uncompahgre
Cleveland No. 2	5072	"
Cross Cut	1847	"
Clydesdale	2501	Eureka
Cornell	858	"
Beach	17954	Eureka
Lotah	17954	"
Protection	17954	"
Protection No. 1	17954	"
Yellowstone	17954	"
Dolly	1231	"
Emma	1753	"
Ellen	1232	"
Digger Indian No. 2	485	Uncompahgre
Denver Belle	13428	"
Hoosier Girl	13428	"
North Star	14447	"
An Undivided 17/18 Rosenkranz	13428	"
Denver	5416	"
Denver	2071	"
Dexter	4860	Eureka
Excelsior	857	"
Equator	113	"
Excelsior	19110	"
Excelsior Ext.	19110	"
Hard Cash	1241	"
Home Stake	19110	"

Name of Claim	U. S. Mining Survey Number	Mining District
Home Stake Ext.	19110	Eureka
Home Stake Annex	19110	"
Gold Brick	19110	"
Ore Cache	19110	"
La Plata Grande	1263	"
Evergreen	16931	Uncompahgre
Esquimaux	5126	"
Extension	676	Eureka
Indian Chief	675	"
Enterprise	2102	"
Evening Star	1851	Uncompahgre
Eva	2072	"
Frances	19411	Eureka
Little Giant	19411	"
Forest Queen	2186	Uncompahgre
Frank Barber	2676	"
Meyers	2676	"
O.K.	2676	"
Flora Fredericks	2605	Eureka
Pavillion	1601	"
Specie	1602	"
Sue Amenda	2605	"
Joe Shipley	19016	"
Fanetta	5415	"
Toronto	5425	"
Great Eastern No. 2	235	Uncompahgre
An Undivided 1/3 Great Republic	970	Eureka
Galena No. 1	17366	Animas
Galena No. 3	17366	"
Galena No. 6	18640	"
Gipsey Maid	1845	Uncompahgre
Ready and Rough	1846	"
Great Eastern	725	Eureka
Silver Lion	322	"
Gipsey King	1775	Uncompahgre
Great Western	1603	Eureka
Hilgrade	1096	Uncompahgre

Name of Claim	U. S. Mining Survey Number	Mining District
Hurricane Peak	478	Uncompahgre
Hesperian	1258	"
Index	18120	Eureka
Iron	2325	"
Justice	18152	"
Jennie R.	2331	"
J. H. French Placer	45	Animas and Eureka
Kate Gibson	1757	Eureka
Katie	746	"
Lee	1716	"
Lake Park	241	Uncompahgre
Lincoln Boy	1261	"
Little Flossie	2327	Eureka
North Pole	1393	"
Promontory	4860	"
Pontoon	1752	"
Ruby	2326	"
Ruby Cross	2328	"
Sterling	414	"
Silver Wing (Surface Only)	70	"
Monitor	530	"
Mountain King	2662	"
Mobile	398	Uncompahgre
An Undivided 1/5 Mountain Eagle	15304	Eureka
Manhattan	495-A	Uncompahgre
Manhattan Mill Site	495-B	"
Merrimac	1751	Eureka
My Choice	2397	Eureka and Uncompahgre
Morning Star	18282	Eureka
Nasby	1918	Uncompahgre
Niagara	2133	Eureka
Redemption	1915	Uncompahgre
O. C. Day	1713	Eureka
Oberto	217	"
Parnell	15251	Eureka and Uncompahgre

Name of Claim	U. S. Mining Survey Number	Mining District
Parallel	18152	Eureka
First S.W. Poughkeepsie Ext.	2177	Uncompahgre
Pine	5123	Eureka and Uncompahgre
Paymaster	4770	Eureka
Queen	826	Uncompahgre
Rollo	350	"
Rarus	995	Eureka
Russell	2184	"
San Francisco	4829	"
An Undivided 10/11 Seven Thirty	225	Uncompahgre
St. Louis	501	"
Silvery Falls	5120	"
Silver Cliff	7300	"
Silver Chord	2103	Eureka
Silver Blossom	567	Uncompahgre
Silver Hill	351	"
Silver Cloud	973	Eureka
Silver Crown	18282	"
Silver Key	18282	"
Silver King	18282	"
Summitt	18282	"
Seventy-six	2108	Uncompahgre
Silver Chord	2335	Eureka and Uncompahgre
Silver Belt	1365	Uncompahgre
Tyrol	476	"
An Undivided 3/5 Toltec	5544	Eureka
An Undivided 3/5 Toltec No. 1	5544	"
An Undivided 2/3 Taggert	2338	"
Tom Moore	94	"
Vermillion Ext. No. 2	1290	"
Vermillion Ext. No. 1	109	"
Wolverine	1179	Uncompahgre
War Eagle	20074	Eureka
Silver Comet	2134	"
Eagle	17954	"

Name of Claim	U. S. Mining Survey Number	Mining District
Daisy	1693	Eureka
I.X.L.	4879	"
Paymaster	1694	"
Barhoff	19738	"
Maude S.	2466	"
Shakespeare	2465	"
Big Cliff	17954	"
Cliff	17692	"
Golconda Mill Site	17701	"
Vesta	19127	"
Veta Grande	17954	"
Empire State	6937	"
Garibaldi	659	"
Crater Lode	20047	"

TABLE II

List of Unpatented Claims*
Controlled by U. S. Manganese Corporation
as of October 25, 1957
in Eureka Mining District, San Juan County, Colorado

	Name	Original Recording		Amended Recording	
		Book	Page	Book	Page
1.	Empire	147	510	--	--
2.	Empire No. 1	147	511	--	--
3.	Empire No. 2	157	282	--	--
4.	Empire No. 3	157	283	--	--
5.	Empire No. 4	157	284	--	--
6.	Empire No. 5	157	285	--	--
7.	Empire No. 6	157	287	--	--
8.	Empire No. 7	157	288	--	--
9.	Empire No. 8	157	289	--	--
10.	Empire No. 9	157	294	--	--
11.	Empire No. 10	157	295	--	--
12.	Float Gold Placer, Tracts A & B	157	268	--	--
13.	Copper Boy No. 1	147	233	92A	279
14.	Copper Boy No. 2	147	254	--	--
15.	Copper Boy No. 3	142	5	92A	280
16.	Frances No. 1	147	215	--	--
17.	S. G. M.	147	543	92A	267
18.	Tom Moore No. 1	147	215	129	635
19.	Tom Moore No. 2	157	350	--	--
20.	Tom Moore No. 3	157	351	--	--
21.	Tom Moore No. 5	147	315	92A	277
22.	Tom Moore No. 6 (1st location)	147	316	--	--
23.	Tom Moore No. 6 (2nd location)	157	321	--	--
24.	Slide	116	312	129	208

* Affidavits of labor for these claims filed in San Juan County Recorder's Office for the year, July 1, 1957 to June 30, 1958.

