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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Granted
—
C

Mine 'CONLIG TUNGSTEN WO₃ Date March 24, 1943
District Whetstone Engineer Earl F. Hastings
Subject: Reconstruction Finance Corporation
Mine Loan

Docket No. Phoenix C-168
Date Application Received March 23, 1943
Date of Field Examination Miles M. Carpenter December 2, 1939
Date of Field Examination George A. Ballam December 16, 1942
Date of Report March 24, 1943

1. Name and address of applicant (correspondent):
'J. Dewey Chadwick, P. O. Box 692, Tombstone, Arizona.
2. Character of project and estimated cost thereof:
'WO₃. It is proposed to strip one of the veins in area A2 for a distance of 200 feet down the slope from a shallow shaft; at this lower elevation it is proposed to drift on the vein to a point directly below the shaft and raise 70 feet to the shaft bottom. A triangular area of possible ore is thus to be blocked, being 180 feet along its base and 88 feet in altitude. The well, for mill water supply, is to be sunk and additional 50 feet. Applicant estimates the cost at \$4,996.70.
3. Location of property:
Whetstone Mining District, Cochise County, Arizona.
4. Applicant's interest in or ownership of property:
Applicant is sole owner of the property, unpatented.
5. Loan requested:
\$4996.70.
6. Loan recommended:
\$5000.00
7. Comments:

(A) The information contained in this docket is quite general and lacks specific and substantiated detail as to ore exposures in the area to be developed.

Two factors make difficult a thorough evaluation report on a property of this kind. First, of course, the problem of effectively sampling tungsten ores and secondly the apparent wide spread mineralization and scattered development would require considerable time and study.

This appraisal must therefore be based upon opinions expressed by those who have visited the property and been impressed by the appearance of the exposures but who have not rendered detailed reports. No additional information has been requested from the applicant as it is obvious he has included all data at hand, and that only an extensive engineer's report could add information of material value.

(B) From docketed material it appears:

1 - There are some 200 shafts, tunnels, and open cuts on the property to a maximum depth of 60 feet, the majority of which are reported to expose a low, but generally

a milling, grade of hubnerite, wolframite, and/or scheelite ore.

2 - That several thousand tons of hubnerite ore can apparently be readily developed with a small expenditure.

3 - That the vein widths vary from a few inches to 5 feet of milling ore, and that mineral values are not confined to the veins proper but penetrate the wall rock.

4 - There is a mill on the premises; although inadequate it can be made to suffice with some alteration.

5 - That the proposed development is not in an area which has previously been explored to any great extent.

(C) It therefore appears the property has merit as a development project, and that development ores can be beneficiated with slight addition to the equipment on the property--providing, of course, that water be made available.

(D) It cannot be determined by studying the docket whether or not the applicant's work schedule is the most feasible means of approaching production. This point can only be determined by a more thorough examination than this Department can afford to undertake at this time; it is probable that such investigation would warrant a more extensive program than is outlined by the applicant.

Recommendation of this loan is made as an alternative of the above. If the loan cannot be granted on the basis of docketed information it should, in no case, be rejected without examination.

It is considered that expenditures for water development should be deferred until mine development is exposing and making sufficient ore to indicate continued production.

Arizona Department of Mineral Resources

Earl F. Hastings, Projects Engineer

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Conlig Tungsten

Date December 16, 1942

District Whetstone

Engineer *G. A. Ballam*

Subject: Report on Tungsten Production Possibilities.

14 claims held by location by J. Dewey Chadwick, Tombstone. Situated in Guindani Canyon on the east side of the Whetstone Mts., 10½ miles south of Benson and 6 miles from San Juan Station on the Southern Pacific Railroad. Secs. 25-26, Twp. 18 S, R 19 E of G & S R Base & Meridian. Access is gained by a good road leading west from the Apache Powder Company road south of St. David. The last mile or so is not maintained, but is in fair condition.

Ore values are huebnerite in quartz stringers cutting a pegmatite intrusion which came up through the schist lying against it on the west. The quartz veins are linked and connected from 1" to 4' thick, in general striking to the northeast and dipping northwest about 70°.

There are some 2500 feet of workings including shallow shafts, open cuts and tunnels, about 200 in all. The main work has been done in three areas on Conlig claims Nos. 1, 2, and 4 respectively, with the greatest development on No. 1. Here there are a number of cuts with two in particular in commercial ore, up to 2% WO₃. Several tons have been extracted and put through a mill on the property, the concentrates going to Fernstrom & Company, Tucson.

