



## **CONTACT INFORMATION**

Mining Records Curator  
Arizona Geological Survey  
1520 West Adams St.  
Phoenix, AZ 85007  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 09/05/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: VERMICULITE LODE MINE

ALTERNATE NAMES:  
MICRO-CELL

MOHAVE COUNTY MILS NUMBER: 548A

LOCATION: TOWNSHIP 20 N RANGE 15 W SECTION 6 QUARTER SW  
LATITUDE: N 35DEG 08MIN 27SEC LONGITUDE: W 113DEG 54MIN 34SEC  
TOPO MAP NAME: RATTLESNAKE HILL - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:  
VERMICULITE

BIBLIOGRAPHY:  
ADMMR VERMICULITE LODE MINE FILE  
BUR OF LAND MGMT, 1978, UNIT RESOURCE  
ANALYSIS, STEP 3 & 4, HUALAPAI-AQUARIUS,  
(MINERALS), PP. H-M-1 THRU H-M-23 (GEO FILE)

f, l  
 (Do not write  
 in this space)

(Wrap each specimen separately, or place it in a substantial  
 bag, by itself, with a number attached, identical with the  
 number on this card.)

Ore \_\_\_\_\_

Cabinet \_\_\_\_\_

No. \_\_\_\_\_

Specimen No. 9, collected by E. B. Holt  
 Field Engineer

Name of ore VermiculiteOperator Not operating

Minerals contained \_\_\_\_\_

Mine active or inactive \_\_\_\_\_

Hydrous mica

If inactive, when operated \_\_\_\_\_

Gangue GraniteSpecimen presented by L. V. RootDepth at which taken Surface

Date \_\_\_\_\_

Approximate mineral content (in terms of  
average per ton) \_\_\_\_\_Notes (Any general information regarding  
the history of the property.) \_\_\_\_\_Mica & Granite

Name of mine or claim \_\_\_\_\_

Group Vermiculite LodeDistrict Maynard-Mohave CoLocation (distance and direction by high-  
way from what town) 17 m. SE. of KingmanOwner of property L. V. Root &If more space is desired for notes, use  
other side.Mr. Harman12.0 x 8.0 x 6.5 cm

This specimen is now in the ADMR Museum - see K number.

MINERAL SPECIMEN FOR DEPARTMENT OF LIBRARY & ARCHIVES

K112

M112  
K112

(Do not write in this space)

This specimen now in the ADMR Museum - see K number.

(Wrap each specimen separately, or place it in a substantial bag, by itself, with a number attached, identical with the number on this card.)

Cabinet \_\_\_\_\_

Specimen No. 19, collected by \_\_\_\_\_  
Field Engineer

Name of ore Vermiculite bed 6 Operator \_\_\_\_\_

Minerals contained \_\_\_\_\_ Mine active or inactive Active

Gangue \_\_\_\_\_ If inactive, when operated \_\_\_\_\_

Depth at which taken Near Surface Specimen presented by Monte Harmon

Approximate mineral content (in terms of average per ton) \_\_\_\_\_ Date Aug 22, 1940

Notes (Any general information regarding the history of the property.)

Name of mine or claim \_\_\_\_\_

This Property was recently discovered, AND IS NOW BEING WORKED. A MILL WILL BE BUILT NEAR KINGMAN FOR THE REDUCTION OF THE ORE.

Group \_\_\_\_\_

District Hualapai

Location (distance and direction by highway from what town) 10 MI S.E. of Kingman

Owner of property Root-Harmon

If more space is desired for notes, use other side.

2164g 12.0 x 11.0 x 9.0 cm

VERMICULITE LODGE MINE

MOHAVE COUNTY

NJN WR 1/9/87: Arthur Adams, Box 3109, Scottsdale, Arizona 85257, 990-0557, brought in vermiculite samples from the Mica Giant area, Mohave County. He reported that the vermiculite can be found in the granite composing the foothills of much of the northeastern Hualapai Mountains. (Vermiculite Lode Mine-file) Nearby, at the Mica Giant (file) some of the vermiculite also occurs as mica schist. A brief popping evaluation of Mr. Adam's vermiculite samples was discouraging due to the small size of the vermiculite (less than 1/8 inch). It did pop and expand in a normal fashion however.

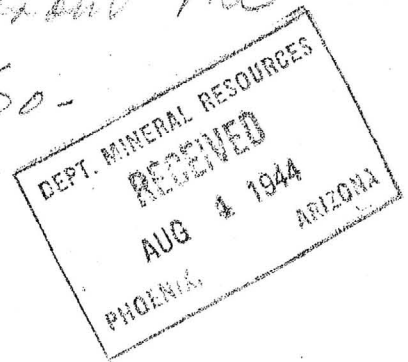
-----

9415  
Dinning:

Please attach this copy to my report  
on the "VERMICULITE LODGE" deposit.  
This will show present ownership of  
the lease on this property from the  
Santa Fe Pacific Railroad Co.

Thanks.

Hot.



August 3, 1944

F. O. Box 188,  
Kingman, Arizona.

Subject: VERMICULITE

Mr. M. H. Kerla,  
2312 Ruskin Ave.,  
Baltimore, Md.

Dear Mr. Kerla:

A Mr. MacDonald called at our Phoenix office and requested information on the vermiculite deposit near Kingman, stating you are interested and a substantial non-metallic dealer, etc.

As I have been instructed by our Director, Mr. Chas. H. Dunning, to write you about the said deposit, kindly be advised as follows:

The deposit was discovered by L. V. Root (deceased) and Montie Harmon, of Kingman, during 1939. The following year it passed into the hands of C. H. Butler. As the main deposit lies within lands belonging to the Santa Fe Pacific Railroad Co., Butler secured a lease from that company on about 480 acres of land. He formed a company and erected a small expanding plant in Los Angeles. He ran into financial and legal difficulties in 1942 and finally dropped out of the picture. Later on the Santa Fe Pacific Railroad Company cancelled the Butler lease and on July 18, 1944, this company executed another lease on the same ground to Mrs. Eccie R. Jones (daughter of L. V. Root), 686, Kingman, Arizona. Any correspondence about this deposit should be directed to her.

I am herewith enclosing a preliminary report by me on this property. You will note the date of this report is April 5, 1940. However, it gives a fair description of the deposit. While very little work has been done, there is a very large tonnage indicated. As to its quality, I can give you very little information, as I am not a vermiculite expert. Butler pronounced it to be of good quality; so you would have to examine it yourself to determine this point. However, I am sending you by Parcel Post a sample of vermiculite which I secured at the property yesterday - surface material, for your consideration.

Very sincerely yours,

cc - Chas. H. Dunning  
Mrs. Eccie R. Jones

Elgin B. Holt,  
Field Engineer.

6 October 1941

Mr. Clarence H. Butler,  
Vermiculite Insulations Company,  
4431 East Sheila,  
Los Angeles, California.

My dear Mr. Butler:

Complying with request contained in your letter of October 2, I am enclosing herewith certified copies of Field Engineers Reports made by Mr. Elgin B. Holt on the Vermiculite Mine in Mohave County, which I trust will serve your purpose.

With kindest personal regards, I am

Yours very truly,

Charles F. Willis  
Chairman, Board of Governors

CFWojrf  
encls.

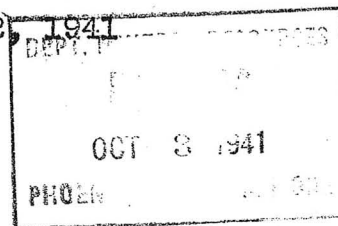


# VERMICULITE INSULATIONS COMPANY

4431 EAST SHEILA  
LOS ANGELES

October 2, 1941

AIR MAIL  
SPECIAL DELIVERY



Department of Mineral Resources  
STATE OF ARIZONA  
Capitol Building  
Phoenix, Arizona

Attention Mr J S Coupal, Director

Dear Mr Coupal:

It is necessary that we prepare a brief of our development and properties in Kingman for submission to various Procurement Departments of Government defense projects, and one of the important features is that of the Engineer's reports on the Kingman property.

Will you please cause copies of Mr Elgin P Holt's reports as of August 5, 1940 and February 3, 1941, to be made and properly attested as being true copies of the originals on file in your office, and forward to me at the above address as quickly as you can find it conveniently possible.

You will be glad to know that we are within a matter of days of completing our expanding plant in Los Angeles, and that shipments will be made from the properties in the very near future.

Thanking you for anything you may do to expedite this matter, and with warm personal regards, I remain,

Yours very truly,

VERMICULITE INSULATIONS COMPANY

By

A handwritten signature in cursive script, appearing to read "Clarence H Butler".

Clarence H Butler.

CHB  
cwb

DEPARTMENT OF MINERAL RESOURCES  
 State of Arizona  
 FIELD ENGINEERS REPORT

Mine: VERMICULITE MINE

Date: Feb. 3, 1941.

District: Maynard Dist., Mohave County

Engineer: Elgin B. Holt.

