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

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WASHINGTON, D.C.
JAN 11
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1956

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Mr. Ora O. Leonard
P. O. Box 11344, Emery Park
Tucson, Arizona

Bob Clement

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1956
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400

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10,222 Nogales Hwy
Tucson, Arizona.

JAN 11 1956

Mr. Ora O. Leonard
P. O. Box 11344, Emery Park
Tucson, Arizona

Re: Docket No. DMEA 3959 - Tungsten
Christenson-Lane claims
Pima County, Arizona

Dear Mr. Leonard:

Your application for aid for an exploration project and other data available to us in Washington concerning the above referenced property have been reviewed.

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

Careful study of our information, although noting a small amount of tungsten mineralization on the Christenson-Lane claims, indicates to us that the probability of disclosing minable tungsten ore reserves is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

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

Sincerely yours,

C. O. Mitchell

Administrator

SPHelt:fec
1-10-56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. III
Messrs. Holliday, USBM
Kiilsgaard, USGS

January 10, 1956

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $9,000.00
Docket No. DMEA 3959 - Tungsten
Ora O. Leonard
Christenson-Lane claims
Pima County, Arizona

Denial of the subject application is recommended by this Division based on the following information:

1. The applicant, Ora O. Leonard, P. O. Box 11344, Emery Park, Tucson, Arizona, requested exploration assistance in the amount of $9,000.00 for drifting on the Christenson-Lane claims.

2. The applicant is the owner of the Christenson-Lane, El Ponciano, Cumpas, and Bushmacher unpatented lode mining claims, in (probable) sec. 24, unsurveyed T. 18 S., R. 15 E., Helvetia Mining District, Pima County, Arizona.

3. The proposed program is to drive 300 feet in an adit on the Christenson-Lane claims.

4. In the area of the Christenson-Lane claims group, sparse tungsten mineralization occurs in outcrops and a shallow inclined shaft, but there is little or no indication that minable bodies of tungsten ore will be discovered by the work proposed under the applicant's exploration program.

5. The Field Team concludes that further exploration of this property is not warranted, and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

SPHOLT:foc
1-10-56
cc to: Docket
Code 400
Adm. Read. File

W. S. Martin, Chief
Iron and Ferro-Alloys Division

400

January 10, 1956

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Review of Field Team Examination Report
Docket No. DMEA-3959
Christenson-Lane Tungsten Claim
Helvetia Mining District
Pima County, Arizona
Ora O. Leonard
$9,000-Tungsten

Subject report states that tungsten mineralization is confined largely to a few widely scattered small zones in 2 quartz veins that average about 3 inches in width.

I concur with the recommendation that the requested aid be denied.

R. W. Holliday

RWHolliday/tra

Copy to: Mr. Holliday
Mr. Geehan
DMEA-3959
F I L E S

400

January 3, 1956

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Review of Report of Examination
Docket No. DMEA-3959
Leonard, Christenson-Lane Tungsten Claim
Pima County, Arizona
Ora O. Leonard
$9,000.00-Tungsten

Subject examination indicates that although scattered mineralization, including scheelite, does occur on the property there is not a sufficient geological justification for the project.

I concur with the field team recommendation of denial.

R. W. Holliday

RWHHolliday/tra

Copy to: Mr. Geehan
Mr. Holliday
DMEA File 3959
F I L E S

400

January 3, 1956

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Review of Report of Examination
Docket No. DMEA-3959
Leonard, Christenson-Lane Tungsten Claim
Pima County, Arizona
Ora O. Leonard
$9,000.00-Tungsten

Subject examination indicates that although scattered mineralization, including scheelite, does occur on the property there is not a sufficient geological justification for the project.

I concur with the field team recommendation of denial.

R. W. Holliday

RWHHolliday/tra

Copy to: Mr. Geehan
Mr. Holliday
DMEA File 3959
F I L E S

IN REPLY REFER TO:

400

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

January 6, 1956

Re: DMEA 3959
Ora O. Leonard
Christianson-Lane Claim
Pima County, Arizona
$9,000 - Tungsten

Memorandum

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

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

Subject: Review of Field Team report.

The applicant requested assistance in driving 300 feet on two narrow quartz veins in granite.

The examiners found the veins to be less than 5 inches wide, averaging about 3 inches. One is traceable for 200 feet, the other for 80 feet.

The scheelite in the veins occurs in narrow ribbons and clots, the ribbons being discontinuous and not more than 1/5 inch wide. Scheelite was seen at only three places. Good grade material can be selected but the amount is too small to warrant work.

The conclusions of the examiners are well supported and I concur with the recommendation that the application be denied.

N. E. Nelson

N. E. Nelson

NENelson:jah
G-1/6/56
cc: Director's reading 4212
Branch reading 4212
DMEA (3)
Docket file
Mr. Robert Holliday 3513 Int.

RECEIVED
JAN 9 1956

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

402

December 22, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 3959 (Tungsten), Ora O. Leonard, Christenson-Lane Tungsten Claim, Pima County, Arizona

Enclosed are the original and three copies of the report pertaining to the subject application.

The field examiners believe that further exploration of this property is not warranted, and they recommend that the application for Government aid be denied.

We concur in this recommendation.

E. N. Harshman

E. N. Harshman
Acting Executive Officer, DMEA
Field Team, Region III

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
12-30-55
(date)

DMEA
Date Rec'd
DEC 21 1955
BUREAU OF MINES
Denver, Colorado

December 19, 1955

Memorandum

TRANSMITTED
DEC 22 1955

To : W. M. Trover, Executive Officer, DMEA Field Team, Region III

From : Superintendent, Northwest Experiment Station

Subject : Field Examination Report, Project DMEA-1000, Ora O. Lemmon's Christensen-Lane Tungsten Claim, Helvetia Mining District, Pima County, Ariz.

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations by T. M. Rumble of the Bureau of Mines and Lowell Dyson of the Geological Survey, and the section on Engineering by Rumble for the above report. A separate report on Geology will be submitted by the Geological Survey.

As there seems little chance of discovering any significant amount of new ore by the proposed exploratory work, we unanimously recommend that the application for Government aid be denied. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

cc W. M. Trover (8)
J. F. Shaw (without report)
J. N. Fulch " "
DMEA-1000
NF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
DEC 22 1955

DMEA-3959, Ora O. Leonard's Christenson-Lane Tungsten Claim

Helvetia Mining District

Pima County, Arizona

T. M. Romalo, Mining Engineer
U. S. Bureau of Mines

Leonid Bryner, Geologist
U. S. Geological Survey

December 1955

Reviewed by
DMEA OPERATING COMMITTEE

(Date)

TRANSMITTED
DEC 22 1955

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By T. M. Renaldo[1] and Leonid Bryner[2]

The Christenson-Lane claim in Pima County, Ariz. was examined for the Defense Minerals Exploration Administration in connection with an application by Ora O. Leonard for aid in exploration for tungsten ore. The examination was carried out under the application's docket No. DMEA-3959.

Tungsten was discovered on the Christenson-Lane claim by the applicant in 1950. Since then, he has built a bulldozer road to the property and sunk 2 shallow shafts. All of the exploratory work has been confined to an area outside the principal zone of tungsten mineralization. No ore of any kind has been produced.

Tungsten is present as scheelite in narrow quartz veins in granite. The 2 principal tungsten-bearing veins strike north to northeast, and dip flatly to the east. They are less than 5 inches thick and probably average about 3 inches in thickness. The south ends of the veins are concealed under alluvium, but to the north the veins are traceable though very discontinuous. Scheelite occurs in 2 or 3 crude bands within each vein. The bands are parallel to the vein structure. These bands generally do not exceed one-fifth of an inch in width and are spaced one

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

quarter to one inch apart. The scheelite grades out both longitudinally and laterally through sparse disseminations into barren rock. Where the veins are exposed along the strike they show scheelite only at 3 places, and each showing persists for only a few feet along the vein.

The indicated and inferred reserves of material of possible ore grade are not significant and there is no evidence that either the grade or extent of ore mineralization will increase with depth. Consequently, we recommend that the request for exploration of the Christensen-Lane claim be denied.

DMEA-3959, ORA O. LEONARD'S CHRISTENSON-LANE TUNGSTEN CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA

TRANSMITTED

DEC 22 1955

Engineering Report

By T. M. Romalo
Mining Engineer
U. S. Bureau of Mines

December 1955

Reviewed by
DMEA OPERATING COMMITTEE

(Date)

DMEA-3959, ORA O. LEONARD'S CHRISTENSON-LANE TUNGSTEN CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA

CONTENTS

Engineering report	Page
Introduction	1
Location and accessibility	2
Topography, physical features and climate	2
History and production	2
Extent and ownership of property	3
Description of the deposits	3
Ore reserves	4
Conclusions and recommendations	5

ILLUSTRATIONS

Figure		Following page
1	Location map	2
2	Claim map	3
3	Geologic map	(See geologic report)

INTRODUCTION

Ora O. Leonard submitted an application to the Defense Minerals Exploration Administrationfor aid in an exploration project for tungsten on the Christenson-Lane property in Pima County, Ariz. The application was docketed as DMEA-3959. It was received by the Operating Committee and forwarded to the Field Team of Region III for a field examination of the property. The Committee found that the application was too poorly prepared and incomplete for usual processing.

The property first was examined by Leonid Bryner, geologist, U. S. Geological Survey, on November 10, 1955. Mr. Leonard, the applicant, accompanied Bryner and told him that the proposed work, costing an estimated $9,000.00, was confined to driving a 300-foot adit on the Christenson-Lane claim, one of the 4 claims mentioned in the application. Examination of the property was completed in the presence of Mr. Leonard on December 5, 1955 by Bryner and T. M. Romslo, mining engineer, U. S. Bureau of Mines. It was confined to the Christenson-Lane claim, 1 of the 4 claims of the application, because this claim includes the known scheelite exposures and the site of proposed explorations.

