UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Terminated (or cancelled) without certification. DMEA No. 15

This is the official contract file containing all official records of the project. Duplicate material has been removed. The records contained in the files are checked and are arranged in this manner:

Left Side

Certificate of Audit (Final).

Interim Audit(s).

Report of Review.

Termination Notice or Agreement.

✓ Recision Notice.

Assignment of Contract.

Contract Amendments (latest on top).

✓ Contract with all exhibits and annexes.

Owner's Consent to Lien.

Subordination Agreement.

Leases and assignments of leases.

no Application and attachments.

Schedule of Collections.

Operator's monthly reports and all attachments (latest on top).

Right Side

Project summary.

Work completed analysis.

✓ All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report. (Tab)

Operator's Final Report.

Interim Reports.

✓ supplemental On-site Exam Report(s). (Tab)

Settlement Sheets.

If additional folders are required because of volume of records, show folder numbers and contents below:

Maps in folder number_____

Operator's Monthly Reports in folder number _____

J. J. M.
Reviewer's Initials

7973

GOVERNMENT COPY

NOTICE OF TERMINATION AND RESCISSION OF EXPLORATION PROJECT CONTRACT BEFORE WORK IS BEGUN

To: Charles F. Williams
Bradbury & Williams
110 Camino de la Pena
Santa Fe, New Mexico

Operator under Exploration Project Contract No. Idm-E227, Docket No. DMA 15, dated December 18, 1951.

The United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereby terminates and rescinds the above-mentioned contract, on the following grounds:

(a) Failure to commence work within sixty (60) days from the date of the contract; and

(b) In the opinion of the Government, you have failed to prosecute operations pursuant to the terms of the contract, in that you have failed to perform any work at all.

Dated this 26th day of September, 1952.

UNITED STATES OF AMERICA

By W. H. King
Executive Officer, DMEA
Field Team, Region IV

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 3 1952

MF-200
(June 1951)

Docket No. DMA 15
Commodity Copper
Idm-E 227
Contracts + Audit

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

It is agreed this 18th day of December, 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and[2]
Charles F. Williams and Charles L. Bradbury, Partners
110 Camino De La Pena
Santa Fe, New Mexico
hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of New Mexico, County of Santa Fe described as follows:[3]
Sections 21, 22, 27 and 28; T.12N., R.7E. in the New Placers Mining District, known as the San Pedro Copper Mine
with respect to which the Operator represents and undertakes:[4]

(*a*) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:
None

(*b*) ~~That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:~~

3. *Exploration project.* The Operator, within Sixty (60) days from the date of this contract shall commence work on a project of exploration for[5] Copper; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of[6] Fourteen (14) months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 50 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $83,700.50, which is 50 percent of the agreed estimated total cost of this project, $167,401.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

Charles F. Williams & Charles L. Bradbury, Partners
(Operator)

By Charles F. Williams
Charles F. Williams, Partner.

By Charles L. Bradbury
Charles L. Bradbury, Partner.

THE UNITED STATES OF AMERICA

By C D Mittenbergs
Acting Administrator,
Defense Minerals Exploration Administration.

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

Docket No. DMA - 15
Charles F. Williams and
Charles L. Bradbury, Partners
Exploration Project Contract

EXHIBIT "A"

Description of Work

The purpose of this project is to explore the San Pedro Mine. The proposed program will consist of the following work:

Dewater the mine.
Rehabilitate the incline shaft and trestle.
Approximately 500 feet of drifting as shown on the accompanying map.
Approximately 3,455 feet of diamond drilling and approximately 305 feet of long-hole drilling as shown on the accompanying 2 maps.
Approximately 600 feet of raises and winzes
Approximately 200 feet of crosscutting and drifting.

The 600 feet of raises and winzes, and the 200 feet of crosscutting and drifting shall include the raising, drifting, and crosscutting necessary for drill stations. Any additional raising, winzing, drifting, and crosscutting than that needed for diamond drill stations may be done only with the approval of the Government and to the maximum as specified in items 5 and 6 above.

If, in the opinion of the Government, the drifting, diamond drilling, and long-hole drilling indicates favorable ore possibilities, then an additional 3,245 feet of diamond drilling and 1,695 feet of long-hole drilling may be drilled. The location and direction of the holes shall be mutually agreeable to the Operator and to the Government.

Estimate of Cost

Summary

Dewatering the mine - labor only		$ 405.00
Rehabilitating incline shaft and trestle - labor only		763.00
500 feet of drifting @ $20.00/ft.		10,000.00
3,455 feet of diamond drilling by contract @ $7.50 per foot	$ 25,912.50	
305 feet of long-hole drilling @ $3.00/ft.	915.00	
	$26,827.50	26,827.50
600 feet of winzes & raises @ $24.00/ft.		14,400.00
200 feet of drifting and crosscutting @ $20.00		4,000.00
3,245 feet of diamond drilling by contract @ $7.50/ft.	$24,337.50	
1,695 feet of long-hole drilling @ $3.00/ft.	5,085.00	
	$29,422.50	29,422.50
Construction of Compressor and Shop Building		1,500.00
Rehabilitating Bunk and Cookhouse, Office and Laboratory, Warehouse		5,400.00
Equipment and supplies to be purchased		46,402.00
Labor and Supervision as scheduled (does not include labor for drifting, crosscutting, raising, winzing and long-hole drilling)		19,500.00
Preliminary work, labor, for installing pipe, ties, rail and cleaning up rock falls		2,581.00
Installation and freight on equipment and supplies		5,000.00
Mine road maintenance		500.00
Truck operating expense		700.00
Total estimated cost		$ 167,401.00

Details

Fixtures and Improvements:

Compressor and shop building	$ 1,500.00

Operating Equipment:

To be rented:

None

To be purchased:

	Estimated Cost
1 Diesel compressor, 450-550 cfm	$ 10,600.00
1 Air hoist, 2000 -lb. rope pull including 600 ft. of cable	2,664.00
1 Battery locomotive and charger	6,338.00
4 Mine cars @ $325.00	1,300.00
1 Drifter, 4 in. and column	875.00
1 Drifter, 3½ in. and column	760.00
2 Jackhammers, 55-lb. @ $330.00	660.00
1 Stoper, 96 lb.	610.00
1 2-ton skip for incline	400.00
1 Air receiver	900.00
1 Air hoist, 5 h. p. single drum	540.00
5 Pressure Tanks @ $75.00	375.00
Drill steel and bits	1,500.00
8 Fifty-ft. lengths air hose with couplings	416.00
8 Fifty-ft. lengths water hose with couplings	300.00
4000 ft. 30-lb. rail, splice bars, bolts, spikes, ties ties	3,367.00
Timber, spikes and bolts to rebuild trestle	500.00
Wall and floor cable rollers, incline shaft, 8 @ $7.50	60.00
Pipe, 2000 ft., 3 in. black	1,260.00
Pipe, 2000 ft., 2 in. black	600.00
Pipe, 2000 ft., 1 in. black	300.00
Pipe, 1500 ft., 1 in. galv.	300.00
Pipe fittings and valves	750.00
1 Deep-well pump, gas driven, 25 gpm against 400 ft.	1,500.00
1 Booster pump, 25 gpm against 400 ft. head	2,000.00
1 Air pump, 162 gpm, 125 psi working pressure	510.00
1 Diesel-electric generating unit, 8-10 KW	2,250.00
Miscellaneous hand tools, shop equipment, etc.	1,500.00
1 Pickup truck, 3/4 ton, including license	2,167.00
Replacement parts and repairs, mining and surface equipment	500.00
Oil and fuel	600.00
Total cost of equipment to be purchased	$ 46,402.00

Equipment furnished by Operator:

None.

Labor and Supervision:

Superintendent @ $500.00 per month	$ 6,000.00
Part time engineer-geologist, 100 days @ $25.00/day	2,500.00
Part time bookkeeper, 140 days @ $10.00/day	1,400.00
General utility, sampling, etc., 2 men @ $250/month	6,000.00
Compressor operator @ $300.00/month	3,600.00
	$ 19,500.00

Labor Classification	Hourly Rate
Laborer	$ 1.41
Mucker	1.49
Tool Nipper	1.53
Truck Drive	1.53
Machine Helper	1.53
Track Helper	1.53
Machine Man	1.74
Trackman	1.74
Motorman	1.74
Pipeman	1.74
Pumpman	1.74
Steel Sharpenr	1.84
Hoistman	1.84

Rehabilitation:

Bunk and cookhouse	$ 2,000.00
Office and Laboratory	2,400.00
Warehouse	1,000.00
Total rehabilitation	$ 5,400.00

The cost per foot of drifting, crosscutting and winzing to include all labor, powder, fuse, caps and all costs necessary to complete this work.

The diamond drilling is to be done by contract and is to include all expenses necessary to complete the drilling, cost of core boxes, core splitter and assaying.

MAP

BELONGS

HERE

#1

2 maps

MF-200
(June 1951)

Docket No. DMA 15
Commodity Copper

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

No Good
Revised

EXPLORATION PROJECT CONTRACT [1]

It is agreed this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Mr. Charles F. Williams, San Pedro Copper Mine, 110 Camino de la Pena, Santa Fe, New Mexico

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of New Mexico, County of Santa Fe described as follows: [3] Sec. 21, 22, T 12 N, R 7 E, New Placer (San Pedro) Mining District

with respect to which the Operator represents and undertakes: [4]

(*a*) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: None

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 10 days from the date of this contract shall commence work on a project of exploration for [5] Copper; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] one year from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 50 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $74,045.00, which is 50 percent of the agreed estimated total cost of this project, $148,090.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

(Operator)

By ---

By ---

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

APPLICATION FOR EXPLORATION AID

Docket No. IMA-15

Exhibit A

1. Exploration Project.

a. Dewater lowest level of the mine and explore by short drill holes and mine workings. Rehabilitate incline shaft to the extent of relaying the rails. An estimated 700 ft. of short hole diamond drilling and 400 ft. of crosscutting, raising and winzing will be necessary. (In preference to No. 1, 2 and 3 on Map 2A)

b. Drilling to be done from underground stations to test west stope and other underlying beds east of the Shaft Fault. A total 1,500 ft. of drilling is proposed. (No. 4 Map 2A)

c. Deep holes to be drilled from underground station to test suggestive ground below laccolith. A total of 4,500 ft. of drilling is planned. (No. 5 and 6 Map 2A)

d. Explore the 50 beds east of No. 1 stope with 2,000 ft. of long hole percussion drilling in addition to 500 ft. of crosscutting and 400 ft. of raising. (No. 7 Map 2A)

Summary of Costs

Drilling	$52,900.00
Crosscutting, drifting and winzing	28,400.00
New facilities	1,500.00
Equipment to be purchased	59,290.00
Installation & Freight	5,000.00
Labor and supervision	18,000.00
Rehabilitation of existing facilities	5,400.00
	$170,490.00

Summary of Exploration Costs

Diamond drilling 6,700 ft. @ $7 / ft.	$46,900.00
Long hole drilling 2,000 ft. @ $3 / ft.	6,000.00
Crosscutting & drifting 700 ft. @ $20 / ft.	14,000.00
Raising & winzing, 600 ft. @ $24 / ft.	14,400.00
	$ 81,300.00

Estimated time of Project is one year

2. Fixtures and Improvements

Compressor and shop building	$ 1,500.00

3. Operating Equipment

a. To be Rented

b. To be Purchased

1	500 cfm Diesel Compressor	$10,620.00
1	shaft hoist, air-driven 2000 lb. rope pull	2,514.00
1	Drifter, 4-in. class	845.00
1	Drifter, $3\frac{1}{2}$-in. class	720.00
2	Jackhammer, 55 lb. class	660.00
1	Stoper, 96 lb. class	610.00
	Drill steel and bits	1,500.00
4	Mine cars	1,300.00
1	2 ton skip	400.00
1	Air receiver	900.00
	2000 ft. of track 30 lb. 2 rail @2,060/M	4,120.00
	Pipe, black 2,000 ft. of 3 in.	1,260.00
	2,000 ft. of 2 in.	600.00
	2,000 ft. of 1 in.	300.00
	Pipe galvanized, 1,500 ft. of 1-in	300.00
1	5 hp. single-drum compressed air hoist	540.00
5	Pressure tanks	375.00
	Air hose, 8-50ft. lengths with couplings	416.00
	Water hose, 8-50 ft. lengths with couplings	300.00
	Electric cap lamps and charging equipment	1,000.00
1	5 Kw gasoline - electric generating unit	1,000.00
1	Deep well pump, gasoline driven 25 gpm against 400 ft. head	1,500.00
1	Booster pump, 25 gpm. against 400 ft. head	2,000.00
1	Airpump, 162 gpm, 125 psi. working pressure	510.00
	Miscellaneous hand tools, shop equipment, etc.	5,000.00
	Pick-up truck (second hand)	1,500.00
	Battery locomotive	7,500.00
	Mucking Machine	2,500.00
	Drill column jack legs, replacement parts	500.00
	Misc. supplies (timber, pipe fittings, tires, spikes core splitters, core boxes, etc)	8,000.00
		$59,290.00

c. Equipment furnished by Operator - None

4. Labor

1	Compressor operator	$ 300.00
2	General utility, sampling, etc.	500.00

Supervision

1	Part time Bookkeeper	200.00

1 Superintendent and engineer	$ 500.00
Total for one year	$18,000.00

Diamond drilling will be contracted @ $7 / ft.

5. Rehabilitation and Repairs

Bunk and cook houses	$ 2,000.00 ?
Office, laboratory and Warehouse	2,400.00 ?
Shop	1,000.00 ?
	$ 5,400.00

6. Miscellaneous

Installation and freight on equipment to be purchased $ 5,000.00

File Copy
Surname

Griswold

UNITED STATES
DEPARTMENT OF THE INTERIOR 500
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

SEP 22 1954

Mr. S. G. Farrar, Manager
Mining Division
Mindus Corporation Limited
10th Floor - 217 Bay Street
Toronto, Canada

Re: Mindus Corporation, Ltd
San Pedro Mine
Santa Fe County, New Mexico
(Formerly Docket No. DMA-15,
Contract No. Idm-E227)

Dear Mr. Farrar:

We have your letter of September 13 in which you state you are planning an exploration program at the San Pedro mine. Inasmuch as the previous contract was terminated, you should submit a new application to:

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

in quadruplet (4 copies), giving full details as outlined in the application.

We are enclosing six copies of the application blank, as well as a copy of DMEA Order 1, amended, and a pamphlet entitled "The Defense Minerals Exploration Program".

Sincerely yours,

C. O. Mittendorf (for)
Administrator

Enclosures 8

WRGriswold/er 9/21/54
Copy to: Docket
Admr. R. File
Op. Committee
Region IV (2)
Base Metals
Mr. Kiilsgaard, Rm 5227
Mr. C. H. Johnson, USBM
Chron.

500

MINDUS CORPORATION LIMITED

TENTH FLOOR - 217 BAY STREET
TORONTO

TELEPHONES:
WAVERLEY 2361-2-3

DEPARTMENT
Defense Minerals
REC'D
SEP 15 1954

September 13, 1954.

Incoming
Betty

Defense Minerals Exploration Administration,
New Interior Building,
Washington 25, D.C.

Re: San Pedro, New Placers Mining Dist.,
Sante Fe County, New Mexico

Gentlemen:

Together with an associated company in the United States, this company is considering an exploration program at the San Pedro Mine, in hopes of proving up enough ore to warrant resumption of production.

We understand that "under Docket No. DMA15 Copper Exploration Project Contract, the U.S. government was prepared to loan some $83,700.00 to explore the San Pedro area, half of the estimated cost of $167,401-no equipment was purchased and no work done under this contract, so it was withdrawn. The owners were subsequently informed that application for reinstatement would be considered - - - With substantial reserves revealed by such exploration the property would be eligible for a production loan, which would not require additional contributions from the owners".