Subject:

B R I E F   S T A T E M E N T

**OWNER:** This deposit is situated on lands belonging to the A. T. & S. F. R. R. Company. During 1940 the lands mentioned were leased to L. V. Root and Montie Harman of Kingman, Arizona, who subleased to C. H. Butler.

**LOCATION:** Property is located 15 miles south-east of Kingman and is reached by a county maintained road, over which heavy loads can be hauled over a down-hill grade to a railroad station five or six miles east of Kingman.

**EXAMINATION:** This ground was inspected by me several times during the past year.

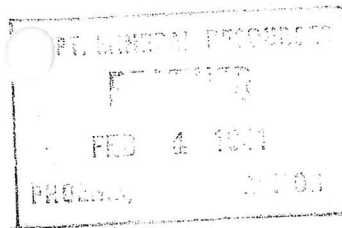
**VERMICULITE:** The vermiculite group, per Dana, includes a number of micaceous minerals, all hydrated silicates, partly related to the chlorites, but varying somewhat widely in composition. They are alteration products chiefly of the micas, biotite, phlogopite, etc. Connected with the loss of water upon ignition is the physical character of exfoliation; the material slowly opening out when heated into long worm-like threads, giving the name to the group from the Latin word *vermiculari*, to breed worms.

**USES:** "The usefulness of vermiculite", per Eldred D. Wilson of the Arizona Bureau of Mines, "depends upon its response to heat treatment, whereby the crude mineral separates into very thin flakes of silvery to golden color. This flaky product, commonly known as 'Zonolite' or 'Tung Ash', is an effective fire-proof insulator against heat, cold and sound; for such purposes it may be packed loose or mixed as an aggregate in various plasters, bricks, cement, composition roofing, and high temperature gaskets. It is also used in ornamental stucco and wall paper. It is reported to be highly effective as an ingredient for lubricating oils and greases and for paints."

**POSSIBLE TONNAGE:** The dimensions of this body of vermiculite is very extensive - amazing, in fact. It has been traced on the surface for over 1.5 miles in a north-south direction, its width ranging from hundreds of feet to 2,000 feet. In places the deposit is covered by from 10 to 12 feet of cap rock and soil. Also the entire mass of this material, which is likely a huge batholith, is intruded by pegmatite dikes, of narrow widths. Between these, however, are workable zones of excellent quality vermiculite, from 80 to 100 feet wide, most of which can be quarried after blasting, and excavated by power shovels.

The depth of the deposit has as yet not been determined, as only shallow trenching has been done, aside from the main quarry opened by Mr. Butler above his pilot crushing and screening plant; but as good quality vermiculite is found along the zone on tops of high ridges and in the bottoms of deep intervening canyons, the depth of the material is probably in excess of 500 feet. Again, there are huge "islands" of good looking vermiculite along the zone where pits can be opened. Hence, it is believed this deposit would readily yield in excess of 50,000,000 tons of vermiculite material, when and if developed in a large way.

(Signed) E. B. Holt  
 Elgin B. Holt, Field Engineer.



February 3, 1941

P. O. Box 288,  
Kingman, Ariz.

Messrs. C. H. Butler & E. E. Coate,  
Rosslyn Hotel, 111 W. 8th St.,  
Los Angeles, Calif.

Gentlemen:

Referring to our telephone conversation of this date concerning the vermiculite property, near Kingman, I note you are taking steps to apply for a \$75,000 loan from the R. F. C., to be used in exploiting this property; and that you wanted a report from me re- the same.

I am herewith enclosing the report asked for, outlining my opinion as to the importance of this deposit. I hope it will be of some assistance to you in raising money.

But as to the application for an R. F. C. loan, I am afraid such a loan would be turned down, for the following reasons:

I have before me CIRCULAR NO. 14 of the RECONSTRUCTION FINANCE CORPORATION, giving information regarding mining loans, in which it is stated on page 5:

"Security may consist of a mortgage on mining property, or it may consist of a lien on property, real or personal, entirely independent of the mining project. If the applicant does not own the mining property, a mortgage by the owner may be required; assignments of leases or options will be required. ~~XXXXXXXXXXXXXXXXXXXX~~".

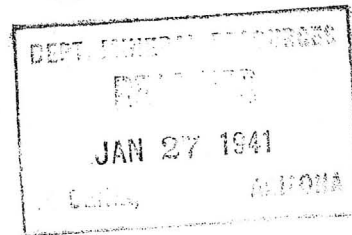
In other words, as the Santa Fe R. R. owns the lands in question, on which the vermiculite is located, this R. R. Company would have to join in the transaction and sign a mortgage in favor of R. F. C.

Kindly be advised that the said R. R. Company does not sell mineral-bearing lands. Hence, I would say it follows that the Santa Fe people would also refuse to sign any mortgage by which they might forfeit such lands. The only possible solution, and this is a thin chance indeed, is that the Santa Fe might be induced to grant a 99 years lease, provided such an arrangement would meet R. F. C. approval. That this lease be put up as security for the amount of loan required.

Very sincerely yours,

Elgin B. Holt,  
Field Engineer.

cc - L. V. Root  
J. S. Coupal



January 25, 1941

VERMICULITE

P. O. Box 288,  
Kingman, Ariz.

The Merrill Company,  
Engineers,  
343 Sansome St.,  
San Francisco, Calif.

Attention: Mr. L. A. Smith

Gentlemen:

Reference is made to your letter of January 18th, asking for information regarding the vermiculite deposit near Kingman, Arizona.

I note you are dealing with Mr. C. H. Butler and that he quotes me as saying work done indicates the presence of over 1,000,000 tons of vermiculite.

In reply, the above statement is correct, as there is well over 1,000,000 tons of vermiculite indicated in this deposit, as you will see by the following description of this property:

The dimensions of this body of vermiculite is very extensive. It has been traced on the surface for over 1.5 miles in a north-south direction, its width ranging from a few hundred feet to 2,000 feet. In places the deposit is covered by from 5 to 10 feet of cap rock and soil. Also the entire mass of this material, which is likely a huge batholith, is intruded by a number of pegmatite dikes, of narrow widths. Between these, however, are workable zones of good looking vermiculite, from 80 to 100 feet wide, most of which can be quarried, after blasting, and excavated by power shovels.

The depth of the deposit has as yet not been determined, in that only shallow trenching has been done, aside from the main quarry opened by Mr. Butler above his crushing and screening plant; but as good quality vermiculite is found along the zone on tops of high ridges and in the bottoms of deep canyons, which it crosses, the depth of the material is probably in excess of 500 feet. Again, there are huge "islands" of good looking material, which I saw tested by a blow torch on the ground, along the zone where pits can be opened; hence the tonnage, or probable tonnage indicated, runs up into the pictures.

In conclusion, I am pleased to recommend this property for your serious consideration.

cc - L. V. Root  
J. S. Coupal

Sincerely yours,

Elgin B. Holt,  
Field Engineer.

DEPT. MINERAL RESOURCES  
RECEIVED  
OCT 17 1940  
PHOENIX, ARIZONA

October 15, 1940.

✓ Box 789  
Judge L. V. Root,  
Kingman, Arizona.

Dear Judge Root:

From our publicity Johns-Manville Company, San Francisco office is interested in finding out more about the Kingman vermiculite and getting samples. Their man in Phoenix, Dusty Miller, just called me up and asked where he could write for samples, and I told him to write to you. I am writing this to let you know just who it is that is making this inquiry, as a tie up with Johns-Manville would be extremely valuable.

With kindest personal regards, I am

Yours very truly,

State Secretary  
ASMOA.

CIV-M

*Card*

October 1, 1940

C. H. Butler  
c/o L. V. Root  
Kingman, Arizona

Dear Mr. Butler:

I am enclosing a copy of a letter I have just received from H. P. Laslett on an inquiry for 10,000 tons of vermiculite per year, and also a copy of my reply to Mr. Laslett.

I do hope that you can supply this ore and that you will advise me when and if negotiations are completed on this inquiry.

Yours very truly,

J. S. Coupal  
Director

JSC:mmm  
Enclosures

12 September 1940

Mr. C. H. Butler,  
Micro-Cell Mines,  
Kingman, Arizona.

Dear Mr. Butler:

I thank you for your letter of September 7 and your expression of appreciation of the work done by the Department of Mineral Resources.

Should we receive further inquiries for vermiculite, we shall be glad to forward them to you.

With kindest personal regards, I am

Yours very truly,

J. S. Coupal  
Director

JSC-jrf

P. S.

I am enclosing herewith a blank mine owners report, which I should suggest that you fill out and return so that information may be available in case we have inquiries for vermiculite.

J.S.C.

Micro-Cell Mines,  
Kingman, Arizona.  
Sept. 7, 1940.

Dr. J. S. Coupal,  
Director, Bureau of Mineral Resources,  
~~Phoenix~~, Arizona.  
Tucson

Dear Dr. Coupal: -

Just a note to inform you that we are about to begin production on our Vermiculite properties here and to express my sincere appreciation for your kind assistance and cooperation in the matter of engineering reports, freight rates, publicity, etc.

