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E. N. PENNEBAKER
CONSULTING GEOLOGIST
P. O. BOX 817
SCOTTSDALE, ARIZONA

April 23, 1958

Mr. E. E. Brown
D. C. Ranch Company
P. O. Box 386
Scottsdale, Arizona

Dear Mr. Brown:

On April 11, 1958, I inspected certain sericite showings with you. These exposures constitute the location work for several lode mining claims recently located, these being:

On the north

D.C. 4
D.C. 5
D.C. 6

On the south

Rancho
Rancho No. 1
Rancho No. 3
Rancho No. 4

The location work on the above claims consists of deep bulldozer cuts running east-west (across the strike) of the inclined schist layers that contain the sericite. These rocks are white and bleached in appearance with occasional and erratic staining by iron oxide.

A bulk sample earlier taken from a shallow cut on Rancho claim and submitted to Mr. Whipple for testing was orally stated by him to contain approximately 20% sericite, 20% clay, and 60% "silica". This information was given to you and passed on to me, with the conclusion that the material

was not suitable for the commercial purposes desired by Mr. Whipple.

The bulldozer cuts recently inspected show that the sericite rock becomes grayer and harder at a depth of about 10 feet and that in places it carries thin ribs of fine-textured quartzite. In other words, the rock exposed at the surface is whiter, and it appears that this added whiteness may be caused by weathering.

Inspection of the bottoms of the trenches reveals that the sericite goes down as a "primary" mineral, but, judged by inspection alone, there is no reason to suspect that it is any richer than the 20% rock turned down by Mr. Whipple as being unsuitable for his purposes. It is suspected that some of the clay has been developed by weathering, that this is responsible for the near-surface whitening, and that this "secondary" clay dies out at moderate depth.

Of the cuts examined, the best quality sericite rock appeared to be in the ones on Rancho and Rancho No. 3 claims. Should you care to pursue the matter further, additional samples from these cuts could be submitted to Mr. Whipple.

There are very limited areas where the quality of the sericite-bearing rock is better than the average, but the tonnage of such material is relatively small and the cost of its extraction would be very high.

Of the material running around 20% (according to Mr. Whipple) there is a great tonnage, but there appears to be no market for it. This material is covered by the 11 lode mining

claims recently located, and D. C. Ranch Company dominates the situation as regards outside claim stakers.

There are other zones of weak sericite on nearby patented ranch lands open to mineral location. However, in view of the lack of market for the better sericite rock on the D. C. Ranch Company claims, any claims staked on these weaker showings could probably be challenged as being on land that is not valuable for its contained minerals.

Yours very truly

E. N. Pennebaker

ENP:mc

58

E. N. PENNEBAKER
CONSULTING GEOLOGIST
P. O. BOX 817
SCOTTSDALE, ARIZONA

April 23, 1958

Mr. E. E. Brown
D. C. Ranch Company
P. O. Box 386
Scottsdale, Arizona

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Yours very truly

E. N. Pennebaker

ENP:mc

58

EXAMINATION OF SERICITE CLAIMS OF E. E. BROWN -

SECT. 17, R5E; T4N

PINNACLE PEAK AREA

MARICOPA CO.

ARIZONA

DEC - 5 - 1957

Loc. Cut "D.C # 3

N 20 E - 45 dip SE

Gray sericitic slate

Brown weathering on bedding planes

Loc. Cut DC # 2

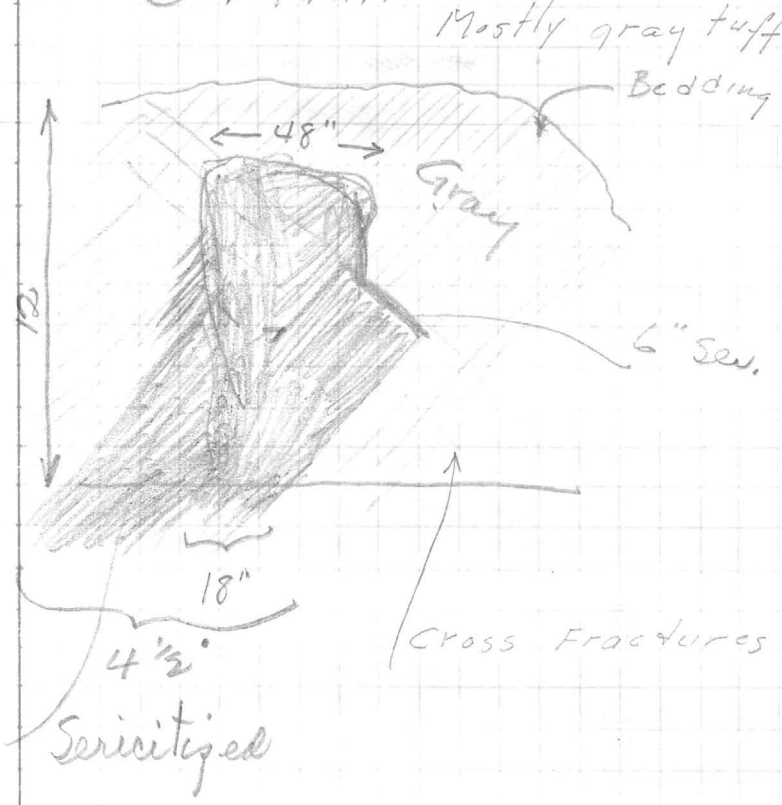
Cut in gray slate with surficial layer of caliche 2'-3' thick above.