We would like to know if this application could be reinstated under Docker DMA15, since, if it were, we would consider embarking on an exploration and development program at the San Pedro Mine.

We remain,

Yours very truly,

MINDUS CORPORATION LIMITED

PER: S G Farrar

S. G. Farrar, Manager,
Mining Division.

SGF/se

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 3 1952

224 New Customhouse
Denver 2, Colorado

September 29, 1952

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Termination of Contract Idm-E227, Docket DMA 15, Bradbury & Williams

Enclosed are three copies of Notice of Termination and Rescission of Exploration Project Contract Before Work is Begun covering Contract Idm-E227, Docket DMA 15, Bradbury & Williams. The original of this notice has been sent to the operator by registered mail.

John F. Shaw
For W. H. King

Enclosures

RECEIVED
OCT 6 - 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

pds
10/3/52

OFFICE OF THE ADMINISTRATOR

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

224 New Customhouse
Denver 2, Colorado

January 18, 1952

REGISTERED MAIL

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, DMEA, Region IV

Subject: Contract Idm-E-227, Docket DMA-15, Charles F. Williams and Charles L. Bradbury, San Pedro Copper Mine

Enclosed are the original and three (3) signed copies of the above contract. One copy has been given to the operator and one copy retained for our files.

W. H. King
W. H. King for
J. H. East, Jr.

Enclosures (4)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 22 1952

FILE COPY
500
SURNAME:

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

O.W.A.
Mouldes

DEC 20 1951

Mr. J. H. East, Jr.
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMA 15
Charles F. Williams and
Charles L. Bradbury, Partners
Exploration Project Contract Idm-E227

Dear Mr. East:

We are enclosing the original and five copies of the above subject contract, signed by this office for the Government, together with Exhibit "A" (4 pages) and two maps.

If the terms and conditions of this contract meet with your approval and are satisfactory to the Operator, all six copies should be signed by a duly authorized official of the Company. One copy should be given to the Operator, one copy retained by your office and the original and three copies returned to this office. However, if there are any changes required which cannot be made by amending the contract by authority delegated to you, all the contract copies should be returned to this office with your comments regarding the proposed changes.

Sincerely yours,

(signed) FRANK E. JOHNSON (fw)

Chairman, Operating Committee
Defense Minerals Exploration
Administration.

Enclosures -6

JWAlt/hmj
12-17-51
cc to: Adm. Reading File
Mails and Files
Mr. Mittendorf
Mr. Moulds
Mr. Alt
Mr. C. H. Johnson
Mr. McKnight
Region IV (2)
Docket

JEQ 12-20-

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

BJ

FILE COPY
SURNAME:

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

DEC 14 1951

(COLLECT)

Acting Administrator
Defense Minerals Exploration
Administration X2456

1420137 Salaries & Expenses
Defense Production Activities
Interior, 1952 "100.0000(480)"

December 12, 1951

MR. CHARLES F. WILLIAMS
110 CAMINO DE LA PEÑA
SANTA FE, NEW MEXICO

YOUR EXPLORATION CONTRACT DOCKET NO. IMA - 15 BEING PREPARED AND SHOULD BE COMPLETED SOON. ANY WORK DONE PREVIOUS TO THE DATE OF THE CONTRACT CANNOT BE CHARGED TO THIS EXPLORATION PROJECT.

(signed) FRANK E. JOHNSON

Text stripped in R.&R.

ACTING ADMINISTRATOR
DEFENSE MINERALS EXPLORATION
ADMINISTRATION

JWAlt/meb

cc to: Adm.Reading File
Mails and Files Br.
Mr. Mittendorf
Mr. Alt
Docket

140

FILE COPY
SURNAME:

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

December 11, 1951

not stripped in R.R.

Memorandum

To: Director, Production Expansion Division

From: Chief Counsel

Subject: Charles F. Williams and Charles L. Bradbury Exploration Project Contract, Docket No. DMA-15

We are unable to approve the draft of the exploration project contract for the following reasons:

1. The description of the property as the "San Pedro Copper Mine" in Article 2 is not sufficiently definite. Besides giving the name of the District and the number of the sections in which it is located, a description of the exact area or the names of the claims should be given. In the event the entire sections are included, the description should be turned around to read: "Sections 21, 22, 27 and 28; T. 12 N., R. 7 E. in the New Placers Mining District, known as the San Pedro Copper Mine."

2. As discussed with you this day, the statement of Exhibit "A" could be much improved. I have given you a copy of a proposed circular entitled "Exhibit A--Form of Statement"; and have indicated in pencil on your Exhibit "A" a way to change the form to more satisfactorily state the estimate of costs. It would be preferable, of course, if the "details" in your Exhibit "A" could be set forth so that they total the same amount as the "Summary."

It is noted that the mine is to be dewatered, and that the equipment to be purchased totals $46,402. Of course, the dewatering and much of the equipment and installations will be useful for future mining operations if the exploration turns out well. The fact that any particular operation or any items of equipment or installation will be of permanent benefit to future mining operations is not to say that they may not properly be allowed as costs of exploration. It is plain, however, that they should be allowed only to the extent necessary to accomplish the exploration and only as the various phases of the exploration require. It is my understanding that all of the equipment and installations listed are necessary for the accomplishment

of all phases of the exploration work. If this is not the case, the contract should be revised to defer as much as possible any unnecessary work or the purchase of any unnecessary equipment or installations.

J. L. Hofflund

J. L. Hofflund
General Counsel

Attachment

RRGuthrie/JLHofflund/em

Copy to: Records & Reports
J. L. Hofflund
R. R. Guthrie
chron.

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA PENA
SANTA FE, N. M.

DEPARTMENT OF THE INTERIOR
RECEIVED
DEC 1 2 1951
Defense Minerals Administration,
Production Expansion Division.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 11 1951

December 10, 1951

Mr. Frank E. Johnson, Acting Director
Production Expansion Division
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMA-15

Dear Mr. Johnson:

In anticipation of the early completion of the DMA contract for the exploration of the San Pedro copper mine, we will start work this week on the program with an initial appropriation of $2,000.

As we have had no communication with your office since receipt of your letter of November 14 and my reply thereto dated November 16, we have assumed that you now have all the items of essential information necessary to the completion of the contract. We have held up the execution of our orders for the major items of equipment pending receipt of the contract or at least some assurance that it will be completed for signature at an early date. It would be most helpful and very much appreciated if you could wire me collect information as to the present status of this contract.

Sincerely yours,

C. F. Williams

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D. C.
Nov 19 1 46 PM '51

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA PENA
SANTA FE, N. M.

DEPARTMENT OF THE INTERIOR
RECEIVED
NOV 20 1951
Defense Minerals Administration,
Production Expansion Division,

November 16, 1951

Mr. Frank E. Johnson, Acting Director
Production Expansion Division
Defense Minerals Administration
Washington 25, D. C.

Re: Docket No. DMA-15

Dear Mr. Johnson:

Reference is made to your letter of November 14; to Mr. Alt's telephone call on the 8th, and to my letter of the 15th in response thereto enclosing a letter of the 13th addressed to me by John H. Soulé of the Bureau's Silver City office.

Complying with requirement set forth in the first two paragraphs of your letter, I enclose itemized estimates of the cost dewatering the mine and rehabilitating the shaft. Labor charged to dewatering should be deducted from the $3,750 item under "Labor, Not Included Elsewhere" in my "Exploration Program for San Pedro Mines, Docket DMA-15" submitted with my letter of October 19, 1951. Likewise the power cost from the $600 item under "Miscellaneous Equipment". Also the labor charged replacing track in the incline should be deducted from the $1,025.80 figure in Mr. Soule's letter of November 13. Labor on rebuilding trestle comes out of the above mentioned $3,750. Mr. Soule' included a wage scale in his letter which is applicable in our camp.

With reference to your third paragraph: please note Mr. Soule's comments on the rock loader and lighting equipment. My reaction - let's eliminate anything that might delay getting on with the job. We have very little time in which to locate, buy, and move in heavy equipment before the snows.

In reference to your comments on drilling: the initial exploration below the laccolith calls for about 2635 feet of diamond drill hole. The exploration of the favorable beds between the lower workings and the laccolith contact is estimated to require about 740 feet making a total of 3375 feet - if these latter holes are all diamond drilled. It is proposed to test the favorable beds between the mine openings and the rhyolite sill with the long hole drill. Some of the long hole footage will be used in drilling low angle holes in stopes where the ore has pinched. Because we have data on the depth and thickness of the laccolith only from the two AS&R DD holes at the west end of the mine, the indicated depth of our DDH No.3 and of the down holes east of the Richman shaft, is pure guess work.

As stated in my letter of January 2, 1951, transmitting Form NSRB-146 to DMA, Att. Mr. C. H. Johnson, the location and direction of each long hole, drift, etc., was not detailed for the reason that much of this work would be contingent on the results of the first work done. The "marble line", the localizer of most of the orebodies found so far, is irregular in outline and offset as between beds. Therefore more than one hole generally be drilled from the locations indicated on the maps. This in answer to your closing questions.

Very truly yours,

1 incl

Estimated Cost of Dewatering Mine

Data
750,000 gal @ 162 gpm, 2,000 ft 3 in pipe, 150 ft head.

Material	Estimated Cost	
Air pump, 162 gpm, 125 psi-	$ 510.00	
Pipe, black, 3 in, 2,000 ft-	1260.00	
Pipe fittings-	50.00	
	$	1820.00
Labor		
1 Pumpman, 10 shifts @ $1.74 per hr-	$ 139.20	
1 Compressor oper. 10 shifts @ $250 per mo-	120.00	
1 Pipeman, 4 shifts @ $1.74-	55.68	
2 Laborers, 4 shifts @ $1.41	90.24	
	$	405.12
Power		
Operating cost, 500 cfm diesel compressor- fuel and oil, 10 shifts @ $3.00 per shift	$	30.00
Total direct cost-	$	2255.12

Estimated Cost of Rehabilitating Incline

Material		
600 ft 30 lb 2-rail track @ $1,430.86/m-	$ 858.52	
Splice bars for above @ $48.30/m-	28.98	
Bolts for above @ $14.78/m-	8.87	
Spikes for above @ $64.57/m-	38.74	
Ties for above, 300 @ 25¢-	75.00	
*Wall and floor cable rollers, 8 @ $7.50-	60.00	
Timbers, spikes and bolts to rebuild trestle-	500.00	
Hoist, air, 2000 lb rope pull incl cable-	2664.00	
Skip, 2 ton-	400.00	
	$4634.11	
Labor (Track)		
1 Trackman, 7 shifts @ $1.74-	$ 97.44	
3 Track helpers, 21 shifts @ $1.53-	257.04	
2 Laborers, 14 shifts @ $1.41-	157.92	
	$ 512.40	
(Trestle)		
2 Timberman, 10 shifts @ $1.74-	$ 139.20	
2 Laborers, 10 shifts @ $1.41-	112.80	
	$ 251.00	
Total direct cost-	$5397.51	

*New item- not incl elsewhere.

OFFICIAL FILE COPY

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA PENA
SANTA FE, N. M.

To	Init.	Date
Copper Br		11-20-51
Room 7009		
Gec. 310	NOV 21	

November 15, 1951

Mr. J. B. Gowen, Chief
Copper Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Room 7009

Re: Docket No. DMA-15

Dear Mr. Gowen:

Reference is made to your telephone call of November 8 asking for additional information in the matter of our loan application now being processed. To insure that this information would be complete and exactly meet your requirements, I suggested that the questions be listed in a letter.

I do not know, except in a general way, what data is contained in the Bureau-Survey report or what information in addition to that furnished by us on Form NSRB-146 under date of January 2, 1951 and in subsequent correspondence, is required.

Pending receipt of the above mentioned letter, I obtained from John Soule' information available in the Bureau's Silver City office with reference to the items mentioned by you. His letter of November 13 is enclosed. If, upon receipt of your letter, I find that further information is needed, I shall supply it without delay.

Very truly yours,

C. F. Williams

1 incl

DMPA
RECEIVED
NOV 20 1951

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
NOV 19 1 46 PM '51

FILE COPY
SURNAME:

410

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

NOV 14 1951

Mr. Charles F. Williams
Mining Engineer
110 Camino De LePena
Santa Fe, New Mexico

Re: Docket No. DMA - 15

Dear Mr. Williams:

Regarding your telephone conversation of November 8, 1951, with Mr. Alt of this Division, please be advised that in order to process your application for an exploration project, we will need the following information:

1. The dewatering cost.
2. The cost of rehabilitating the shaft.
3. An itemized schedule of labor, by numbers and classes (miners, muckers, etc.), with the maximum wages that may be paid to each.

Perhaps items 1 and 2 are already included in other costs, if so, these items should be deducted from those costs and set up separately. The dewatering cost and the rehabilitating the shaft could be set up as to include only labor. The rails could be as equipment to be purchased.

As stated in telephone conversation of November 8, we will eliminate from your equipment to be purchased - 1 Rock Loader, listed at a cost of $2,967.00 and electric Cap Lamps and charging equipment at $1,000.00. These two items will reduce the total cost by $3,967.00 and will change the total cost from $172,562.00 to $168,595.00. Government participation to be 50 per cent or $84,295.50.

Accompanying your letter of October 19, 1951, were two maps, a composite map and geologic section of the San Pedro Mine workings. You state that the location of about 3,375 feet of long hole and core drilling is indicated in red. The amount of drilling actually shown on the maps is 3,450 feet of core drilling and 305 feet of long hole drilling. Please correlate the stated footage and the footage shown on the maps.

From your estimate of costs, as submitted on October 19, 1951, you desire to do 6,700 feet of core drilling and 2,000 feet

of long hole drilling. Is it still your intention to do this much drilling and will additional drilling be done from the drill set-ups when favorable showings are made? Or do you plan on completing the drilling as shown on the maps, then reviewing the drilling data and proceed to drill in the most favorable areas? This information is essential to us in making up Exhibit "A" of your contract, which requires stating of a definite program.

We will endeavor to expedite the processing of your application, as soon as we receive the above information from you.

Sincerely yours,

(signed) FRANK E. JOHNSON (fw)

Acting Director
Production Expansion Division

07 11/14

11/13/51
J.W.Alt/meb

cc to: Admir's Reading Files
Reports and Records
PED
Mr. C.H.Johnson
Mr. McKnight
Mr. Alt
Field Team,Reg IV(2)
Docket

FILE COPY
SURNAME:

410

J.W.A.
FE Johnson

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

Nov. 14. 1951

Hon. Clinton P. Anderson
United States Senate
Washington 25, D. C.

Re: Docket No. DMA - 15
Charles F. Williams
Sante Fe, New Mexico

My dear Senator Anderson:

Your letter of November 5, 1951, addressed to J. B. Gowen, Chief, Copper Branch, Defense Minerals Administration, has been referred to this office.

In reply to your request regarding the status of the above-referenced application, we wish to state that the application has been reviewed and the applicant requested to furnish additional pertinent information. We are presently waiting to hear from Mr. Williams. When the required information is received, we shall proceed with the processing of his application.