Name	Original Recording Book	Original Recording Page	Amended Recording Book	Amended Recording Page
25. Mexia	147	367	92A	269
26. Mexia No. 2	147	368	92A	270
27. Mexia No. 3	157	332	--	--
28. Mexia No. 4	157	333	--	--
29. Mexia No. 6	157	334	--	--
30. Treasure Mountain	147	527	92A	271
31. Treasure Mountain No. 1	147	528	92A	272
32. Treasure Mountain No. 2	157	322	--	--
33. Treasure Mountain No. 3	157	323	--	--
34. Treasure Mountain No. 4	157	324	--	--
35. Treasure Mountain No. 5	157	325	--	--
36. Treasure Mountain No. 6	147	529	92A	273
37. Treasure Mountain No. 7	147	530	--	--
38. Treasure Mountain No. 8	157	335	--	--
39. Treasure Mountain No. 9	157	326	--	--
40. Treasure Mountain No. 10	157	336	--	--
41. Treasure Mountain No. 11	157	337	--	--
42. Treasure Mountain No. 12	157	338	--	--
43. Treasure Mountain No. 13	157	339	--	--
44. Treasure Mountain No. 14	157	340	--	--
45. Treasure Mountain No. 15	157	327	--	--
46. Treasure Mountain No. 16	157	341	--	--
47. Treasure Mountain No. 17	157	342	--	--
48. Golden Fleece No. 1	157	316	--	--
49. Golden Fleece No. 2	157	317	--	--
50. Golden Fleece No. 3	157	318	--	--
51. Golden Fleece No. 4	157	319	--	--
52. Golden Fleece No. 5	147	525	92A	274
53. Golden Fleece No. 6	147	526	92A	275
54. Byron No. 1	147	370	--	--
55. Byron No. 2	147	371	--	--
56. Byron No. 3	147	372	92A	276
57. Byron No. 4	147	524	--	--
58. Nantucket No. 1	147	493	--	--
59. Nantucket No. 2	147	494	92A	278
60. Bear No. 12	157	267	--	--

TABLE III

List of United States
Manganese Property to Be Excluded
From Government Lien

A. Patented Claims

Name of Claim	U. S. Mining Survey Number	Mining District
An Undivided 1/2 Acapulca	180	Uncompahgre
Adelia	510	"
Big Giant	505	"
Byron	419-A	Eureka
Byron Mill Site	419-B	"
Buffalo	509	Uncompahgre
Clara	506	"
Central	507	"
A. W. Hafer	508	"
Georgia	504	"
Hite Wing	511	"
Silver	512	"
Waldron	513	"
Acme	5671	Eureka
Roy	298	"
Rainbow	5671	"
Tempest	5671	"
Ben Bolt	994	"
Bountiful	2583	"
Boston Dip	1478	Uncompahgre
Brown	5140	Eureka
Bryan (Part)	15481	Uncompahgre
Bullion	352	"
Big Mountain	5073	"
Belcher	2121	Eureka and Uncompahgre
Bonanza No. 2	5121	Uncompahgre
Bannock Burne	1204	"
An Undivided 81/100 Bruce	19320	Eureka

Name of Claim	U. S. Mining Survey Number	Mining District
An Undivided 81/100 Little Julia	19320	Eureka
Braidalbine	2501	"
Blue Jacad	5398	Uncompahgre
Copper King	5120	"
Caesar	6715	Eureka
Carbonate King	1175	"
Canon	1262	"
Custer	14438	"
Cleveland	5072	Uncompahgre
Cleveland No. 2	5072	"
Cross Cut	1847	"
Clydesdale	2501	Eureka
Cornell	858	"
Beach	17954	"
Lotah	17954	"
Protection	17954	"
Protection No. 1	17954	"
Yellowstone	17954	"
Dolly	1231	"
Emma	1753	"
Ellen	1232	"
Digger Indian No. 2	485	Uncompahgre
Denver Belle	13428	"
Hoosier Girl	13428	"
An Undivided 17/18 Rosenkranz	13428	"
Denver	5416	"
Denver	2071	"
Dexter	4860	Eureka
Equator	113	"
Excelsior	19110	"
Excelsior Ext.	19110	"
Hard Cash	1241	"
Home Stake	19110	"
Home Stake Ext.	19110	"
Home Stake Annex	19110	"
Gold Brick	19110	"
Ore Cache	19110	

Name of Claim	U. S. Mining Survey Number	Mining District
La Plata Grande	1263	Eureka
Evergreen	16931	Uncompahgre
Esquimaux	5126	"
Extension	676	Eureka
Indian Chief	675	"
Evening Star	1851	Uncompahgre
Eva	2072	"
Frances	19411	Eureka
Little Giant	19411	"
Forest Queen	2186	Uncompahgre
Frank Barber	2676	"
Meyers	2676	"
O. K.	2676	"
Flora Fredericks	2605	Eureka
Pavillion	1601	"
Specie	1602	"
Sue Amenda	2605	"
Joe Shipley	19016	"
Fanetta	5415	"
Toronto	5425	"
Great Eastern No. 2	235	Uncompahgre
Galena No. 1	17366	Animas
Galena No. 3	17366	"
Galena No. 6	18640	"
Gipsey Maid	1845	Uncompahgre
Ready and Rough	1846	"
Gipsey King	1775	Uncompahgre
Great Western	1603	Eureka
Hilgrade	1096	Uncompahgre
Hurricane Peak	478	"
Hesperian	1258	"
Iron	2325	Eureka
Justice	18152	"
J. H. French Placer	45	Animas and Eureka
Lake Park	241	Uncompahgre
Lincoln Boy	1261	"
Little Flossie	2327	Eureka

Name of Claim	U. S. Mining Survey Number	Mining District
North Pole	1393	Eureka
Promontory	4860	"
Pontoon	1752	"
Ruby	2326	"
Ruby Cross	2328	"
Sterling	414	"
Silver Wing (Surface Only)	70	"
Monitor	530	"
Mobile	398	Uncompahgre
An Undivided 1/5 Mountain Eagle	15304	Eureka
Manhattan	495-A	Uncompahgre
Manhattan Mill Site	495-B	"
Merrimac	1751	Eureka
My Choice	2397	Eureka and Uncompahgre
Nasby	1918	Uncompahgre
Niagara	2133	Eureka
Redemption	1915	Uncompahgre
Oberto	217	Eureka
Parnell	15251	Eureka and Uncompahgre
Parallel	18152	Eureka
First S. W. Poughkeepsie Ext.	2177	Uncompahgre
Pine	5123	Eureka and Uncompahgre
Paymaster	4770	Eureka
Queen	826	Uncompahgre
Rollo	350	"
Rarus	995	Eureka
Russell	2184	"
San Francisco	4829	"
An Undivided 10/11 Seven Thirty	225	Uncompahgre
St. Louis	501	"
Silvery Falls	5120	"
Silver Cliff	7300	"
Silver Blossom	567	"
Silver Hill	351	"

Name of Claim	U. S. Mining Survey Number	Mining District
Silver Cloud	973	Eureka
Seventy-six	2108	Uncompahgre
Silver Chord	2335	Eureka and Uncompahgre
Silver Belt	1365	Uncompahgre
Tyrol	476	"
An Undivided 2/3 Taggert	2338	Eureka
Tom Moore	94	"
Vermillion Ext. No. 2	1290	"
Vermillion Ext. No. 1	109	"
Wolverine	1179	Uncompahgre
Silver Comet	2134	Eureka
Eagle	17954	"
Daisy	1693	"
Paymaster	1694	"
Barhoff	19738	"
Maude S.	2466	"
Shakespeare	2465	"
Big Cliff	17954	"
Cliff	17692	"
Golconda Mill Site	17701	"
Vesta	19127	"
Veta Grande	17954	"
Empire State	6937	"
Garibaldi	659	"

B. Unpatented Claims

Name	Original Recording Book	Original Recording Page	Amended Recording Book	Amended Recording Page
Empire	147	510	--	--
Empire No. 1	147	511	--	--
Empire No. 2	157	282	--	--
Empire No. 3	157	283	--	--
Empire No. 4	157	284	--	--
Empire No. 5	157	285	--	--
Empire No. 6	157	287	--	--
Empire No. 7	157	288	--	--
Empire No. 8	157	289	--	--
Empire No. 9	157	294	--	--
Empire No. 10	157	295	--	--
Float Gold Placer, Tracts A & B	157	268	--	--
Copper Boy No. 1	147	233	92A	279
Copper Boy No. 2	147	254	--	--
Copper Boy No. 3	142	5	92A	280
Frances No. 1	147	215	--	--
S. G. M.	147	543	92A	267
Tom Moore No. 1	147	215	129	635
Tom Moore No. 2	157	350	--	--
Tom Moore No. 3	157	351	--	--
Tom Moore No. 5	147	315	92A	277
Tom Moore No. 6 (1st location)	147	316	--	--
Tom Moore No. 6 (2nd location)	157	321	--	--
Slide	116	312	129	208
Golden Fleece No. 5	147	525	92A	274
Golden Fleece No. 6	147	526	92A	275
Byron No. 4	147	524	--	--
Bear No. 12	157	267	--	--