The mill has a capacity of about ten tons per day. Hammer type breaker, ball mill, concentrating table, with elevator to fine ore bin. The crushing equipment is unsatisfactory, especially on the hard pegmatite and granite which in addition to the quartz, carries the metal. Jaw crusher should be installed. In the past the ore has been reduced to 30 mesh before leaving screen in mill, in order to bring the concentrate up to 60% or better. However, it is believed that a coarser grind, making a rough concentrate of 40% or better, will increase capacity 100%. Concentrates are shipped to cleaning plant in any event. In addition, this procedure will conserve water.

At present water is obtained from a 35' well in the wash below the mill. Well is 4' by 4' and bottoms in loose rock. In ordinary seasons there has been ample water for small operation, but insufficient during the past dry season. Deepening the well to 75' should produce sufficient water for the mill, provided water is reclaimed from sump in tailing pond.

There is a large potential tonnage of ore which will run 0.75% or better WO₃. Mill capacity should be stepped up to 25 tons per day by (1) installing jaw crusher, (2) coarser screen in ball mill, (3) development of more water.

(Signed: G. A. Ballam.)

December 16, 1942

MEMORANDUM

Conlig Tungsten

TO: Director, Dept. Mineral Resources

From: George A. Ballam

Following examination of the Conlig, I assisted Dewey Chadwick in preparing his application for a \$10,000 development loan. In attaching a report by Jonothan Gordon, I was rather skeptical of the advisability of so doing. He claimed 3,000,000 tons of commercial ore, that is, mill grade with the present equipment. I believe there are thousands of tons which can be readily developed and milled at once. The huebnerite seems to penetrate both Granite walls from the quartz stringers, and in some cases four or five feet of mill ore is definitely showing. There is more actual tungsten ore showing in these workings, not massive but of milling grade, than any I have yet seen in the district.

I believe this property definitely merits a loan, part of which is to be expended for a well and additional equipment.

(Signed: G. A. Ballam)

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine CONLIG TUNGSTEN

Date December 2, 1939

District WHEATSTONE DISTRICT, COCHISE COUNTY

Engineer Miles M. Carpenter, E.M.

Subject: Special Reconnaissance covering Ore Showings

Page 2

Mill Test

Lot	Lbs. Ore	Lbs. Conc.	%WO ₃ - Ore (Calculated)	%WO ₃ Conc.
1	42.0	5.0	4.14	34.8
2	63.0	8.375	2.19	21.9

Practical Considerations. With a current quotation for small lots of Wolframite concentrate at Tucson of \$18.00 per unit of 20 lbs. WO₃ the ores figure in dollars and cents as follows:

Quartz vein as broken	4.14 units per ton,	\$74.52
General sample of exposures	2.19 " " "	52.38
Ore occurring in granite	1.69* " " "	30.42*

*(Calculated from weights and difference in assays of Lots No. 1 and 2)

Under the conditions of location, accessibility and size of ore outcrops, this must be classed as exceptionally good ore. Mining on a small scale, say 5 tons per day, should be done for \$5.00 per ton or less either on contract or by day labor at the start of operations. Milling of this ore appears to be simple and with a well arranged little "raw hide" plant the cost should be kept below \$5.00 per ton, possibly as low as \$3.00. Ore from the granite ore bodies will have to be packed off the hill, from the veins on the piedmont it can be hauled to mill in trucks. For the small tonnage to be moved off the hill the cost will probably be \$1.50 to \$2.00 per ton for packing, tho it is recognized that \$1.00 per ton is a customary contract price for short packs.

No branch of mining shows wider variation in costs than the very small mining and milling operations, since it depends so largely on the ability of the one man in charge. In this case, I would say that the operating costs might be held as low as \$10.00 per ton and there should be no excuse for exceeding \$15.00 per ton as long as conditions continue substantially as at present.

With indicated values in recoverable tungsten of \$30 to \$75 per ton of ore, the margin for profit is wide enough to stand considerable decline in price, and/or grade and still remain a profitable undertaking. If the price and grade hold at present levels, this property promises returns out of all proportion to the small investment necessary to equip and put into operation on the small scale justified by the undeveloped status of the ore showings.

While this report has heretofore stated that no blocked tonnage of ore can be claimed, there are exposures of sufficient number and size to indicate a cheap plant. If the equipment for such a plant is standard, and in good condition there would be little depreciation in value from several months use. So it would be possible to measure the capital necessarily risked in opening this property in hundreds of dollars.