Sincerely yours,

(signed) FRANK E. JOHNSON (for)

Acting Administrator

87 11/14

JWAlt/meb
11/9/51

cc to: Admr's Reading Files
Reports and Records
PED
Mr. Gowen
Mr. Alt
Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

AIR MAIL

New Mexico Field Office
Box 1060, Silver City, New Mexico
November 13, 1951

Mr. Charles F. Williams
110 Camino de la Pena
Santa Fe, New Mexico

Dear Mr. Williams:

In answer to your letter of the 9th, I submit the following comments:

As to a breakdown of the track costs, the following figures should suffice:

Material			
2,000 feet of 30 lb. 2-rail track	@	$1,430.86/m =	$2,861.72
Splice bars for above	@	48.30/m -	96.60
Bolts for above	@	14.78/m -	29.56
Spikes	@	64.57 -	129.14
Ties, 1,000	@	0.25 -	250.00
Total material			$3,367.02
Labor			
1 Trackman, 14 shifts @ $13.92			$195.88
3 Track helpers, 42 shifts @ $12.24			514.08
2 Laborers, 28 shifts @ $11.28			315.84
Total labor			$1,025.80
Total material and labor			$4,392.82

This figure of $4,392.82 is a little more than the $4,120 first reported because I have used a somewhat higher labor rate that represents the prevailing new schedule in this district.

In regards to the unwatering problem, I can only go on what you told me about Bradbury's remarks as to the conditions prevailing when he was manager of the property. If it is true that the mine makes very little water, then the 162 gpm air pump should be adequate. From the maps in our files there are nearly 1,500 feet of submerged workings equivalent to about 75,000 cubic feet of storage space for water. Allowing 100,000 cubic feet, this is 750,000 gallons of stored water. The suggested pump will pump 233,280 gallons per 24 hours and will evacuate the water in a little over 3 days neglecting the new water which you told me was very slight. This pump appears entirely adequate for the job.

Probably the electric cap lamp item was a little "grand" but some allowance should be made for lamps and carbide, which will be an item. Carbide is $10.35 per 100 lbs. here and lamps are $1.50 for hat lamps and $3.50 for hand lamps.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

The power and fuel item is considered in the costs for the various phases of work but it now seems that a more detailed breakdown is desirable.

I can not think of anything else at this time that has not been covered excepting the new union schedule for one of the local mines. I will list the new wage scale, which has yet to be approved by the Wage Stabilization Board.

Occupational Classification	Hourly Rate
Laborer	$1.41
Mucker	1.49
Tool Nipper	1.53
Truck Driver	1.53
Machine Helper	1.53
Track Helper	1.53
~~Shovel Operator~~	~~1.74~~
Machine Man	1.74
Trackman	1.74
Motorman	1.74
Pipeman	1.74
Pumpman	1.74
Steel Sharpener	1.84
~~Diamond Driller~~	~~1.84~~
Hoistman	1.84

You will have to substitute additional muckers from the above column to make up for the mucking machine and operator. Over a period of time, hand mucking can become expensive as compared to the machine and also the machine saves time.

I am sorry your letter was not answered sooner but it arrived on a weekend that contained an extra holiday. I trust the above information is satisfactory.

Sincerely yours,

John H. Soule

John H. Soule
Acting Supervising Engineer

ALLEN J. ELLENDER, LA., CHAIRMAN
CLYDE R. HOEY, N. C.
OLIN D. JOHNSTON, S. C.
SPESSARD L. HOLLAND, FLA.
CLINTON P. ANDERSON, N. MEX.
JAMES O. EASTLAND, MISS.
HUBERT H. HUMPHREY, MINN.
GEORGE D. AIKEN, VT.
MILTON R. YOUNG, N. DAK.
EDWARD J. THYE, MINN.
JAMES P. KEM, MO.
BOURKE B. HICKENLOOPER, IOWA
KARL E. MUNDT, S. DAK.

C. M. MOUSER, CHIEF CLERK

REPORTS AND RECORDS

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.

United States Senate

COMMITTEE ON
AGRICULTURE AND FORESTRY

NOV 6 10 08 AM '51

November 5, 1951

Mr. J. B. Gowen
Chief, Copper Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

In Re: DMA 15
Charles F. Williams
Santa Fe, New Mexico

Dear Mr. Gowen:

I have been requested to inquire into the status of the above application for a loan, and would appreciate your advising me of its present status.

Sincerely yours,

Clinton P. Anderson

Clinton P. Anderson

CPA-VLFf

310

FILE COPY
SURNAME:

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

OCT 25 1951

Mr. Charles F. Williams
110 Camino De La Pena
Santa Fe, New Mexico

Re: Docket No. DMA-29

Dear Mr. Williams:

This is to acknowledge your letter of October 19, 1951 with its enclosures.

We wish to inform you that this material will be included with your file and that from appearances it will be sufficient to further process your application.

Very truly yours,

J. B. Gowen

J. B. Gowen, Chief
Copper Branch

RVWaugh:rw
10-24-51

Copy to: Administrator's Reading File
Executive Officer, DMA Field Team IV
Copper Branch
DMA Docket

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA PEÑA
SANTA FE, N. M.

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
OCT 22 8 58 AM '51

October 19, 1951

Mr. J. B. Gowen, Chief, Copper Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMA-15

Dear Mr. Gowen:

With reference to our telephone conversation of October 15: I have discussed the items in question with the Bureau of Mines Supervising Engineer, Mr. J. H. Soule' and enclose a revised estimate in the amount of $172,562. Included in this figure are the fifteen items listed in my letter of September 8, 1951.

Mr. Soule' informed me that he had included the cable in the price of the hoist and that the estimate for track included the cost of installation. He advised a fifty cent increase in the estimated cost per foot for core drilling to cover cost of core boxes, core splitter, and assaying expense. He suggested that a new pickup be purchased to keep maintenance down and that sums be included to cover employment of part time engineer-geologist and bookkeeper. As a result of experience in supervising projects already approved, he stressed the advisability of drawing the contract to permit reasonable latitude in compliance with the estimated cost of the items of equipment. Prices are not stable and the size and type of equipment listed is frequently unavailable in the local supply houses.

Also enclosed are a composite map and geologic section of the San Pedro mine workings. The approximate location of about 3375 feet of long hole and core drilling and about 500 feet of exploration drift is indicated in red. This much of the program will be carried out substantially as shown and the maps will give you a good idea of the general objectives. The balance of the footage will be directed toward the further exploration of favorable showings.

In general, it is expected that a substantial tonnage will result from the exploration drift at the east end and the prospect for the northwestern extension of the highgrade shipping ore in No. 1 stope. This stope produced about 6000 tons of copper ore averaging better than 16%. It is in the upper "50" bed with rhyolite in the back. This horizon remains practically untested east of the shaft fault. The recent AS&R drilling which proved their theory of mineralization below the laccolith, also disclosed other apparently favorable beds below the West Stope bed. These also will be explored.

Very truly yours,

Encl - 3

EXPLORATION PROGRAM FOR SAN PEDRO MINES, DOCKET DMA-15

Exploration

		Approx. Cost
Diamond core drilling-	est. 6,700 ft @ $7.50	$50,250
Long hole drilling-	est. 2,000 ft @ 3.00	6,000
Drifting & X-cutting-	est. 700 ft @ 20.00	14,000
Raises & winzes-	est. 600 ft @ 24.00	14,400
		$84,650

Construction

New: Compressor & shop bldg, trestle to incline bin-	$ 2,500
Rehabilitation: Bunk & cookhouse-	2,000
Office & laboratory-	2,400
Warehouse-	1,000
	$ 7,900

Mining Equipment

X Diesel compressor, 450-550 cfm-	$10,600
X Air hoist, 2000 lb rope pull incl. 600 ft cable-	2,664
X Battery locomotive and charger-	6,338
Not allowed Rock loader-	2,967
X Mine cars, 4 @ $325-	1,300
X Drifter, 4 in and column-	875
X Drifter, 3½ in and column-	760
X Jackhamers, 55 lb, 2 @ $330-	660
X Stoper, 96 lb-	610
X Skip for incline, 2 ton-	400
X Air receiver-	900
X Air hoist, 5hp single drum-	540
X Pressure tanks, 5 @ $75-	375
X Drill steel & bits-	1,500
X Air hose, 8 50ft lengths with couplings-	416
X Water hose, 8 50ft lengths with couplings-	300
Not allowed Electric cap lamps & charging equipment-	1,000
X Track, 2000ft two rail, 30lb @ $2,060 M- ($3,367.02)	4,120
X Pipe, 2000ft 3in, black-	1,260
X Pipe, 2000ft 2in, black-	600
X Pipe, 2000ft 1in, black-	300
X Pipe, 1500ft 1in, galv.-	300
X Pipe fittings & valves-	750
	$39,535
Installation & freight on mining equipment, est.-	$ 5,000

Miscellaneous Equipment

X Deep well pump, gas driven, 25 gpm against 400ft-	1,500
X Booster pump, 25 gpm against 400ft head-	2,000
X Air pump, 162 gpm, 125 psi working pressure-	510
X Diesel-electric generating unit, 8-10 kw-	2,250
X Miscellaneous hand tools, shop equipment, etc-	1,500
X Pickup truck, ¾ ton incl license-	2,167
Truck operating expense, estimate for 1 yr-	700
X Replacement parts & repairs, mining & surface equip.-	500
X Operating expense, fuel & oil, also REA power, when avail.-	600
	$11,727

Labor, Not Included Elsewhere, Est. For 12 Month Period

Superintendent @ $500 per month-	$ 6,000
Compressor operator @ $300 per month-	3,600
1- X General utility, sampling, etc, two men @ $250-	6,000
Part time engineer-geologist @ $25 per day, est.-	2,500
Part time bookkeeper @ $10 per day, est.-	1,400
Preliminary work, installing pipe, cleaning up rock falls-	3,750
Mine road maintenance-	500
	$23,750

Estimated Cost of Project

$172,562

310

FILE COPY
SURNAME:

DMA

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

OCT 1 1951

Memorandum

To: Director, Production Expansion Division

From: Director, Supply Division

Subject: Application for Exploration Aid of Charles P. Williams, San Pedro Mines, 110 Camino De LaPena, Santa Fe, New Mexico, DMA-15, Commodity-Copper, Government Participation-$74,045.00

Transmitted herewith are: six copies of Exploration Project Contract with exhibits attached, one field team report, two NSRB-146, two reports by Charles F. Williams and a group of maps.

This project is recommended for approval by the Defense Minerals Administration, Field Team Region IV. The Supply Division concurs in the recommendation.

Tom Lyon

Tom Lyon, Director
Supply Division

Attachments

RVWaugh:rw
9/21/51

Copy to: Administrator's Reading File
Executive Officer, DMA Field Team IV
Copper Branch
Files-DMA Docket

310
FILE COPY
SURNAME:

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

SEP 19 1951

Memorandum:

To: Reports and Records Branch

From: Director, Supply Division

Subject: Application for loan of Mr. C. F. Williams, San Pedro Copper Mine, DMA-15, Commodity-Copper

Mr. Williams' application for production loan, DMA-15, has been withdrawn in favor of an application for exploration aid DMA-15.

Tom Lyon

Tom Lyon, Director
Supply Division

RVWaugh:es
9/18/51
Copy to: Adm. Reading File
Executive Officer, DMA Field Team Iv
Copper Branch
Files - DMA Docket

310

FILE COPY
SURNAME:

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

9-17

Mr. Charles F. Williams
110 Camino De La Pena
Santa Fe, New Mexico

Re: Docket No. DMA-15

Dear Mr. Williams:

This is to acknowledge your letter of September 8, 1951 submitting a list of additional equipment to be included with your application.

We wish to inform you that this material submitted has been incorporated with your application and the necessary revisions made.

Very truly yours,

J. B. Gowen

J. B. Gowen, Chief
Copper Branch

RWaughtez
9/17/51
Copy to: Adm. Reading File
Executive Officer, Region IV
Copper Branch
Files - DMA Docket

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA PENA
SANTA FE, N. M.

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
SEP 13 11 08 AM '51

September 8, 1951

Mr. Tom Lyon, Director
Supply Division
Defense Minerals Administration
Washington 25, D. C.

Re: Docket DMA-15

Dear Mr. Lyon:

Reference is made to the proposed copper exploration program for San Pedro Mines and to the report of the Field Team, Region IV, in connection therewith.

We have not been advised whether our contract will be drawn to permit adjustments in the several items included in the cost estimate of $148,090. The difficulty of foreseeing and accurately estimating the cost of all items of expense in an extensive exploration program suggests the advisability of providing in the contract for reasonable adjustment in the items now included in the estimate. Listed below are items of equipment and other expense considered essential to do the job and not included or only partially covered in the estimate.

1. 600 ft cable for incline shaft hoist.
2. Pick-up truck, second hand.
3. Battery locomotive.
4. Mucking machine.
5. Ties, spikes, bolts and plates for 2000 ft track.
6. Pipe fittings and valves for 7500 ft pipe.
7. Timbers to rebuild trestle to incline hoist bin.
8. Electric wire and installation thereof.
9. One mile road repair into mine camp.
10. Core boxes.
11. Core splitter.
12. Assaying expense.
13. Drill column, jacklegs, replacement parts.
14. Operating expenses - fuel, power, etc.
15. Salary of a part time bookkeeper.

It is estimated an additional $20,000 will cover the above listed items. Possible savings through purchase of used equipment, where available, might approach this figure. However, unless such amounts are made available for use elsewhere, our total expenditure will exceed the Government's commitment by approximately this amount.

Very truly yours,

C. F. Williams

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

224 New Customhouse
Denver, Colorado

Air Mail

September 7, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Supplemental Report, DMA Docket 15, Williams & Bradbury, San Pedro Copper Mine, New Placers District, Santa Fe County, New Mexico

Enclosed herewith are original and two copies of the report as indicated above.

We concur with the conclusions and recommendations of the examining team.

J. H. East, Jr.

A. H. Koschmann

Enclosures

DEFENSE MINERALS ADMINISTRATION
WASHINGTON, D.C.
SEP 10 1951

Mining Division
Region IV

September 6, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Supplemental Report, DMA Docket 15, Williams & Bradbury, San Pedro Copper Mine, New Placers District, Santa Fe County, New Mexico.

This supplemental report deals with a revised application by the owners of the subject docket for an exploration project on the copper deposits of the San Pedro Mine at an estimated cost of $148,090.

The proposed exploration consists of 6700 feet of diamond core drilling, 2000 feet of long hole drilling, 700 feet of cross-cutting and drifting, and 600 feet of raising and winzing at an estimated cost of $81,300. As there is not any equipment at the mine, and additional facilities and rehabilitation of present facilities are required, the total of these items, with labor and supervision amounts to $67,390.

Past production of copper from the San Pedro Mine has amounted to 20,704,981 pounds. The geological probability of increasing the present reserves by the extension of known ore reserves and by the discovery of new ore bearing zones are favorable.

The report contains the essential information for an exploration project contract, and the examining team recommends approval, with which we concur.

Paul T. Allsman

Paul T. Allsman

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Administration
200 New Customhouse
Denver 2, Colorado

September 4, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 15, San Pedro Mine, Santa Fe County, New Mexico

Enclosed are the original and 7 copies of the supplementary geologic report by J. N. Faick of the Geological Survey covering the above docket.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA VERA
SANTA FE, N. M.

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.
SEP 4 2 25 PM '51

318

September 1, 1951

Mr. Tom Lyon, Director
Supply Division
Defense Minerals Administration
Washington 25, D. C.

Re: Docket DMA-15

Dear Mr. Lyon:

I refer to your letter of August 29 advising that my application for Government aid for the San Pedro Mine has been returned to the Copper Branch.

It was the opinion of the Field Team, Region IV, at the time the examination was made, that there was insufficient blocked ore to satisfy the requirements for a development loan. By informal agreement between the owners and Supervising Engineer Soule', it was decided to request an exploration loan based on the scheelite showings. After sampling and assay, Mr. Soule' concluded that the tungsten orebodies sampled were too spotty to support a recommendation for a tungsten exploration loan. He then proposed that we request a copper exploration loan based on fifty percent participation to which we agreed.

Because it is important that the essential equipment required to do the exploration job be moved onto the property while the good weather holds, we are most anxious to have the contract at an early date.