TABLE IV

LIST OF U.S. MANGANESE CLAIMS IN THE EXPLORATION AREA

(1) PATENTED

Kate Gibsen, No. 1757

Index, No. 18120

Excelsior, No. 857

Mountain King, No. 2662

Crescent, No. 18238

Great Republic, No. 970

Canola, No. 2101

Great Eastern, No. 725

Silver Lion, No. 322

Jennie R., No. 2331

Silver Chord, No. 2103

Crater, No. 20047

Enterprise, No. 2102

War Eagle, No. 20074

(2) UNPATENTED

Golden Fleece, No. 1

" " No. 2

" " No. 3

" " No. 4

Treasure Mountain, No. 3

" " No. 4

" " No. 5

TABLE IV (Continued)

Treasure	Mountain,	No. 8
"	"	No. 9
"	"	No. 10
"	"	No. 11
	"	No. 12

TABLE V - SURFACE SAMPLE ASSAY DATA

Symbol (Map II)	Assay No.	Location	Type of Sample	Assay Data				
				% Mn	% SiO_2	% Combined Pb, Zn, Cu	Ozs/ton Au	Ozs/ton Ag
S1	5426	Kate Gibson Claim, #1757 200 ft. from S. W. boundary	Channel sample across 6 ft. rhod. -bearing outcrop	26.5	33.8	0.42	trace	0.1
S2	5427	Kate Gibson Claim, #1757 750 ft. from S. W. boundary	Channel sample across 12 ft. rhod. -quartz outcrop	25.4	43.8	0.55	trace	0.2
S3	5431	Index Claim #18120 center of claim	Composite grab sample from dump adjacent to small pit	15.3	21.6	3.70	0.02	3.4
S4	5423	Great Eastern Claim #725 center of east-west vein	Channel sample across 8 ft. rhod. -quartz outcrop	13.2	77.9	0.05	0.02	1.1
S5	5429	Silver Lion Claim, #322 center of east-west vein	Composite grab sample from dump adjacent to small tunnel	7.7	88.7	0.60	trace	0.3
S6	5428	Jennie R. Claim, #2331 center of east-west vein	Composite grab sample from dump near portal of small shaft	8.2	80.2	0.45	0.01	0.8

TABLE VI

APPROXIMATE CONTENT OF MAJOR GANGUE MATERIALS IN VEIN MATTER AT 200 FT. DEPTH

(Calculated From Drill Core Assay Data)

Hole No.	Depth* of Vein	Vein Width, Ft.	% Rhodonite	% Free Quartz	% Calcite
1	219	22.5	26	18	40
2	209	25.7	31	11	41
3	188	46.5	18	34	20
4	197	63.2	27	28	44
5	181	31.5	21	45	17
6	184	18.0	15	45	30

* Below outcrop

TABLE VII

DRILL HOLES PROPOSED FOR STAGE I
OF EXPLORATION PROJECT

A. Picayune Basin

Hole No.	Claim	Inclination	Depth in Feet Bx	Depth in Feet Ax	Total
D-1	Excelsior	-45°	10	390	400
D-2	Excelsior	-45°	10	390	400
D-3	Mt. King	-30°	10	250	260
D-4	Mt. King	-30°	10	250	260
D-5	Mt. King	-30°	10	250	260
D-6	Index	-45°	10	310	320
D-7	Index	-45°	10	310	320
D-8	Great Republic	-35°	10	430	440
D-9	Great Republic	-35°	10	440	450
D-10	Great Republic	-45°	10	365	375
D-11	Conola	-45°	10	390	400
D-12	Great Eastern	-45°	10	330	340
D-13	Great Eastern	-45°	10	330	340
D-14	Crescent	-45°	10	270	280
D-15	Crescent	-45°	10	270	280
D-16	Silver Lion	-35°	10	240	250
D-17	Silver Lion	-45°	10	490	500
D-18	Silver Lion	-45°	10	480	490
D-19	Jennie R	-45°	10	450	460
D-20	Jennie R	-45°	10	480	490
D-21	Jennie R	-45°	10	530	540
D-22	Silver Chord	-45°	10	500	510
D-23	Jennie R	-45°	10	250	260
D-24	Silver Chord	-45°	10	250	260
D-25	Crater	-45°	10	320	330
D-26	Crater	-45°	10	320	330
D-27	Treasure Mt. #5 (U. P.)	-45°	10	320	330
					9,875

B. Placer Gulch

Hole No.	Claim	Inclination	Depth in Feet Bx	Ax	Total	
D-28	Kate Gibson	45°	10	340	350	
D-29	Kate Gibson	45°	10	340	350	
D-30	Kate Gibson	45°	10	340	350	
						1,050
					Total footage for Stage I	10,925

Bulldozer work for drill sites and drill roads estimated at 130 hrs.

EXHIBIT A

DRILL CORE SAMPLE ASSAY DATA FROM PRELIMINARY DRILLING OF SILVER CHORD VEIN

OFFICIAL FILE COPY
DMGA
RECEIVED FEB 23 1958
DATE | INITIALS | CODE

EXHIBIT B

QUOTATIONS OF DRILLING COSTS
FROM PROSPECTIVE CONTRACTORS

Diamond Core Drilling
Mining
Quarries
Shaft Sinking
Tunnel Driving

Bayles Bros.
DRILLING COMPANY

CONTRACTORS · ENGINEERS · GEOLOGISTS
General Offices
1321 South Main Street Phone HUnter 4-4481
SALT LAKE CITY 15, UTAH

January 13, 1958 Reply to: S. L. C.

OFFICIAL FILE COPY
DMFA
RECEIVE

Mr. C. Sheer, Vice President
United States Manganese Corporation
261 Madison Avenue
New York 16, New York

Dear Mr. Sheer:

Reference is made to your letter of January 6 referring to the proposed drilling program to be done on the rhodonite deposits near Silverton, Colorado. We are very much interested in carrying out this program should the program be approved and have carefully gone over costs of the preliminary drilling to see just what could be done price-wise. It seems however, that our rates were apparently just about correct on the first work. We sustained a small loss on the 1422 feet drilled, but feel that with a greater amount of work and doing it in the summer the rates would be correct.

Following are the rates necessary for Stage 1 with the necessary revision for holes beyond 500 feet.

1. Drilling Rates:

	AX	BX	NX
0 - 250	$5.30	$5.70	$6.60
250 - 500	5.75	6.30	
500 - 750	6.30	6.90	
750 - 1000	6.90	7.60	

2. Reaming, if required, will be charged for at $2.50 per foot.

3. Cementing, if required, $10.60 plus cost of cement or cement substitute, including drilling mud.

4. Surveying or delays ordered by the company will be charged for at $9.60 per hour.

5. Weather delays will be charged for at $6.60 per hour for 2 man crew.

6. Water will be hauled at truck rentals of $250.00 plus 12 cents per mile plus drivers wages and payroll taxes.

7. Access roads and drill stations will be at no cost to us.

8. Bull Dozer D6 Class will be charged for at $14.00 per hour, plus cost of mobilization to job.

9. Lost Casing will be charged for at 75% of list price f.o.b. the job. Casing left in hole at company's request will be charged for at list price f.o.b. the job.

Should the foregoing rates meet with your approval, no further inspection would be necessary. We feel that after Stage 1 was drilled we would be happy to go over our costs with you and adjust them according to the findings. However, at this point we feel the foregoing rates are as low as we dare to quote for a program of this magnitude.

Thank you for calling on us.

Yours very truly,

P. A. Park.

P. A. Park
Assistant Manager, Drilling Division

PAP/bm

cc: Mr. Fred S. Haley

MINERALS ENGINEERING COMPANY
P. O. BOX 1951
GRAND JUNCTION, COLORADO

January 2, 1957

Mr. C. Sheer, Vice President
United States Manganese Corporation
261 Madison Avenue
New York 16, New York

Dear Sir:

Your letter dated December 24, 1957, to R. G. Sullivan has been referred to me.