Needless to say, after having mining experience in other States, especially Colorado, it is a pleasure to operate in Arizona, where the development work is blessed with the helpful efforts of a department such as you maintain.

In the advent your department receives inquiries regarding Vermiculite ore, reference to us would be appreciated or we should be glad to contact them direct on receipt of their address.

Looking forward to the pleasure of meeting you again, I remain, with warm personal regards,

Sincerely yours,



C. H. Butler.



C  
O  
P  
Y

August 2, 1940

Mr. J. S. Coupal,  
Phoenix, Arizona.

Dear Mr. Coupal:-

I enclose clippings from yesterday's MINER which contains a brief article on the vermiculite operations near here. You can add to this what you may desire to make it fake form for your use. The discovery was made by myself some years ago and I had it tested by an eastern firm. Mr. Butler, who was with the Vermiculite Company of America for a number of years spent nearly a year prospecting the western Rockies for a deposit but was without success until he reached Kingman. He came to Kingman because Montie Butler had directed him to contact Mr. Henry Shuck who had at some time submitted a sample of vermiculite to the bureau of mines. The Shuck material was not of good quality and Mr. Butler was filling his car with gas preparatory to leaving when the boy waiting on him asked "if he were a mining man"? Mr. Butler replied "Yes" and upon further questions stated he was looking for vermiculite. The boy said: "I don't know what vermiculite is but if you will go and see Judge Root he will tell you where there is any in Mohave County". Mr. Butler was at first disposed to drive on but then on second thought, he drove a couple of blocks to my office and asked me if I knew where there was any vermiculite. I had some in my desk which I showed him and without further comment he wanted to know where it came from and I told him that "if he had a car I would show it to him in thirty minutes." He said, "All right, I'll pay you for your time." I piloted him to the deposit. He was interested. He put up the money for me to do some further prospecting. I got my prospecting partner, Mr. Montie Harman, and he went into the field where I thought there should be more of it with the result that Mr. Butler now has several hundred acres of ground on which Mr. Holt states there is an unlimited supply of the material. Mr. Butler pronounces the deposit the largest and best of any known in the United States and he says that he has visited every commercial deposit in the nation. There are the truths about the finding of the deposit and just how you can turn this into department columns will be up to you. Your department has been very good in rendering contracts since the discovery, however, and of this situation I am very appreciative.

Yours very truly,

/sd/ L. V. Root  
L. V. ROOT.

*Copy sent to  
Mr. Coupal*

26 June 1940

Mr. H. R. Goodrich,  
Director of Research,  
2901 Los Feliz Boulevard,  
Los Angeles, California.

Dear Mr. Goodrich:

Complying with request contained in your letter of June 22, I am enclosing herewith a copy of field engineers report made by Mr. Elgin B. Holt covering the Vermiculite Lode Mine owned by Judge L. V. Root of Kingman, Arizona.

Trusting that this information will give you the information desired, I am

Yours very truly,

J. S. Coupal  
Director

JSC-jrf

CC-L.V.Root

# GLADDING, McBEAN & Co.

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OAKLAND  
SEATTLE  
PORTLAND  
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LOS ANGELES

TEN PLANTS  
CALIFORNIA  
OREGON  
WASHINGTON

CABLE ADDRESS  
MACBEAN, LOS ANGELES

22 June 1940.

Mr. J.S. Coupal, Director,  
State Bureau of Mineral Resources,  
Capital Building,  
Phoenix, Arizona.

Dear Mr. Coupal:

A few days ago I called on Judge L.V. Root at Kingman, Arizona, to examine the vermiculite ore deposit that occurs 12 to 14 miles out of Kingman. Unfortunately Judge Root was editing his paper and was not able to direct us to the property, nor were we able to find anyone in town that knew the directions to the deposit. Judge Root, however, told me that your Department had written a report on this deposit and we would appreciate it very much if you would kindly send us a copy. If there is any charge for this service please advise and we shall be pleased to pay for the report.

Thanking you, we remain,

Very truly yours,

GLADDING, McBean & Co.

*H. R. Goodrich*  
H. R. Goodrich,  
Director of Research.

HRG-lap

*Answer*

30 July 1940

Judge L. V. Root,  
Kingman, Arizona.

Dear Judge Root:

I have received a letter from Mr. Charles W. Garland, 412 West Sixth Street, Los Angeles, California, in which he states that he has an inquiry for 300 tons of commercial grade vermiculite per month.

I have referred Mr. Garland to you, and I am holding up a float item on this inquiry until I know whether or not you can take care of it.

I am still anxious to get a feature story such as we have been carrying in the last three issues of Pay Dirt showing the accomplishments of the department. In the next issue I should like to include your vermiculite if it has reached the stage where we can use that publicity.

Please let me know as quickly as possible whether or not you would permit us to write such an article, or if you wish to prepare it yourself, we should be glad to publish it in the next issue of Pay Dirt, which goes to press about August 12.

With best wishes, I am

Yours very truly,

J. S. Coupal  
Director

JSC-jrf

30 July 1940

Mr. Charles W. Garland,  
412 West Sixth Street,  
Los Angeles, California.

Dear Mr. Garland:

In reply to your letter of July 27, I will state that I know of only one producer of vermiculite, and I should suggest that you contact Mr. L. V. Root, Kingman, Arizona. He has uncovered a large deposit, and may be in a position to supply you with the tonnage required.

We have several mica properties on our list, but none of them are producing, and if you are looking for production and not for properties, I regret to say that I know of none that are available.

If you will let me know the price you can pay for scrap mica, I shall be glad to take the matter up with some of the mine owners and see if they are willing to go to the expense of sending samples and making a trial shipment.

We have constant inquiries for a market on manganese. Can you give me the price being paid for 45 per cent manganese. f. o. b. Pacific ports?

Yours very truly,

J. S. COUPAL  
Director

JSC-jrf

CHARLES W. GARLAND COMPANY  
MINES - ORES AND CONCENTRATES  
412 WEST SIXTH STREET  
LOS ANGELES

July 27, 1940

Mr. J. S. Coupal  
Director of Mineral Research  
Phoenix, Arizona

Dear Mr. Coupal:

We have an inquiry for 300 tons of commercial grade Vermiculite, per month. Do you know any producers in Arizona who would be likely to furnish this?

We also have inquiries for Scrap Mica.

We will be glad to have your early reply.

Very truly yours

CHARLES W. GARLAND COMPANY

By

*Charles W. Garland*

CWG:H



# Mohave County Miner

Quality Printing :: Advertising :: Office Supplies

Established 1882

▼ Covers Mohave County Like Its Well Known Sunshine ▼

M. O. Ream, Publisher

Published Every Thursday at KINGMAN, ARIZONA


August 2, 1940.

Mr. J. S. Coupal,  
Phoenix, Arizona.

Dear Mr. Coupal:-

I enclose clipping from yesterday's MINER which contains a brief article on the vermiculite operations near here. You can add to this what you may desire to make it take form for your use. The discovery was made by myself some years ago and I had it tested by an eastern firm. Mr. Butler, who was with the Vermiculite Company of America for a number of years spent nearly a year prospecting the western Rockies for a deposit but was without success until he reached Kingman. He came to Kingman because Montie Butler had directed him to contact Mr. Henry Shuck who had at some time submitted a sample of vermiculite to the bureau of mines. The Shuck material was not of good quality and Mr. Butler was filling his car with gas preparatory to leaving when the boy waiting on him asked "If he were a mining man?" Mr. Butler replied "Yes" and upon further questions stated he was looking for vermiculite. The boy said: "I don't know what vermiculite is but if you will go and see Judge Root he will tell you whether there is any in Mohave county." Mr. Butler was at first disposed to drive on but then on second thought, he drove a couple of blocks to my office and asked me if I knew where there was any vermiculite. I had some in my desk which I showed him and without further comment he wanted to know where it came from and I told him that "If he had a car I would show it to him in thirty minutes." He said, "All right, I'll pay you for your time". I piloted him to the deposit. He was interested. He put up the money for me to do some further prospecting. I got my prospecting partner, Mr. Montie Haman, and he went into the field where I thought there should be more of it with the result that Mr. Butler now has several hundred acres of ground on which Mr. Holt states there is an unlimited supply of the material. Mr. Butler pronounces the deposit the largest and best of any known in the United States and he says that he has visited every commercial deposit in the nation. These are the truths about the finding of the deposit and just how you can turn this into department columns will be up to you. Your department has been very good in rendering contacts since the discovery, however, and of this situation I am very appreciative.