N 30 E - 48° dip SE into hill

D.C. - Claim

Loc Shaft.

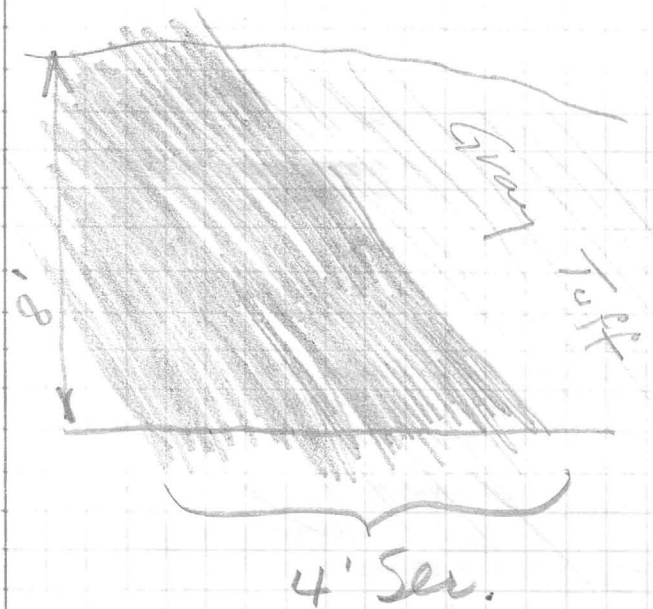
So. Wall



D.C. Claim - Loc. Shaft

No. Wall

Beds dip 40° SE



CLAIM DC # 1

N45E Dip 35°SE

Loc Cut.

Brown stains on parting planes. Schist dark Some mica. Grains of garnet. A few spots are sericitized.

D.C. 5 Claim

Trench shows 10 ft of better white stubs

Trench shows granite & is only partly replaced.

D.C- 6 Claim

Not well exposed.

Only a spot or two looks fairly good.

D-C 4

±15' pretty fair but only partly replaced

Gets grapey at depth

±3' looks pretty good

Rancho 4 ✓

Looks only fair

Partly replaced

Fence - gr. glyte rib

Rancho 3 /

Best so far, but

apparently grapes at

depth

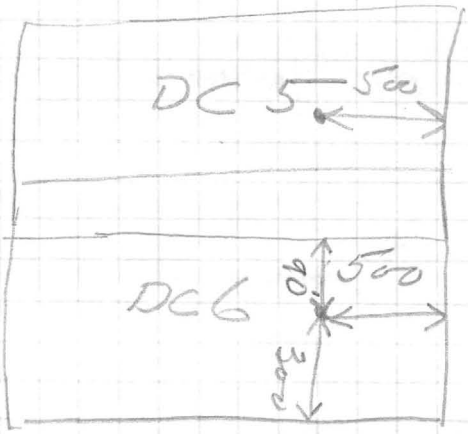
RANCHO ✓

Locally looks pretty good. but again gets gouge at depth.

RANCHO #1 ✓

Not too well exposed. Streaky & iron stained - due [illegible]

Best showings
on Rawlins & Rawlins #3


DC 5
500
DC 6
20
500
300

Trend N15E to
saddle, ±400' northerly

West edge is 300'
East of Sericite Body Fw.

SERICITE DEPOSITS
ON D.C. RANCH

March 1958

E. N. PENNEBAKER
CONSULTING GEOLOGIST
SCOTTSDALE, ARIZONA

E.N.C. Copy

E. N. PENNEBAKER
CONSULTING GEOLOGIST
P. O. BOX 817
SCOTTSDALE, ARIZONA

December 7, 1957

Mr. E. E. Brown
P.O. Box 386
Scottsdale, Arizona

Dear Sir:

On December 5, 1957, I made a brief examination of the "D.C." group of four contiguous unpatented lode mining claims. These claims are situated about 15 miles north of Scottsdale, Maricopa County, Arizona, in Sec. 17; T4N; R5E. Their chief interest is due to the occurrence of a small body of fine-textured, compact sericite mica exposed in a shallow shaft on the D.C. claim.