LOCATION AND ACCESSIBILITY

The Christenson-Lane claim is about 28 airmiles southeast of Tucson, Ariz., probably in sec. 24 of unsurveyed T. 18 W., R. 15 E., Helvetia Mining District, Pima County, Ariz. (figure 1). It may be reached from Tucson by driving 18 miles south on U. S. Highway 89 to the village of Sahuarita, thence 14.1 miles southeasterly on a graded road to the Helvetia mining camp, then 1.7 miles in a southerly direction on a bulldozer road to the approximate center of the claim.

TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Christenson-Lane claim is at an average altitude of about 4,700 feet on the western foothills of the Santa Rita Mountains. The topography of the claim is moderately rugged. Drainage is westerly to the Santa Cruz River.

Vegetation on the property is confined largely to forage grasses and a medium growth of small live oak trees.

Summers are hot and winters are mild.

Annual precipitation is about 12 inches. It occurs principally as heavy summer rain storms, and light rain and snowfalls in the winter.

HISTORY AND PRODUCTION

O. O. Leonard, the applicant, discovered scheelite on the property in 1950. Since then he has built a road to the property, sunk a 20-foot deep pit, and a 20-foot inclined shaft. The

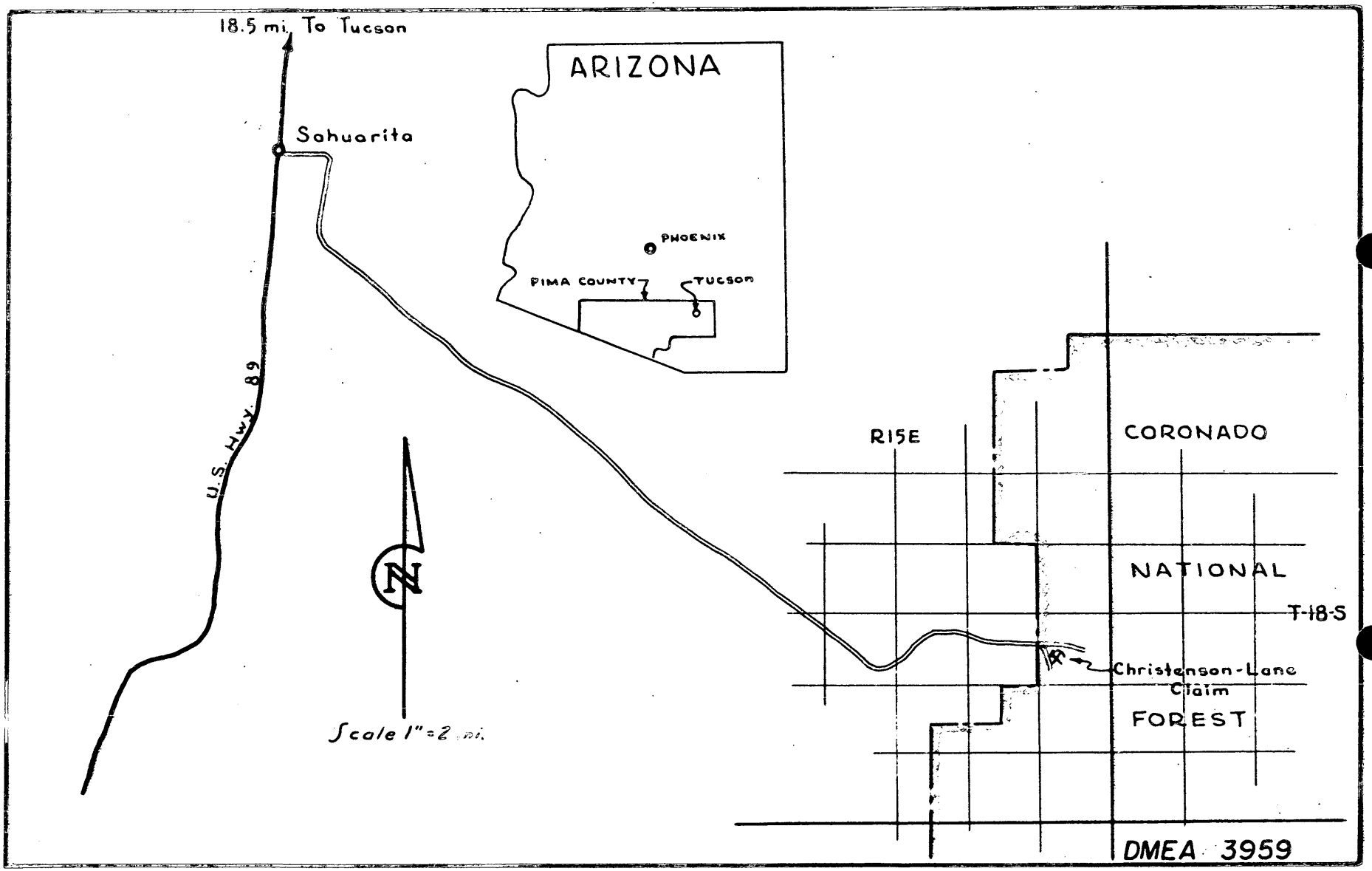


FIG. 1 LOCATION MAP, O. O. LENARD

PIMA COUNTY, ARIZONA

exploratory workings are confined to quartz veinlets at several hundred feet southwest of the scheelite area.

According to Mr. Leonard, the quartz veinlets of the exploratory workings contain gold and silver values in widely scattered very small zones. No ore of any kind has been produced from the property.

EXTENT AND OWNERSHIP OF PROPERTY

The applicant, O. O. Leonard, Route 3, P. O. Box 739, 10,222 Nogales Highway, Tucson, Ariz., reportedly is the owner of 4 unpatented lode mining claims. The approximate location of a group of 3 of the claims, namely the Ponciano, the Christenson-Lane, and the Cumpas is shown on figure 2. The other claim mentioned in the application, the Bullwhacker, reportedly is located northwest of the group of 3 claims.

DESCRIPTION OF THE DEPOSITS

Tungsten is present as scheelite in narrow quartz veins in granite (figure 3). The granite contains some inclusions of schist, a few weak shear zones and fractures, and diabase(?) dikes.

The principal tungsten-bearing veins strike north to northeast, and dip flatly to the east. They are less than 5 inches thick and probably average about 3 inches in thickness.

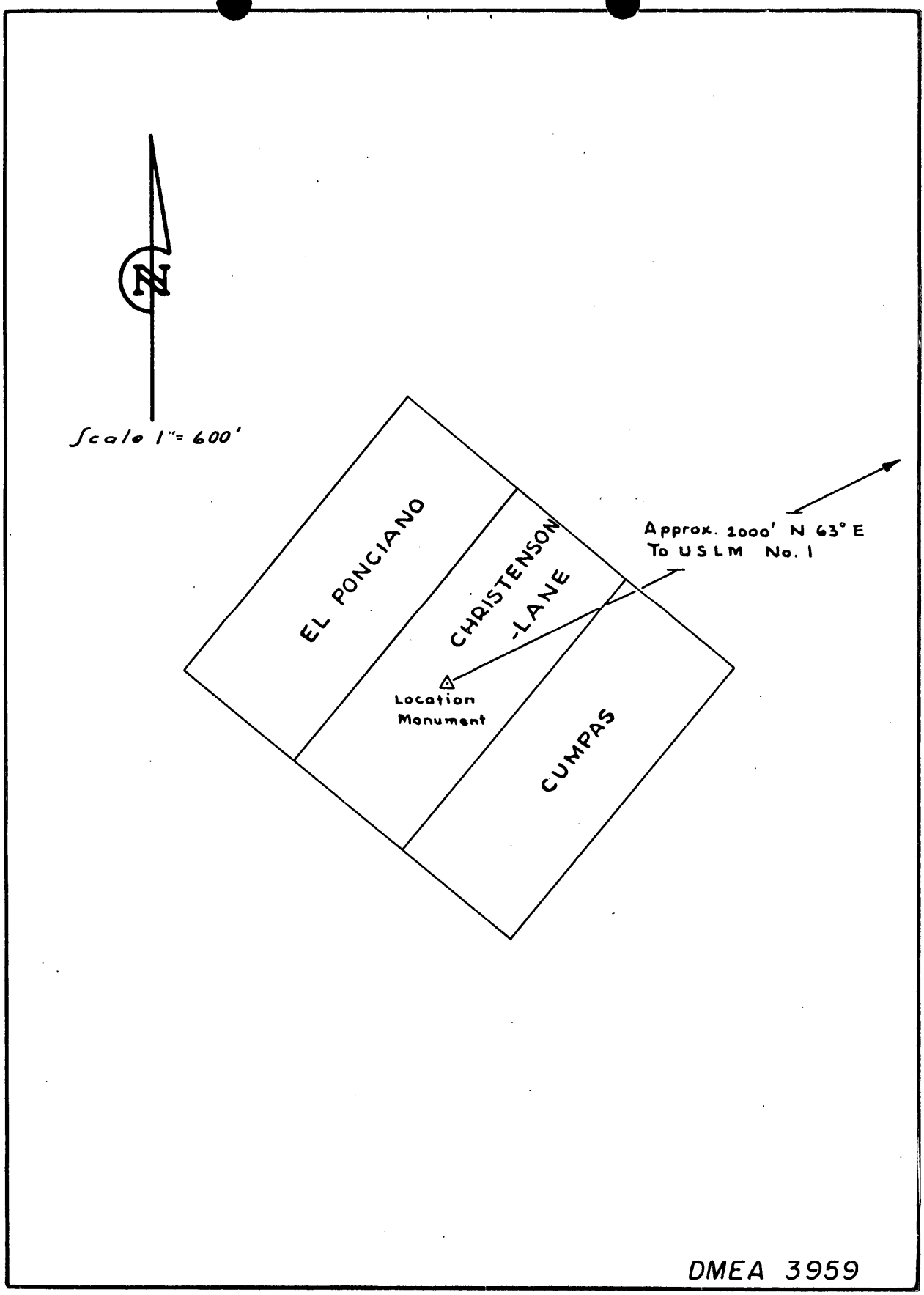


FIG. 2 CLAIM MAP, O. O. LENARD

PIMA COUNTY, ARIZONA

There are 2 such veins at the north end of the property. One of the veins is traceable for about 200 feet. At places it branches into a net work of veinlets. The other vein can be traced for about 50 feet.