Yours very truly,

  
C. V. ROOT.

A G R E E M E N T

AGREEMENT MADE this 24 day of May, 1940, between C. H. BUTLER of 1560 1/2 Fairpark Avenue, Eagle Rock, Los Angeles County, California, as a party of the first part, and MONTIE HARMAN of Kingman, Mohave County, Arizona, as a party of the second part, W I T N E S S E T H:

WHEREAS, the above named first party has secured lease upon the Southwest quarter of the Northwest quarter of Section 35, and the West half of the Southwest quarter of

Section 35, Township 21 North, Range 15 West, G. & S.R.B. & M., and, also, upon the East half of Section 3, Township 20 North, Range 15 West, of the same range and meridia. all being situate in Mohave County, Arizona, and generally described as in the northerly portion of the Wallapai Mountains in the Maynard Mining District, and,

WHEREAS, such leases and the location of the mineral deposits upon said described property was so secured by first party through the effort, knowledge and service of second party, without which first party would have been unable to secure this valuable property, and,

WHEREAS, first party is desirous of paying second party for such service in a manner commensurate with the service rendered.

NOW, THEREFORE, first party agrees with second party that he will pay to said second party for each ton of mineral or material taken from said deposit, which may be used or sold, a royalty of twenty-five cents (25%) for each and every ton so removed and used or sold and such royalty shall be paid upon a basis of the shipping weight of the material or mineral so removed and parties understand that said basis is the shipping weight of the actual material as loaded aboard cars or trucks at the mine or property or at the shipping point where scales shall be available to determine such shipping weight.

IT IS FURTHER AGREED between parties that to clarify the matter herein it is understood that the basic material expected to be removed from the described land hereinabove is vermiculite and that it may be that such mineral or material will, in a primary instance be shipped as taken from the property and that if a plan of operation carries, at a later time, a cleaning plant may be installed at or near Kingman, Arizona, and the purpose of such cleaning plant will be to take from the material or mineral mined any waste therefrom and that if such waste be so removed then and in such event, the basic weight to be accepted for payment of royalty will be the cleaned material as loaded upon cars or trucks for shipment to the fabricating centers.

IT IS FURTHER AGREED that parties hereto accept that a like agreement, as herein, is to be prepared and executed between first party and one L. V. ROOT, who is in like position as the second party hereto and such arrangement of agreement is accepted between parties to an end that payments be made to respective parties concerned to an end that each may receive his portion independent of the other and without conflict one to the other.

The provisions and stipulations herein contained shall extend to and bind upon the heirs, executors, administrators and assigns of respective parties hereto.

IN WITNESS WHEREOF respective parties have placed their signatures hereto all on the day and year first above written.

C. H. Butler  
C. H. Butler, First Party  
Montie Harman  
Montie Harman, Second Party

STATE OF ARIZONA, }  
COUNTY OF MOHAVE } ss

The above and foregoing agreement acknowledged before me this 25 day of May, 1940, by C. H. BUTLER AND MONTIE HARMAN, parties to said agreement.

(Notarial Seal)

J. H. Smith  
Notary Public

My commission expires:

May 1, 1942.

Filed and Recorded at Request of Montie Harman  
May 31 A.D. 1940 at 4 o'clock P.M. in  
book 28 of Miscellaneous, Pages 485-486,  
Records of Mohave County, Arizona.  
#17813 Mary E. Carrow  
County Recorder

For Agreement See Book 39 Mineral Pages 485-486

Vermiculite  
Lode Mine  
(file)  
Mohave  
County

This is believed to be the correct location



WHEREAS, C. H. BUTLER and C. M. HENRY have heretofore on the 8th of November, 1940 entered into an Agreement whereby C. M. Henry and associates were to raise certain funds for the purpose of acquiring an interest in certain Vermiculite deposits owned by C. H. Butler and which are located near Kingman, Arizona, and

WHEREAS, C. M. Henry and associates have expended certain of their funds in protecting the interest of C. H. Butler in and to said Vermiculite deposits prior to the exercise of the option contained in said Agreement on the 8th day of November, 1940, and

WHEREAS, it is the intention of both parties to said Agreement of the 8th day

of November, 1940 that C. M. Henry and associates be fully protected by the assignment to C. M. Henry as trustee for all parties who have an interest in said Vermiculite deposits by the expenditure of funds thereon;

NOW, THEREFORE, KNOW ALL PERSONS that C. H. Butler, assignor, residing in Eagle Rock, California, in consideration of Ten (\$10.00) Dollars, paid by C. M. Henry, trustee and assignee herein, whose address is H. W. Helman Building, Los Angeles, California, hereby assigns unto the assignee a certain lease made by the Santa Fe Pacific Railroad Company, being Mining Lease No. 8330 and dated the 15th day of June, 1940, covering certain Vermiculite deposits in Section 3, T 20 N, R 15 W and Section 35, T 21 N, R 15 W, Mohave County, Arizona, together with the premises therein described;

TO HAVE AND TO HOLD the same unto the assignee, C. M. Henry, trustee, and assigns from the 8th day of November, 1940 for the benefit of all the parties in interest in said Vermiculite deposits, subject to the rents, covenants, conditions and provisos therein also mentioned;

IN WITNESS WHEREOF, the assignor has hereunto set his hand in the City of Los Angeles, California, on this 18th day of November, 1940.

C. H. Butler

C. H. Butler Assignor

SIGNED IN THE PRESENCE OF

STATE OF CALIFORNIA, }  
COUNTY OF LOS ANGELES. ) ss.

On this 18th day of November in the year One Thousand, Nine Hundred and Forty A.D. before me, Edward H. Marxen a Notary Public in and for said County, residing therein, duly commissioned and sworn, personally appeared C. H. Butler. Personally known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

(Notarial Seal)

(No expiration of commission given)

Edward H. Marxen

Notary Public in and for the County of  
Los Angeles, State of California.

Filed and Recorded at Request of C. M. Henry  
Feb. 20 A.D. 1942 at 9 o'clock A.M. in  
Book 30 of Miscellaneous Pages 93-94  
Records of Mohave County, Arizona.

Mary E. Carrow  
County Recorder

Kingman, Arizona, Aug. 30, 1940.

For immediate release:

Kingman, Arizona ----- Work is progressing satisfactorily at the vermiculite property, located in Mohave County, in the north end of the Hualpai Mountains, 15 miles southeast of Kingman, according to Elgin B. Holt, Field Engineer of the Arizona State Department of Mineral Resources.

Mr. Holt, who recently visited this property again states: "The dimensions of this body of vermiculite material is amazing. It has been traced on the surface for at least 1.5 miles in a north-south direction; its width ranging from a few hundred feet to 2,000 feet. In places the deposit is covered by from 5 to 10 feet of weathered cap rock and soil. Also the entire mass of this material is intruded by a number of pegmatite and granite dikes. Between these, however, are workable zones of excellent quality vermiculite, running from 70 to 90 per cent in that material, hundreds of feet wide. The depth of the deposit is as yet undetermined; but as vermiculite is found along the zone on tops of intervening ridges and <sup>in</sup> the bottoms of canyons which it crosses, the depth of the vermiculite material must be considerable."

The main part of this deposit ~~belongs~~ is covered by lands belonging to the Santa Fe R. R., now held under an operating lease by L. V. Root and Montie Harman of Kingman. The said lease has been transferred by Root and Harman to the "MICRO-CELL INSULATIONS COMPANY", C. H. Butler, General Manager, Kingman, Arizona.

At the present time, Mr. Butler is constructing a pilot crushing and screening plant adjacent to a quarry located on north end of property. The capacity of this plant will be about 20,000 tons of raw screened product yearly, which will be marketed in California. A larger plant will later be erected at Louise siding, on the R. R. east of Kingman.

expanded

Mr. Butler stated that vermiculite has varied and growing uses, partly enumerated as follows: Heat, cold and sound insulation; for annealing steel; non-corrosive paint; boiler covering and pipe lagging; lime and gypsum insulating plaster; replacing cork in cold storage and refrigeration plants, ice boxes and hot water heaters; used as a loose fill in house insulation; used as

VERMICULITE

asphalt and vermiculite aggregate roofing material, in block, sheet and shingle forms; as exterior insulating stucco. Fireproof insulating board made from vermiculite is said to stand exposure to 1700 degrees F. without any appreciable expansion or contraction.

Mr. Butler further stated that heretofore there has been very little use for vermiculite in West Coast States due to the fact this material has not been available. Previously, the only commercial producing areas have been in Colorado and Montana; and 95% of this material from these centres has been shipped and marketed east of the ~~MISSISSIPPI~~ Mississippi. That aside from the West Coast ~~STATES~~ markets, vermiculite can be shipped from Kingman by rail to San Pedro and thence by water, via the Canal, to the Atlantic seaboard markets, with sufficient economy to compete with Colorado and Montana vermiculite production.

Page #2

Elgin B. Holt.

M-8

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine VERMICULITE LODGE

Date April 5, 1940.

District Maynard, Mohave County.

Engineer Elgin B. Holt,  
P. O. Box 288,  
Kingman, Arizona.

Subject: Vermiculite.

SYNOPSIS REPORT

OWNERS: ~~L. V. Root~~ and Montie Harman, Kingman, Arizona.

*Mrs. Eccie Jones  
Box 686, Kingman*

LOCATION: Property located about 17 miles southeast of Kingman, from which it is reached by following the Sandy road 15 miles; thence two miles over a rough but passable mountain road to the area discussed herein.