RECONSTRUCTION FINANCE CORPORATION
MINING SECTION
LIQUIDATION REPORT

Borrower: J. Dewey Chadwick
Docket No. MD-8198
Date of Report: May 30, 1944

1. NAME AND ADDRESS OF APPLICANT:

J. Dewey Chadwick - P. O. Box 692 - Tombstone, Arizona

2. LOCATION OF PROJECT:

In secs. 25 and 26, T. 18 S. R. 19 E. - Cochise County, Arizona

3. AMOUNT OF LOAN AND DATE OF AUTHORIZATION:

\$5,000.00 loan approved to captioned borrower on April 7, 1943.

4. PURPOSES FOR WHICH LOAN WAS EXPENDED:

Borrower did substantial amount of surface work in the form of pits and shallow shafts in an attempt to expose substantial amounts of tungsten bearing ore.

5. EQUIPMENT:

a. Bought May 29, 1943 - 86' Goodyear air hose - - - - - \$34.60
Bought June 26, 1943 - 2 mine cars at \$15.00 - - - - - 30.00
Bought July 2, 1943 - 147' - 1-1/4 inch iron pipe - - - 23.22

b. 86' Good year hose - - - - - \$25.00)
Two mine cars - - - - - 20.00) Estimated resale value
147' - 1-1/4" iron pipe - - - - 15.00)
Location of equipment at the property

c. No equipment previously sold.

d. No remaining equipment worth liquidating.

6. PROPERTY:

Borrower holds property by right of location under state and federal laws.

7. COMMENTS:

Operations ceased on this property March 28, 1944, the last date of my visit.

8. CONCLUSION:

The proposed project failed to develop any material quantity of ore, and with the exception of the remaining equipment worth salvaging, the property apparently has no value at this time. Consequently, except for the salvage value of equipment, the loan should be considered a loss.

9. RECOMMENDATION:

It is recommended that this account be closed when the remaining equipment acquired in whole or in part, with loan or operation funds which is considered worth salvaging has been liquidated and proceeds applied on borrower's indebtedness.

Returning Cash 40.84

car
CHARLES A. RASOR
Supervising Engineer

RECONSTRUCTION FINANCE CORPORATION
MINING DIVISION
REPORT OF SUPERVISING ENGINEER

Docket No. ND-5968
Date Authorization for Exam. March 24, 1944
Date of Examination: March 28, 1944
Date of Report: April 12, 1944

In April, 1943, the applicant was approved for a loan of \$5000.00 to develop his tungsten property in the Whetstone Mountains of Southern Arizona. With the \$5000, the applicant and two additional men have opened a number of surface exposures and sunk in some areas as deep as 30 feet. Most of the exposures worked upon revealed ore which was stacked on the surface. The characteristics of the ore as well as the general trend of the veins were described and plotted during a previous examination. After that examination, the applicant continued surface development, in place of mining as we had agreed upon. Thus the applicant now applies for an additional loan of \$5000 to mine and mill the ore developed. This report considers his application.

1. Name and Address of Applicant

J. Dewey Chadwick
Box 692
Tombstone, Arizona

Correspondent: Applicant

2. Character of Project:

To mine and mill wolframite ore exposed thru expenditure of a \$5000 preliminary development loan.

3. Location of Mine:

On Sec. 25 and 26, T. 18 S. R. 19 E, Cochise County, Arizona, about 6 miles from San Juan, a siding on the nearest railroad. Road to property is unimproved and used mostly by cattlemen.

4. Applicant:

Applicant has shown himself responsible in handling the past operations and has accounted for all expenditures in a satisfactory manner.

5. Loan requested:

\$10,000; \$5000 of which is to repay previous loan.

6. Description of Project:

A. General features-

1. No other mine workings or necessary appurtenances which are not confined within applicant's ownership.
2. Project would comply with State compensation or Safety-first statutes.
3. No legal discrepancies not covered.
4. Right of way facilities are impeded by three line fence gates and Southern Pacific Railroad track.
5. No likelihood of surface or sub-surface trespass.

B. Existing Development:

1. Surface and open pits:

- a. Attached to this report is a map showing tape and compass survey of all available exposures of tungsten mineralization opened by applicant.

b. Sampling

Sampling all the individual quartz stringers opened up by the applicant would indicate very little in the evaluation of the property, because of the narrow width and limited depth to which the mineralization extends. All this has been previously discussed.