Please accept the following quotations as our bid for diamond core drilling your property in the Treasure Mountain region of the Eureka Mining District near Silverton, Colorado:

Proposal No. 1

Depth	Price per Foot AX Core
0-250 feet	$ 9.50
250-500 feet	12.50
500-750 feet	15.50
750-1000 feet	18.50
1000-1250 feet	22.50
1250-1500 feet	28.50
1500-1750 feet	35.00

Standby time will be charged at the rate of $18.50 per hour. Mobilization, moving and setting up between holes, reaming and cementing would be on a standby time basis. The above prices per foot would include water hauling providing we could get to each drill site with 4-wheel drive water trucks and would not exceed a 2-mile haul.

Proposal No. 2

Hourly basis of $15 per hour, plus all diamond bit costs.

It is my understanding from a telephone conversation with your geologist, Mr. Fred Haley, that you would want a minimum of four core drills and Stage 1 drilling would consist of a total minimum footage of 10,000 feet to a maximum depth of 850 feet for six holes and 24 holes averaging 330 feet all to be completed in the summer of 1958; also, all holes will be 35° to 45° angle holes with part of the drills skid-mounted.

The bulldozer work would be $13.25 per hour for D-7 caterpillar angle dozers and $16.50 per hour for D-8 caterpillar angle dozers plus $1 per mile move-in from Grand Junction on either size dozer for less than 200 hours of work at any one time.

Very truly yours,

MINERALS ENGINEERING COMPANY

Edson Foster

Edson Foster
Drill Superintendent

Ef/k

cc - Mr. Fred Haley
J. L. Robison

SPRAGUE & HENWOOD, Inc.
Contractors for DIAMOND DRILLING
MINERAL EXPLORATION • SOIL SAMPLING • PRESSURE GROUTING

EXECUTIVE OFFICES & PLANT
221 WEST OLIVE STREET
SCRANTON, PENNSYLVANIA
Telephone Diamond 4-8507

January 18, 1958

United States Manganese Corporation
261 Madison Avenue,
New York 16, New York

Attention:- Mr. C. Sheer,
Vice-President

Gentlemen:-

In further reference to your inquiry of December 24th, requesting a quotation on drilling in the Treasure Mountain region of the Eureka Mining District near Silverton, Colorado, our Mr. Carver was in touch with your Mr. Fred S. Haley and we are pleased to submit to you the following prices for drilling, Stage 1, 2 and 3:-

ITEM NO.

1 - For drilling AX holes

Depths	0' to 500'	-	$	6.20 per lin.ft.
"	500' to 1000'	-	$	6.85 per lin.ft.
"	1000' to 1250'	-	$	7.60 per lin.ft.
"	1250' to 1500'	-	$	8.35 per lin.ft.
"	1500' to 1750'	-	$	9.35 per lin.ft.

2 - For reaming holes

AX to BX	-	-	$	3.35 per lin.ft.
BX to NX	-	-	$	3.85 per lin.ft.
NX to 3-1/2"	-	-	$	4.50 per lin.ft.

3 - For cementing - - - $ 9.00 per hour (plus cost of cement)

4 - Bulldozer work, using Allis-Chalmers HDS Tractor with 10-foot blade - $ 9.00 per hour.

For the above prices we will furnish complete drilling equipment, including experienced operating personnel.

You are to furnish core boxes for any cores which you wish to preserve.

Payments to be made monthly. Our invoice will be issued on the first of each month covering work performed the previous month and payments to be made within 15 days after date of invoice.

BRANCH OFFICES: NEW YORK • PITTSBURGH • PHILADELPHIA • BUCHANS, NEWFOUNDLAND • GRAND JUNCTION, COLORADO

MANUFACTURERS OF DIAMOND DRILLS DRILLING EQUIPMENT "ORIENTED" DIAMOND BITS

TO:-
United States Manganese Corporation
Attn:- Mr. C. Sheer, Vice-President

1/18/58

We wish to thank you for your inquiry. If awarded the contract, we are prepared to take care of this work when you require it and the work will be performed from our Grand Junction, Colorado Branch.

Very truly yours,

SPRAGUE & HENWOOD, INC.,

Wm. J. Schank

Wm.J.Schank,
Vice President

WJS:GT
cc - Mr. Fred S. Haley,
3813 Mackland Avenue, N.E.,
Albuquerque, New Mexico

cc - Grand Junction Office

SPRAGUE & HENWOOD, Inc.
Contractors for DIAMOND DRILLING
MINERAL EXPLORATION • SOIL SAMPLING • PRESSURE GROUTING

EXECUTIVE OFFICES & PLANT
221 WEST OLIVE STREET
SCRANTON, PENNSYLVANIA
Telephone Diamond 4-8507

January 30, 1958

United States Manganese Corporation
261 Madison Avenue,
New York 16, New York

Attention:- Mr. C. Sheer,
Vice-President

Gentlemen:-

We wish to refer you to our quotation of January 18, 1958 for drilling in Treasure Mountain region near Silverton, Colorado.

ITEM NO. 4 of our quotation is for using an Allis-Chalmers HDS Tractor with 10-foot blade and we have received a letter from our Mr. Robert Carver, stating it was agreed between he and your Mr. Haley that a Caterpillar D-7 Tractor should be used to make the roads and the smaller bulldozer on which we quoted would be the Allis-Chalmers HDS was too small to take care of this work satisfactorily.

Therefore, this item should read - you are to provide the bulldozer and make roads at your expense.

We are sorry there has been a misunderstanding in the type of bulldozer required for the road work.

Very truly yours,

SPRAGUE & HENWOOD, INC.,

Wm.J.Schank,
Vice President

WJS:GT
c - Mr. Fred S. Haley,
3813 Mackland Avenue, N.E.,
Albuquerque, New Mexico

cc- Grand Junction Office

BRANCH OFFICES: NEW YORK • PITTSBURGH • PHILADELPHIA • BUCHANS, NEWFOUNDLAND • GRAND JUNCTION, COLORADO

MANUFACTURERS OF DIAMOND DRILLS DRILLING EQUIPMENT "ORIENTED" DIAMOND BITS

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

October 28, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 30 1958

DATE	INITIALS	CODE
10/30	C	220
10/31	WSM	400
		225

Memorandum

To: George C. Selfridge, Acting Chairman, Operating Committe, OME

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

Subject: Docket No. DMEA-4944 (Manganese) U. S. Manganese Corporation (Treasure Mountain Area) San Juan County, Colorado

In reference to your letter of October 24, 1958, we have been unable to learn whether or not the land described in Docket DMEA-4944 is involved in the deposits owned by the Great Divide Mining and Milling Corporation, but from indirect sources we have been given to understand that the U. S. Manganese Corporation controls the property owned by the Great Divide Mining and Milling Corporation. Also, in the application, Docket DMEA-4944, it is stated that the U. S. Manganese Corporation is associated with Vitro Minerals Corporation. Therefore, it seems logical to assume that the deposits are one and the same.

We have also been given to understand that in excess of 50 tons of rhodonite ore has been processed through the Pride Of The West mill at Howardsville to remove the sulfides and that the remainder was shipped for processing at the West Orange, N. J. plant.

If more specific information is desired, we will make further attempts to obtain it for you.

E. N. Harshman

E. N. Harshman

No reply necessary
WSM

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10-24	Holt	400
10-24	Martin	400
10/24	[illegible]	130
"	Johnson	110
		~~400~~ ~~240~~ 225

OCT 24 1958

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

Re: Docket No. DMEA 4944 - Manganese
U. S. Manganese Corporation
Treasure Mountain Area
San Juan County, Colorado

Dear Mr. Harshman:

It is not clear whether the attached copy of an article in the MINING RECORD for October 1, 1958, refers to the same deposit for which U. S. Manganese Corporation filed the above-captioned application, and whether Vitro Corporation has made any shipments of rhodonite from the Silverton area.

We will appreciate any information you can give us on this matter.