EXAMINATION: Property was inspected by me, in company with L. V. Root and Montie Harman. On our arrival, we found a number of men trenching the huge outcrop, in which the vermiculite occurs, for sampling purposes.

VERMICULITE: The vermiculite group, per Dana, includes a number of micaceous minerals, all hydrated silicates, partly related to the chlorites, but varying somewhat widely in composition. They are alteration products chiefly of the micas, biotite, phlogopite, etc. Connected with the loss of water upon ignition is the physical character of exfoliation; the material slowly opening out when heated, into long worm-like threads, giving the name to the group from the Latin vermiculari, to breed worms. Sintered vermiculite has important, varied and growing uses in industry, which, however, will not be discussed in this report.

GEOLOGY: The vermiculite, of this deposit, is found in a zone of granitic rock complex, having a width roughly of 250 feet; and striking N. 10 deg. East. This zone is traceable, according to Mr. Harman, about 6,000 feet; but I did not have the time at my disposal to check his estimate. However, I walked over the outcrop for about 1,600 feet, from Columbus Wash on the South to near the top of a ridge on the North, and found that it continued North and South of the points mentioned.

DEVELOPMENT WORK: Consists of 5 open cuts, recently excavated partly across the zone, from 60 to 85 feet in length and around 2 feet deep; also one test pit 10 feet deep. These workings are located on zone near the top of the ridge referred to, the cuts being spaced about 100 feet apart and are numbered from 1 to 5, from South to North; Cut No. 5 being situated at an elevation above sea level, per aneroid reading, of 5,775 feet and around 1,000 feet North of the bottom of Columbus Wash, where the vermiculite zone is also found massively exposed and on which the workmen were digging a cut, designated by me for future reference, "Columbus Cut", the elevation of which is 5,575 feet, or 200 feet lower than Cut No. 5.

All the openings referred to, expose vermiculite material of even texture, the percentage and quality of which was not available at the time of my visit; but I was informed by Mr. Root that G. H. Butler, a fabricator of vermiculite products, recently examined property and estimated that the entire zone material, so far uncovered, will average from 70 to 98% vermiculite. Personally, I had no way of estimating percentage; but Mr. Harman made a great number of blow torch tests for me from all the cuts, which caused the vermiculite particles to curl up and swell, worm-like, several times their original size, in process of exfoliation. These tests also showed a surprisingly small amount of gangue material other than vermiculite.

ESTIMATED TONNAGE: Not enough exploratory work has as yet been done to warrant an estimate, at this time, regarding positive tonnage of vermiculite material in the deposit. However, a discussion of possible tonnage thereof may be of interest.

Cuts Nos. 1 to 5 partially expose on the surface the zone for around 400 feet in length and 250 feet in width. Allowing the zone to contain the same material for 100 feet North of Cut No. 5 and 100 feet South of Cut No. 1, we will assume the length of the zone, so far prospected here, at 600 feet by 250 feet wide by 100 feet deep. Hence, the estimated tonnage of this block of vermiculite zone material would approximate: 600' X 250' X 100', divided by 15, equals 1,000,000 tons.

But the above estimate does not take into consideration that the said zone has also been exposed by the Columbus Cut, in the bottom of Columbus Wash, around 1,000 feet South of Cut No. 5.

Neither does this estimate take into consideration the fact that the zone runs on to the North and on to the South of all zone outcroppings inspected by me.

Neither does it take into consideration that the zone is evidently deep-seated, which is attested by the fact that the said vermiculite zone has also been opened by Columbus Cut, in the bottom of Columbus Wash, at an elevation 200 feet deeper than Cut No. 5, as above set forth.

Taking all the above factors into consideration, this important deposit, without any question of doubt, contains a vast amount of vermiculite material running into millions of tons.

REMARKS: The only questions, as yet, to be answered are these:

1. What percentage of vermiculite does the zone material contain ?
2. Can an economical process be worked out to isolate the vermiculite from worthless gangue material ?
3. When and if this quality of vermiculite can be so isolated and then processed by heating, etc., will it then prove to be of commercial value ?
4. If so, can large amounts of processed vermiculite be marketed, from the point where this property is located in Arizona, at a profit ?

These questions I will leave to others to answer.



Elgin B. Holt, Field Engineer.

*Pending*

30 July 1940

Judge L. V. Root,  
Kingman, Arizona.

Dear Judge Root:

I have received a letter from Mr. Charles W. Garland, 412 West Sixth Street, Los Angeles, California, in which he states that he has an inquiry for 300 tons of commercial grade vermiculite per month.

I have referred Mr. Garland to you, and I am holding up a float item on this inquiry until I know whether or not you can take care of it.

I am still anxious to get a feature story such as we have been carrying in the last three issues of Pay Dirt showing the accomplishments of the department. In the next issue I should like to include your vermiculite if it has reached the stage where we can use that publicity.

Please let me know as quickly as possible whether or not you would permit us to write such an article, or if you wish to prepare it yourself, we should be glad to publish it in the next issue of Pay Dirt, which goes to press about August 12.

With best wishes, I am

Yours very truly,

J. S. Coupal  
Director

JSC-jrf

31 July 1940

Mr. Charles W. Garland,  
412 West Sixth Street,  
Los Angeles, California.

Dear Mr. Garland:

In reply to your letter of July 27, I will state that I know of only one producer of vermiculite, and I should suggest that you contact Mr. L. V. Root, Kingman, Arizona. He has uncovered a large deposit, and may be in a position to supply you with the tonnage required.

We have several mica properties on our list, but none of them are producing, and if you are looking for production and not for properties, I regret to say that I know of none that are available.

If you will let me know the price you can pay for scrap mica, I shall be glad to take the matter up with some of the mine owners and see if they are willing to go to the expense of sending samples and making a trial shipment.

We have constant inquiries for a market on manganese. Can you give me the price being paid for 45 per cent manganese. f. o. b. Pacific ports?

Yours very truly,

J. S. COUPAL  
Director

JSC-jrf

CHARLES W. GARLAND COMPANY  
MINES - ORES AND CONCENTRATES  
412 WEST SIXTH STREET  
LOS ANGELES

July 27, 1940

Mr. J. S. Coupal  
Director of Mineral Research  
Phoenix, Arizona

Dear Mr. Coupal:

We have an inquiry for 300 tons of commercial grade Vermiculite, per month. Do you know any producers in Arizona who would be likely to furnish this?

We also have inquiries for Scrap Mica.

We will be glad to have your early reply.

Very truly yours

CHARLES W. GARLAND COMPANY

By

*Charles W. Garland*

CWG:H





# Mohave County Miner

Quality Printing :: Advertising :: Office Supplies

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Covers Mohave County Like Its Well Known Sunshine

M. O. Ream, Publisher

Published Every Thursday at KINGMAN, ARIZONA

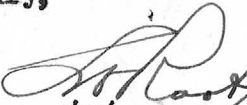
August 2, 1940.

Mr. J. S. Coupal,  
Phoenix, Arizona.

Dear Mr. Coupal:-

I enclose clipping from yesterday's MINER which contains a brief article on the vermiculite operations near here. You can add to this what you may desire to make it take form for your use. The discovery was made by myself some years ago and I had it tested by an eastern firm. Mr. Butler, who was with the Vermiculite Company of America for a number of years spent nearly a year prospecting the western Rockies for a deposit but was without success until he reached Kingman. He came to Kingman because Montie Butler had directed him to contact Mr. Henry Shuck who had at some time submitted a sample of vermiculite to the bureau of mines. The Shuck material was not of good quality and Mr. Butler was filling his car with gas preparatory to leaving when the boy waiting on him asked "If he were a mining man?" Mr. Butler replied "Yes" and upon further questions stated he was looking for vermiculite. The boy said: "I don't know what vermiculite is but if you will go and see Judge Root he will tell you whether there is any in Mohave county." Mr. Butler was at first disposed to drive on but then on second thought, he drove a couple of blocks to my office and asked me if I knew where there was any vermiculite. I had some in my desk which I showed him and without further comment he wanted to know where it came from and I told him that "If he had a car I would show it to him in thirty minutes." He said, "All right, I'll pay you for your time". I piloted him to the deposit. He was interested. He put up the money for me to do some further prospecting. I got my prospecting partner, Mr. Montie Haman, and he went into the field where I thought there should be more of it with the result that Mr. Butler now has several hundred acres of ground on which Mr. Holt states there is an unlimited supply of the material. Mr. Butler pronounces the deposit the largest and best of any known in the United States and he says that he has visited every commercial deposit in the nation. These are the truths about the finding of the deposit and just how you can turn this into department columns will be up to you. Your department has been very good in rendering contacts since the discovery, however, and of this situation I am very appreciative.