Since the applicant has placed on the surface all the ore extracted from the narrow veins, a grab sample was taken from each of the piles of ore. The places where each sample was taken are indicated on the map and the amount of ore represented by each sample. The following table lists the assays:

Assay of Grab Samples

No. 186	5.51% WO ₃	500 lbs of ore taken from narrow vein.
No. 187	4.46% WO ₃	4 ton of ore taken from 27' shaft.
No. 188	.76% WO ₃	3 ton of mineralized granite ore.
No. 189	1.13% WO ₃	400 lbs. of ore from 6" vein.
No. 190	1.54% WO ₃	500 lbs. of ore from 10" vein in shaft.
No. 191	4.62% WO ₃	1 ton of ore from 3" vein exposed in 27' shaft.

C. Proposed Development:

The work proposed is the mining and milling of the ore exposed through the expenditure of loan funds just completed under Docket No. ND-8198.

D. Equipment:

1. Applicant did not intend to buy any additional equipment.
2. Condition of Mill:

The present mill on the property would suffice to mill one or two tons per day, but the greatest handicap is the lack of water. There has been no water in the gulch for over one and one-half years. Water could be developed by drilling.

Comments of Supervising Engineer:

It is agreed that the narrow quartz veins cutting across the granite intrusion and opened by the applicant thru the expenditure of a \$5000 loan, contain high grade tungsten mineralization. This is indicated by the assays of the grab samples. However these high assays do not vary greatly from those submitted in other reports. In place of 3,000,000 tons of milling ore or any other fantastic figure as to the available or indicated tonnage, there can only be a small tonnage of relative high grade ore which probably could be mined and milled at a profit by a couple of aggressive individuals.

Mr. Chadwick has proven with the aid of the previous loan that stringers of quartz carrying high grade wolframite which may be as wide as 7 inches on the surface wedge out to nothing 25 to 30 feet deeper. Not only one shaft has proven this fact, but many. The length of the mineralization also fades at each end of the shoot of ore.

There are only two places exposed on the property where tungsten mineralization pervades the granite. It is these areas which have led some engineers to believe the whole mass of the granite to be mineralized with low grade ore.

Applicant has worked hard and is sincere in his effort to repay the loan. He believes that an additional loan will not be granted, but hopes for the best. However, he is not working the property, but has taken his compressor away. He and the compressor are working for another one of our Borrowers.

Under the present conditions, I do not believe that an additional loan is warranted.

Car
CHARLES A. RASOR
Supervising Engineer

Attachments:
Assay Certificate
Map

No. 242 RE

Phoenix, Arizona,

April 8, 1944.

CHAS. A. DIEHL

ARIZONA ASSAY OFFICE

Phone 3-4001

815 North First Street

P. O. Box 1148

This Certificate That samples submitted for assay by

Mr. C. A. Rasor.

contain as follows per ton of 2000 lbs. Avoir.

No.	SILVER		GOLD		VALUE (Oz.) Of Gold and Silver	PERCENTAGE %	REMARKS
	Ounces	Tenths	Ounces	Handfuls			
Dewey Chadwick						1003	
186 Grab						5.51	
187 "						4.46	
188 "						.76	
189 " from pile						1.13	
190 "						1.54	
191 "						4.62	