Sincerely yours,

George C. Selfridge

ACTING Chairman, Operating Committee (24/2)

APPROVED:

Richard H. Mote (24/2)
Member, Bureau of Mines

N. E. Nelson (24/2)
Member, Geological Survey

SPHOLT:foc 10-24-58
cc to: Code 400
Director's Read. File
Oper. Comm.
FT. REG. II
Messrs. Gilbert DeHuff, USBM
T. H. Kiilsgaard, USGS

Attachment

8623

MANGANESE MINING HOLDS ATTENTION IN SAN JUAN, COLORADO

Vitro Corp. of America, Skarr-Korman Associates, Inc., and Great Divide Mining & Milling Corp. joined forces to produce manganese by a new process from rhodonite deposits owned by Great Divide and located in the Eureka area of San Juan county near Silverton. The process was invented by Shear-Korman and Vitro was awarded a BCA contract to equip and operate a pilot plant at West Orange, N. J., on the rhodonite. -- U. S. Bureau of Mines.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7/9	WSM on LEAVE	400
7/9	RC	400
7/11	Selbrede	130
"	Johnson	110
"	Hartenday	100
		230
7/11	Lamb	130
7/11	Kiilsgaard	130

Mr. C. Sheer, Vice-President
U. S. Manganese Corporation
261 Madison Avenue
New York, 16, New York

JUL 14 1958

Re: Docket No. DMEA 4944 - Manganese
Treasure Mountain Area
San Juan County, Colorado

Dear Mr. Sheer:

Early in June we sent you the Department of the Interior Information Service Release dated June 6 which announced that no new Defense Minerals Exploration Administration contracts could be executed after June 30 because of the ending of the present program for exploration assistance.

We regret to inform you that your application, identified above, could not be completely processed before June 30 because we did not have the necessary information. I had discussed the subject at some length with Mr. Littel of Vitro Corporation, when he called here on May 20, 1958. According to our latest information, although the technical feasibility of the Hi-Arc process to recover manganese from rhodonite ores has been proven, there are still several problems to be solved by additional pilot-plant work before the economic aspects of the process can be realistically appraised.

Under the DMEA program we could not have approved an exploration project on your property until a satisfactory recovery process for the type of ore to be explored had been clearly demonstrated and, hence, better indicating the probability of making a significant discovery of such ore.

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

WSMARTIN:dl 7-9-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. III
Messrs: Gilbert DeHuff, USBM
T. H. Kiilsgaard, USGS

8623

GENERAL SERVICES ADMINISTRATION

Washington 25, D. C.

JUN 23 1958

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 25 1958

DATE	INITIALS	CODE
6-25	Hg.	225
25	[illegible]	100
"	[illegible]	110
		120
	WSM	400

DMEA 4944

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

Dear Mr. Mittendorf:

Relative to your inquiry of June 9 on the Vitro Corporation of America, 261 Madison Avenue, New York City, we have concluded that the technical feasibility of the Hi-Arc process to recover manganese from the rhodonite ores has been proven. Apart from the strategic significance of obtaining manganese from materials considered as yet refractory, the process has distinct possibilities of application to other minerals and ores.

With respect to the economic aspects of the process, we find that before these can be realistically appraised there are still several problems to be solved by additional pilot-plant work. The estimated treatment cost figures for a projected commercial operation are based on test results in the pilot plant plus several assumptions in various phases of the treatment.

At this stage of the investigation the estimated expenditure for recovering the manganese is appreciably higher than the world's market price for this commodity.

Sincerely yours

Franklin Floeter

FRANKLIN FLOETER
Administrator

No reply necessary
WSM
7/3/58

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/10	Martin	400
6/10	Selfridge	120
6/10	Johnson	110
"	Mittendorf	100
6/10	C	320
		400

JUN 9 1958

Mr. Franklin G. Floete, Administrator
General Services Administration
General Services Building
Washington 25, D. C.

Re: Docket No. DMEA 4944 - Manganese
United States Manganese Corporation
Treasure Mountain Area
San Juan County, Colorado

Dear Mr. Floete:

The subject corporation is associated with Vitro Corporation of America, 261 Madison Avenue, New York, New York. The decision which we must make on its application for exploration assistance will depend in part on the metallurgical success obtained by Vitro Laboratories, Inc., and Vitro Engineering, Inc., whose respective Hi-Arc and Sylvester processes have the common objective of recovering manganese from the extensive rhodenite deposits of the Silverton District, Colorado.

We have reviewed the related information on pages 11, 12 and 13 of "General Services Administration - Defense Material Service - Report Upon Research Projects for The Development of Metallurgical Processes to Recover Manganese from Domestic Low-grade Ores and Slags - December 10, 1956." Your report indicates that there is in this instance a wide difference between what is technically feasible and what would be commercially practicable from a metallurgical standpoint.

It will be appreciated if you will briefly summarize for us your most recent conclusions on the subject, based on the data given to you by Vitro Corporation of America and its associates.

Sincerely yours,

C. O. Mittendorf

Administrator

WSMartin/foc
6-10-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. III
Messrs. Gilbert DeHuff, Jr., USBM
Thor Kiilsgaard, USGS

8623

11:00 5/20/58

Mr. Martin:

Mr. Mitt called and said Mr. Little of Vitro was coming in this afternoon at 2 P.M. to see him and he would like to be briefed on the docket (DMEA No. 4944) before that time. I told him you would call him and he said he would probably be at lunch when you called but that he did want to see you.

foc

Excerpt from Mr. Mittendorf's diary, 5/20/58:

Mr. Littel, of Vitro Corporation, called at 2 o'clock for a pre-arranged appointment. He said the company had a directors' meeting in New York yesterday and he reported the highlights of his discussion with me two or three weeks ago.

He told the group that I had considerable reservations, based on (1) the metallurgical feasibility of the project, (2) the defense aspects with respect to rhodonite, and (3) the need for exploration at this time in view of the substantial ore reserves.

He also discussed with the group the possible expiration of our program come June 30. The directors were hopeful that we could take action before June 30.

I told Mr. Littel that we could take action before June 30 if we do so along the lines of our present thinking. I told him that all who have reviewed the case thus far recommend denial based on available information.

He, of course, was disappointed. He said Vitro has not put in its final report to GSA, but it does submit monthly progress reports. He said it has been told that GSA will allow it to spend the remainder of the funds appropriated for the pilot plant toward further experimentation on battery- and chemical-grade manganese.

He admitted that Vitro's process could not compete in the metallurgical-grade manganese field, but he felt that it does have a chance in the higher-priced commodity market, such as battery- and chemical-grade and manganese chloride.

He said the fact that his company is ready and willing to supply its share of the cost of the exploration project should be sufficient proof that they are not only serious, but that they feel that up to this time sufficient ore reserves have not been inferred. He felt that that fact alone should give DMEA proof that the pilot plant experiment had been satisfactory and the company is now willing to enter into operations on a commercial scale.

I told him we could not accept this situation as proof that our objections to the deal had been eliminated. I said, in the first place, the company is spending only $1 to the Government's $3. Also, many companies are obligated to perform certain work under the terms of their land agreements, and they are quite willing to put up their small share of the costs, along with DMEA; but this does not mean that they necessarily intend to produce. They might prove their point and then set the property aside for 20 or 30 years.

I asked him about the price of power in Colorado, because he said any commercial plant would probably be built close to the source of the raw material. He said they have firm bids for the supply of "off-peak" power at 3 mills per kwh. He said most all power companies have a rolling reserve of about 33 percent of their actual power demand. This is industry practice and

provides for a safety factor to meet firm power commitments in case of breakdown. This is called "off-peak" power. It can be purchased cheaply, but is subject to power interruptions. There is no firm guarantee of availability.

He said one unique feature of the Vitro arc process is that it can be interrupted without undue hardship.

In conclusion, I told Littel of our precedents in dealing with like cases and cited Cuyuna Manganese and Dr. King's manganese-cobalt-nickel process. I said in the latter case we even referred Dr. King's process to the National Academy of Science. I said the burden of proof of metallurgical feasibility always falls upon the applicant. However, we carry out our own responsibilities by obtaining specialized advice and opinions of the applicant's methods.