Very truly yours,

Charles F. Williams

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

August 31, 1951

Memorandum

To: Mr. A. H. Koschmann, Denver, Colorado

From: Mr. A. F. Shride, Tucson, Arizona

Subject: Supplementary Geologic Report, DMA 15, San Pedro Mine, Santa Fe County, New Mexico

Enclosed are the original and 7 copies of the above report by J. N. Faick of the Geological Survey.

It seems to me that more detailed consideration should have been given to certain aspects of the proposed exploration project before reports were prepared. However, the engineering report has already been transmitted to Denver so this report also is being forwarded.

It would seem to me preferable to set the exploration program up in stages, the later stages to depend on the results of the early stages. For the proposals noted as 1, 2 and 3 I fail to understand the validity of driving raises and winzes after the ore has been outlined by cross-cutting and drilling. It would seem that such raises or winzes are development rather than exploration projects. Proposals 4, 5 and 6 as set up by Faick differ slightly from similarly numbered proposals by Seule' in the engineering report. Faick suggests that if preliminary drilling does not show satisfactory indications, additional drilling should not be done.

I also believe that some attempt should have been made to determine whether or not the area that is expected to provide minable ore is of sufficient size to include enough ore to allow amortization of the loan. There also may be a problem, at the end of this project, of defining the areas that are to be subject to a lien by the Government. This problem should be recognized in preparing a contract.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 8

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-15 - Charles F. Williams' San Pedro Copper Mine

Santa Fe County, New Mexico

John H. Soule', Mining Engineer
U. S. Bureau of Mines

John Faick, Geologist
U. S. Geological Survey

August 1951

ON-SITE REPORT SUPPLEMENT

SAN PEDRO MINE
SANTA FE COUNTY, NEW MEXICO
SUPPLEMENTARY REPORT
DMA 15

Geology

By John N. Faick
Geologist, U. S. Geological Survey

SAN PEDRO MINE
SANTA FE COUNTY, NEW MEXICO
SUPPLEMENTARY REPORT
DMA 15

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Introduction	1
General Geology	1
Exploration Proposals	3
Supplementary Information	5

ILLUSTRATIONS

Figure	To Follow Page
2A	See Supplementary Engineering Report
3A	1

INTRODUCTION

Messrs. Charles F. Williams and Charles L. Bradbury, owners of the San Pedro mine, have revised their original request for Government assistance. They now seek a loan of $75,000, to be matched by an equal amount of their own money, for the purpose of exploring for additional copper ore in the San Pedro mine.

The report which follows is based upon previous reports and should be read in conjunction with the Geological Report on the San Pedro Mine, DMA 15, submitted July, 1951.

GENERAL GEOLOGY

At the San Pedro mine copper ores have been mined from rocks of Pennsylvanian age. These strike northerly and dip 15 degrees to the east. A syenite laccolith underlies the mine area and is thought to be largely responsible for metamorphism of the overlying sediments. The known ore occurs as replacement deposits in seven metamorphosed beds which form a unit 80 to 90 feet thick. These productive beds are interbedded with shale and are known as the "Spanish Series" or "Favorable Series." The productive beds locally are designated as follows:

Name of Bed	Thickness
Upper 50 bed	2 to 3 feet
Lower 50 bed	2 to 3 feet
Upper 24 bed	8 to 10 feet
Lower 24 bed	9 to 12 feet
Unnamed bed	2 to 3 feet
West stope bed	5 to 7 feet
10 bed	3 to 4 feet

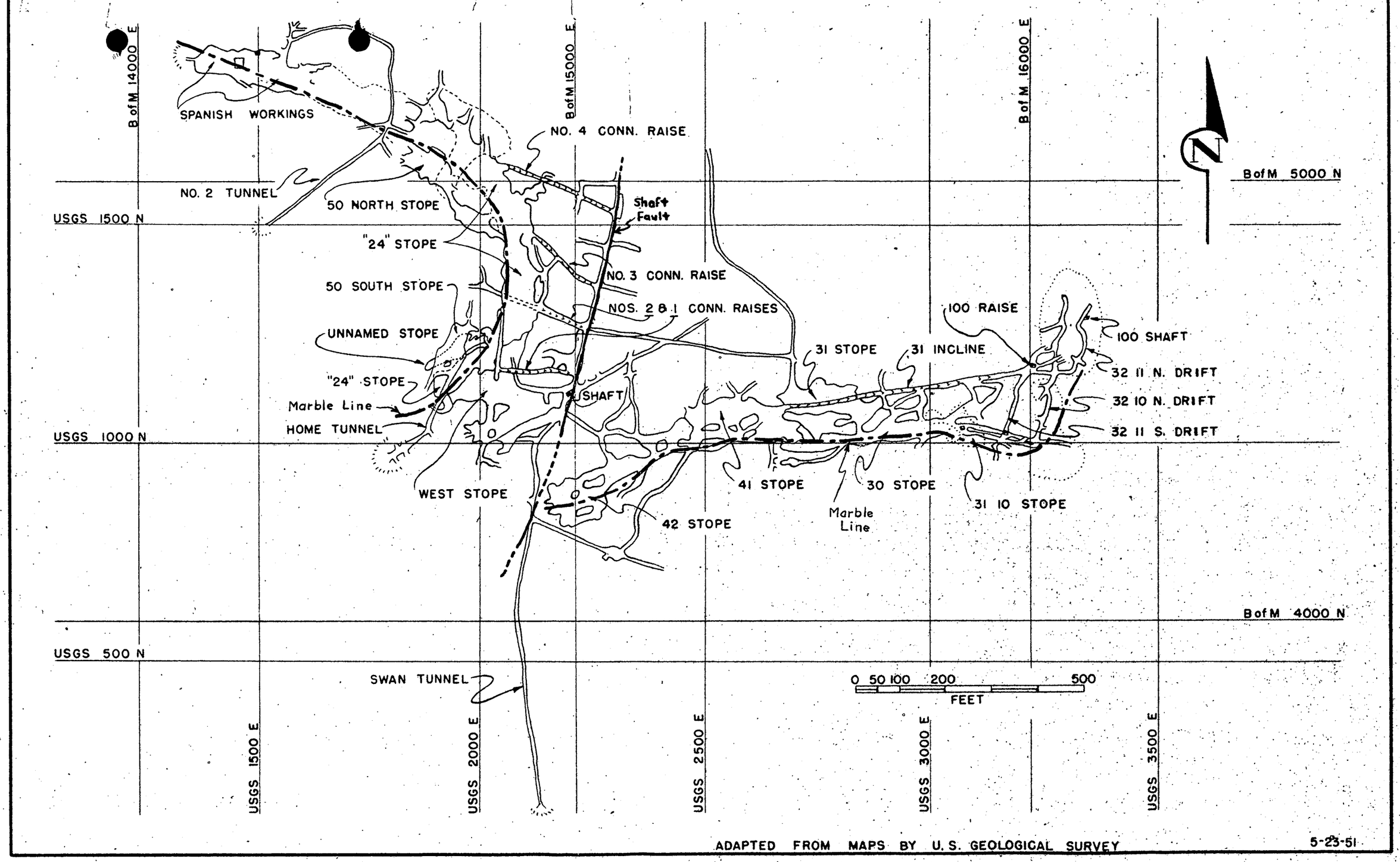


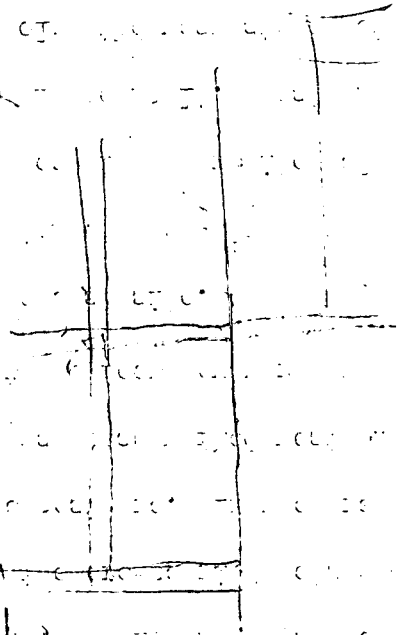
FIGURE 3A-PLAN OF MINE WORKINGS, SAN PEDRO COPPER MINE, SANTA FE COUNTY, NEW MEXICO

Over part of the laccolith the beds have been altered to tactite; around the tactite the limestone beds have been marmorized. Ore is found in a zone 100 to 200 feet wide between the tactite and marmorized limestone. The tactite-limestone contact is referred to as the marble line and is shown on Fig. 3A. Ore has been mined for a distance of about 2400 feet along the marble line but only rarely are all the beds productive at any one place. Chalcopyrite, the only important copper mineral is associated with garnet, calcite, quartz, specular hematite and pyrite.

The general eastward dip has been slightly modified by gentle flexures and by two sets of small fractures, one set trending nearly north-south and the other set trending east-west. These small structures are thought to have been important in localizing the ore.

The most prominent fracture of the north-south system is an important fault passing through the Richman Shaft, and is known as the Shaft fault. The Shaft fault (Fig. 3A) offsets the ore-bearing beds and is not itself mineralized, thus is thought to be post ore. If the ore beds mined east of the Shaft fault are the same as those worked west of the fault, the west side has been displaced 80 to 90 feet downward and perhaps 200 to 250 feet northward relative to the east side.

There is some doubt about the correlation of the beds on the opposite sides of the fault because of the presence of a quartzite bed west of the fault and its possible absence east of the fault. West of the Shaft fault the quartzite bed lies 60 feet below the west stope bed and is to be expected in the same relative position east of the fault. The validity of the above correlation should be established because if it is not correct, than another series of favorable beds may exist.



EXPLORATION PROPOSALS

The exploration proposals set forth by Mr. Williams are much the same as those considered by several other geologists. These were broadly outlined on page 9 of the Geological Report of DMA Docket 15 submitted July, 1951. The exploration proposals offered by Mr. Williams are listed below. The numbering is the same as used by Mr. Soule' in the Supplementary Engineering Report and reference is made to Figure 2A in the same report.

1, 2, and 3. The best chance for finding additional ore is on the down-dip continuation of the ore body below the 31 incline (see Fig. 3A). Previous drilling for this purpose was from the surface and apparently wide of the target and found marbleized limestone and tactite but no ore. Rather than drill additional holes from the surface it is proposed to explore this area from underground. It is proposed to pump out the incline and then explore northeastward from the lowest level. The work is intended to explore the favorable beds along the probable northeastward extension of the "marble line" near which most of the ore was found in the past. This exploration will be done by means of crosscutting, to be followed with about 700 feet of diamond drilling, and raising and winzing. Approximately 400 feet of crosscutting, raising and winzing will be required for this part of the project.

4. Another recommendation is for an underground hole into the floor of 31 stope somewhere near its west end. This hole could be either vertical or inclined about 75 degrees to the west, normal to the beds and should settle beyond dispute the important question of the identity of the ore beds on either side of the shaft fault. If the 31 stope is in the 24 beds, as has been assumed, then a distinctive quartzite bed should be

cut in the proposed hole at a depth of approximately 85 feet. The penetration of this marker bed at an entirely different depth, or its absence in the core would establish the fact that there are at least two series of ore-bearing beds and would enormously increase the potentialities of the San Pedro mine.

It is proposed to drill this hole to establish the stratigraphy below the 31 stope. If favorable beds are found with the first hole, several additional holes will be drilled to complete exploration of the same area. A maximum of 1500 feet of drilling may be required.

5 and 6. It is thought that another series of favorable beds may exist below the laccolith and that this will have another contact zone between marble and limestone similar to the one developed in the favorable "Spanish Series." Drilling to test this possibility was started in 1946 by the American Smelting and Refining Company but was discontinued after drilling two holes. One of these holes found pyrite with some gold and silver in an arkose bed and the other penetrated alternating beds of limestone, hornfels, quartzite and marble.

In order to continue exploration below the laccolith it is proposed to drill some deep holes from the mine workings in vicinity of 24 stope. A total of 4500 feet of drilling is planned for this project. This portion of the project is highly speculative, but if additional mineralized zones are found, the potential of this mine may be greatly increased. Therefore, this exploration is worthwhile. If the first 2 or 3 holes fail to get satisfactory results, then this part of the program should be discontinued, or at least critically reviewed before continuing to completion.

Nearly 5000 tons of 16.5 percent copper ore have been produced from the "50" beds in the No. 1 stope. It is proposed to explore for more ore of this type in the west stope area. Long hole percussion type drilling is proposed, supplemented by crosscutting and raising. It is thought that 2000 feet of drilling, with 500 feet of crosscutting and 400 feet of raising will be required.

The "50" beds have been the only source of high grade ore in the past and this project is thought to have a good chance to find similar ore.

SUPPLEMENTARY INFORMATION

As soon as Government funds are made available, the applicants will incorporate in order to spread the risk and responsibility of the operation. The applicants will take stock in the corporation in exchange for the $75,000 cash which they will make available for the project. If exploration finds adequate ore reserves of commercial grade, then the applicants will proceed with plans to develop the mine, erect a mill and place the property on an operating basis.

The exploration projects have considerable merit and may be expected to result in the discovery of ore. None of the projects appear especially difficult to accomplish. The property is one of the best brought to the writer's attention during the DMA program and is under competent management. We therefore recommend the application for Government assistance be accepted.

CHARLES F. WILLIAMS' SAN PEDRO COPPER MINE
NEW PLACERS (SAN PEDRO) MINING DISTRICT
SANTA FE COUNTY, NEW MEXICO
DMA DOCKET 15

SUPPLEMENTAL ENGINEERING REPORT

By John H. Soule'
Mining Engineer
U. S. Bureau of Mines

August 1951

Engineering

CHARLES F. WILLIAMS' SAN PEDRO COPPER MINE
NEW PLACERS (SAN PEDRO) MINING DISTRICT
SANTA FE COUNTY, NEW MEXICO
DMA DOCKET 15

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Cost summary	5
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ILLUSTRATIONS

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3 Longitudinal section A. B. C.	2
4 Cross section - Geology & mine workings	2
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INTRODUCTION

Charles F. Williams, part owner of the San Pedro Copper mine in the New Placers (San Pedro) Mining District, Santa Fe County, New Mexico, applied to the Defense Minerals Administration for a development loan on the San Pedro mine. This application later was converted to one for tungsten exploration in which the applicant was to share costs with the Government on a 25-75 percent basis. Sampling by the Bureau of Mines disclosed negligible quantities of tungsten minerals so a recommendation was made that the application be denied. Exploration for copper on an equal share basis was tentatively recommended. The applicant could not then be reached for his approval of an exploratory project for copper. Recently he has signified his willingness to spend $75,000, matched by equal Government funds, to explore the San Pedro mine for copper.

The applicant has suggested a tentative exploratory program that is in accord with previous recommendations by the Bureau of Mines, Geological Survey, and private geologists. This report contains data obtained from previous reports and is arranged in order of the various exhibits as listed by the Defense Minerals Administration in Form MF-200, Exploration Project Contract. The program as outlined in this report is recommended for approval.