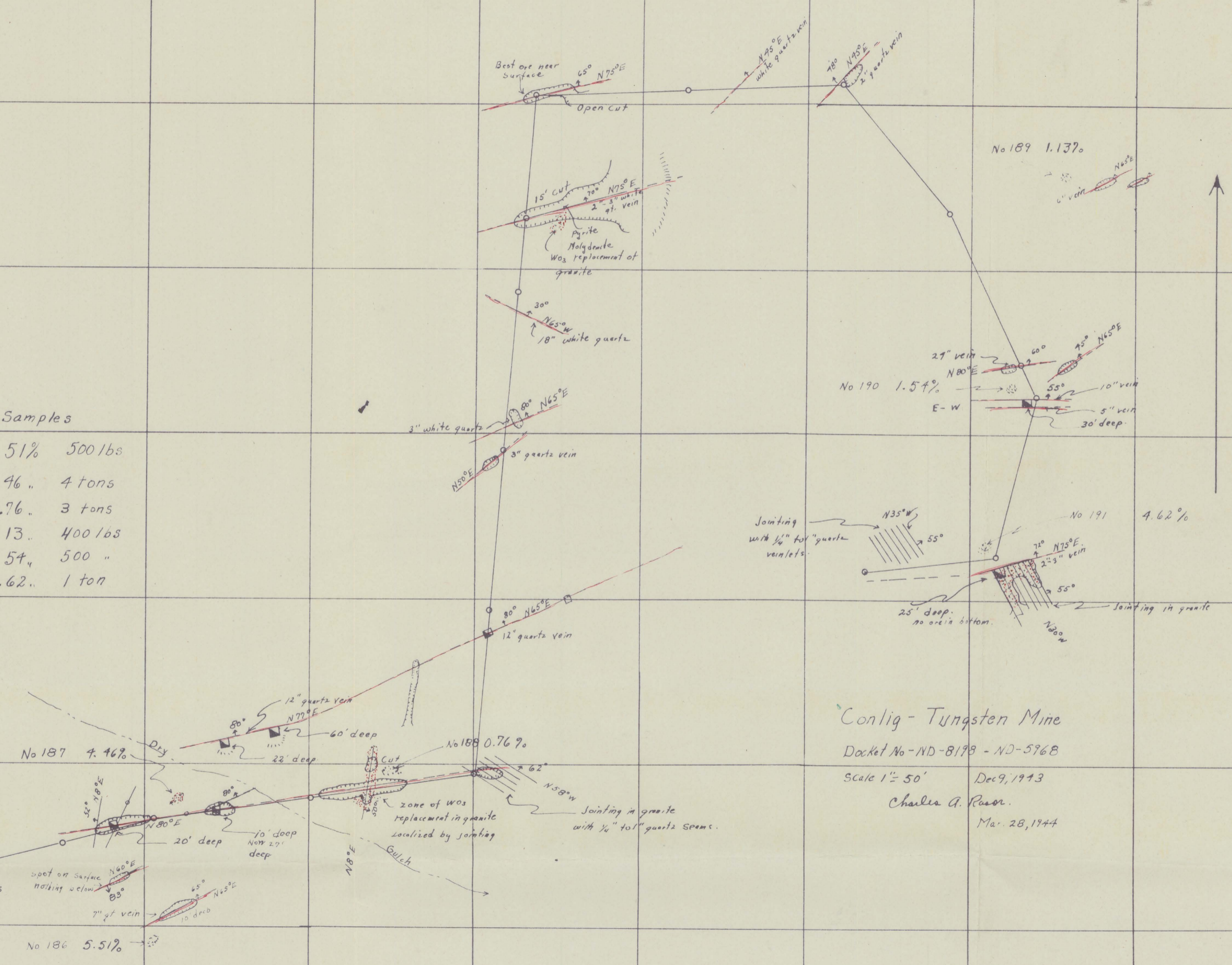
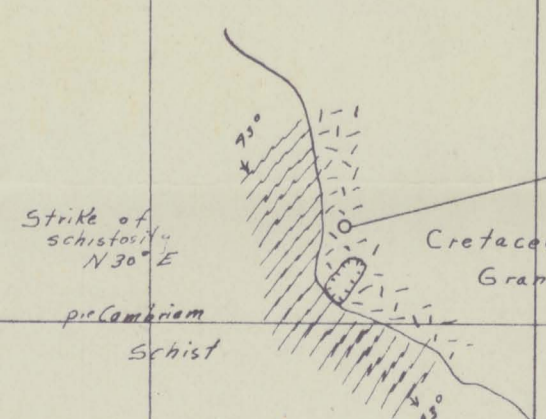
Charges \$ 18.00

Assayer

ARIZONA ASSAY OFFICE

Assay of Samples

No 186	Grab	5.51%	500 lbs
No 187	"	4.46	4 tons
No 188	"	.76	3 tons
No 189	"	1.13	400 lbs
No 190	"	1.54	500 "
No 191	"	4.62	1 ton



Conlig-Tungsten Mine
Docket No-ND-8193 - ND-5968
Scale 1" = 50'
Dec 9, 1913
Charles A. Ross
Mar. 28, 1944

325 Heard Building
Phoenix, Arizona

December 18, 1943

Mr. L. Dewey Chadwick
Box 692
Tombstone, Arizona

Re: Docket No. NE-8198

Dear Mr. Chadwick:

I am enclosing a copy of the map I made
of your property and which I promised I
would send to you.

I enjoyed my visit with you very much
and will look forward to seeing you
again the next time I am your way.

Very truly yours,

CHARLES A. RASOR
Supervising Engineer

Enc/Map

b

RECONSTRUCTION FINANCE CORPORATION

MINING SECTION

MEMORANDUM REPORT OF SUPERVISING ENGINEER

Docket No. - ND-8198

J. Dewey Chadwick

Date of Examination - Dec. 9, 1943

Date of Report - Dec. 17, 1943

In April, 1943, the applicant was recommended for a loan of \$5,000 to resume operations on his tungsten property in the Whetstone Mountains of Southern Arizona. At a previous time, other people interested in this property had prospected the surface with numerous adits, cuts, pits and shallow shafts. Applicant has continued in the same manner to expose other tungsten bearing veins and to additionally expose some of the known veins at depth.