Yours very truly,

  
C. V. ROOT.

A G R E E M E N T

AGREEMENT MADE this 24 day of May, 1940, between C. H. BUTLER of 1560 1/2 Fairpark Avenue, Eagle Rock, Los Angeles County, California, as a party of the first part, and MONTIE HARMAN of Kingman, Mohave County, Arizona, as a party of the second part, W I T N E S S E T H:

WHEREAS, the above named first party has secured lease upon the Southwest quarter of the Northwest quarter of Section 35, and the West half of the Southwest quarter of

Section 35, Township 21 North, Range 15 West, G. & S.R.B. & M., and, also, upon the East half of Section 3, Township 20 North, Range 15 West, of the same range and meridia. all being situate in Mohave County, Arizona, and generally described as in the northerly portion of the Wallapai Mountains in the Maynard Mining District, and,

WHEREAS, such leases and the location of the mineral deposits upon said described property was so secured by first party through the effort, knowledge and service of second party, without which first party would have been unable to secure this valuable property, and,

WHEREAS, first party is desirous of paying second party for such service in a manner commensurate with the service rendered.

NOW, THEREFORE, first party agrees with second party that he will pay to said second party for each ton of mineral or material taken from said deposit, which may be used or sold, a royalty of twenty-five cents (25¢) for each and every ton so removed and used or sold and such royalty shall be paid upon a basis of the shipping weight of the material or mineral so removed and parties understand that said basis is the shipping weight of the actual material as loaded aboard cars or trucks at the mine or property or at the shipping point where scales shall be available to determine such shipping weight.

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The provisions and stipulations herein contained shall extend to and bind upon the heirs, executors, administrators and assigns of respective parties hereto.

IN WITNESS WHEREOF respective parties have placed their signatures hereto all on the day and year first above written.

C. H. Butler  
C. H. Butler, First Party  
Montie Harman  
Montie Harman, Second Party

STATE OF ARIZONA, }  
COUNTY OF MOHAVE } ss

The above and foregoing agreement acknowledged before me this 25 day of May, 1940, by C. H. BUTLER AND MONTIE HARMAN, parties to said agreement.

(Notarial Seal)

J. H. Smith  
Notary Public

My commission expires:

May 1, 1942.

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May 31 A.D. 1940 at 4 o'clock P.M. in  
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#17813 Mary E. Carrow  
County Recorder

Copy furnished to  
for  
7-5-40

Vermiculite  
Lode Mine  
(file)  
Mohave  
County

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C. H. Butler

C. H. Butler Assignor

SIGNED IN THE PRESENCE OF

\_\_\_\_\_  
\_\_\_\_\_

STATE OF CALIFORNIA, )  
COUNTY OF LOS ANGELES.) ss.

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Notary Public in and for the County of

Los Angeles, State of California.

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VERMICULITE

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Page #2

Elgin B. Holt.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine VERMICULITE LODGE

Date April 5, 1940.

District Maynard, Mohave County.

Engineer Elgin B. Holt,  
P. O. Box 288,  
Kingman, Arizona.

Subject: Vermiculite.

SYNOPSIS REPORT

OWNERS: ~~L. V. Root~~ and Montie Harman, Kingman, Arizona.

*Mrs. Eccie Jones  
Box 686, Kingman*

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EXAMINATION: Property was inspected by me, in company with L. V. Root and Montie Harman. On our arrival, we found a number of men trenching the huge outcrop, in which the vermiculite occurs, for sampling purposes.

VERMICULITE: The vermiculite group, per Dana, includes a number of micaceous minerals, all hydrated silicates, partly related to the chlorites, but varying somewhat widely in composition. They are alteration products chiefly of the micas, biotite, phlogopite, etc. Connected with the loss of water upon ignition is the physical character of exfoliation; the material slowly opening out when heated, into long worm-like threads, giving the name to the group from the Latin vermiculari, to breed worms. Sintered vermiculite has important, varied and growing uses in industry, which, however, will not be discussed in this report.

GEOLOGY: The vermiculite, of this deposit, is found in a zone of granitic rock complex, having a width roughly of 250 feet; and striking N. 10 deg. East. This zone is traceable, according to Mr. Harman, about 6,000 feet; but I did not have the time at my disposal to check his estimate. However, I walked over the outcrop for about 1,600 feet, from Columbus Wash on the South to near the top of a ridge on the North, and found that it continued North and South of the points mentioned.

DEVELOPMENT WORK: Consists of 5 open cuts, recently excavated partly across the zone, from 60 to 85 feet in length and around 2 feet deep; also one test pit 10 feet deep. These workings are located on zone near the top of the ridge referred to, the cuts being spaced about 100 feet apart and are numbered from 1 to 5, from South to North; Cut No. 5 being situated at an elevation above sea level, per aneroid reading, of 5,775 feet and around 1,000 feet North of the bottom of Columbus Wash, where the vermiculite zone is also found massively exposed and on which the workmen were digging a cut, designated by me for future reference, "Columbus Cut", the elevation of which is 5,575 feet, or 200 feet lower than Cut No. 5.

All the openings referred to, expose vermiculite material of even texture, the percentage and quality of which was not available at the time of my visit; but I was informed by Mr. Root that G. H. Butler, a fabricator of vermiculite products, recently examined property and estimated that the entire zone material, so far uncovered, will average from 70 to 98% vermiculite. Personally, I had no way of estimating percentage; but Mr. Harman made a great number of blow torch tests for me from all the cuts, which caused the vermiculite particles to curl up and swell, worm-like, several times their original size, in process of exfoliation. These tests also showed a surprisingly small amount of gangue material other than vermiculite.

ESTIMATED TONNAGE: Not enough exploratory work has as yet been done to warrant an estimate, at this time, regarding positive tonnage of vermiculite material in the deposit. However, a discussion of possible tonnage thereof may be of interest.

Cuts Nos. 1 to 5 partially expose on the surface the zone for around 400 feet in length and 250 feet in width. Allowing the zone to contain the same material for 100 feet North of Cut No. 5 and 100 feet South of Cut No. 1, we will assume the length of the zone, so far prospected here, at 600 feet by 250 feet wide by 100 feet deep. Hence, the estimated tonnage of this block of vermiculite zone material would approximate: 600' X 250' X 100', divided by 15, equals 1,000,000 tons.

But the above estimate does not take into consideration that the said zone has also been exposed by the Columbus Cut, in the bottom of Columbus Wash, around 1,000 feet South of Cut No. 5.

Neither does this estimate take into consideration the fact that the zone runs on to the North and on to the South of all zone outcroppings inspected by me.

Neither does it take into consideration that the zone is evidently deep-seated, which is attested by the fact that the said vermiculite zone has also been opened by Columbus Cut, in the bottom of Columbus Wash, at an elevation 200 feet deeper than Cut No. 5, as above set forth.

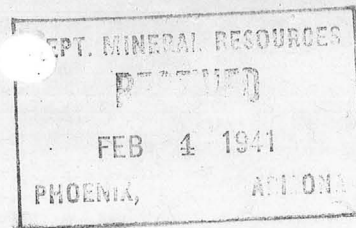
Taking all the above factors into consideration, this important deposit, without any question of doubt, contains a vast amount of vermiculite material running into millions of tons.

REMARKS: The only questions, as yet, to be answered are these:

1. What percentage of vermiculite does the zone material contain ?
2. Can an economical process be worked out to isolate the vermiculite from worthless gangue material ?
3. When and if this quality of vermiculite can be so isolated and then processed by heating, etc., will it then prove to be of commercial value ?
4. If so, can large amounts of processed vermiculite be marketed, from the point where this property is located in Arizona, at a profit ?

These questions I will leave to others to answer.

  
Elgin B. Holt, Field Engineer.



February 3, 1941

P. O. Box 288,  
Kingman, Ariz.

Messrs. C. H. Butler & E. E. Coate,  
Rosslyn Hotel, 111 W. 5th St.,  
Los Angeles, Calif.

Gentlemen:

Referring to our telephone conversation of this date concerning the vermiculite property, near Kingman, I note you are taking steps to apply for a \$75,000 loan from the R. F. C., to be used in exploiting this property; and that you wanted a report from me re- the same.

I am herewith enclosing the report asked for, outlining my opinion as to the importance of this deposit. I hope it will be of some assistance to you in raising money.

But as to the application for an R. F. C. loan, I am afraid such a loan would be turned down, for the following reasons:

I have before me CIRCULAR NO. 14 of the RECONSTRUCTION FINANCE CORPORATION, giving information regarding mining loans, in which it is stated on page 5:

"Security may consist of a mortgage on mining property, or it may consist of a lien on property, real or personal, entirely independent of the mining project. If the applicant does not own the mining property, a mortgage by the owner may be required; assignments of leases or options will be required. ~~XXXXXXXXXXXXXXXXXXXX~~".

In other words, as the Santa Fe R. R. owns the lands in question, on which the vermiculite is located, this R. R. Company would have to join in the transaction and sign a mortgage in favor of R. F. C.

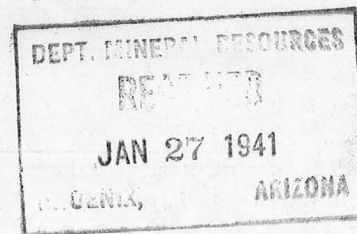
Kindly be advised that the said R. R. Company does not sell mineral-bearing lands. Hence, I would say it follows that the Santa Fe people would also refuse to sign any mortgage by which they might forfeit such lands. The only possible solution, and this is a thin chance indeed, is that the Santa Fe might be induced to grant a 99 years lease, provided such an arrangement would meet R. F. C. approval. That this lease be put up as security for the amount of loan required.