I told him his application seems to be on dead center pending a resolution of the metallurgical feasibility aspects. I felt that we could hasten a final decision by formally requesting GSA to give us its opinion to guide us in the processing of this particular exploration application. This was a matter we would decide internally.

He said he was calling on Brussolo shortly and would tell him of his discussion with me. He indicated he might suggest that Brussolo phone us.

Phoned Brussolo
June 3, 1958
WSG

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

March 28, 1958

DMEA
RECEIVED MAR 31 1958
DATE | INITIAL | CODE
3/31 | C | 220
WSM | 400

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: DMEA Docket 4944 (Manganese), United States Manganese Corporation (Treasure Mountain area), San Juan County, Colorado

Your letter of March 18, 1958, requested data on the measured or indicated ore reserves of rhodonite on the property included in the subject application or on other properties in the same district, and our comments on the application.

I regret that rhodonite ore reserves, as such, cannot be given either for this property or for other properties in the district. Until recently rhodonite has not been of economic interest in the Silverton area and the specific data on grade, width, continuity, etc. necessary for ore reserve estimates are not available.

The Bureau of Mines has been doing considerable research on rhodonite and their information on the Treasure Mountain area was made available to me. Mr. C. K. Rose spent last summer in the area gathering information on rhodonite and has recently completed a report titled "Appraisal of Rhodonite Deposits, San Juan Region, Colorado--Progress Report--November 1957." The Regional Director, U. S. Bureau of Mines, Region III, forwarded this report to C. W. Merrill, Chief, Division of Minerals, Washington, D. C. by his letter of February 24, 1958. Copies were sent also to Paul Zinner and G. L. DeHuff, both with the Bureau of Mines in Washington.

I refer you to the report by Mr. Rose for details, but in summary he estimates a potential of 4,400,000 tons of rhodonite for the Sunnyside vein and 5,000,000 tons for the Scotia vein. These estimates include only rhodonite in the vein material between the outcrops and the lowest workings on the veins. The Sunnyside vein ranges in width from 20 to 300 feet and has an estimated average width of 40 feet; about 8-1/2 percent of the vein material (estimated at 53,000,000 tons) is considered to be rhodonite. The Scotia vein ranges in width from 40 to 50 feet and about 33-1/3 percent of this vein material (estimated at 15,000,000 tons) is considered to be rhodonite.

Two other veins in the general area are described in the Rose report; the No Name vein is estimated to contain 898,000 tons of rhodonite and the Washington vein 890,000 tons. Again these estimates are made on the basis of outcrops and lowest known workings on the veins.

In summary the major veins in the Treasure Mountain area are wide, persistent, and contain from 8 to 30 percent rhodonite (a mineral which contains 42 percent Mn.) If rhodonite is considered to be a commercial source of manganese the reserves in the area are believed to be significant.

The U. S. Manganese Corporation proposes core drilling to explore for rhodonite on two of the principal veins and several minor veins in the Treasure Mountain area. Referring to Map II in their application, the 6 holes drilled by the applicant explored the Scotia vein (renamed the Silver Chord vein by the applicant) to depths of from 150 to 200 feet below the outcrop. The results of their exploration confirms the presence of rhodonite-bearing vein material 10 to 50 feet wide containing 7 to 12 percent Mn. It is my opinion that if rhodonite is considered an ore of manganese, additional exploration along Scotia vein on the Silver Lion, Jenner, and Silver Chord claims is warranted and could be approved without field examination.

I am informed by Mr. Rose that the vein exposed along Placer Creek on the Kate Gibson claim (Map II of the application) is the Sunnyside, one of the major rhodonite-bearing veins in the area. Based on data in the Rose report, the exploration proposed on the Kate Gibson claim appears warranted and could be approved without field examination.

I cannot evaluate the exploration proposed on the Excelsior, Mountain King, Index, Great Republic, Canola, Great Eastern, Crescent, Crater, and Treasure Mountain No. 8 claims. The proposed drilling is directed to explore what appear to be minor splits or branch veins about which I can find no data. Rose questions the presence, or at least the significance, of these minor veins. From available data I conclude that the propriety of exploration on these veins can be determined only by a field examination. The area may not be accessible until early in July for snow depths are above normal this year.

I am informed by Mr. Rose that he had the opportunity to field check Map II of the application and he found a number of discrepancies in the location of various physical features shown on the map as well as in the plotting of the claim locations. Since the plotting of the vein outcrops in relation to claim boundaries appears to be correct for the Sunnyside and Scotia veins, the inaccuracies should not adversely affect the proposed exploration on these two veins.

The general plan to core the veins at depths of about 200, 500, and 1,000 feet below the outcrops appears sound. The deep drilling is necessary to determine the mineralogical character of the veins at depth as well as to roughly delineate the large amounts of ore necessary to justify a completely new operation in the area.

Downward revision of the applicant's cost estimates will be necessary, particularly the item for Management and Technical Services (page 22 of the application.) This item amounts to about 44 percent of estimated Stage I costs and 27 percent of the estimated cost of the entire project. Drilling costs appear reasonable.

The Rose report outlines a Bureau of Mines' proposal for exploration on the Sunnyside vein. Hole D-30 proposed by the applicant duplicates, in part, holes 3 and 4 of the Bureau of Mines' proposal, With the exception of Hole D-30, the two exploration programs would be supplementary rather than a duplication.

Although many of the holes proposed by the applicant are to be drilled from ground they do not control, it is my understanding that permission to drill will be granted by the owners.

I refer you to W. S. Burbank, U. S. Geological Survey, who has mapped the Treasure Mountain area and can undoubtedly furnish additional data to assist in evaluation of the proposed project. In addition, I refer you to U. S. Bureau of Mines Research Report No. 51.1 in which magnetic concentration of rhodonite ore from the Treasure Mountain is discussed. This report should be available from the U. S. Bureau of Mines in Washington; a copy was transmitted to C. W. Merrill, Chief, Division of Minerals by a memorandum of March 11, 1958, from the Chief, Division of Minerals Technology, Region III.

E. N. Harshman

E. N. Harshman

4944

3-27-58

THE MINING RECORD

3/27/58

Vol. 69, No. 13, Page 5

Rhodonite Claims In San Juan Region To Mill Rhodonite.

United States Manganese Corp. (40% owned by Vitro Corp of America) was formed for the purpose of producing manganese from domestic rhodonite ores. Vitro Corporation owns 40%, Sheer-Korman Associates, Inc., owns 40%, and Great Divide Mining & Milling Corporation owns 20%.

The company had no income during the year and is not expected to be activated for production until completion of pilot plant operations now being conducted pursuant to a government contract, by the Hierarc process, which will not be completed until the end of 1958.

The company has substantial rhodonite claims near Silverton, Colorado, which were assigned to it by Great Divide Mining & Milling. During the year there was some exploratory drilling on these claims to provide pilot quantities of ore and to obtain a better idea of the extent of the rhodonite deposits.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3-14	Chapman	400
3-14	Martin	400
3/17	[illegible]	130
"	Johnson	110
"	[illegible]	100
3/18	[illegible]	220
		400

MAR 10 1958

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

Re: Docket No. DMEA 4944 - Manganese
United States Manganese Corporation
Treasure Mountain Area
San Juan County, Colorado

Dear Mr. King:

The above-docketed application for exploration assistance is at this time being referred to your office for review only. Please provide us with a summary of any information you may have on the measured and indicated tonnage of rhodonite at the subject property or other mines in the same district.