Quartz is the dominant material of the veins which are somewhat vuggy. Sericite is associated intimately with the quartz. Copper stains, and bunches and disseminations of galena with a little pyrite are present at places. Scheelite occurs in 2 or 3 crude bands parallel to the vein structure. The bands generally do not exceed a fifth of an inch in width and are spaced in intervals of1/4 to 1 inch apart. They grade out into sparsely disseminated scheelite. The total strike length of zones of possible ore grade comprises a very small portion of the veins.

The applicant reported that uranium and copper occurs in the workings south of the scheelite area. The evidence he presents for uranium is in the 20-foot inclined shaft where a maximum count of 1 to 2 times the background is obtained. A brief examination of the workings by the examining team showed that little or no copper minerals were present.

ORE RESERVES

The applicant said that 2 samples taken by him from random places in the scheelite-bearing veins assayed 3.7 and 3.35 percent WO_3. Investigations showed that the 2 samples had been taken from

2 of the most highly mineralized zones, neither of which appear to contain more than a few hundred pounds of similar material. It is possible that several zones of similar grade and size might be erratically distributed along the vein.

CONCLUSIONS AND RECOMMENDATION

Tungsten mineralization of ore grade on the Christenson-Lane claim is confined largely to a few widely scattered small zones in 2 quartz veins that average about 3 inches in width. The indicated reserves of such material is not significant and there is no reason to believe that either the degree or extent of ore mineralization will increase with depth. Consequently, it is recommended that the requested aid be denied.

RECEIVED
DEC 27 1955

MINERAL DEPOSITS
DMEA
RECEIVED
DEC 19 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

December 16, 1955

DMEA
Date Rec'd.
DEC 2? 1955
BUREAU OF MINES
Denver, Colorado

MEMORANDUM

TRANSMITTED
DMA
DEC 22 1955

To: Mr. E. N. Harshman

From: John N. Faick

Subject: DMEA 3959 - Ora O. Leonard, Christenson-Lane Claim
Helvetia Mining District, Pima County, Arizona (Tungsten)

Enclosed are the original and 8 copies of Report of Examination of the above subject property, by Leonid Bryner. The report recommends denial of government participation because geologic conditions indicate that tungsten is not present in amounts that might be minable under any foreseeable conditions. This report has my approval.

John N. Faick

John N. Faick

JNF:ms

cc: Harshman (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REGION III

TRANSMITTED

DEC 22 1955

GEOLOGY

EXAMINATION REPORT

DMEA 3959

ORA O. LEONARD, CHRISTENSON-LANE CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA

(Tungsten)

By
Leonid Bryner
Geologist

U. S. Geological Survey

December 15,1955

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

EXAMINATION REPORT
DMEA 3959

ORA O. LEONARD'S CHRISTENSON-LANE CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA
(Tungsten)

CONTENTS

	Page
INTRODUCTION	1
GEOLOGY	1
GRADE AND RESERVES	3
CONCLUSIONS AND RECOMMENDATIONS	4

ILLUSTRATIONS

Fig. 1 Location Map	See Engineering Report
Fig. 2 Claim Map	" " "
Fig. 3 Geologic Map	Following page 4

INTRODUCTION

In an application to the Defense Minerals Exploration Administration dated August 29, 1955, Ora O. Leonard requested government participation in a program estimated to cost $9,000 to explore for tungsten on the Christenson-Lane and adjacent claims.

The claims are in the Helvetia Mining District, Pima County, Arizona, and are about 2,000 feet southwest of U.S.L.M. No. 1, shown on the U.S.G.S. Patagonia Quadrangle. To reach the property from Sahuarita on U. S. highway 89, drive southeast 14.1 miles to Helvetia. Southeasterly from Helvetia the property is 1.7 miles up Flores canyon; 0.3 of a mile beyond the National Forest boundary fence.

The applicant is the owner of the property. The property consists of three unpatented claims lying side by side and oriented in a northeasterly direction. From northwest to southeast the claims are named ElPonciano, Christenson-Lane, and Cumpas.

I was accompanied over the ground by Leonard on November 10, 1955. This examination included only the Christenson-Lane claim, as all the scheelite occurrences are confined to this claim, and Leonard's proposed work would be confined to drifting and cross-cutting to explore the two main veins on this claim. A U. S. Bureau of Mines engineer was not available at the time. On the evening of December 6, however, the property was examined by T. M. Romslo of the U. S. Bureau of Mines, accompanied by the writer and the applicant.

GEOLOGY

The deposits occur in a Mesozoic granite a thousand feet, more or less, from the exposed contact between this granite and the sedimentary

rocks that it intrudes. The granite contains inclusions of schist, and exhibits shear zones, fractures, dikes and veins as shown in figure 3.

The one recognized shear, shown at "B" in figure 3, strikes about due E and dips 60 degrees south. The prevalent fracture direction is about N15°E, and the dip, 30 to 50 degrees east. These fractures generally contain sericite, whereas other fractures do not. The dikes are concentrated at the northeast end of the claim. They are classified here as diabase (?), and are fine-grained, greenish to dark brown, and porphyritic, with phenocrysts that probably represent altered feldspar. There are two main groups of quartz veins, (1) those that strike NE to E and dip steeply to moderately northwest, and (2) those that strike N to NE and dip moderately to flatly to the east. Group (1) veins are generally a few inches thick and consist simply of bull quartz. Group (2) veins cut the veins of group (1), and apparently occupy the shears and the prevalent fractures mentioned above.

The tungsten values occur in two veins of the group 2 type near "A" at the north end of the claim (fig. 3). The two veins are traceable north from the bed of a draw. The No. 1 vein can be traced about 200 feet by its expression as a low, elongate hump on the hillslope. Over this distance the vein in many places branches into networks of veinlets. The No. 2 vein, about 80 feet east of the No. 1, has a similar topographic expansion, but it is thinner and can be traced only about 50 feet uphill from the bed of the draw. South of the draw the veins are covered.

The veins are less than 5 inches thick, and probably average about 3 inches in thickness. They are predominantly of quartz and have

a composite, vuggy structure. Sericite is intimately [illegible] the quartz. Parts of the veins contain bunches and disseminations [illegible] galena with very minor pyrite. Copper oxide staining is present in a few places. Scheelite occurs in each vein in two or three crude bands parallel to the vein structure. The bands and the clots of scheelite that make up the bands generally do not exceed a fifth of an inch in width, and the bands are spaced one quarter to one inch apart. The bands grade out both longitudinally and laterally through sparsely disseminated specks of scheelite, into barren vein material. Scheelite was seen only in three places in these veins, as shown by red in figure 3.

At the south end of the property ("B", in figure 3) there are traces of scheelite along the shear zone mentioned on page 2. The granite along the shear zone is highly sericitized over a width of about one foot. The vein is exposed in a shallow, 25-degree incline and at the surface about one hundred feet east of the incline. This locality is not included in the applicant's proposed program.

The applicant, as an afterthought to his loan request, reported that the deposit contains uranium. The evidence he presents is in the above-mentioned incline where a maximum count of one or two times background is obtained. This is too meager a showing to justify consideration of the project from the standpoint of exploration for uranium.

GRADE AND RESERVES

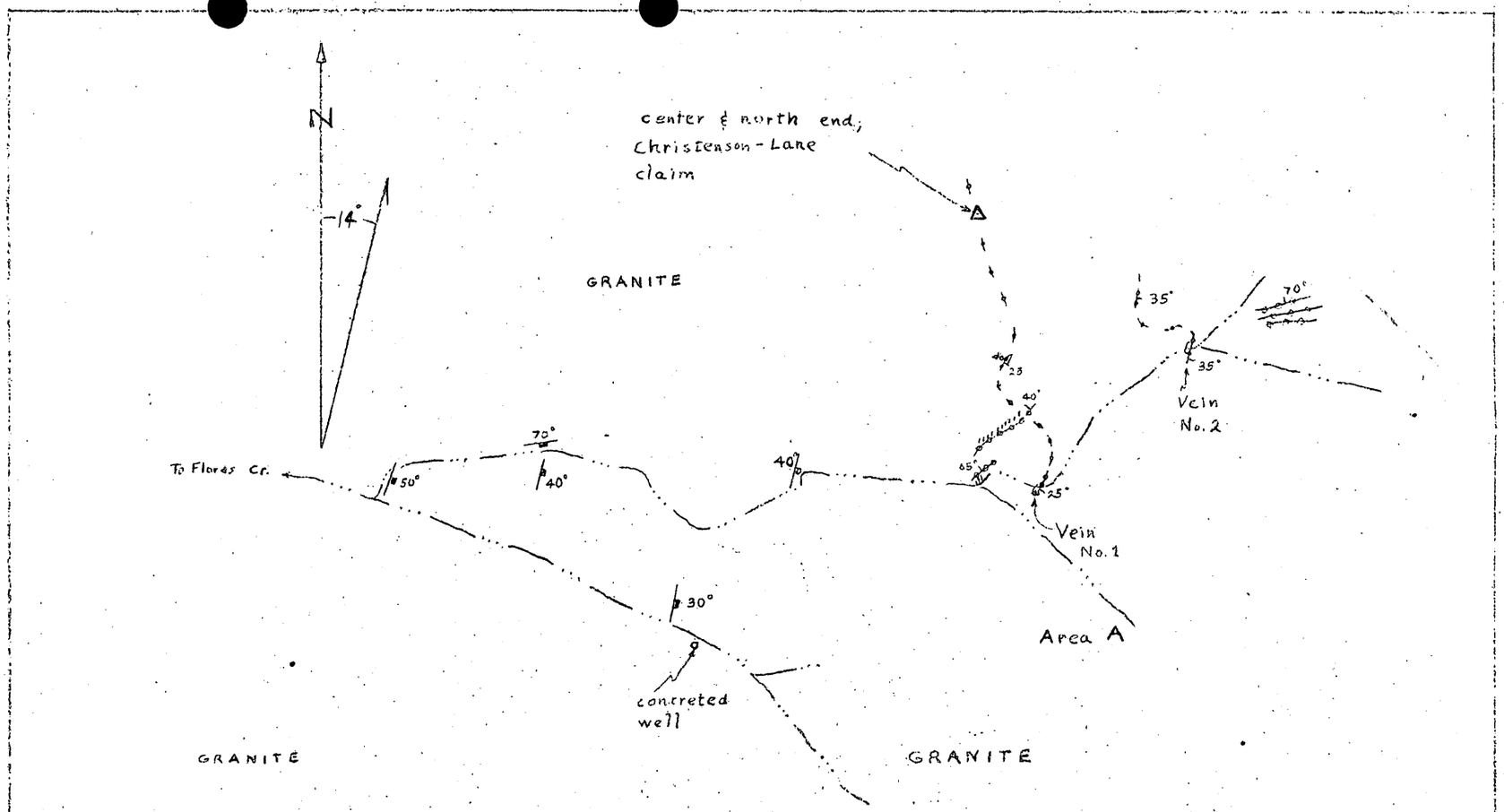
No ore has been shipped from this property. No assay data is included in the application but the applicant states that two samples taken at random places from the surface near the No. 1 and No. 2 veins