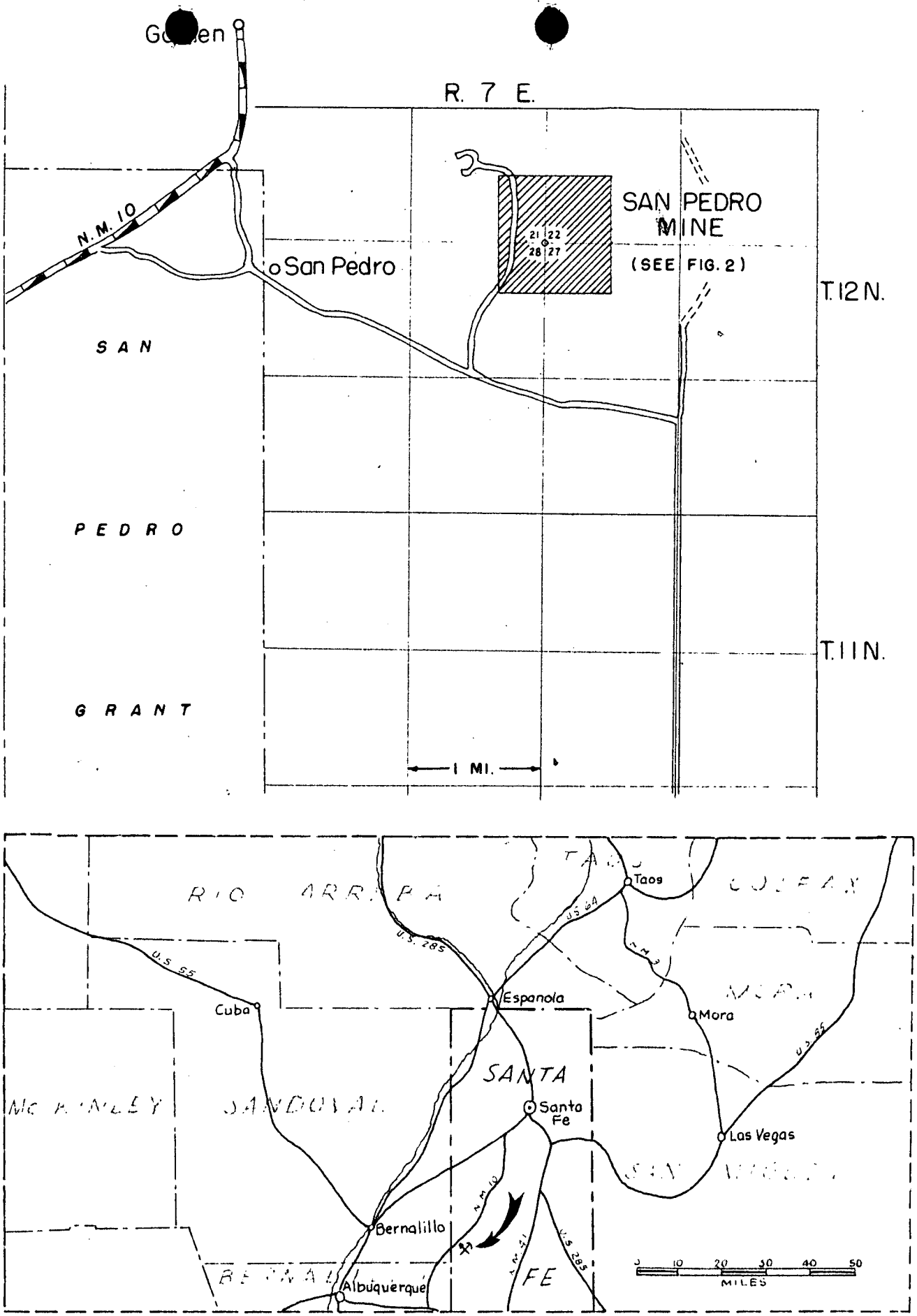

Figure I. General location map, San Pedro Copper mine, Santa Fe Co., N.M.

EXHIBIT A - EXPLORATION

The proposed exploration is shown in plan in Figure 2A with reference to the detailed geologic map, Figure 2, and the sections, Figures 3,4 and 5. The phases of the exploration work are discussed below with the paragraph headings referring to Figure 2A.

1,2 and 3. Three surface holes were planned to explore the ground east of the stoped area below the main tunnel level. However, subsequent information shows that more satisfactory results could be obtained by dewatering the lowest level of the mine and exploring by short drill holes and mine workings. The water is reported to be seepage. It was easily controlled with a small pump during the last mining operations in 1940. This change in exploratory procedure will make possible the close approach to the target area which would not be possible by surface drilling. The inclined shaft must be rehabilitated to the extent of relaying the rails. An estimated 700 feet of short hole diamond drilling and 400 feet of crosscutting, raising, and winzing will be necessary.

4. This drilling is to be done from underground stations to test the West Stope and other underlying beds east of the Shaft Fault. A total 1,500 feet of drilling is proposed.

5 and 6. These deep holes are to be drilled from underground stations to test suggestive ground below the laccolith. This ground has been shown to be mineralized by previous drilling. A total of 4,500 feet of drilling is planned here.

7. This work is planned to explore the 50 beds east of No. 1

MAP

BELONGS

HERE

#2

6 maps.

stope. Some high-grade shipping ore was obtained from No. 1 stope. The applicant plans 2,000 feet of long hole percussion drilling in addition to 500 feet of crosscutting and 400 feet of raising.

All the proposed diamond drilling will be done by contract, while the long hole drilling and mining will be done on company account. The basic costs of the outlined exploration are tabulated as follows:

Diamond drilling, 6,700 ft. @ $7/ft	$ 46,900
Long hole drilling, 2,000 ft. @ $3/ft.....	6,000
Crosscutting & drifting, 700 ft. @ $20/ft.....	14,000
Raising & winzing, 600 ft. @ $24/ft.....	14,400
Total	$81,300

The above figures were submitted by the applicant. The drilling costs may seem somewhat high but are not abnormally so. The mining costs may seem a little low but most of the work will be in short headings with no timbering costs. Some of the proposed raising and crosscutting will be necessary for drill station preparation.

EXHIBIT B - ADDITIONAL FACILITIES

Other than a compressor and shop building, no new additional facilities are necessary at the present time. The cost of these new buildings would be about $1,500.

EXHIBIT C - OPERATING EQUIPMENT

As there is no equipment at the mine, a complete set is necessary. This necessary equipment is listed in the following tabulation:

Machinery and Equipment

Mining equipment

1 - 500 cfm Diesel compressor	$10,620
1 - Shaft hoist, air-driven, 2000 lb. rope pull	2,514
1 - Drifter, 4-in. class	845
1 - Drifter, 3½-in. class	720
2 - Jackhammers, 55-lb. class	660
1 - Stoper, 96-lb. class	610
Drill steel and bits	1,500
4 - Mine cars	1,300
1 - 2-ton skip	400
1 - Air receiver	900
2,000 ft. of track, 30-lb., 2 rail @ $2,060/M	4,120
Pipe, black	
2,000 ft. of 3-in.	1,260
2,000 ft. of 2-in.	600
2,000 ft. of 1-in.	300
Pipe, galvanized, 1,500 ft. of 1-in.	300
1 - 5 hp. single-drum compressed air hoist	540
5 - Pressure tanks	375
Air hose, 8 - 50-ft. lengths with couplings	416
Water hose, 8 - 50-ft. lengths with couplings	300
Electric cap lamps and charging equipment	1,000
Total	$29,280

+ 9000

Installation and freight charges on above items, estimated	$ 5,000

Miscellaneous equipment

1 - 5 kw gasoline-electric generating unit	$ 1,000
1 - Deep-well pump, gasoline drive, 25 gpm against 400-ft. head	1,500
1 - Booster pump, 25 gpm against 400-ft. head	2,000
1 - Air pump, 162 gpm, 125 psi working pressure	510
Miscellaneous hand tools, shop equipment, etc.	5,000
Total	$10,010

- 39,290

EXHIBIT D - LABOR

There is considerable native labor available in the district and no shortage would be expected unless in the upper skilled brackets.

As most labor is included in the various items of exploration there leaves only the superintendent and two or three men to be charged to company account after the installation of equipment. These are listed as follows with the estimated monthly salary.

Superintendent and engineer	$ 500
1 Compressor operator	300
2 General utility, sampling, etc.....	500
Total	$ 1,300

For one year's operation this would amount to $15,600.

EXHIBIT E - REHABILITATION OF EXISTING FACILITIES

Considerable rehabilitation of existing buildings is necessary and these are listed as follows:

Rehabilitation of bunk and cook houses	$ 2,000
Rehabilitation of office, laboratory and warehouse	2,400
Rehabilitation of shop	1,000
Total	$ 5,400

COST SUMMARY

The costs derived in the preceeding chapters are summarized as follows:

Exhibit A	
Diamond drilling	$46,900
Long hole drilling	6,000
Crosscutting and drifting	14,000
Raising and winzing	14,400
Exhibit B	
New facilities	1,500
Exhibit C	
Machinery and equipment	29,280
Installation and freight	5,000
Miscellaneous equipment	10,010

Exhibit D	
Labor and supervision.....	$15,600
Exhibit E	
Rehabilititation of existing facilities..	5,400
Estimated total cost of project	$148,090

CONCLUSIONS AND RECOMMENDATIONS

The total estimated cost of the project is $148,090, of which one-half will be supplied by the applicant and one-half to be supplied by the Government. Each share would be $74,045. The outlined program would be easily completed within two years and should be done in one year.

The above program is recommended because of the appreciable past production of copper ore and the relatively good prospects of increasing the small present reserves by the extension of known ore zones and by the discovery of new ore-bearing zones.

310

FILE COPY
SURNAME:

Gordon

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

AUG 29 1951

Mr. Charles F. Williams
110 Camino De La Pena
Santa Fe, New Mexico

Re: Docket DMA-15

Dear Mr. Williams:

This is to inform you that your application for Government aid for the San Pedro Mine has been returned to the Copper Branch for consideration.

It is noted in a memorandum from the Field Team, Region IV, that your original loan application was changed to an application for exploration of the tungsten area with contribution by yourself of 25 percent of the total cost up to $27,500. This office has not received any such application, nor any notice of such application other than that contained in the Field Team Report.

We would like to know whether you would consider a copper exploration project for the San Pedro Mine on the basis of 50 percent participation as required by the Regulations (MO-5).

Very truly yours,
Tom Lyon

Tom Lyon, Director
Supply Division

JF 8/29

JWGowen:pk
8/27/51

Copy to: Administrator's Reading File
Reports and Records Branch
Field Team IV
Copper Branch
Files-DMA Docket

MINING DIVISION
REGION IV

Memorandum August 22, 1951

To : Paul T. Allaman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject: Supplemental Report, DMA Docket 15, Charles F. William's San Pedro Copper Mine, Santa Fe County, N. Mex.

Enclosed are original and 7 copies of a supplemental Engineering Report on the above property. The original report was submitted in July. In that original report, an exploration loan for Copper was recommended if the owner agreed. The owner at that time was in Hawaii and could not be reached. When he returned to Santa Fe, the attached proposal was worked out.

I note where Seule', under Exhibit D, calculates supervision, etc. for only one year. However, in the section on Conclusions and Recommendations he says: "The outlined program would be easily completed with in two years and should be done in one year."

When and if Williams is given a contract to sign, he should increase this amount for superintendent, etc. if he thinks he cannot complete the project withing the one year.

The report has my approval.

The original brochure is enclosed.

Walter R. Storms

CC P.T. Allaman (7)
C.A. Andersen
DMA-15
DF

WRStorms:als

340

FILE COPY
SURNAME:

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

Holderer
Ballard
Thayer
Geehan

AUG 22 1951

Mr. Charles F. Williams
110 Camino de la Pena
Santa Fe, N. M.

In reply please refer to:
DMA-15 Tungsten

Dear Mr. Williams:

We have carefully reviewed your application for an exploration loan under the tungsten 75 per cent participation plan. The samples obtained by our field team indicate an average WO_3 content of only 0.14 percent, which is not sufficient to qualify for an exploration loan on tungsten. It is therefore necessary to deny your application.

Your docket is being returned to the Copper Branch for that consideration it may merit on copper.

Very truly yours,

Tom Lyon

BJ 8/22

Tom Lyon
Director Supply Division

TJBallard:ll Aug 20, 1951
CC: Files
Adm. Reading File
Reports and Records
Mr. Lemmon
Mr. Geehan
Mr. Holderer
Field Team Region IV

310

FILE COPY
SURNAME:

Gowen

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

G.E.C

AUG 17 1951

Memorandum

To: Chief, Tungsten Branch

From: Chief, Copper Branch

Subject: Application of Charles F. Williams for Exploration Aid for Tungsten Area, San Pedro Mine, Docket DMA-15, Commodity - Tungsten-Copper

The subject application was originally for a production and development loan in the amount of $161,625, and was referred to the field team on that basis as a copper project.

Subsequently in a letter dated February 19, 1951, Mr. Williams asked to have his application transferred to the Tungsten Branch. Although this was not done, the field team was requested to investigate the tungsten possibilities and the applicant was informed that his application would be processed by both branches.

I am transmitting herewith the entire docket file together with the field team report for your review as a tungsten project. Please return it to the Copper Branch for further processing.

(sgd)
J. B. Gowen, Chief
Copper Branch

Attachments

JBGowen:rw
8-17-51

Copy to: Administrator's Reading File
Reports and Records Branch
Executive Officer, DMA Field Team IV
Copper Branch
Files - DMA Docket

QEC

July 18, 1951

Memorandum

To: Landon Strobel, Executive Secretary
Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 15, Final Report, Charles F. Williams,
San Pedro Copper Mine, New Placers District,
Santa Fe County, New Mexico

Herewith is transmitted the original and two copies of the examiners report on the above docket. It is noted that the examining team recommends denial of the application due to the low unit content of tungstic-trioxide, but does, however, recommend an exploration project for copper when and if the applicant signifies his willingness to participate.

We concur with the conclusions and recommendations.

Paul F. Allsman

P. F. Allsman, Alternate

A. M. Leschmann

DEPARTMENT OF INTERIOR
Defense Minerals Administration
RECEIVED
JUL 20 1951
LANDON F. STROBEL
Executive Secretary

Enclosures
One copy by Air Mail
Two copies by Regular Mail

FFA:ld

a.E.C. -

DEPARTMENT OF THE ARMY
Defense Minerals Administration
RECEIVED
JUL 20 1951
LANDON F. STROBEL
Executive Secretary

Mining Division
Region IV

July 11, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: DMA Docket 15, Final Report, Charles F. Williams, San Pedro Copper Mine, New Placers District, Santa Fe County, New Mexico

The applicants on the above docket originally requested a development and exploitation loan of $161,685 to re-equip the San Pedro Mine and build a mill for the production of copper and tungstic-trioxide concentrates. Before action was taken on this application Charles F. Williams took a few samples in the tungsten area with inferred reserves of 22,500 tons of ore with an average grade of 2.51 percent copper and 0.45 percent WO_3. He accordingly changed his original loan application to an application for exploration of the tungsten area, with contribution by Williams of 25 percent of the total cost up to $27,500.

The part of the mine with the tungsten was surveyed and sampled by the U. S. Geological Survey and the U. S. Bureau of Mines. Approximately 20,000 tons of indicated copper ore contains 1.31 percent copper and 0.14 percent tungstic-trioxide. Due to the low unit content of tungstic-trioxide, the examining team recommends denial of the application, with which we concur.

The examining team does recommend however, an exploration project for copper when and if the applicant signifies his willingness to participate. We concur also with this recommendation.

Paul T. Allsman

P. T. Allsman

PTA:ld

FOR GOVERNMENT USE ONLY

Mining Division
Deb Field
JUL 1951
BUREAU OF MINES
Denver Colorado

Mining DIVISION
REGION IV

July 6, 1951

Memorandum

To : Paul T. Allman, Denver, Colorado

From : Chief, Arizona-New Mexico Dr., Mining Div., Region IV

Subject : Final Report, DPA Docket 15, Mrs. F. Williams' and Pedro Copper Mine, Santa Fe County, N. Mex.

Enclosed are original and 7 copies of the section on Summary, Conclusions and Recommendations by John R. Faick of the Geological Survey and John H. Soule' of the Bureau of Mines, and the section on Engineering by Soule'.

As Williams had gone to Hawaii after the examiners found that the mine did not contain enough tungsten to warrant a tungsten exploration loan they could not contact him regarding a copper exploration loan.