Very sincerely yours,

Elgin B. Holt,  
Field Engineer.

cc - L. V. Root  
J. S. Coupal





January 25, 1941

VERMICULITE

P. O. Box 288,  
Kingman, Ariz.

The Merrill Company,  
Engineers,  
343 Sansome St.,  
San Francisco, Calif.

Attention: Mr. L. A. Smith

Gentlemen:

Reference is made to your letter of January 16th, asking for information regarding the vermiculite deposit near Kingman, Arizona.

I note you are dealing with Mr. C. H. Butler and that he quotes me as saying work done indicates the presence of over 1,000,000 tons of vermiculite.

In reply, the above statement is correct, as there is well over 1,000,000 tons of vermiculite indicated in this deposit, as you will see by the following description of this property:

The dimensions of this body of vermiculite is very extensive. It has been traced on the surface for over 1.5 miles in a north-south direction, its width ranging from a few hundred feet to 2,000 feet. In places the deposit is covered by from 5 to 10 feet of cap rock and soil. Also the entire mass of this material, which is likely a huge batholith, is intruded by a number of pegmatite dikes, of narrow widths. Between these, however, are workable zones of good looking vermiculite, from 80 to 100 feet wide, most of which can be quarried, after blasting, and excavated by power shovels.

The depth of the deposit has as yet not been determined, in that only shallow trenching has been done, aside from the main quarry opened by Mr. Butler above his crushing and screening plant; but as good quality vermiculite is found along the zone on tops of high ridges and in the bottoms of deep canyons, which it crosses, the depth of the material is probably in excess of 500 feet. Again, there are huge "islands" of good looking material, which I saw tested by a blow torch on the ground, along the zone where pits can be opened; hence the tonnage, or probable tonnage indicated, runs up into the pictures.

In conclusion, I am pleased to recommend this property for your serious consideration.

cc - L. V. Root  
J. S. Coupal

Sincerely yours,  
Elgin B. Holt,  
Field Engineer.

DEPT. MINERAL RESOURCES  
RECEIVED  
OCT 17 1940  
PHOENIX, ARIZONA

October 15, 1940.

✓ Box 789

Judge L. V. Root,  
Kingman, Arizona.

Dear Judge Root:

From our publicity Johns-Manville Company, San Francisco office is interested in finding out more about the Kingman vermiculite and getting samples. Their man in Phoenix, Dusty Miller, just called me up and asked where he could write for samples, and I told him to write to you. I am writing this to let you know just who it is that is making this inquiry, as a tie up with Johns-Manville would be extremely valuable.

With kindest personal regards, I am

Yours very truly,

State Secretary  
ASMOA.

CFW-AM

*Card*

October 1, 1940

C. H. Butler  
c/o L. V. Root  
Kingman, Arizona

Dear Mr. Butler:

I am enclosing a copy of a letter I have just received from H. P. Laslett on an inquiry for 10,000 tons of vermiculite per year, and also a copy of my reply to Mr. Laslett.

I do hope that you can supply this ore and that you will advise me when and if negotiations are completed on this inquiry.

Yours very truly,

J. S. Coupal  
Director

JSC:mmm  
Enclosures

12 September 1940

Mr. C. H. Butler,  
Micro-Cell Mines,  
Kingman, Arizona.

Dear Mr. Butler:

I thank you for your letter of September 7 and your expression of appreciation of the work done by the Department of Mineral Resources.

Should we receive further inquiries for vermiculite, we shall be glad to forward them to you.

With kindest personal regards, I am

Yours very truly,

J. S. Coupal  
Director

JSC-jrf

P. S.

I am enclosing herewith a blank mine owners report, which I should suggest that you fill out and return so that information may be available in case we have inquiries for vermiculite.

J.S.C.

Micro-Cell Mines,  
Kingman, Arizona.  
Sept. 7, 1940.

Dr. J. S. Coupal,  
Director, Bureau of Mineral Resources,  
Phoenix, Arizona.  
~~Tucson~~

Dear Dr. Coupal: -

Just a note to inform you that we are about to begin production on our Vermiculite properties here and to express my sincere appreciation for your kind assistance and cooperation in the matter of engineering reports, freight rates, publicity, etc.

Needless to say, after having mining experience in other States, especially Colorado, it is a pleasure to operate in Arizona, where the development work is blessed with the helpful efforts of a department such as you maintain.

In the advent your department receives inquiries regarding Vermiculite ore, reference to us would be appreciated or we should be glad to contact them direct on receipt of their address.

Looking forward to the pleasure of meeting you again, I remain, with warm personal regards,

Sincerely yours,



C. H. Butler.

C  
O  
P  
Y

August 2, 1940

Mr. J. S. Coupal,  
Phoenix, Arizona.

Dear Mr. Coupal:-

I enclose clippings from yesterday's MINER which contains a brief article on the vermiculite operations near here. You can add to this what you may desire to make it fake form for your use. The discovery was made by myself some years ago and I had it tested by an eastern firm. Mr. Butler, who was with the Vermiculite Company of America for a number of years spent nearly a year prospecting the western Rockies for a deposit but was without success until he reached Kingman. He came to Kingman because Montie Butler had directed him to contact Mr. Henry Shuck who had at some time submitted a sample of vermiculite to the bureau of mines. The Shuck material was not of good quality and Mr. Butler was filling his car with gas preparatory to leaving when the boy waiting on him asked "If he were a mining man"? Mr. Butler replied "Yes" and upon further questions stated he was looking for vermiculite. The boy said: "I don't know what vermiculite is but if you will go and see Judge Root he will tell you where there is any in Mohave County". Mr. Butler was at first disposed to drive on but then on second thought, he drove a couple of blocks to my office and asked me if I knew where there was any vermiculite. I had some in my desk which I showed him and without further comment he wanted to know where it came from and I told him that "if he had a car I would show it to him in thirty minutes." He said, "All right, I'll pay you for your time." I piloted him to the deposit. He was interested. He put up the money for me to do some further prospecting. I got my prospecting partner, Mr. Montie Harman, and he went into the field where I thought there should be more of it with the result that Mr. Butler now has several hundred acres of ground on which Mr. Holt states there is an unlimited supply of the material. Mr. Butler pronounces the deposit the largest and best of any known in the United States and he says that he has visited every commercial deposit in the nation. There are the truths about the finding of the deposit and just how you can turn this into department columns will be up to you. Your department has been very good in rendering contracts since the discovery, however, and of this situation I am very appreciative.

Yours very truly,

/sd/ L. V. Root  
L. V. ROOT.

Copy sent  
to E. J. W.

26 June 1940

Mr. H. R. Goodrich,  
Director of Research,  
2901 Los Feliz Boulevard,  
Los Angeles, California.

Dear Mr. Goodrich:

Complying with request contained in your letter of June 22, I am enclosing herewith a copy of field engineers report made by Mr. Elgin B. Holt covering the Vermiculite Lode Mine owned by Judge L. V. Root of Kingman, Arizona.

Trusting that this information will give you the information desired, I am

Yours very truly,

J. S. Coupal  
Director

JSC-jrf

CC-L.V.Root

FOUNDED 1875

# GLADDING, McBEAN & Co.

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SPOKANE

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LOS ANGELES

TEN PLANTS  
CALIFORNIA  
OREGON  
WASHINGTON

CABLE ADDRESS  
MACBEAN, LOS ANGELES

22 June 1940.

Mr. J.S. Coupal, Director,  
State Bureau of Mineral Resources,  
Capital Building,  
Phoenix, Arizona.

Dear Mr. Coupal:

A few days ago I called on Judge L.V. Root at Kingman, Arizona, to examine the vermiculite ore deposit that occurs 12 to 14 miles out of Kingman. Unfortunately Judge Root was editing his paper and was not able to direct us to the property, nor were we able to find anyone in town that knew the directions to the deposit. Judge Root, however, told me that your Department had written a report on this deposit and we would appreciate it very much if you would kindly send us a copy. If there is any charge for this service please advise and we shall be pleased to pay for the report.

Thanking you, we remain,

Very truly yours,

GLADDING, McBean & Co.

*H. R. Goodrich*  
H. R. Goodrich,  
Director of Research.

HRG-hp

*Account*



DEPARTMENT OF MINERAL RESOURCES  
State of Arizona  
FIELD ENGINEERS REPORT

Mine: VERMICULITE MINE Date: Feb. 3, 1941.  
District: Maynard Dist., Mohave County Engineer: Elgin B. Holt.  
Subject:

B R I E F S T A T E M E N T

**OWNER:** This deposit is situated on lands belonging to the A. T. & S. F. R. R. Company. During 1940 the lands mentioned were leased to L. V. Root and Montie Harman of Kingman, Arizona, who subleased to C. H. Butler.