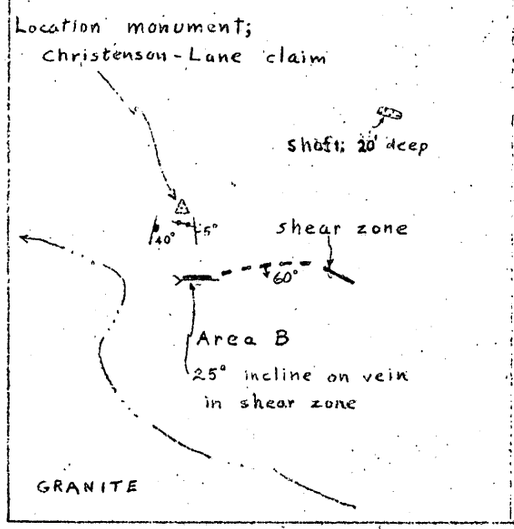
assayed 3.7 and 3.35 percent WO_3. After our examination of the veins by ultraviolet light, it was evident that such assays could only have been obtained from hand-picked specimens. The best parts of the veins might very well contain 2 or 3 percent WO_3, but such material is so scarce that it is not even remotely representative of the average grade of the ground that would have to be mined in order to obtain the tungsten. The distribution of scheelite is too sparse and erratic to constitute any more than a few tons of indicated or inferred reserves.

Leonard stated that in the 20-foot shaft 150 feet northeast of "B" he has obtained rock that contains gold, silver, and copper values. Judging by the weak copper oxide stains in this shaft, copper cannot be present in more than trace amounts.

CONCLUSIONS AND RECOMMENDATIONS

The deposit is too small and the scheelite too erratically distributed to constitute a minable reserve under present or foreseeable future conditions. There are no geologic indications of possible improvement with depth. Consequently I recommend that this application for government aid be denied.





E X P L A N A T I O N

25° Scheelite-bearing veins, showing strike and dip; dashed where indefinite

65° Other veins, showing strike and dip

50° Fractures, showing strike and dip

Diabase (?) dikes

Brunton sketch by Leonid Bryner, Nov 10 '55

100 0 200
SCALE - FEET

FIG. 3 - GEOLOGIC MAP, LEONARD'S CHRISTENSON-LANE CLAIM, HELVETIA DISTRICT, PIMA COUNTY, ARIZ.

RECEIVED
SEP 26 1955

Copy retained 400

September 23, 1955

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 3959 (Tungsten), Ora O. Leonard, Christenson-Lane claims, Pima County, Arizona

The subject application in the amount of $9,000.00 is enclosed herewith. The brochure consists of the following:

1. Form MF-103 (incomplete)
2. Photocopy of memo from McInnis to Chief, Iron and Ferroalloys Division - DMEA
3. Photocopy of memo from W. P. Williams to W. H. Martin
4. Photocopy of letter of transmittal from Chairman, Operating Committee to Executive Officer
5. Copy of Executive Officer's memo of transmittal to this office

The memoranda by Williams and Traver point out the fact that the Form MF-103 is incomplete. However, a field examination and suitable report are required. The completed report should be sent directly to the Executive Officer with a copy of your memo of transmittal to this office.

W. H. KING

W. H. King

Enclosures

Copy to: E. N. Harshman
J. N. Faick
W. M. Traver (3)
Secy, Op Committee (2)

400

RECEIVED
SEP 19 1955

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

September 16, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. H. King (With brochure)
J. H. Faick

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3959 (Tungsten), Ora O. Leonard, Christenson-Lane claims, Pima County, Arizona

Enclosed is the subject application in the amount of $9,000.00. The brochure consists of Form MF-103 which is not complete. Also enclosed is a copy of a letter from the Chairman of the Operating Committee and attached memoranda from the Commodity Group. Your attention is called to the last paragraph of the review of the application by W. P. Williams.

A field examination and suitable report are requested.

W. M. Traver

Enclosures

HMC:ab
cc: Sec. Opr. Comm. (2)
Harshman
Docket 3959
Chron.

400

SEP 12 1955

Mr. Ora O. Leonard
P. O. Box 11344, Emery Park
Tucson, Arizona

Re: Docket No. DMEA 3959, Tungsten
Christenson-Lane claims
Pima County, Arizona

Dear Mr. Leonard:

The above docketed application for exploration assistance for tungsten ores has been reviewed by the Iron and Ferro Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Custom House, Denver 2, Colorado, for a field examination of the property.

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

Sincerely yours,

C. O. Mittenbergh

Administrator

cc" Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
Robt. Holliday, USBM
Field Team, Reg. 3

TLChapman/ls
9/8/55

400

SEP 12 1955

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

Re: Docket No. DMEA 3959, Tungsten
Ora O. Leonard
Christenson Lane claims
Pima County, Arizona

Dear Mr. Traver:

The above docketed application for exploration assistance is being referred to your office for a field examination of the property.

Two copies each of relevant memoranda, one dated September 1, 1955, by W. P. Williams, Geological Survey, and the other dated September 6, 1955, by Wilmer McInnis, Bureau of Mines, are enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

P. F. Yopes

Member, Bureau of Mines

/s/ N. E. Nelson

Member, Geological Survey

cc: Docket
Code 400
Oper. Committee
Adm. Reading File
FT, Region 3
Thor Kiilsgaard, USGS
Robt. Holliday, USBM

TLChapman/ls
9/8/55

C
O
P
Y

400

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

September 6, 1955

Memorandum

To: Chief, Iron and Ferroalloys Division - DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist

Subject: Docket No. DMEA 3959 - Tungsten
Application for Exploration Assistance $9,000

It is recommended that a field team examination be made.

Signed: Wilmer McInnis

Wilmer McInnis

400

IN REPLY REFER TO:

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

RECEIVED
SEP - 2 1955

September 1, 1955

Memorandum

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

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

Subject: Review of DMEA Application, Docket No. 3959, Ora O. Leonard, Christenson-Lane claims, Pima (?) County, Arizona (Tungsten (?)).

The subject application is too poorly prepared and incomplete for usual processing. From the condition of the application it appears that the applicant would be unable to furnish adequate additional information should he be asked to do so.

I suggest the Field Team be asked to communicate with the applicant, at the Field Team's convenience, to obtain more information about the property.

It may be well for the Field Team to ascertain the competency of the applicant since it seems doubtful to me that one who is unable to complete the application form would be equipped to perform the supervisory duties and keep adequate, accurate records which are part of an efficient and well-directed exploration program.

WPW

W. P. Williams

WPWilliams:iml
G-9/1/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
R. Holliday, 3513

400

DOCKET
SURNAME

Holt
Martin
Yopes
Kiilsgaard
Selfridge

JAN 11 1956

Mr. Ora O. Leonard
P. O. Box 11344, Emery Park
Tucson, Arizona

Re: Docket No. DMEA 3959 - Tungsten
Christenson-Lane claims
Pima County, Arizona

Dear Mr. Leonard:

Your application for aid for an exploration project and other data available to us in Washington concerning the above referenced property have been reviewed.

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

Careful study of our information, although noting a small amount of tungsten mineralization on the Christenson-Lane claims, indicates to us that the probability of disclosing minable tungsten ore reserves is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

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

Sincerely yours,

G. O. Simonson

Administrator

SPHolt:fec
1-10-56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. III
Messrs. Holliday, USBM
Kiilsgaard, USGS

R.S.H.

Docket

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

January 10, 1956

WSM

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Review of Field Team Examination Report
Docket No. DMEA-3959
Christenson-Lane Tungsten Claim
Helvetia Mining District
Pima County, Arizona
Ora O. Leonard
$9,000-Tungsten

Subject report states that tungsten mineralization is confined largely to a few widely scattered small zones in 2 quartz veins that average about 3 inches in width.

I concur with the recommendation that the requested aid be denied.

Copy retained 400

R W Holliday
R. W. Holliday

Copy to: Mr. Holliday
Mr. Geehan
DMEA-3959
F I L E S

Mr. Holliday also sent use memo on 1-3-56 concurring in denial

Copy retained 400

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

January 10, 1956

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $9,000.00
Docket No. DMEA 3959 - Tungsten
Ora O. Leonard
Christenson-Lane claims
Pima County, Arizona

Denial of the subject application is recommended by this Division based on the following information:

1. The applicant, Ora O. Leonard, P. O. Box 11344, Emery Park, Tucson, Arizona, requested exploration assistance in the amount of $9,000.00 for drifting on the Christenson-Lane claims.

2. The applicant is the owner of the Christenson-Lane, El Ponciano, Cumpas, and Bushwhacker unpatented lode mining claims, in (probable) sec. 24, unsurveyed T. 18 S., R. 15 E., Helvetia Mining District, Pima County, Arizona.

3. The proposed program is to drive 300 feet in an adit on the Christenson-Lane claims.

4. In the area of the Christenson-Lane claims group, sparse tungsten mineralization occurs in outcrops and a shallow inclined shaft, but there is little or no indication that minable bodies of tungsten ore will be discovered by the work proposed under the applicant's exploration program.