If the Defense Production Act is extended the examiners will contact Williams at a later date about copper exploration.

The brochure will be kept here until we know something more definite about this docket.

Walter A. Storms

cc: P. T. Allman (7)
W. A. Anderson
MVA-15

WAStorms:frj

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

200 Post Customhouse
Denver 2, Colorado

July 3, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 916--Report, San Pedro Mine, Santa Fe County, New Mexico

Enclosed are the original and 7 copies of the above report.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O. Box 4126, University Station
Tucson, Arizona

June 29, 1951

Memorandum

To: Mr. A. H. Koschmann, Denver, Colorado

From: Mr. A. F. Shride, Tucson, Arizona

Subject: DMA Docket #15 Report, San Pedro Mine, Santa Fe County, New Mexico

Enclosed are original and 7 copies of the above report.

C. A. Anderson has reviewed and approved this report and the conclusions in the summary report by Faick and Soule'.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 8

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT ON EXAMINATION BY FIELD TEAM
REGION IV

DMA-15 - Charles F. Williams, San Pedro Copper Mine

Santa Fe County, New Mexico

John Faick, Geologist
U. S. Geological Survey

John H. Soule', Mining Engineer
U. S. Bureau of Mines

July 1951

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By John H. Faick[1] and John H. Soule[2]

Charles F. Williams of Santa Fe, N. Mex., one of the owners of the San Pedro copper mine, New Placers (San Pedro) Mining District, Santa Fe County, New Mex., submitted an application to the Defense Minerals Administration for a development loan of $161,625 to re-equip the mine and mill in order to produce copper and tungsten. The application was given docket number MA-15, but was sent to the Field Team, Region IV, for consideration as an exploration project. The property was visited by the writers in April 1951.

The San Pedro mine has been operated intermittently since 1869. The estimated past production is in excess of 20,000,000 pounds of copper plus a small amount of gold and silver.

The copper ores of the mine are of the contact metamorphic type. They occur principally as elongate mantos in an 80 to 90 foot series of gently dipping, alternating thin beds of shales and limestones. Ore has been found in as many as 7 different beds. The principal ore mineral is chalcopyrite which occurs as grains, small masses, and nodules disseminated in garnet, or the ore may replace limestone along bedding planes and faults. The ore zone is about 2,400 feet long, about 150 feet wide, and generally is confined to the contact zone between massive garnet and unreplaced limestone. Scheelite has been found in some of the ore, but it is low grade and limited in distribution.

1/ Geologist, Geological Survey
2/ Mining Engineer, Bureau of Mines

The estimated ore reserves of the San Pedro mine are: measured ore, 4,000 tons; indicated ore, 40,000 tons; and inferred ore, 150,000 tons. The grade is estimated to be about 3 percent copper. Approximately 20,000 tons of the indicated copper ore contains 1.31 percent copper and 0.14 percent WO_3.

The mine has been idle since 1941 when it was completely stripped of all material and equipment. Open stoping methods were used in mining the gently dipping tabular ore bodies, as the walls and back stand very well with a minimum of support.

It was suggested that the application for a development loan be changed to an exploration loan with tungsten as the basic metal. Very low tungsten assays on samples taken by the Bureau of Mines made it necessary to deny the application as an exploration loan for tungsten.

Because of its considerable past production of copper and because the possibilities of considerably increasing the copper ore reserves are very good, an exploration project for copper is recommended. However, C. F. Williams, one of the owners, has not replied to inquiries as to his interest in participating in an exploration loan for copper. No recommendations as to details of a copper exploration program and costs can be supplied until Williams indicates a willingness to participate.

Geology

SAN PEDRO MINE
SANTA FE COUNTY, NEW MEXICO

Geology

By John N. Faick
Geologist, U. S. Geological Survey

SAN PEDRO MINE
SANTA FE COUNTY, NEW MEXICO

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GEOLOGY

INTRODUCTION

The San Pedro mine area, located in the New Placers mining district in the southwestern part of Santa Fe County, New Mexico, has received considerable attention from mining engineers and geologists over a period of many years. Previous studies have resulted in several detailed reports, the more important being listed here:

Lindgren, Waldemar, Craton, L. C., and Gordon, C. E., The Ore Deposits of New Mexico; U. S. Geol. Survey, Prof. Paper 68 pp. 170- 175, 1910.

Locke, Augustus and Perry, Edward H., Private Report to the Santa Fe Gold and Copper Mining Company, San Pedro, New Mexico.

San Pedro Mine, Santa Fe County, New Mexico: War Minerals Report 143, U. S. Bureau of Mines, April 1943.

Smith, J. F., Wadsworth, A. H., Cooper, J. T., Farwell, F. W., and Weissenborn, A. E., San Pedro and Carnahan Mines, New Placers Mining District, Santa Fe County, New Mexico, U. S. Geol. Survey Open File Report, January 1945.

Entwistle, L. P., Private Report on the San Pedro Mine for the American Smelting and Refining Company, 1945.

McMillan, W. D., Proposed Development Project on the San Pedro Copper Mine, New Placers (San Pedro) Mining District, Santa Fe County, New Mexiso, U. S. Bur. Mines Supplemental Examination Report, June 1950.

ROCKS OF THE AREA

Sedimentary Rocks.

The San Pedro area is underlain with a 2000 foot thick series of Pennsylvanian strata belonging to the Madera formation. The lower member of this series consists of thick-bedded gray limestone interbedded with minor amounts of shales. The upper member consists of interbedded arkosic sandstones, shales and limestones. About 80 to 90 feet of the section near the base of the upper member is known as the favorable beds since it has been the host rock for nearly all ore produced from the San Pedro mine.

Igneous Rocks.

The Madera formation in vicinity of the San Pedro mine has been intruded by a granodiorite laccolith, rhyolite sills, and east of the mine by a monzonitic stock. Several dikes occur in the area. These intrusions and related mineralization have caused widespread metamorphism of the Madera formation.

SUMMARY OF GEOLOGIC COLUMN

Pennsylvanian

Madera

<u>Upper Member</u>

Dominantly Arkosic Limestones

Canyoncito Formation	≠ 400 feet of shales and sandstones with few limy beds.
Fussle sill (Laramide age)	≠ 60 feet white, fine-grained rhyolite.

Upper Member (cont'd.)

San Pedro formation	110-120 feet in two distinct units.
Spanish series	80-90 feet of alternating limestone and shale beds of "favorable series." Includes 7 thin limy beds that are best rocks for San Pedro ore.
Giblin quartzite	30 feet bed of quartzite. May be facies of Parnell arkose.
Parnell arkose	30 feet dirty brown quartzite with fragments of feldspar, limestone, gravels and grits.

Lower Member

Marine limestones

Carnahan limestone	≠ 50 feet above laccolith. - Thin bedded shaly limestone.
San Pedro laccolith (Laramide age)	450 feet syenite (?) or granodiorite.
Carnahan limestone	≠ 1000 feet below laccolith. - Fossiliferous limestone; massive, thick bedded, shaly at top. Is best rock for Carnahan ore body.

STRUCTURE

The structure of the San Pedro district is relatively simple. The stratified formations and associated sills strike almost due north and dip about 15 degrees east. This regional pattern has been locally interrupted by gentle warps and flexures and several small faults. Both faults and folds are best seen in the San Pedro mine and some of them undoubtedly play a relatively important part in the localization of the ore.

Two sets of faults are known in the San Pedro mine, one striking approximately east-west and the other trending nearly north-south.

The east-west fractures are pre-mineral, but the much stronger north-south faults are regarded as post-mineral although some movement may have taken place before the ore was emplaced.

METAMORPHISM

Near the San Pedro mine the sedimentary rocks have been extensively metamorphosed. In general, the shale beds have been altered to hornfels and the limestone beds have been either recrystallized to marble or altered to garnet-rich tactite. The contact between tactite and unreplaced limestone and shale may be sharp or gradational and tactite may replace shale as well as limestone. Apparently the different beds are receptive to metamorphism to a varying extent as it is much more widespread in some beds than in others. Tactite is not confined to the San Pedro mine but has been found in some beds as far east as the head of Lazarous Gulch.

The narrow contact zone between the marbelized limestone and garnetized limestone in the San Pedro mine was observed by Locke and Perry and designated by them as the marble line. It is the edge along which mineralization ceases and marble comes in. The marble line is not a simple structure but is highly irregular both in the plane of the beds and in planes normal to the beds. Most of the San Pedro ore bodies lie along or near this line.

ORE DEPOSITS

Occurrence of Ore

The ore in the San Pedro mine is a replacement of certain parts of the 7 favorable beds in the Spanish series. The ore occurs as small, tabular replacements of thin east-dipping marble beds whose hanging walls and foot walls are altered shale. The ore bodies

have a decidedly linear character with a single long dimension roughly parallel to the dip of the beds.

The ore zone crops out on the southwest shoulder of the hill in the old Spanish mine workings, and then follows an irregular but well defined course eastward down the dip of the beds for over 2400 feet to the lowest workings, where the ore trend appears to be turning to the north.

The average width of the stopes is less than 100 feet and the height of the stopes varies from two to thirty feet. In considerable part of the stoped distance ore has been stoped from two beds, one over the other, and separated by a barren or low grade pillar a few feet thick. In a few places ore has been stoped from 3 beds and in one place from 4. In several places only one bed has been stoped.

Character of Ore

Chalcopyrite is the valuable mineral at the San Pedro mine. It normally occurs disseminated or in small nodules in massive garnet associated with calcite, specularite, quartz, pyrite. Locally the ore contains some scheelite. Small amounts of molybdenite have been reported from the lower workings of the mine. Nearly all of the ore contains small amounts of gold and silver.

Oxidation has not greatly affected the ore body although some evidence of supergene alteration can be found to considerable depths in the mine. No noteworthy bodies of secondarily enriched ore have been found, although the old Spanish workings on the outcrop supposedly exploited oxidized ores containing free gold and native copper.

Ore produced in the past from the San Pedro mine averaged about 3 percent copper, although locally much higher grade ores have been mined. The No. 1 stope in the 50 bed is reported to have produced about 5000 tons of chalcopyrite ore that averaged 16.5 percent copper. Some small shipments of hand cobbed ore averaged 20 percent copper and a few thin beds of this type of ore can still be seen in some of the old stopes.

Tungsten, in the form of scheelite, is found in and around the 42, 51, 24 stopes and west stope, Home tunnel and unnamed stope areas, shown on figure 3. In these areas the scheelite is disseminated in a copper-bearing tactite and could possibly be produced as a by-product from mining and milling copper ore. Areas outside of those mentioned above are essentially barren of tungsten, although some scheelite has been found disseminated in hornfels.

In correspondence leading up to this examination it was mentioned that some recent churn drilling shed new light on the occurrence of tungsten at the San Pedro mine. The drilling mentioned was on the old Ortiz land grant in the New Placers district. This work has established the presence of tungsten in amounts up to about .15 percent WO_3 in a large breccia zone. Drilling has also established the presence of small amounts of scheelite in nearly all of the gravels of both Old Placers and New Placers districts. These occurrences are of interest but do not have any direct bearing on the San Pedro mine.

ORE RESERVES

Copper

According to Charles L. Bradbury, owner of one half interest in the San Pedro mine, the reserves are 75,000 tons of ore averaging

3.3 percent copper. This could not be verified but appears to be somewhat large. In the flooded workings below the 31 incline is a block of developed ore containing about 4000 tons averaging 2.9 percent copper for an average thickness of 4.4 feet. There is probably about 8000 tons of indicated ore in the same area. In the workings above water level are considerable gob, many small ore remnants and pillars, which if handled carefully might constitute marginal ore. It is possible that 10,000 tons of this type of ore is available as indicated ore.

Tungsten

Reserves of ores containing tungsten have previously been calculated[1/] and these estimates are given below. While this ore has been regarded as inferred, it appears sufficiently well developed to be classified as indicated ore.

Location	Bed	Tons
42 Stope	Upper and Lower 24	3,500
Hess Tunnel	Upper 50	2,000
51 Stope	Upper 24, Lower 50	16,800
	Total Tungsten - Copper Ore	- 22,300

This ore is probably too low grade to mine as is shown by samples taken by J. H. Soule'. The arithmetical average of 28 samples is as follows:

Gold	0.029 ounces per ton
Silver	0.367 ounces per ton
Copper	1.31 percent
Tungsten Trioxide	0.14 percent

1/ Smith, J. F. et al, Op. cit.

OWNERSHIP AND CLAIMS

The property consists of thirteen patented mining claims listed as follows: Apex, Virginia, Copper Bell, Montezuma, Giblin, Frankfort, White, Hoosier Girl, Ella, Michigan, Puzzle, Bonanza, and Magnolia. This group totals about 200 acres.

The San Pedro property is at present owned by a partnership consisting of Charles L. Bradbury of Albuquerque and Charles F. Williams of Santa Fe.

DESCRIPTION OF DEPOSIT

The ore occurs principally as elongate mantos in an 80 to 90 foot series of alternating thin beds of shale and limestone. Ore has been found in as many as 7 different beds along the ore zone. This zone is about 2,400 feet long and 130 feet wide. The ore zone is generally confined to the contact between massive garnet and unreplaced limestone. The principal ore mineral is chalcopyrite which occurs as grains, small masses and nodules disseminated in garnet, or the ore may replace limestone along bedding planes and faults.

ORE RESERVES

There are practically no measured minable reserves of copper ore in the San Pedro mine. It is doubtful if there ever were large reserves as most mining seems to have been done with a minimum of advance exploration work. The owners of the property have estimated a total of 75,000 tons of ore containing 0.026 oz. of gold and

Four samples taken by Mr. C. F. Williams from the same areas assayed as follows:

Location	Copper %	Tungsten Trioxide %
42 Stope	4.30	0.49
51 Stope	2.07	0.28
Unnamed Stope	2.18	0.45
24 Stope	1.97	0.16

Summary of Reserves

The estimated available ore reserves of the San Pedro mine are summarized as shown below:

Location	Class	Tons	Copper %	Tungsten Trioxide %
Below 31 incline	Measured	4,000	2.9	
Below 31 incline	Indicated	8,000	3.0	
In old workings as gob, pillars, remnants	Indicated	10,000	2.5	
42,51 stopes and Home Tunnel area	Indicated	22,300	1.31	0.14
Unexplored areas in and around mine	Inferred	150,000	3.0	

EXPLORATION POSSIBILITIES

Exploration possibilities for copper ore in and around the San Pedro mine are excellent. Many beds of the favorable series have not been explored in the former productive area and the long range exploration possibilities have not been adequately tested. There are ample opportunities for a carefully executed exploration program to greatly increase ore reserves at the San Pedro mine. This writer believes an additional 150,000 tons of inferred ore may reasonably be expected from the extension of the known ore zone and from

unexplored tactite zones near the mine. The bulk of this ore will probably contain about 3 percent copper, and a small amount of high-grade ore may be found.

Exploration possibilities for additional tungsten bearing ores are not as good as for copper. A large part of the San Pedro mine is known to be barren of tungsten, and this metal appears to be concentrated in the 42 stope area and in the home tunnel, 24 stope, and west stope area shown on figure 3. The search for other similar concentrations of tungsten appears to be highly speculative.

Locke and Perry[1/] have outlined 42 specific exploration projects of which about 12 have been completed. They have classified these projects into 4 groups as explained below.

1. There is a chance of getting ore within the ground penetrated by the present mine workings, in the favorable beds where they have not yet been thoroughly explored.

2. The thickness of the favorable section may be increased, especially downward, with the finding of additional productive beds.

3. There is a chance of getting ore in the favorable beds on the continuation of their marble line easterly from the east end of the mine (bottom of 30 stope).