We must obtain additional metallurgical information from General Services Administration before making a field referral in this instance. It would, however, be appreciated if you would inform us now whether you could judge the merits of the proposed work without a field examination.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHR)

APPROVED:

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

Thor H. Kiilsgaard (JHR)
Member, Geological Survey

TLCHAPMAN/dlm 3-14-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. III
Messrs. G. L. DeHuff, Jr. USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/14	GCS	120

March 14, 1958

MEMORANDUM

To: Administrator

From: George C. Selfridge, Special Assistant

Subject: GSA Metallurgical Contract
Docket No. DMEA-4944 (Manganese)
U.S. Manganese Corporation
Treasure Mountain Area
San Juan County, Colorado

The writer telephoned Mr. Brussolo yesterday to inquire about the status of the work that Vitro was doing on rhodonite ores. Mr. Brussolo informed the writer that a report was still pending but read passages from either field notes or a report by Carrel Larson on a recent conference concerning the project.

GSA had asked that it be furnished a complete report regarding the economic feasibility of the work that had been done to date. The company replied that it could not furnish all of the supporting figures until additional work had been done. As the termination date of the contract is May 1st, the company requested that the contract be extended sufficiently to allow the securing of additional data. Thus, it would appear that the process is still in the experimental stage, and that appreciable time might pass before definite conclusions can be drawn regarding the economic feasibility of treating rhodonite ores by the Vitro process.

George C. Selfridge.

GCSelfridge/esf
cc: Docket
Admr. R. File
Mr. Mittendorf
Mr. Johnson
Mr. Selfridge

8623

Don't use this letter

Background

E.G. Littel

Me 8-2330

Vitro

Saw DeHuff 8/8/55
re GSA process contract

Called us 3/1/56

In again 8/2/57

4 holes 4600

3 holes 3000

Washington Shaft

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3-11	Chapman	400
3-11	Martin	400
		130
		180
		100
		220

United States Manganese Corporation
261 Madison Avenue
New York 16, New York

Re: Docket No. DMEA 4944 - Manganese
Treasure Mountain Area
San Juan County, Colorado

Gentlemen:

The above referenced application for exploration assistance for manganese ores has been referred to Mr. William H. King, Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado, for review and a field examination of the property if considered necessary.

Any aid you can give the members of the Field Team will be appreciated.

Sincerely yours,

Administrator

TLCHAPMAN/dlm 3-11-58
cc to: Code 400
Admr. R. File
Oper. Comm.
Messrs. G. L. DeHuff, Jr. USBM
T. H. Kiilsgaard, USGS
FT. REG. II

8623

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

United States Manganese Corporation
261 Madison Avenue
New York 16, New York

Re: Docket No. DMEA 4944 - Manganese
Treasure Mountain Area
San Juan County, Colorado

Gentlemen:

The above referenced application for exploration assistance for manganese ores has been referred to Mr. William H. King, Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado, for review and a field examination of the property if considered necessary.

Any aid you can give the members of the Field Team will be appreciated.

Sincerely yours,

Administrator

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

DMEA
RECEIVED MAR 7 1958

DATE	INITIALS	CODE
3-7	C	220
	WSM	400
		110
	WSM	400

March 5, 1958

Memorandum

To: W. S. Martin, DMEA

From: G. L. DeHuff, Jr., Commodity Specialist
Branch of Ferrous Metals and Ferroalloys

Subject: DMEA-4944 Manganese. United States Manganese Corporation, San Juan County, Colorado. $566,372.

Subject application, dated February 10, 1958, proposes to explore for rhodonite by diamond drilling veins located at high elevations in the vicinity of Treasure Mountain, 15 miles by road northeast of Silverton, Colorado.

The proposed project is divided into 3 stages, the expenses of each of which are in turn divided into a Drilling Contract, and a Management and Technical Services Contract.

As of this writing:

1. Although rhodonite can be used to make silicomanganese, it is not so used commercially, and is not considered an ore of manganese by either industry or Government.

2. Vitro Corporation of America, applicant's parent company, has a $270,541 contract with GSA to construct and operate a pilot plant to test its high-intensity arc process for the recovery of manganese from rhodonite. It is my understanding that the pilot plant has been completed, and shake-down runs made. Conceivably, if the process is a good one, rhodonite could become an ore.

3. A report by the contractor submitting data relative to the first tests is about a month overdue. It appears that unforeseen difficulties have developed, with the result that contractor has approached GSA for additional funds to be used in laboratory research in connection with the process.

4. The property of applicant under consideration in the Treasure Mountain area contains a number of strong rhodonite-bearing veins.

5. In July-August 1957, the Bureau of Mines, Region III, as a Bureau project made a reconnaissance of the rhodonite deposits of this general area, including portions held by the applicant. Three 5-ton bulk samples obtained from three different rhodonite veins, for metallurgical test purposes, assayed 22.3, 17.8, and 28.1 percent manganese. Some rhodochrosite occurs with the rhodonite, and abundant quartz-zinc-lead mineralization is associated either as parts of the same veins or as essentially separate veins. The engineer's preliminary tonnage estimate for one rhodonite-bearing vein system alone (Scotia), upon which appears to lie much (if not most) of applicant's proposed exploration, infers 15,000,000 tons of vein material in a known height of 815 feet. Approximately one-third of this tonnage is estimated to be of possible interest for its rhodonite content.

why replace?

6. Bureau of Mines, Region III, desires to explore (subject to authorization) one major vein at depth in fiscal year 1959, and to continue metallurgical tests aimed at satisfactorily producing a rhodonite concentrate which can be smelted economically to silicomanganese. (The market for silicomanganese has certain limitations). In support of its proposal, the following statement is made: "Based on available information on the size of the veins and grade of the ore, the potential of the San Juan district is in the order of 100 million tons of vein material containing some 10 million tons of manganese metal. Because the regional geology indicates that the veins will extend downward from known levels and other areas of the district are known to contain additional rhodonite veins, the manganese resource may well prove even larger than inferred." It is also stated, "The average grade of the resource, if exploited for manganese rather than for lead and zinc, is probably about 20 percent manganese".

Compute, as metallurgist, possible

After consideration of all the above, it is concluded that subject application is premature. It is recommended that this application be denied without prejudice on the basis that rhodonite is not an ore of manganese. Applicant has not yet demonstrated that it has a process which can make rhodonite an ore of manganese.

G. E. DeHuff, Jr.

G. E. DeHuff, Jr.

IN REPLY REFER TO:

DMEA
RECEIVED MAR 3 1958

DATE	INITIALS	CODE
3/3	C	220
	WSM	400
Memorandum		

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

February 28, 1958
Re: DMEA 4944
United States Manganese Corp.
Treasure Mountain Area
San Juan County, Colorado
$566,372.02 - Manganese

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

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

Subject: Review of application

The applicant requests assistance in exploring by diamond drilling the Silver Chord and other rhodonite-bearing veins.

The Silver Chord vein has been explored by surface cuts and at shallow depth, around 200 feet, by 6 drill holes. As a result a 1,000,000 ton reserve is inferred within a length of 2,400 feet and in a vein that averages 28 feet wide. The average rhodonite content is 23%, and the manganese content 11.3%.

The proposed drilling would explore 7 veins, with a total length of 16,900 feet to a maximum depth of about 1,000 feet. If by chance the results remain more or less uniform, no less than 7,000,000 tons of ore would be drill indicated to a depth of only 200 feet. That such uniformity is to be expected is attested by results at the nearby Sunnyside Mine and in the Sandiago tunnel where depths of 1,000 and 800 feet, respectively, are demonstrated.