5. The Field Team concludes that further exploration of this property is not warranted, and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

W S Martin
W. S. Martin, Chief
Iron and Ferro-Alloys Division

400

DOCKET
SURNAME
Holt
Martin
Yoges

January 10, 1956

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $9,000.00
Docket No. DMEA 3959 - Tungsten
Ora O. Leonard
Christenson-Lane claims
Pima County, Arizona

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1. The applicant, Ora O. Leonard, P. O. Box 11344, Emery Park, Tucson, Arizona, requested exploration assistance in the amount of $9,000.00 for drifting on the Christenson-Lane claims.

2. The applicant is the owner of the Christenson-Lane, El Ponciano, Campas, and Bushmacher unpatented lode mining claims, in (probable) sec. 24, unsurveyed T. 18 S., R. 15 E., Helvetia Mining District, Pima County, Arizona.

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4. In the area of the Christenson-Lane claims group, sparse tungsten mineralization occurs in outcrops and a shallow inclined shaft, but there is little or no indication that minable bodies of tungsten ore will be discovered by the work proposed under the applicant's exploration program.

5. The Field Team concludes that further exploration of this property is not warranted, and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

SPHOLT:foc
1-10-56
cc to: Docket
Code 400
Adm. Read. File

W. S. Martin, Chief
Iron and Ferro-Alloys Division

IN REPLY REFER TO:

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

Hachel

January 6, 1956

Re: DMEA 3959
Ora O. Leonard
Christianson-Lane Claim
Pima County, Arizona
$9,000 - Tungsten

Memorandum

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

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

Subject: Review of Field Team report.

The applicant requested assistance in driving 300 feet on two narrow quartz veins in granite.

The examiners found the veins to be less than 5 inches wide, averaging about 3 inches. One is traceable for 200 feet, the other for 80 feet.

The scheelite in the veins occurs in narrow ribbons and clots, the ribbons being discontinuous and not more than 1/5 inch wide. Scheelite was seen at only three places. Good grade material can be selected but the amount is too small to warrant work.

The conclusions of the examiners are well supported and I concur with the recommendation that the application be denied.

N. E. Nelson

N. E. Nelson

Copy retained 400

RECEIVED
JAN 9 1956

IN REPLY REFER TO:

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

January 6, 1956

Re: DMEA 3959
Ora O. Leonard
Christianson-Lane Claim
Pima County, Arizona
$9,000 - Tungsten

Memorandum

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

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

Subject: Review of Field Team report.

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The conclusions of the examiners are well supported and I concur with the recommendation that the application be denied.

N. E. Nelson

N. E. Nelson

NENelson:jeh
G-1/6/56
cc: Director's reading 4212
Branch reading 4212
DMEA (3)
Docket file
Mr. Robert Holliday 3513 Int.

January 6, 1956

Re: DMEA 3799
Ora D. Leonard
Christiansen-Lane Claim
Pima County, Arizona
$9,000 - Douglas

Memorandum

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

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

Subject: Review of Field Team report.

The applicant requested assistance in driving 300 feet on two narrow quartz veins in granite.

The examiners found the veins to be less than 5 inches wide, averaging about 3 inches. One is traceable for 200 feet, the other for 80 feet.

The scheelite in the veins occurs in narrow ribbons and clots, the ribbons being discontinuous and not more than 1/5 inch wide. Scheelite was seen at only three places. Good grade material can be selected but the amount is too small to warrant work.

The conclusions of the examiners are well supported and I concur with the recommendation that the application be denied.

N. E. Nelson

N. E. Nelson

NENelson:jah
G-1/6/56
cc: Director's reading 4212
Branch reading 4212
DMEA (3) ✓
Docket file
Mr. Robert Holliday 3513 Int.

Docket

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

January 3, 1956

Memorandum

To: Chief, Iron & Ferroalloys Division-DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist-Tungsten

Subject: Review of Report of Examination
Docket No. DMEA-3959
Leonard, Christenson-Lane Tungsten Claim
Pima County, Arizona
Ora O. Leonard
$9,000.00-Tungsten

Subject examination indicates that although scattered mineralization, including scheelite, does occur on the property there is not a sufficient geological justification for the project.

I concur with the field team recommendation of denial.

R. W. Holliday

R. W. Holliday

Copy to: Mr. Geehan
Mr. Holliday
DMEA File 3959
F I L E S

Copy retained 400

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

RECEIVED
DEC 27 1955

December 22, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 3959 (Tungsten), Ora O. Leonard, Christenson-Lane Tungsten Claim, Pima County, Arizona

Enclosed are the original and three copies of the report pertaining to the subject application.

The field examiners believe that further exploration of this property is not warranted, and they recommend that the application for Government aid be denied.

We concur in this recommendation.

E. N. Harshman
Acting Executive Officer, DMEA
Field Team, Region III

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
12-30-55
(date)

DMEA
Date Rec'd
DEC 21 1955
BUREAU OF MINES
Denver, Colorado

December 19, 1955

Memorandum

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

TRANSMITTED
DEC 22 1955

From : Superintendent, Southwest Experiment Station

Subject : Field Examination Report, Docket DMEA-3050, Ora G. Leonard's Christensen-Lewis Tungsten Claim, Helvetia Mining District, Pima County, Ariz.

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations by T. M. Rosale of the Bureau of Mines and Leonid Bryner of the Geological Survey, and the section on Engineering by Rosale for the above report. A separate report on Geology will be submitted by the Geological Survey.

As there seems little chance of discovering any significant amount of new ore by the proposed exploratory work, examiners recommend that the application for Government aid be denied. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
J. F. Shaw (without report)
J. N. Faick " "
DMEA-3050
RF

WRStorms:frj

Received
DMEA OPERATING COMMITTEE
12-30-55
(date)

RECEIVED
DEC 27 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
DEC 22 1955

DMEA-3959, Ora O. Leonard's Christenson-Lane Tungsten Claim

Helvetia Mining District

Pima County, Arizona

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

Leonid Bryner, Geologist
U. S. Geological Survey

December 1955

Reviewed by
DMEA OPERATING COMMITTEE
12-30-55
(date)

TRANSMITTED

DEC 22 1955

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By T. M. Romslo[1] and Leonid Bryner[2]

The Christenson-Lane claim in Pima County, Ariz. was examined for the Defense Minerals Exploration Administration in connection with an application by Ora O. Leonard for aid in exploration for tungsten ore. The examination was carried out under the application's docket No. DMEA-3959.

Tungsten was discovered on the Christenson-Lane claim by the applicant in 1950. Since then, he has built a bulldozer road to the property and sunk 2 shallow shafts. All of the exploratory work has been confined to an area outside the principal zone of tungsten mineralization. No ore of any kind has been produced.

Tungsten is present as scheelite in narrow quartz veins in granite. The 2 principal tungsten-bearing veins strike north to northeast, and dip flatly to the east. They are less than 5 inches thick and probably average about 3 inches in thickness. The south ends of the veins are concealed under alluvium, but to the north the veins are traceable though very discontinuous. Scheelite occurs in 2 or 3 crude bands within each vein. The bands are parallel to the vein structure. These bands generally do not exceed one-fifth of an inch in width and are spaced one

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

quarter to one inch apart. The scheelite grades out both longitudinally and laterally through sparse disseminations into barren rock. Where the veins are exposed along the strike they show scheelite only at 3 places, and each showing persists for only a few feet along the vein.

The indicated and inferred reserves of material of possible ore grade are not significant and there is no evidence that either the grade or extent of ore mineralization will increase with depth. Consequently, we recommend that the request for exploration of the Christenson-Lane claim be denied.

RECEIVED
DEC 27 1955

DMEA-3959, ORA O. LEONARD'S CHRISTENSON-LANE TUNGSTEN CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA

TRANSMITTED
DEC 22 1955

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

December 1955

Reviewed by
DMEA OPERATING COMMITTEE
12-30-55
(date)

RECEIVED
DEC 27 1955

DMEA-3959, ORA O. LEONARD'S CHRISTENSON-LANE TUNGSTEN CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA

CONTENTS

Engineering report	Page
Introduction	1
Location and accessibility	2
Topography, physical features and climate	2
History and production	2
Extent and ownership of property	3
Description of the deposits	3
Ore reserves	4
Conclusions and recommendations	5

ILLUSTRATIONS

Figure		Following page
1	Location map	2
2	Claim map	3
3	Geologic map	(See geologic report)

INTRODUCTION

Ora O. Leonard submitted an application to the Defense Minerals Exploration Administrationfor aid in an exploration project for tungsten on the Christenson-Lane property in Pima County, Ariz. The application was docketed as DMEA-3959. It was received by the Operating Committee and forwarded to the Field Team of Region III for a field examination of the property. The Committee found that the application was too poorly prepared and incomplete for usual processing.

The property first was examined by Leonid Bryner, geologist, U. S. Geological Survey, on November 10, 1955. Mr. Leonard, the applicant, accompanied Bryner and told him that the proposed work, costing an estimated $9,000.00, was confined to driving a 300-foot adit on the Christenson-Lane claim, one of the 4 claims mentioned in the application. Examination of the property was completed in the presence of Mr. Leonard on December 6, 1955 by Bryner and T. M. Romslo, mining engineer, U. S. Bureau of Mines. It was confined to the Christenson-Lane claim, 1 of the 4 claims of the application, because this claim includes the known scheelite exposures and the site of proposed explorations.

LOCATION AND ACCESSIBILITY

The Christenson-Lane claim is about 28 airmiles southeast of Tucson, Ariz., probably in sec. 24 of unsurveyed T. 18 ~~W.~~ S., R. 15 E., Helvetia Mining District, Pima County, Ariz. (figure 1). It may be reached from Tucson by driving 18 miles south on U. S. Highway 89 to the village of Sahuarita, thence 14.1 miles southeasterly on a graded road to the Helvetia mining camp, then 1.7 miles in a southerly direction on a bulldozer road to the approximate center of the claim.

TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Christenson-Lane claim is at an average altitude of about 4,700 feet on the western foothills of the Santa Rita Mountains. The topography of the claim is moderately rugged. Drainage is westerly to the Santa Cruz River.

Vegetation on the property is confined largely to forage grasses and a medium growth of small live oak trees.

Summers are hot and winters are mild.