4. It is not impossible that the favorable beds have another marble line, or the continuation of the known marble line, on the other side of the garnet, somewhere in the unexplored area that lies northerly from the mine.

1/ Locke, Augustus and Perry, Edward H.: Private Report to the Santa Fe Gold and Copper Mining Company, San Pedro, New Mexico, 1916.

The above summary adequately covers most of the exploration possibilities at the San Pedro mine. It should be emphasized, as shown by Smith[1/] that a hole drilled downward from 31 stope would establish the identity of the ore beds on either side of the shaft fault and would test the west stope bed which has not been explored in this area. It would also test other calcareous beds that might exist below the west stope bed and above the laccolith.

1/ Smith, J. F. et al., Op. cit., pp. 16.

SAN PEDRO COPPER MINE
NEW PLACERS MINING DISTRICT
SANTA FE COUNTY, NEW MEXICO
DMA DOCKET 15

Engineering Report

by John H. Seulc
Mining Engineer
U. S. Bureau of Mines

July 1951

Engineering

SAN PEDRO COPPER MINE
NEW PLACERS MINING DISTRICT
SANTA FE COUNTY, NEW MEXICO
DMA DOCKET 15

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INTRODUCTION

Charles F. Williams of Santa Fe, New Mexico, part owner of the San Pedro copper mine, applied for a development loan of $141,625 under the Defense Production Act early in 1951. It was intended to rehabilitate the mine, rebuild the mill, and produce tungsten and copper ores.

The application, DPA Docket 15, was sent to the Field for consideration as an exploratory project. Williams was amenable to Government participation in exploration for tungsten on a 25-75 percent basis. However, sampling by the Bureau of Mines revealed only a little tungsten ore and that was very spotty and of low average grade.

Considering the relatively large past production of copper and the very good chance of increasing the reserves of copper ores through extensions of mined ore bodies and by finding new ore, this report is based on an exploratory project for copper where the applicant and the Government share equally the cost of exploration.

This mine has twice been proposed as the site of a Bureau of Mines exploratory project and the general recommendations are derived from the reports proposing the projects.

ACKNOWLEDGMENTS

Acknowledgment is made of the assistance rendered and the data supplied by Charles F. Williams, part owner of the San Pedro mine. Acknowledgment also is made of the assistance rendered by Martin Pollock in guiding the engineers through the mine.

Acknowledgment also is made of the data obtained from reports by the U. S. Geological Survey and from reports by Charles H. Johnson and W. D. McMillan, both of the Bureau of Mines. Most of the information in this report was extracted from McMillan's report.

LOCATION, TOPOGRAPHY AND CLIMATE

The San Pedro copper mine is located on the southwestern slopes of the San Pedro Mountains, east and north of the common corner of secs. 21, 22, 27, and 28, T. 12 N., R. 7 E., in the New Placers (San Pedro) Mining District, Santa Fe County, N. Mex. (Fig. 1).

Access to the mine from Albuquerque, the nearest source of major supplies, is via U. S. Highway 66 east for 16 miles to Tijeras, thence northeasterly on State Highway 10 for 15 miles. There the road forks to the right, or southeast. This fork is taken to a point about 2 miles beyond the old town of San Pedro. At the top of a steep grade, a sharp left turn is taken which leads northerly to the mine.

Stanley, N. Mex., the nearest rail shipping point, is 20 miles southeast of the mine.

The copper deposits are at an altitude of about 7,500 feet. The San Pedro mountain reaches an elevation of 8,250 feet. Vegetation consists of mountain cedar, piñon pine, scrub oak, native grasses and cacti. The slopes generally are steep, although not exceptionally rugged.

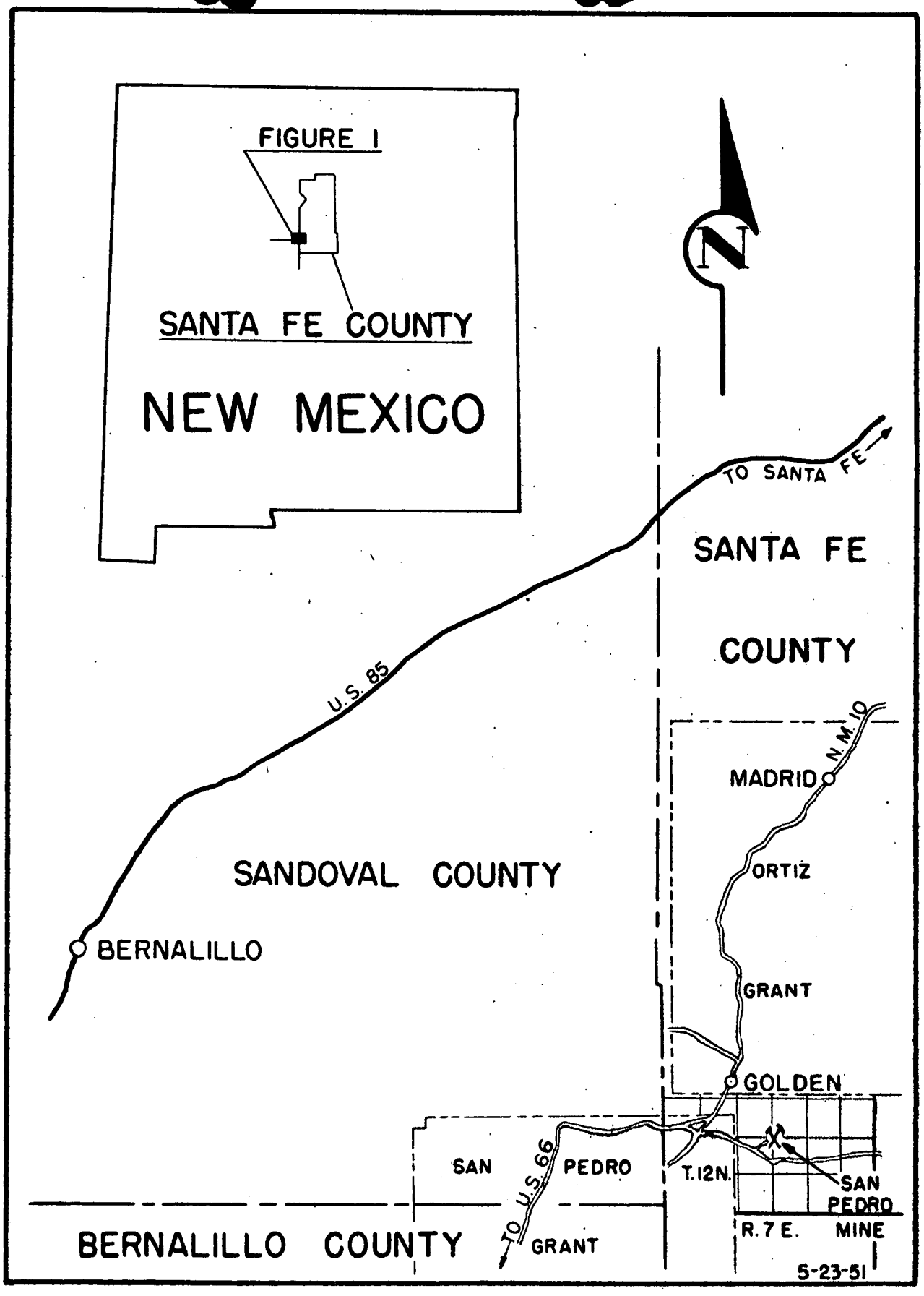

FIGURE 1.–INDEX MAP, SAN PEDRO COPPER MINE, SANTA FE CO., N. MEX.

The average annual precipitation ranges from 20 to 25 inches. Winter snows may be heavy but should hamper mining operations but little if the roads are maintained. Summer thunder showers may wash out the roads but should interfere little with mining. Temperatures range from 95 degrees to below zero, although this sub-zero weather usually is not prolonged.

HISTORY AND PRODUCTION

The San Pedro mine reportedly was discovered and worked by the Spaniards looking for the source of placer gold in the New Placers area. The first recorded copper production from Santa Fe County was in 1889. The San Pedro is the only copper mine in the county and was operated by the Santa Fe Gold and Copper Co. for three years after 1889. A copper matte smelter was built.

The mine was inactive until 1899 when the company was reorganized and a new smelter was erected. This operation lasted one year. Crude ore was shipped from the mine the next three years.

In 1907 the company again was reorganized and operations started. These operations continued intermittently until 1918. From 1919 to early 1940, the property was idle except for small shipments of crude ore. The Kaskob Mining Interests purchased the mine in 1939, constructed a 150-ton mill in 1940 and operated through August 1941. They then completely stripped the mine and mill of all equipment.

Operations since that time have been confined to lessees shipping small lots of crude ore.

A field class of the University of New Mexico under the leadership of Dr. V. C. Kelley visited the mine in 1944 and discovered the presence of scheelite in some of the old stopes. No tungsten has been produced. The occurrences were sampled by the Bureau of Mines and the results are shown in Figure 2.

The following table shows the recorded production of copper from the San Pedro mine from 1889 through 1948.

MAP

BELONGS

HERE

#3

TABLE NO. I. - Recorded and Estimated Production of San Pedro Copper Mine

Year	Short tons	Gold Ounces	Gold oz/ton	Silver Ounces	Silver oz/ton	Copper Pounds	Copper Percent	Remarks
1889 1/						4,315,731		Metal recoverable
1890 1/						200,000		from
1891 1/						923,076		matte
1889-91 1/	28,194	5,638.00	0.20	80,353	2.85	5,638,807	10.00	
1892-99	Inactive							
1900-01	Smelter operated - no record of production							
1902- 1/	16	3.20	0.20	46	2.85	3,250	10.00	Metal recoverable
1903 1/	48	9.60	0.20	137	2.85	9,596	10.00	from crude ore -
1904 1/	11	2.20	0.20	31	2.85	2,308	10.00	shipped by leasers.
1905-06	Inactive							
1907 2/	21,256	786.00	0.037	17,625	0.82	1,223,460	2.8	Metal rec. from matte
1908 2/	Inactive							
1909 3/	6	1.20	0.20	17	2.85	1,093	10.00	Metc. rec. from crude
1910 3/	25	5.00	0.20	71	2.85	5,150	10.00	ore - shipped by
1911 3/	83	16.60	0.20	237	2.85	16,644	10.00	leasers.
1912 2/	14,583	493.81	0.034	13,134	0.90	801,895	2.75)	
1913 2/	29,506	1,065.00	0.037	21,714	0.74	1,774,473	3.00)	
1914 2/	23,080	242.55	0.010	4,767	0.20	277,159	0.60)	Metal recoverable
1915 2/	26,921	1,995.84	0.074	23,601	0.87	1,673,790	3.10)	from matte.
1916 2/	40,087	3,189.88	0.080	29,532	0.73	2,140,995	2.67)	
1917 2/	6,880	328.33	0.047	6,380	0.92	369,390	2.68)	
1918 2/	3,600	158.30	0.044	4,645	1.29	210,923	2.93)	
1889-1918	194,338	13,956.03	0.071	202,291	1.04	14,148,953	3.64	
1919 4/	10	3.00	0.158	53	2.75	3,414	2.95)	
1920-21 4/	—	—		—		—	)	Metal recoverable
1922 4/	9	1.00	0.111	27	3.00	2,003	11.20)	from crude ore -
1923 4/	34	20.60	0.245	245	2.91	19,032	11.32)	mainly shipped by
1924 4/	534	123.50	0.231	1,786	3.35	143,152	13.40)	leasers.
1925 4/	584	100.90	0.170	2,939	2.95	197,000	10.00)	
1926 4/	544	85.90	0.158	1,850	3.41	141,530	13.01	Metal content of crude
1927 4/	201	15.50	0.092	466	2.31	34,312	8.53	ore - mainly shipped
1928 4/	2,235	144.70	0.065	3,750	1.67	245,391	5.46	by leasers.
1929 4/	1,166	111.10	0.095	2,425	2.08	185,574	7.95	——do——
1930 4/	365	39.00	0.107	865	2.37	82,447	11.29	——do——

Table No. 1 - Recorded and Estimated Production of San Pedro Copper Mine - Continued

Year	Short Tons	Gold Ounces	Gold Oz/ton	Silver Ounces	Silver Oz/ton	Copper Pounds	Copper Percent	Remarks
1931-32	—	—		—		—		
1933 3/	5	1.00	0.20	14	2.85	1,000	10.00	Metal content of crude
1934 4/	2	2.93	1.465					ore - mainly shipped
1935 4/	31	5.00	0.161	78	2.52	5,604	9.03	by leasers.
1936 4/	34	6.10	0.179	40	1.17	3,174	4.66	by San Pedro Cons. Co.
1937 3/	436	87.00	0.20	1,240	2.85	87,000	10.00	by leasers.
1938 3/	402	80.40	0.20	1,145	2.85	88,500	11.00	——do——
1939 3/	2,580	515.00	0.20	7,353	2.85	671,000	13.000	——do——
1940 4/	3,297	1,275.00	0.386	12,823	3.88	1,044,463	15.84	by Kaskob Min. Interests.
1919-1940	12,930	2,695.63	0.208	37,110	2.87	2,874,256	11.11	
1940 4/	31,671	1,394.00	0.044	24,007	0.756	2,026,944	3.2	Metal contents of heads
1941 4/	26,544	876.00	0.033	20,925	0.788	1,646,343	3.1	at Kaskob A. I. Mill.
1942-45	—	—		—		—		
1946 3/	30	6.00	0.20	85	2.85	6,000	10.0	Metal recoverable
1947 3/	2/	0.40	0.20	6	2.85	500	10.0	from crude ore shipped
1948 3/	10	2.00	0.20	28	2.85	2,000	10.0	by leasers
1940-48	58,257	2,275.40	0.039	45,051	0.77	3,681,792	3.27	
1919-40	12,930	2,695.63	0.208	37,110	2.87	2,874,256	11.11	
1889-1918	194,338	13,956.03	0.071	202,291	1.04	14,148,933	3.64	
1889-1948	265,525	18,930.06	0.071	284,452	1.07	20,704,981	3.90	

1/ Copper production from county records, Lindren, Graton & Gordon, U. S. Geol. Surv. Prof. Paper 68, pp. 21-23. Tons ore and ounces gold and silver estimated.
2/ Bureau of Mines - Geological Survey Annual Statistics.
3/ Copper production from county records, Bureau of Mines. Tons ore and ounces gold and silver estimated.
4/ Bureau of Mines Annual Statistics.

3.26 percent copper per ton. This ore would seem to be largely in the indicated and inferred categories, especially the latter.

The U. S. Geological Survey studied the tungsten occurrences in 1944. They estimated 22,300 tons of scheelite-bearing rock in the mine ranging in grade from 0.1 to 0.3 percent WO_3. The grade was estimated by the ultra-violet light. Subsequent sampling by the Bureau of Mines shows an unweighted average of a little over 0.1 percent WO_3. The copper content of this material is so low that it cannot be considered ore (Fig. 2).

PRESENT STATUS

The mine is idle at the present time and is completely stripped of all equipment, pipe and track. Any underground exploratory work undertaken must be done with the installation of equipment and facilities. A plan of the mine workings is shown in figure 3.

TENTATIVE EXPLORATION

Although a definite program of exploration cannot be proposed until the owners of the property decide to what extent they are willing to participate, the following tentative program is submitted to give a general picture of the necessary expenditures. This may be scaled up or down as necessary.