As pointed out by Mr. Harshman, in this case geological considerations may be secondary to metallurgical considerations. A statement on the status of negotiations between GSA and Vitro Laboratories and other experimenters in connection with pilot-plant testing of the Hi-Arc and other processes is in order. It is said studies made by Vitro show rhodonite ore reserves of the Silverton District may be of the order of 500,000,000 tons having an average Mn content of 32%. In view of the information contained in the application, the grade mentioned, 32% Mn, is not realistic.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

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

February 25, 1958

United States Manganese Corporation
261 Madison Avenue
New York, 16, New York

Attention Mr. C. Sheer:

Subject: DMEA-4944

Gentlemen:

Your application for exploration assistance, dated February 10, 1958 submitted to our office at Denver, Colorado has been assigned Docket Number DMEA-4944 and referred to the Iron & Ferro Alloys 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

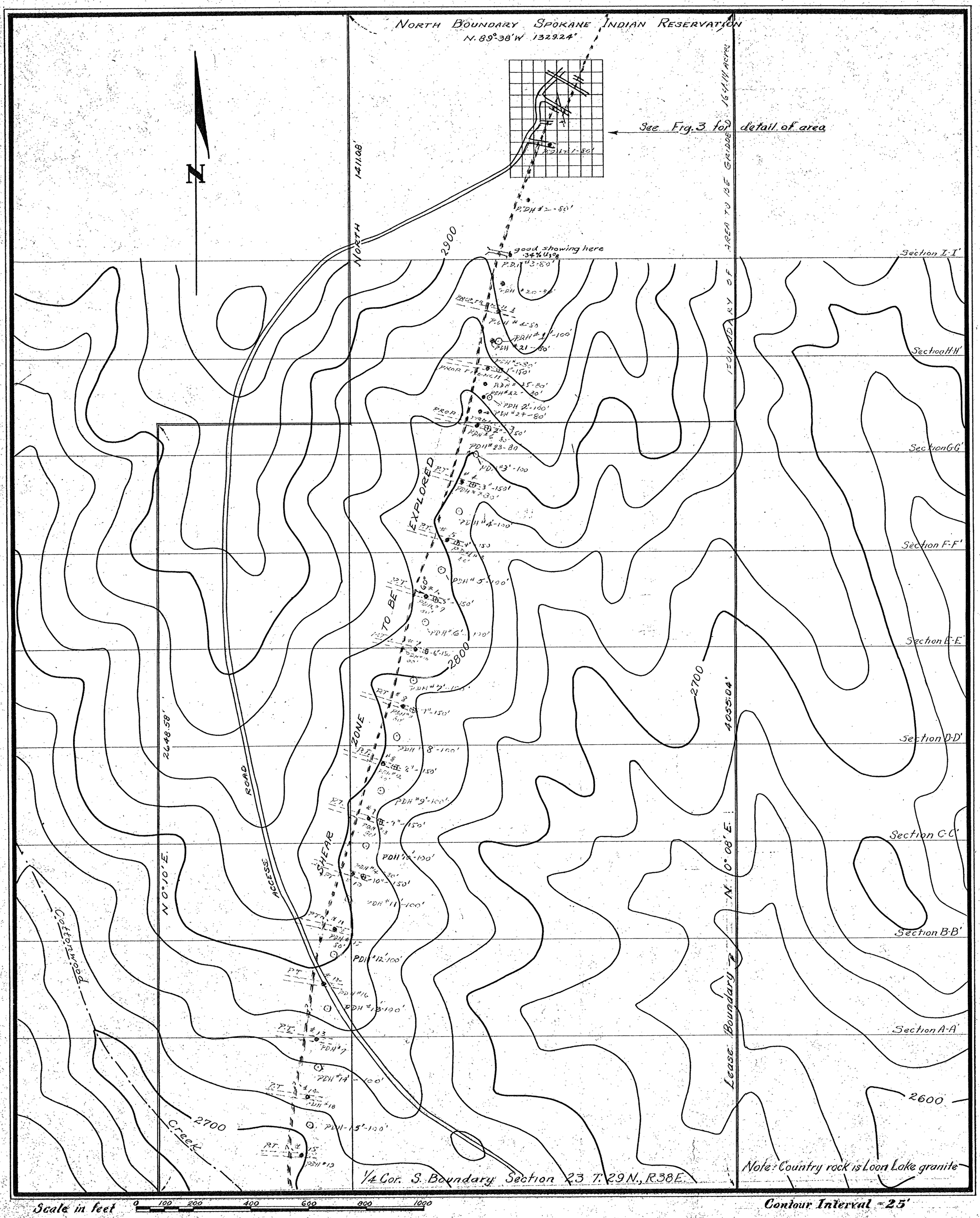

FIG. 1 ~ NORTH STAR URANIUM INC. MINING LEASE ~ STEVENS COUNTY WASH

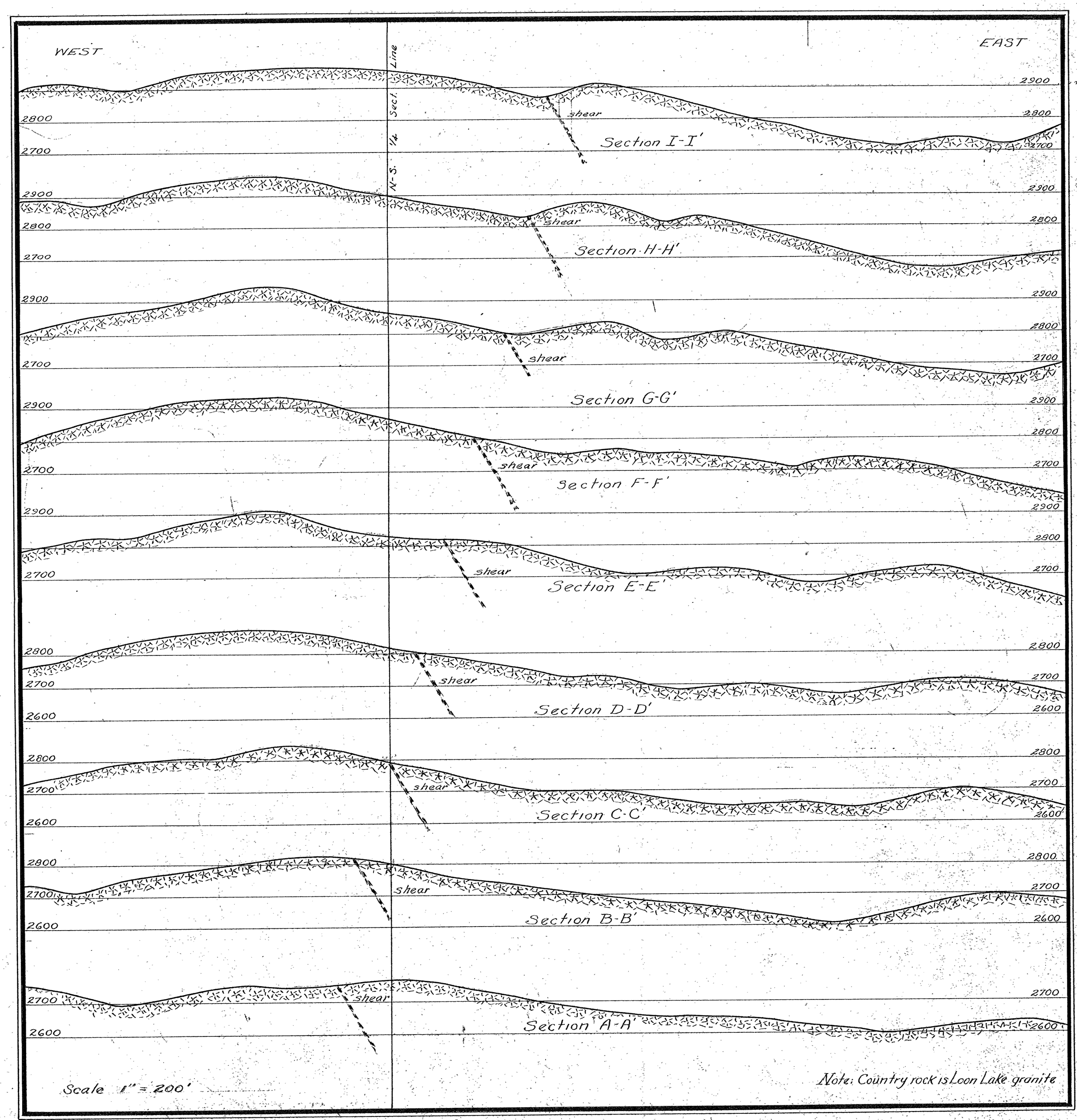

FIG. 2 ~ EAST-WEST CROSS SECTIONS NORTH STAR LEASE ~ STEVENS COUNTY WASH.