Annual precipitation is about 12 inches. It occurs principally as heavy summer rain storms, and light rain and snowfalls in the winter.

HISTORY AND PRODUCTION

O. O. Leonard, the applicant, discovered scheelite on the property in 1950. Since then he has built a road to the property, sunk a 20-foot deep pit, and a 20-foot inclined shaft. The

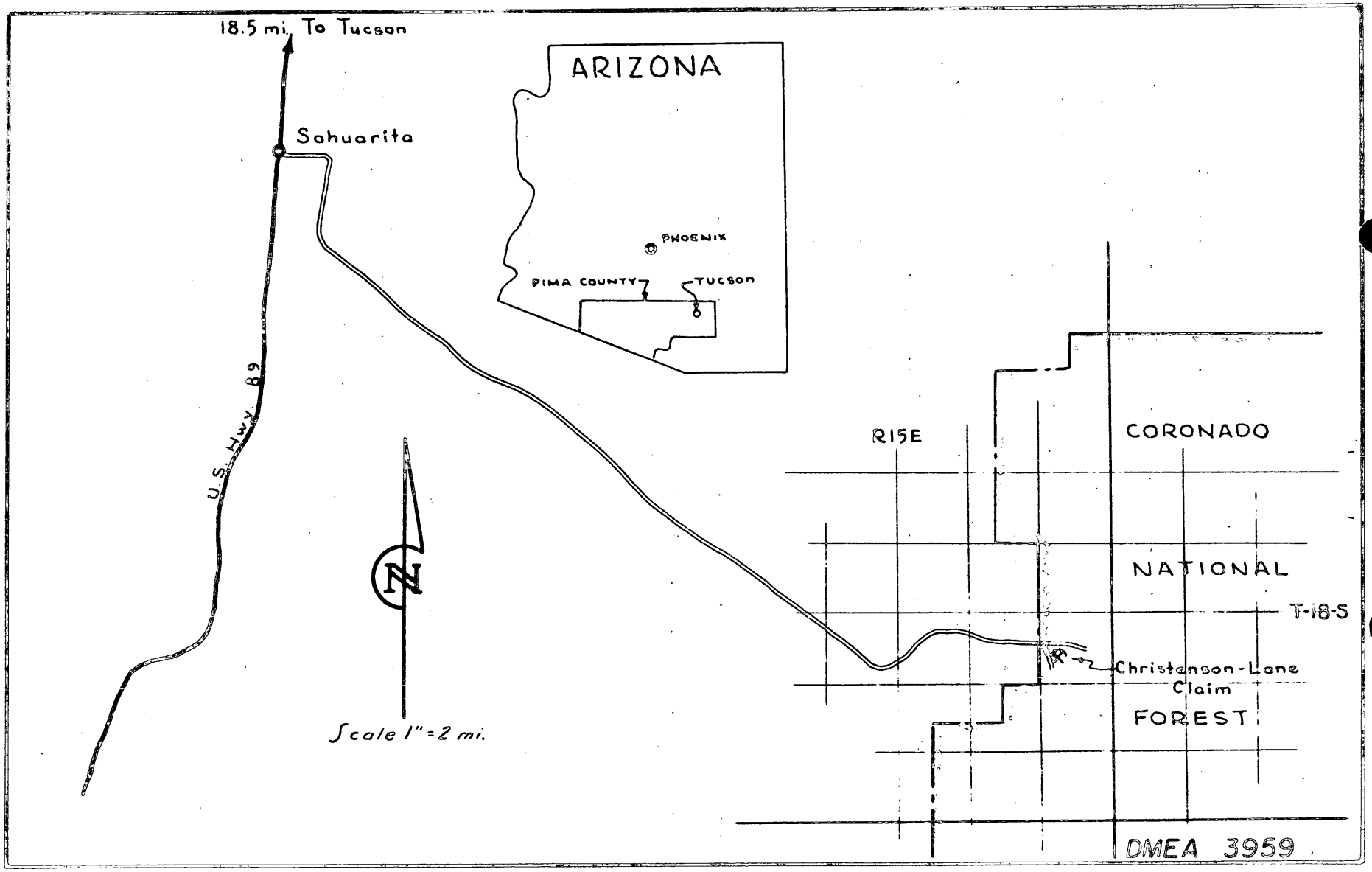

FIG. 1 LOCATION MAP, O.O. LENARD
PIMA COUNTY, ARIZONA

exploratory workings are confined to quartz veinlets at several hundred feet southwest of the scheelite area.

According to Mr. Leonard, the quartz veinlets of the exploratory workings contain gold and silver values in widely scattered very small zones. No ore of any kind has been produced from the property.

EXTENT AND OWNERSHIP OF PROPERTY

The applicant, O. O. Leonard, Route 3, P. O. Box 739, 10,222 Nogales Highway, Tucson, Ariz., reportedly is the owner of 4 unpatented lode mining claims. The approximate location of a group of 3 of the claims, namely the Ponciano, the Christenson-Lane, and the Cumpas is shown on figure 2. The other claim mentioned in the application, the Bullwhacker, reportedly is located northwest of the group of 3 claims.

DESCRIPTION OF THE DEPOSITS

Tungsten is present as scheelite in narrow quartz veins in granite (figure 3). The granite contains some inclusions of schist, a few weak shear zones and fractures, and diabase(?) dikes.

The principal tungsten-bearing veins strike north to northeast, and dip flatly to the east. They are less than 5 inches thick and probably average about 3 inches in thickness.

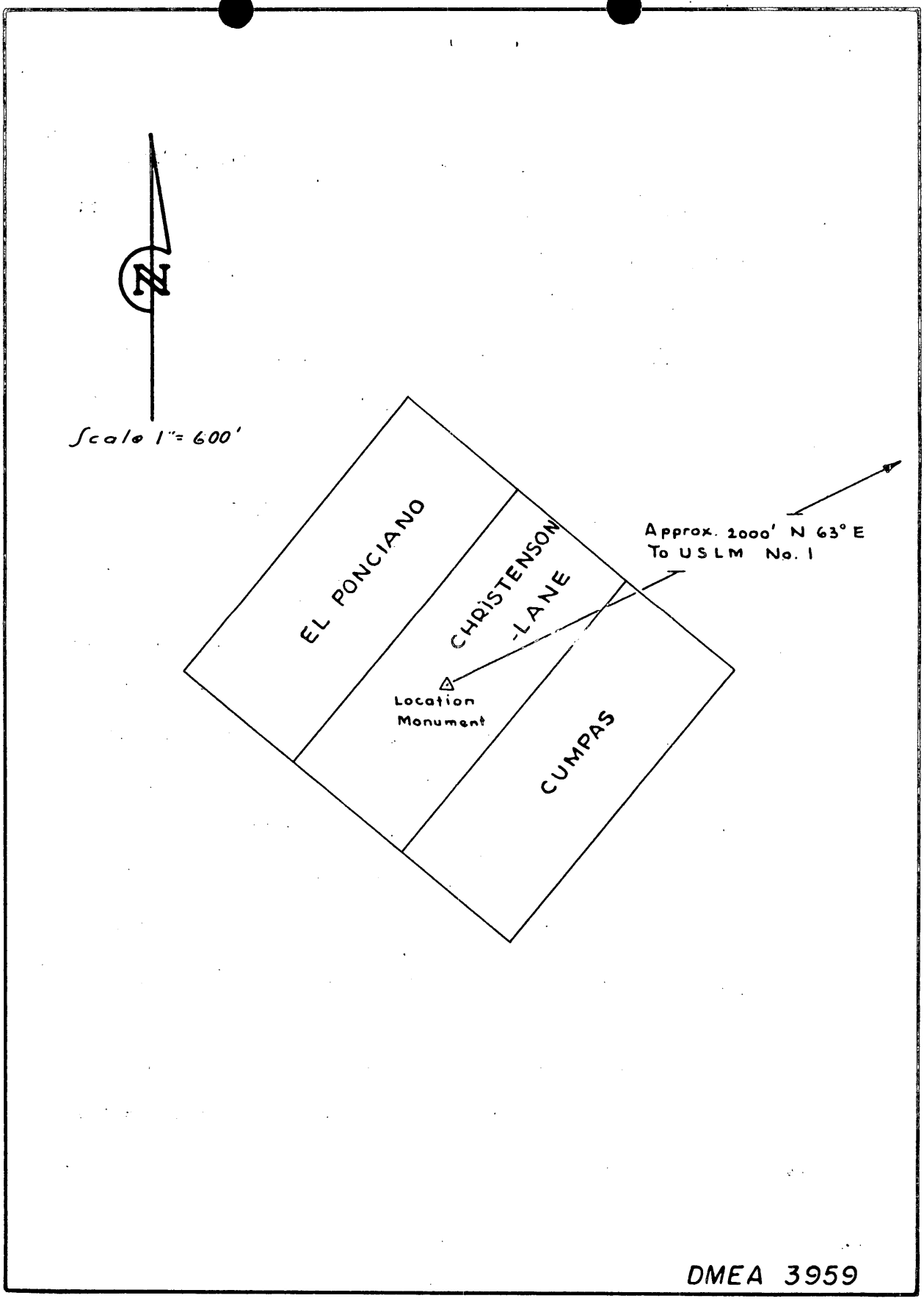

FIG. 2 CLAIM MAP, O. O. LENARD

PIMA COUNTY, ARIZONA

There are 2 such veins at the north end of the property. One of the veins is traceable for about 200 feet. At places it branches into a net work of veinlets. The other vein can be traced for about 50 feet.

Quartz is the dominant material of the veins which are somewhat vuggy. Sericite is associated intimately with the quartz. Copper stains, and bunches and disseminations of galena with a little pyrite are present at places. Scheelite occurs in 2 or 3 crude bands parallel to the vein structure. The bands generally do not exceed a fifth of an inch in width and are spaced in intervals of 1/4 to 1 inch apart. They grade out into sparsely disseminated scheelite. The total strike length of zones of possible ore grade comprises a very small portion of the veins.

The applicant reported that uranium and copper occurs in the workings south of the scheelite area. The evidence he presents for uranium is in the 20-foot inclined shaft where a maximum count of 1 to 2 times the background is obtained. A brief examination of the workings by the examining team showed that little or no copper minerals were present.