Estimates of the direct cost of the tentative exploratory program are given as follows. These data were extracted from a preliminary economic analysis by W. B. McMillan of the Bureau of Mines

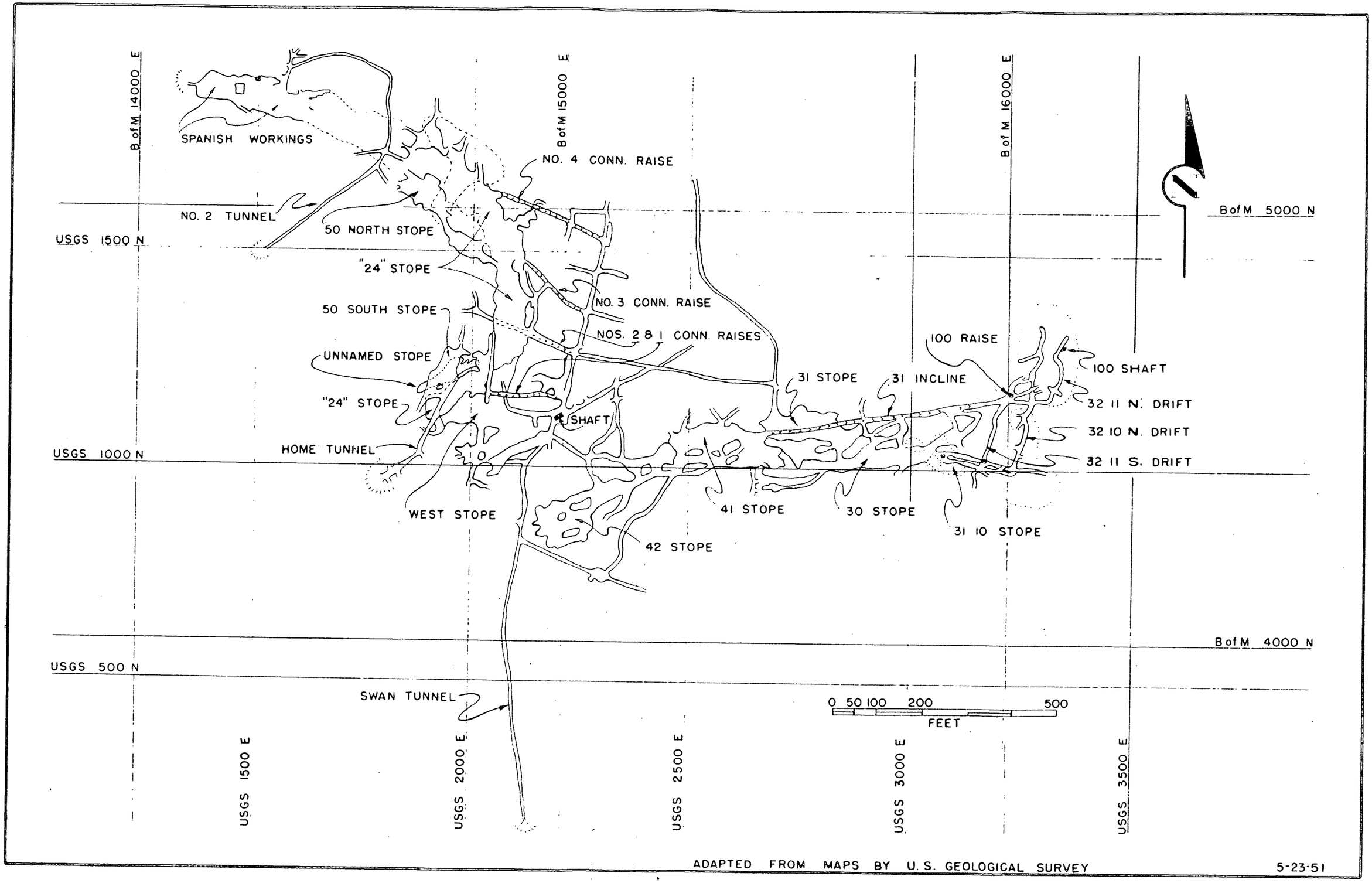

FIGURE 3.– PLAN OF MINE WORKINGS, SAN PEDRO COPPER MINE, SANTA FE COUNTY, NEW MEXICO

Direct Costs - Exploration

Diamond drilling, 1,000 ft. at $7/ft. (by contract)	$7,000
Long hole drilling (20 to 30 ft.), 1,000 ft. at $3/ft.	3,000
Drifts and crosscuts, 1,000 ft. at $25/ft.	25,000
Raises, 800 ft. at $30/ft.	24,000
Total	$59,000

The present brick bunkhouse and the former shop require repairs and other buildings will be necessary. The estimated cost of these is given as follows:

Estimated Cost of Buildings

Rehabilitation of bunk and cook house	$2,000
Rehabilitation of shop	1,000
Office, warehouse, and laboratory	2,400
Power and compressor house	1,500
Total	$6,900

There is no machinery or equipment at the property, so complete mining equipment will be required. The estimated cost of this is $35,052. Details are given as follows:

Machinery and Equipment

Mining Equipment	
1 compressor, 500 cfm Diesel motor, skid mounted	$10,620
1 drifter, 4-in. class	845
1 drifter, 3½-in. class	720
2 jackhammers, 55-lb. class	660
1 stoper, 96-lb class	610
Drill steel and bits	1,500
1,400 ft. track, 30-lb. (2-rail) at $2,060/1,000	2,884
4 mine cars, rocker side dump, 20 cu. ft. capacity	1,300
1 air receiver - 48-in. by 12 ft.	900
Pipe - black	
1,400 ft. 3-in.	862
2,000 ft. 2-in.	600
2,000 ft. 1-in.	300
Pipe - galvanized, 1,500 ft. 1-in.	300
2 7½-hr slusher hoists, double drum, complete with cable, slushers, and accessories	1,800
1 5-HP single drum compressed air hoist	540
5 pressure tanks	375
Air hose, 8 50-ft. lengths, 3/4-in., with couplings	416
Water hose, ½-in., 6 50-ft. lengths with couplings	300
Electric cap lamps and charging equipment	1,000
Total	$26,552

Miscellaneous Equipment

1 5-Kw gasoline-electric generating unit	$1,000
1 deep well pump, gasoline driven, cap. 25 gpm against 400 ft. head	1,500
1 booster pump, cap. 25 gpm against 400 ft. head	2,000
Miscellaneous hand tools, shop equipment, wire, etc.	4,000
Total	$8,500

Summary of Costs for Exploration Program

Direct costs	$59,000
Buildings	6,900
Machinery and equipment	26,552
Miscellaneous equipment	8,500
Total	$100,952

Providing that exploration is successful, the following additional costs will be necessary.

Additional Equipment for Exploitation on Successful Completion of Exploration Project

1 Locomotive storage battery, type 10 HP, rated drawbar pull, 500 lbs.	$8,370
1 Loader rocker type bucket, cap. 4½ - 6 cu. ft.	2,970
Additional pneumatic drill steel and air hose	4,000
1 Generator set, Diesel-electric, 96-Kw, continuous, 60-cycle, 3-phase, 900-rpm, 440-volt (Caterpillar D-17,000)	13,800
1 Switchboard and transformers	1,500
1 All-flotation, 2 mineral milling plant, cap. 50 tons/day	60,000
Total	$ 90,650

Exploration program	100,952
Total capital investment	$191,602

Production Costs

Production costs are estimated as follows, being based on a daily production of 50 tons of ore from a total assumed reserve of 45,000 tons.

Estimated Production Costs

Item	Cost/ton ore
Mining and hauling	$4.00
Milling	4.00
Hauling concentrates to railhead	0.14
Smelting concentrates, refining & selling charges	2.00
Taxes and insurance	0.50

Estimated Production Costs, Cont'd

Amortization of Capital Investment

	Total	Amount Amortization
Exploration	$59,000	$59,000
Buildings	6,900	6,900
Machinery & equipment	125,702 - 60%	75,421
Totals	$191,602	$141,321*

*Value of above amount at 3 percent compound interest for four years = $159,058 — $3.54

Total — $14.16

CONCLUSIONS AND RECOMMENDATIONS

Based on an examination of the San Pedro mine, a study of considerable filed data pertaining to the mine, and sampling of tungsten exposures, a recommendation for tungsten exploration cannot be made. The sampling indicated an insignificant tonnage of very low-grade tungsten-bearing rock.

However, based on the considerable past production of copper obtained from the mine and the relatively good prospects of increasing the copper ore reserves, exploration of the mine on the basis of copper is recommended. Under this, the Government and the applicant would share equally the costs of exploration.

The owners of the mine, Charles Bradbury and Charles F. Williams, are qualified technical men, both having served the mining industry in positions of responsibility.

The details of the recommended exploration and the amount to be expended are dependent upon how far the owners wish to participate on an equal share basis with Government aid.

REGIONAL DIRECTOR'S
OFFICE
REGION IV
NOV 3 1950
BUREAU OF MINES
DENVER, COLORADO

CHARLES F. WILLIAMS
MINING ENGINEER
110 CAMINO DE LA PENA
SANTA FE, N. M.

(15)

November 1, 1950

Mr. J. H. East, Jr.
Regional Director, Region IV
Bureau of Mines
224 New Customhouse
Denver 2, Colorado

San Pedro Copper Mine
New Placers District
Santa Fe County, N. M.

Dear Mr. East:

Reference is made to my letter of October 17, 1950 to Mr. McMillan wherein application was made for Government technical assistance with equipment and/or financial aid in the exploration, development and equipment of the San Pedro mine. Reference is also made to Mr. Allsman's letter of October 30 enclosing a form letter outlining information required to determine whether this mine qualifies for a loan. In supplying this data, the numerical sequence of the form is followed.

1. The mine is known as the San Pedro copper mine and there are 45 mining claims including 21 patented claims in the property. The entire group is owned jointly by Charles L. Bradbury of Albuquerque and C. F. Williams of Santa Fe. It was operated from 1889 to 1938 by the Santa Fe Gold and Copper Co.- a Lewisohn organization. The Raskob Mining Interests, Inc., gained control in 1938 and the present owners acquired title to the property in 1944.

2. The value of the past production is estimated at $15,000,000. From 1904 to 1942, according to Bureau of Mines records, the mine produced 233,666 tons of ore. Metal, crude ore, and concentrates shipped in this period contained 12,848,550 pounds copper, 11,170 ounces gold, and 172,893 ounces silver. During the War, the former owners sold the surface and underground equipment. For this reason, present operations are on a limited scale and needed development is not being done. Production is is about 20 tons per month of 20% copper ore which is shipped to the El Paso smelter.

3. The property was examined by engineers of the Bureau of Mines and is the subject of a War Minerals Report dated December 1942. It was later examined by geologists of the U. S. Geological Survey and is the subject of a Strategic Minerals Report dated January 1945. More recently, Mr. W. D. McMillan, Supervising Engineer, Bureau of Mines, studied the property and prepared an exploration and development program based, in part, on the earlier reports.

a. Maps showing proposed new work have been prepared by Mr. McMillan.

b. No major equipment is on hand. A source of water, adequate for underground, milling and domestic purposes, is available and a power line has been authorized which will cross the property. Housing can be provided for the development crew.

c. Immediate requirements are (1) jackhammer and stoper drills with steel for long-hole prospecting, (2) portable compressor, (3) the use of a diamond drill capable of drilling up to 1000 feet, (4) 6000 foot of light rail and ties, (5) 2000 foot each water and air line, (6) light pumping equipment, (7) 4 mine cars and 2 ton skip with hoist and cable for incline, (8) 50 ton ore-bin below dump to handle shipping ore, and (9) repairs to mine buildings. Later requirements will include (1) rebuilding the 150 ton mill, (2) installation of diesel power (contingent on high-line and its capacity) and larger compressor, and (3) extending air and water lines and increasing mining equipment to produce and transport around 6000 tons per month.

d. During the past two years from 5 to 10 miners have been employed.

e. It is proposed to suspend production during development work, except as is incidental thereto, and the present crew should be increased to about 25 and later to 150-200 as new reserves are opened up and milling facilities are again available. The village of San Pedro is the center of a Spanish-American farming and mining community which supplied as many as 900 miners and mechanics for the operation of the San Pedro copper mine. Many of the old families still live in the vacinity and as there is little other steady work to be had, full scale operation of the mine is essential to the local economy.

f. It is proposed to stock-pile ore that cannot be shipped direct to the smelter pending the rebuilding of the mill. Ore can be trucked under contract from mine to smelter for $6 per ton. The nearest point on the railroad is Stanley, distance about 15 miles. Shipment by truck all the way has been cheeper than the truck-rail haul.

g. Upon completion of the proposed work it is expected that around 150 tons of milling ore and 25 tons of shipping ore will be produced daily and from which about 18,000 pounds of recoverable copper will be obtained. Should the development of the ore under the monzonite sill come up to our expectation, this figure would be increased substantially.

h. It is estimated that tha development program can be substantially completed within six to eight months. Production should attain former levels soon thereafter. The power-compressor plant and the mill foundations are usable and both installations could be rebuilt and ready to operate in a few weeks time providing the equipment is available.

i. The mining camp is served by all-weather gravel roads and is accessible throughout the year.

j. Estimates based on present costs indicate that the mine can show an operating profit on the grade of ore expected at current quotations for the metals produced.

4. With reference to ore reserves, the following is extracted from the Bureau of Mines War Minerals Report previously mentioned:

"No ore is blocked out in the mine, excepting a few pillars. Ore showings in the bottom levels, according to Bradbury, would justify the estimation by ordinary conservative rules, of only a few hundred tons of probable or indicated ore. From past experience, it is believed that mineable orebodies lie beyond present exploratory workings and stope faces, to be found by continued stoping or by following small leads. In this mine reserves never have been large, as orebodies once found have been delimited by stoping rather than by exploratory workings.

"Geologic or possible ore, is not subject to estimation in terms of tonnage. It can only be stated that no observed changes in nature or grade of ore, nor other geologic factors, indicate a termination of ore eastward and downward along the trend of the marble line. Several possibilities for discovery of orebodies in other horizons and in other localities also remain to be tested."

With reference to maps, the Geological Survey's Strategic Minerals Report previously mentoned, is accompanied by a complete set of surface and underground maps. These maps are the most recent and best available for the purposes of this report.

5. Reports by engineers and geologists have been loaned to Mr. McMillan and are summarized in the reports by the Bureau and Survey above referred to.

6. No one could be better qualified to supervise the development, re-equipment and operation of the San Pedro mine than the former manager of the Raskob Interists, Mr. Bradbury. He has a background of thirty years experience as shiftboss, mine captain, superintendent and manager for large mining enterprises in the United States, Mexico and South America. Under his supervision, the San Pedro mine operated continuously with substantial profit to the owners until war conditions caused all operations of the company to be suspended. Associated with Mr. Bradbury will be his partner in the ownership of the property, Charles F. Williams who has had twenty-five years experience as engineer, geologist and mine superintendent. He is a former senior mining engineer of the U. S. Geological Survey serving eighteen years in the Tri-State lead and zinc district as District Mining Supervisor.

7. Additional data: Three years ago two diamond drill holes were put down to prospect the beds below the monzonite sill. Although apparently favorable beds of limestone were penetrated at a considerable distance south of the axis of strongest mineralization above the sill, both cores showed mineralization. Two samples showing altered shale and limestone and representing two and one-half and two feet of core, assayed over $10 in cu, au and ag. Two likely looking sections of core from between 900 and 960 feet were assayed for gold and silver. The returns were as follows:

# 1	0.32 au	0.50 ag
#2	9.70 au	17.30 ag

The information now available as a result of the deep drilling is most encouraging. The logs of both holes do not show any tactite below the monzonite. Therefore, if the close relationship between the upper orebodies and the marble-tactite zone or the marble line first observed by Locke and Perry, should hold in the horizon below the monzonite sill, additional drilling to bottom further north is now indicated. The favorable beds may be prospected by drilling 700 foot holes from undergroung setups.

8. No attempt has been made to secure finances required from any source other than the Government.

Yours very truly,

C. F. Williams

C. F. Williams