**LOCATION:** Property is located 15 miles south-east of Kingman and is reached by a county maintained road, over which heavy loads can be hauled over a down-hill grade to a railroad station five or six miles east of Kingman.

**EXAMINATION:** This ground was inspected by me several times during the past year.

**VERMICULITE:** The vermiculite group, per Dana, includes a number of micaceous minerals, all hydrated silicates, partly related to the chlorites, but varying somewhat widely in composition. They are alteration products chiefly of the micas, biotite, phlogopite, etc. Connected with the loss of water upon ignition is the physical character of exfoliation; the material slowly opening out when heated into long worm-like threads, giving the name to the group from the Latin word vermiculari, to breed worms.

**USES:** "The usefulness of vermiculite", per Eldred D. Wilson of the Arizona Bureau of Mines, "depends upon its response to heat treatment, whereby the crude mineral separates into very thin flakes of silvery to golden color. This flaky product, commonly known as 'Zonolite' or 'Tung Ash', is an effective fire-proof insulator against heat, cold and sound; for such purposes it may be packed loose or mixed as an aggregate in various plasters, bricks, cement, composition roofing, and high temperature gaskets. It is also used in ornamental stucco and wall paper. It is reported to be highly effective as an ingredient for lubricating oils and greases and for paints."

**POSSIBLE TONNAGE:** The dimensions of this body of vermiculite is very extensive - amazing, in fact. It has been traced on the surface for over 1.5 miles in a north-south direction, its width ranging from hundreds of feet to 2,000 feet. In places the deposit is covered by from 10 to 12 feet of cap rock and soil. Also the entire mass of this material, which is likely a huge batholyth, is intruded by pegmatite dikes, of narrow widths. Between these, however, are workable zones of excellent quality vermiculite, from 80 to 100 feet wide, most of which can be quarried after blasting, and excavated by power shovels.

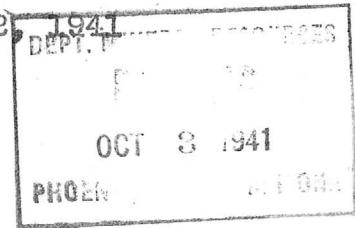
The depth of the deposit has as yet not been determined, as only shallow trenching has been done, aside from the main quarry opened by Mr. Butler above his pilot crushing and screening plant; but as good quality vermiculite is found along the zone on tops of high ridges and in the bottoms of deep intervening canyons, the depth of the material is probably in excess of 500 feet. Again, there are huge "islands" of good looking vermiculite along the zone where pits can be opened. Hence, it is believed this deposit would readily yield in excess of 50,000,000 tons of vermiculite material, when and if developed in a large way.

(Signed) E. B. Holt  
Elgin B. Holt, Field Engineer.

# VERMICULITE INSULATIONS COMPANY

4431 EAST SHEILA  
LOS ANGELES

October 2, 1941



AIR MAIL  
SPECIAL DELIVERY

Department of Mineral Resources  
STATE OF ARIZONA  
Capitol Building  
Phoenix, Arizona

Attention Mr J S Coupal, Director

Dear Mr Coupal:

It is necessary that we prepare a brief of our development and properties in Kingman for submission to various Procurement Departments of Government defense projects, and one of the important features is that of the Engineer's reports on the Kingman property.

Will you please cause copies of Mr Elgin P Holt's reports as of August 5, 1940 and February 3, 1941, to be made and properly attested as being true copies of the originals on file in your office, and forward to me at the above address as quickly as you can find it conveniently possible.

You will be glad to know that we are within a matter of days of completing our expanding plant in Los Angeles, and that shipments will be made from the properties in the very near future.

Thanking you for anything you may do to expedite this matter, and with warm personal regards, I remain,

Yours very truly,

VERMICULITE INSULATIONS COMPANY

By

Clarence H Butler.

CHB  
cwb

OK

Dear Sir:

Please attach this copy to my report on the "VERMICULITE LODE" deposit. This will show present ownership of the lease on this property from the Santa Fe Pacific Railroad Co.

Thanks.

Best,

DEPT. MINERAL RESOURCES  
RECEIVED  
AUG 4 1944  
PHOENIX, ARIZONA

August 3, 1944

Subject: VERMICULITE

P. O. Box 188,  
Kingman, Arizona.

Mr. M. H. Kerla,  
2312 Ruskin Ave.,  
Baltimore, Md.

Dear Mr. Kerla:

A Mr. MacDonald called at our Phoenix office and requested information on the vermiculite deposit near Kingman, stating you are interested and a substantial non-metallic dealer, etc.

As I have been instructed by our Director, Mr. Chas. H. Dunning, to write you about the said deposit, kindly be advised as follows:

The deposit was discovered by L. V. Root (deceased) and Montie Harmon, of Kingman, during 1939. The following year it passed into the hands of C. H. Butler. As the main deposit lies within lands belonging to the Santa Fe Pacific Railroad Co., Butler secured a lease from that company on about 480 acres of land. He formed a company and erected a small expanding plant in Los Angeles. He ran into financial and legal difficulties in 1942 and finally dropped out of the picture. Later on the Santa Fe Pacific Railroad Company cancelled the Butler lease and on July 18, 1944, this company executed another lease on the same ground to Mrs. Eccie R. Jones (daughter of L. V. Root), 686, Kingman, Arizona. Any correspondence about this deposit should be directed to her.

I am herewith enclosing a preliminary report by me on this property. You will note the date of this report is April 5, 1940. However, it gives a fair description of the deposit. While very little work has been done, there is a very large tonnage indicated. As to its quality, I can give you very little information, as I am not a vermiculite expert. Butler pronounced it to be of good quality; so you would have to examine it yourself to determine this point. However, I am sending you by Parcel Post a sample of vermiculite which I secured at the property yesterday - surface material, for your consideration.

Very sincerely yours,

cc - Chas. H. Dunning  
Mrs. Eccie R. Jones

Elgin B. Holt,  
Field Engineer.

6 October 1941

Mr. Clarence H. Butler,  
Vermiculite Insulations Company,  
4431 East Sheila,  
Los Angeles, California.

My dear Mr. Butler:

Complying with request contained in your letter of October 2, I am enclosing herewith certified copies of Field Engineers Reports made by Mr. Elgin B. Holt on the Vermiculite Mine in Mohave County, which I trust will serve your purpose.

With kindest personal regards, I am

Yours very truly,

Charles F. Willis  
Chairman, Board of Governors

CFWojrf  
encls.

(Do not write  
in this space)(Wrap each specimen separately, or place it in a substantial  
bag, by itself, with a number attached, identical with the  
number on this card.)This specimen now in the  
ADMR Museum - see K number.

Cabinet \_\_\_\_\_

No. \_\_\_\_\_

Specimen No. 19, collected by \_\_\_\_\_  
Field EngineerName of ore Vermiculite <sup>100%</sup> Operator \_\_\_\_\_Minerals contained \_\_\_\_\_ Mine active or inactive Active

If inactive, when operated \_\_\_\_\_

Gangue \_\_\_\_\_ Specimen presented by Monte HarmonDepth at which taken Near Surface Date Aug 22, 1940Approximate mineral content (in terms of  
average per ton) \_\_\_\_\_ Notes (Any general information regarding  
the history of the property.) \_\_\_\_\_Name of mine or claim \_\_\_\_\_  
This Property was recently  
discovered, AND ISGroup \_\_\_\_\_  
now being worked. A MILLDistrict Hualapai \_\_\_\_\_  
will be built near KingmanLocation (distance and direction by high-  
way from what town 10 MI S.E. of \_\_\_\_\_  
for the reduction of the Ore.Owner of property Kingman. \_\_\_\_\_  
If more space is desired for notes, use  
other side.Root-Harmon2 lb 4 oz 12.0 x 11.0 x 9.0 cm

Mi-2

K112

*P.L.*  
(Do not write  
in this space)

(Wrap each specimen separately, or place it in a substantial  
bag, by itself, with a number attached, identical with the  
number on this card.)

Ore \_\_\_\_\_

Cabinet \_\_\_\_\_

No. \_\_\_\_\_

Specimen No. 9, collected by E. B. Holt  
Field Engineer

Name of ore VermiculiteOperator Not operating

Minerals contained \_\_\_\_\_

Mine active or inactive \_\_\_\_\_

Hydrous mica

If inactive, when operated \_\_\_\_\_

Gangue GraniteSpecimen presented by L. V. RootDepth at which taken Surface

Date \_\_\_\_\_

Approximate mineral content (in terms of  
average per ton) \_\_\_\_\_Notes (Any general information regarding  
the history of the property.) \_\_\_\_\_Mica & Granite

Name of mine or claim \_\_\_\_\_

Group Vermiculite LodeDistrict Maynard-Mohave CoLocation (distance and direction by high-  
way from what town) 17 m. SE. of KingmanOwner of property L. V. Root &If more space is desired for notes, use  
other side.M. Harman12.0 x 8.0 x 6.5 cm

This specimen is now in the ADMR Museum - see K number.