As of December 1, 1943, applicant had a balance of \$625 from the second withdrawal request and a balance of \$1,000 in the Valley National Bank Trust account.

On August 5, 1943, the applicant recorded his progress as follows:

"An open cut has been driven in a distance of 65 feet, attaining a depth of 20 feet at the face. At this point, there is a low grade wolframite ore showing in the pegmatite, with a few one inch crystals of wolframite also showing in the small quartz vein.

"Another cut 20 feet in length reaching a depth of 8 feet also shows wolframite ore in the pegmatite at the face.

"At two other places, holes of 8 feet in depth show tungsten values as wolframite, both in the quartz and pegmatite. Both these holes will be developed further to determine to what extent the wolframite penetrates the pegmatite."

On December 1, 1943, Mr. Chadwick gave a more complete record of the work performed on the tungsten veins. You have his original letter to Mr. Gohring outlining the progress and his interesting notes regarding the extent of tungsten mineralization.

Following Mr. Chadwick's letter, I made an examination of his workings on December 9, 1943, and discussed with him further work and the possibility of finding tungsten values below the present depth of 20 feet.

The attached map made from a tap and compass survey shows the areas the applicant has been working, the strike and dip of the veins and the places where small amounts of tungsten ore have been mined.

I examined all of the cuts and shafts which the applicant has opened, except a few high up on a steep hill. In general, the narrow quartz

veins or pegmatites strike North 75 degrees east and dip steeply to the N.W. They vary in width from a few inches to 2 1/2 inches. The average width was around 3 or 4 inches. However, the width of the veins did not persist with depth. Within a depth of 10 to 20 feet nearly all of the veins narrowed to one inch or less or faded out completely. The tungsten mineralization follows the same course as the quartz veins. Near the surface, specimens of tungsten ore show wolframite crystals grouped together as narrow bands on both sides of the quartz vein. Rarely do these bands approach one half inch in thickness. Wolframite does not penetrate to the center of the quartz vein but restricts itself to the contact between the quartz and granite as replacements. This is to be expected for the granite has been sericitized and therefore softened allowing easy access. Mr. Chadwick, in his report of December 1, 1943, adequately describes the fading out of tungsten mineralization with depth from the surface. This fading out occurs quickly within a distance of 10 to 20 feet. The tungsten mineralization also pervades the granite in some localized parts for a distance of 20 feet laterally from the quartz vein. Apparently these areas are the result of closely spaced jointing of the granite and the tungsten mineralization moves laterally replacing the granite in the form of tiny wolframite crystals 1/40 of an inch in width to 3/10 of an inch in length. This type of mineralization has confused many engineers into believing that the whole of the granite is metalized with tungsten and represents large tonnages of low grade ore. Such is not the case as has been demonstrated by Mr. Chadwick's surface operations. This same occurrence of tungsten is written with the technologic literature as the only known occurrence of tungsten ores as magmatic segregations. There are some geologists, including myself, who do not believe the wolframite occurs as magmatic segregations. The evidence points directly to replacement.

The applicant has come to the conclusion that he is not going to find, by surface trenching and shaft sinking, a persistent tungsten mineralization below a few tens of feet. I fully agree with him, and we have agreed that the remaining funds will be used in mining the exposed ores near the surface. This deposit, like others in the same type of granite near Dragoon, Arizona, will not be found much below the surface exposure where it occurs as a rich ore. There is a reason for this which can be found with a little study, but which has no bearing on the present problem.

The applicant has been conservative in spending the loan and has accomplished much in the way of opening up the surface showing with the help of two men. It is unlikely that the applicant will apply for additional funds after exhaustion of the present loan.

CAK
CHARLES A. RASOR
Supervising Engineer

Attachment
Map

325 Heard Bldg.
Phoenix, Arizona
December 17, 1943

TULLY - Ass't Chief - Mining Section RFC - Washington, 25, D. C.

Re: J. Dewey Chadwick - Docket No. ND-8198

Attached herewith are two copies of
my memorandum report on the above
captioned docket, together with map.

CHARLES A. RASOR
Supervising Engineer

CAR:dem
Encs: 2c Memo. Report
1 Map