ORE RESERVES

The applicant said that 2 samples taken by him from random places in the scheelite-bearing veins assayed 3.7 and 3.35 percent WO_3. Investigations showed that the 2 samples had been taken from

2 of the most highly mineralized zones, neither of which appear to contain more than a few hundred pounds of similar material. It is possible that several zones of similar grade and size might be erratically distributed along the vein.

CONCLUSIONS AND RECOMMENDATION

Tungsten mineralization of ore grade on the Christenson-Lane claim is confined largely to a few widely scattered small zones in 2 quartz veins that average about 3 inches in width. The indicated reserves of such material is not significant and there is no reason to believe that either the degree or extent of ore mineralization will increase with depth. Consequently, it is recommended that the requested aid be denied.

Box 4126 University Station
Tucson, Arizona

RECEIVED
DEC 22 1955
DEC 19 1955
GEOLOGICAL SURVEY
DENVER, COLORADO

December 16, 1955

DMEA
Date Rec'd.
DEC 22 1955
BUREAU OF MINES
Denver, Colorado

MEMORANDUM

TRANSMITTED
DEC 22 1955

To: Mr. E. N. Harshman

From: John N. Faick

Subject: DMEA 3959 - Ora O. Leonard, Christenson-Lane Claim
Helvetia Mining District, Pima County, Arizona (Tungsten)

Enclosed are the original and 8 copies of Report of Examination of the above subject property, by Leonid Bryner. The report recommends denial of government participation because geologic conditions indicate that tungsten is not present in amounts that might be minable under any foreseeable conditions. This report has my approval.

John N. Faick

John N. Faick

JNF:ms

cc: Harshman (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
12-30-55
(date)

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
DEC 27 1955

REGION III

GEOLOGY

EXAMINATION REPORT

DMEA 3959

TRANSMITTED
DEC 22 1955

ORA O. LEONARD, CHRISTENSON-LANE CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA

(Tungsten)

By
Leonid Bryner
Geologist

U. S. Geological Survey

December 15,1955

Reviewed by
DMEA OPERATING COMMITTEE
12-30-55
(date)

RECEIVED
DEC 27 1955
RECEIVED
DEC 27 1955

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

EXAMINATION REPORT
DMEA 3959

ORA O. LEONARD'S CHRISTENSON-LANE CLAIM
HELVETIA MINING DISTRICT
PIMA COUNTY, ARIZONA
(Tungsten)

CONTENTS

	Page
INTRODUCTION	1
GEOLOGY	1
GRADE AND RESERVES	3
CONCLUSIONS AND RECOMMENDATIONS	4

ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Geologic Map	Following page 4

INTRODUCTION

In an application to the Defense Minerals Exploration Administration dated August 29, 1955, Ora O. Leonard requested government participation in a program estimated to cost $9,000 to explore for tungsten on the Christenson-Lane and adjacent claims.

The claims are in the Helvetia Mining District, Pima County, Arizona, and are about 2,000 feet southwest of U.S.L.M. No. 1, shown on the U.S.G.S. Patagonia Quadrangle. To reach the property from Sahuarita on U. S. highway 89, drive southeast 14.1 miles to Helvetia. Southeasterly from Helvetia the property is 1.7 miles up Flores canyon; 0.3 of a mile beyond the National Forest boundary fence.

The applicant is the owner of the property. The property consists of three unpatented claims lying side by side and oriented in a northeasterly direction. From northwest to southeast the claims are named ElPonciano, Christenson-Lane, and Cumpas.

I was accompanied over the ground by Leonard on November 10, 1955. This examination included only the Christenson-Lane claim, as all the scheelite occurrences are confined to this claim, and Leonard's proposed work would be confined to drifting and cross-cutting to explore the two main veins on this claim. A U. S. Bureau of Mines engineer was not available at the time. On the evening of December 6, however, the property was examined by T. M. Romslo of the U. S. Bureau of Mines, accompanied by the writer and the applicant.

GEOLOGY

The deposits occur in a Mesozoic granite a thousand feet, more or less, from the exposed contact between this granite and the sedimentary

rocks that it intrudes. The granite contains inclusions of schist, and exhibits shear zones, fractures, dikes and veins as shown in figure 3.

The one recognized shear, shown at "B" in figure 3, strikes about due E and dips 60 degrees south. The prevalent fracture direction is about N15°E, and the dip, 30 to 50 degrees east. These fractures generally contain sericite, whereas other fractures do not. The dikes are concentrated at the northeast end of the claim. They are classified here as diabase (?), and are fine-grained, greenish to dark brown, and porphyritic, with phenocrysts that probably represent altered feldspar. There are two main groups of quartz veins, (1) those that strike NE to E and dip steeply to moderately northwest, and (2) those that strike N to NE and dip moderately to flatly to the east. Group (1) veins are generally a few inches thick and consist simply of bull quartz. Group (2) veins cut the veins of group (1), and apparently occupy the shears and the prevalent fractures mentioned above.

The tungsten values occur in two veins of the group 2 type near "A" at the north end of the claim (fig. 3). The two veins are traceable north from the bed of a draw. The No. 1 vein can be traced about 200 feet by its expression as a low, elongate hump on the hillslope. Over this distance the vein in many places branches into networks of veinlets. The No. 2 vein, about 80 feet east of the No. 1, has a similar topographic expansion, but it is thinner and can be traced only about 50 feet uphill from the bed of the draw. South of the draw the veins are covered.

The veins are less than 5 inches thick, and probably average about 3 inches in thickness. They are predominantly of quartz and have

a composite, vuggy structure. Sericite is intimately associated with the quartz. Parts of the veins contain bunches and disseminations of galena with very minor pyrite. Copper oxide staining is present in a few places. Scheelite occurs in each vein in two or three crude bands parallel to the vein structure. The bands and the clots of scheelite that make up the bands generally do not exceed a fifth of an inch in width, and the bands are spaced one quarter to one inch apart. The bands grade out both longitudinally and laterally through sparsely disseminated specks of scheelite, into barren vein material. Scheelite was seen only in three places in these veins, as shown by red in figure 3.

At the south end of the property ("B", in figure 3) there are traces of scheelite along the shear zone mentioned on page 2. The granite along the shear zone is highly sericitized over a width of about one foot. The vein is exposed in a shallow, 25-degree incline and at the surface about one hundred feet east of the incline. This locality is not included in the applicant's proposed program.

The applicant, as an afterthought to his loan request, reported that the deposit contains uranium. The evidence he presents is in the above-mentioned incline where a maximum count of one or two times background is obtained. This is too meager a showing to justify consideration of the project from the standpoint of exploration for uranium.

GRADE AND RESERVES

No ore has been shipped from this property. No assay data is included in the application but the applicant states that two samples taken at random places from the surface near the No. 1 and No. 2 veins

assayed 3.7 and 3.35 percent WO_3. After our examination of the veins by ultraviolet light, it was evident that such assays could only have been obtained from hand-picked specimens. The best parts of the veins might very well contain 2 or 3 percent WO_3, but such material is so scarce that it is not even remotely representative of the average grade of the ground that would have to be mined in order to obtain the tungsten. The distribution of scheelite is too sparse and erratic to constitute any more than a few tons of indicated or inferred reserves.

Leonard stated that in the 20-foot shaft 150 feet northeast of "B" he has obtained rock that contains gold, silver, and copper values. Judging by the weak copper oxide stains in this shaft, copper cannot be present in more than trace amounts.

CONCLUSIONS AND RECOMMENDATIONS

The deposit is too small and the scheelite too erratically distributed to constitute a minable reserve under present or foreseeable future conditions. There are no geologic indications of possible improvement with depth. Consequently I recommend that this application for government aid be denied.

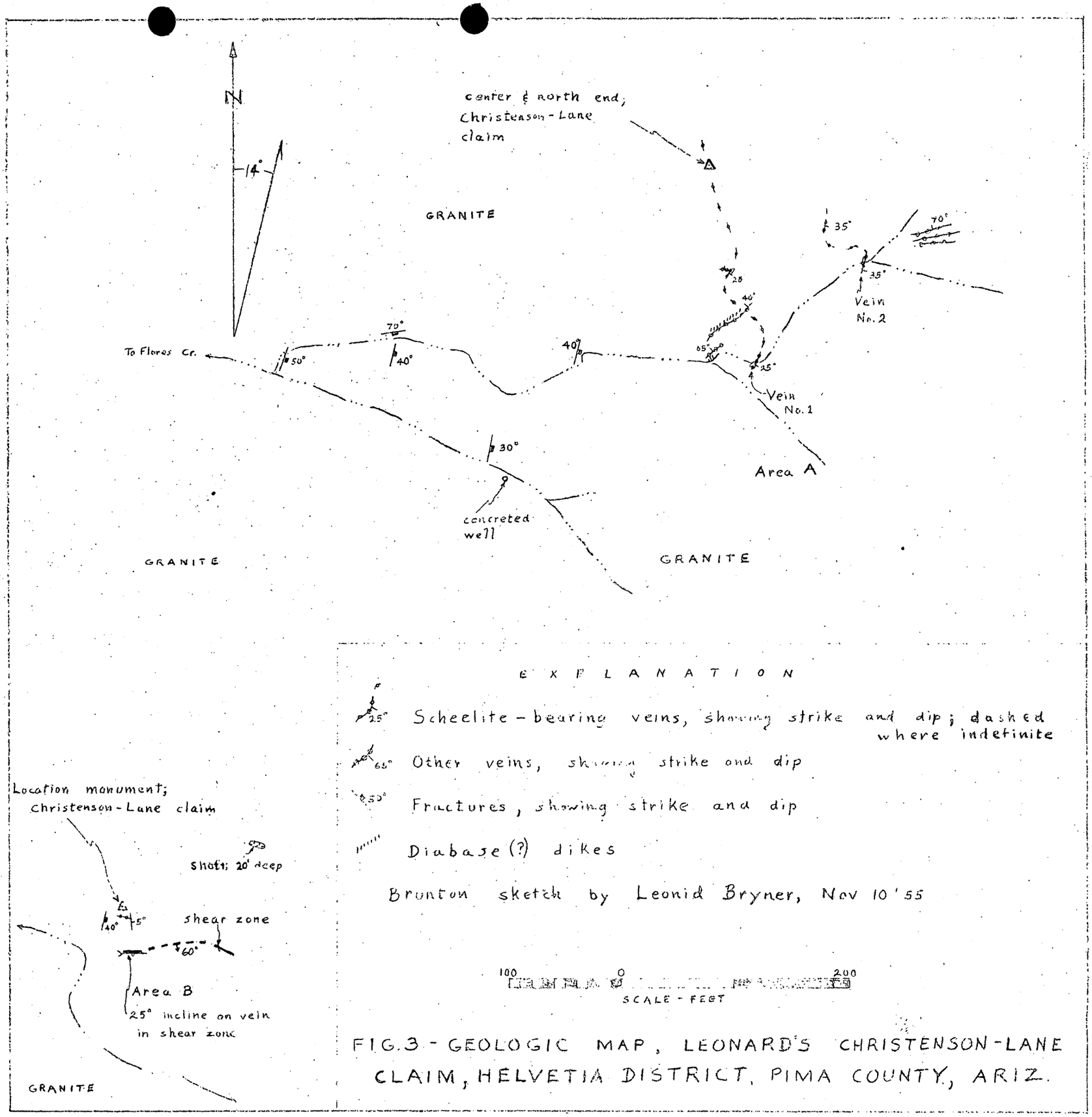

FIG. 3 - GEOLOGIC MAP, LEONARD'S CHRISTENSON-LANE CLAIM, HELVETIA DISTRICT, PIMA COUNTY, ARIZ.

Docket

RECEIVED

SEP 26 1955

September 21, 1955

Copy retained 100.

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 3959 (Tungsten), Ora O. Leonard, Christenson-Lane claims, Pima County, Arizona

The subject application in the amount of $9,000.00 is enclosed herewith. The brochure consists of the following:

1. Form MF-103 (incomplete)
2. Photocopy of memo from McInnis to Chief, Iron and Ferroalloys Division - DMEA
3. Photocopy of memo from W. P. Williams to W. E. Martin
4. Photocopy of letter of transmittal from Chairman, Operating Committee to Executive Officer
5. Copy of Executive Officer's memo of transmittal to this office

The memoranda by Williams and Traver point out the fact that the Form MF-103 is incomplete. However, a field examination and suitable report are required. The completed report should be sent directly to the Executive Officer with a copy of your memo of transmittal to this office.

W. H. KING

W. H. King

Enclosures

Copy to: E. N. Marshman
J. N. Falck
W. M. Traver (3)
Secy. Opr. Committee (2)

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

Docket

RECEIVED
SEP 19 1955

September 16, 1955

25th New Customhouse
Denver 2, Colorado

W/34

Memorandum

Copy retained 400

To: W. H. King (With brochure)
J. H. Faick

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3959 (Tungsten), Ora G. Leonard, Christensen-Lane claims, Pima County, Arizona

Enclosed is the subject application in the amount of $2,000.00. The brochure consists of Form MF-103 which is not complete. Also enclosed is a copy of a letter from the Chairman of the Operating Committee and attached memoranda from the Commodity Group. Your attention is called to the last paragraph of the review of the application by W. P. Williams.

A field examination and suitable report are requested.

W. M. Traver

Enclosures

MMC:ab
cc: Sec. Opr. Comm. (2)
Hershman
Docket 3959
Chron.

400

DOCKET
Surname:
Chapman
Martin
Selfridge

SEP 12 1955

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

Re: Docket No. DMEA 3959, Tungsten
Ora O. Leonard
Christenson-Lane claims
Pima County, Arizona

Dear Mr. Traver:

The above docketed application for exploration assistance is being referred to your office for a field examination of the property.

Two copies each of relevant memoranda, one dated September 1, 1955, by W. P. Williams, Geological Survey, and the other dated September 6, 1955, by Wilmer McInnis, Bureau of Mines, are enclosed for your information.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JB)

Enclosures

APPROVED:

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

/s/ M. E. Nelson (JB)
Member, Geological Survey

cc: Docket
Code 400
Oper. Committee
Adm. Reading File
FT, Region 3
Thor Kiilsgaard, USGS
Robt. Holliday, USBM

TLChapman/ls
8/9/55

R.S.S.

DOCKET
Surname:
Chapman
Martin
Yoder
Jeffrey
Nelson

400

SEP 12 1955

Mr. Ora O. Leonard
P. O. Box 11344, Emery Park
Tucson, Arizona

Re: Docket No. DMEA 3959, Tungsten
Christenson-Lane claims
Pima County, Arizona

Dear Mr. Leonard:

The above-docketed application for exploration assistance for tungsten ores has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Custom House, Denver 2, Colorado, for a field examination of the property.

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

Sincerely yours,

C. O. Mittendorf

Administrator

cc" Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
Robt. Holliday, USBM
Field Team, Reg. 3

TLChapman/ls
9/8/55

R.C.H.

Docket

RECEIVED

SEP - 7 1955

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

September 6, 1955

Memorandum

To: Chief, Iron and Ferroalloys Division - DMEA
Through: Chief, Branch of Ferrous Metals & Ferroalloys

From: Commodity Specialist

Subject: Docket No. DMEA 3959 - Tungsten
Application for Exploration Assistance $9,000

It is recommended that a field team examination be made.

Wilmer McInnis

Wilmer McInnis

Do-chart

IN REPLY REFER TO:

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

RECEIVED
SEP - 2 1955

September 1, 1955

Copy retained 400

Memorandum

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

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

Subject: Review of DMEA Application, Docket No. 3959, Ora O. Leonard, Christenson-Lane claims, Pima (?) County, Arizona (Tungsten (?)).

The subject application is too poorly prepared and incomplete for usual processing. From the condition of the application it appears that the applicant would be unable to furnish adequate additional information should he be asked to do so.

I suggest the Field Team be asked to communicate with the applicant, at the Field Team's convenience, to obtain more information about the property.

It may be well for the Field Team to ascertain the competency of the applicant since it seems doubtful to me that one who is unable to complete the application form would be equipped to perform the supervisory duties and keep adequate, accurate records which are part of an efficient and well-directed exploration program.

WPWilliams

W. P. Williams

Subject: Exploration
Re: Christenson-Lane

August 31, 1955

The receipt of your application dated August 29, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3959 and referred to the Iron and Ferry Alloys Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

D.M.E.A. ①

Christenson - Lane Mine

RECEIVED
AUG 31 1955

The Principal Metals for which I am applying for aid under the Defence Minerals Exploration Program are, Tungsten Sheelite, and uranium. also Copper in all, there are four unpatented located claims situated in the Helvetia Mining District thirty-four miles South of Tucson, arizona. in the Santa Rita mountains.

The mine where the exploration work is to be Performed is known as the Christenson-Lane. Book-289 Page 573.

the remaining three claims which are likely to benefit by the exploration work are the, El Ponciano. Book 289 - Page 572
Cumpas, Book 821 Page 489
Bushwhacker Book 849 Page 382

The Christenson - Lane has approximately forty feet of drift completed and there are three contacts in the drift. Uranium, Sheelite, and copper. The university of arizona mines and minerals department have assisted me considerablly in the past, and have tested the ore and declared it to contain uranium, Sheelite, and copper.

The mine is located within 16 miles of Sahuarita, arizona a rail road shiping point. a county graded road leads to one and one half miles of the Proposed exploration Project. the remaining one and one half miles to the mine is in fair condition and usable.

The Proposed exploration project is located near mines which are now in Production, mainly copper. and opperated by a Mr. Chilson.

The Sheelite Outcropping on the

Christenson - Lane is traceable for appor. nine hundred feet. and assay $2\frac{75}{100}$

I propose the completion of three drifts of one hundred feet each, making a total of three hundred feet. considering the cost at $30.00 per foot I believe the work can be completed for nine thousand dollars.

I have all the equipment necessary with the exception of a compressor and jack hammer.

Miners and laborers are obtainable. accessability and working conditions are very favorable.

The sheelite vein is 90% vertical and three and one half feet wide.

The uranium bearing ore contact is appor. four feet wide and lies thirty degrees vertically.

There are two springs within four hundred ft of the Christenson-Lane mine

and sufficient water can be developed for Mill Purposes.

5(d) I first began working in mines at the age of fourteen. have worked in the Bisbee-Douglas Copper Mines at Bisbee arizona. I have also supervised mining opperations in Mexico.

(6) Estimate of cost.

three hundred feet of drift. $30.00 Per foot total $9,000.00

Ora O. Leonard

30 So. Main St.
P. O. Box 1889

JACOBS ASSAY OFFICE

Phone 2-0813

REGISTERED ASSAYERS

Duplicate

Tucson, Arizona, Aug 25th, 1955

Sample Submitted by Mr. O O Leonard

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore * $	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	LEAD Per cent Wet Assay	WO_3 Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay
	Tungsten Trioxide			—	—	2 75/100	—	—

* Gold Figured $35.00 ~~per~~ oz. Troy

Charges $ 4.00 Paid

Very respectfully,

Ben D. Jacobs

RECEIVED
AUG 31 1955

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
AUG 31 1955

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

Not to be filled in by applicant

Docket No. 3959
Metal or Mineral Tungsten stat
Date Received Aug 31, 1955
Estimated Cost 9000.00
Participation (Government %) 75

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: ORA O LEONARD
Po. Box 11344 EMERY PARK. TUCSON, ARIZONA.
6410 So. FONTANA. TUCSON, ARIZ.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract LOCATED LODE CLAIMS.
CHRISTENSON-LANE. BOOK 289 PAGE 573
EL PONCIANO BOOK 289 PAGE. 572.
CUMPAS. BOOK 821 PAGE 489. BUSHWHACKER BOOK 849 PAGE 382

(*b*) State any mine name by which the property is known. CHRISTENSON-LANE

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise OWNER

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

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

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

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

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

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

.....

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 5 days and be completed within 3 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

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

☒ Money ☒ Use of equipment owned by you ☒ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated Aug 29, 1955

Ora O. Leonard
(Applicant)

By .....

.....

.....

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1