COPY

Sericite is the very fine textured variety of muscovite mica. This is a silicate of aluminum and potassium with a chemical formula of $H_2KAl_3(SiO_4)_3$.

Muscovite occurs in larger sheets and is used as insulating material in electrical apparatus and as non-inflamable transparent material. Sericite is a finely divided scaly muscovite united in fibrous aggregates. The latter is used as a non-conductor of heat (as a fireproofing material); mixed with oil as a lubricant; as a filler in paints, roofing, wall paper, and rubber; and as foundry facing material. A small production of processed sericite now comes from central Arizona.

The area of present interest is near the north end of the McDowell Mountains. Here the bedrock is made up of schists and slates that strike about N20E and dip southerly into the north end of a prominent hill. The claims are located on its lower slope.

These schists and slates are mostly dark gray in color and show a layered structure. Originally they were an interbedded group of shales, lava flows, and volcanic ash now much altered and changed due to their great age, compaction, and structural history. All of these rocks contain a certain amount of sericite, but only where there has been an excessive development of younger sericite do these beds have any possible commercial interest.

Cutting these schists and slates are veinlets and irregular tabular bodies of white quartz. These are younger injections, possibly related to nearby granite, that both cut across and follow along the layers of schist and slate. Apparently related to this phase of activity is the additional development of white sericite. Such sericite cuts across and follows along certain beds of volcanic ash (now slate) and along certain flows of quartz-bearing rhyolitic lava (now transformed to schist).

The location shaft on the D. C. claim exposes a body of white sericite that cuts across and follows along a 4-foot inclined bed of volcanic ash. Going north from the shaft it narrows and persists only a few tens of feet, where it fades into the gray variety of unreplaced rock. To the south it also appears to die out, but exposures are not too good in this direction.

The above is the best exposure of what appears to be a rather clean, white sericite, although we do not have any chemical analyses or microscopic examinations to prove that it is actually a pure sericite free from clay and silica. It is clear that this sericite does not occupy an extended, thick bed that would provide a really important tonnage of clean, white material. From available exposures it is not possible to tell what tonnage is available, and this could only be determined by digging or drilling, at a cost of several thousand dollars. However, from the nature of the occurrence, which in part cuts across the beds and is pockety, it is doubtful if such an expenditure is warranted. Perhaps a small deposit of commercial grade might be developed, but it would probably support only a small daily production at a relatively high cost per ton.

There is another white rock on the property. It is an interbedded volcanic flow of rhyolitic composition. When closely inspected it is seen to contain abundant tiny specks of gray quartz. Although this type of rock contains much sericite, the sericite-rich portion extends for only limited distances, and it is judged that its quartz content would be an undesirable constituent.

The prevailing dark gray schists and slates that compose the bulk of the mountain contain some sericite but not in amounts that make them commercially promising. The brown iron-staining along joints that cut these rocks would make them undesirable for paints, even if their composition were otherwise suitable. The scarcity of pronouncedly fibrous minerals (like asbestos) make it doubtful that they would be useful for the manufacture of

pipes, shingles, etc.

Judged by available exposures, there is little hope that the rocks on the D. C. claims give promise of yielding a profitable venture. Considering the quartz and sericite exposed, there is probably enough mineral showing, particularly on the D. C. claims, to hold these claims and prevent trespassing. It is doubtful if enough mineral is present to allow these four lode mining claims and adjacent areas to be carried to patent.

E. N. PENNEBAKER

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Scottsdale, Arizona
November 7, 1957

SERICITE DEPOSITS
SOUTH OF PINNACLE PEAK
MARICOPA COUNTY, ARIZONA

INTRODUCTION

On December 5, 1957, the writer made a brief examination of the "D.C." group of four mining claims in or near Section 17; T4N; R5E; about 15 miles north of Scottsdale, Maricopa County, Arizona. At that time the principal interest was in a small body of sericite exposed in a shallow shaft on the D. C. claim. The conclusion was that this body was too small and irregular to be of commercial interest.

During this inspection other bodies of sericitized rhyolite were observed which contained abundant tiny specks of gray quartz, but it was judged that the quartz content would be an undesirable constituent. However, as a result of the testing of this material by Mr. Ed Whipple, we were advised that it might have commercial value if it occurred in bodies of sufficient size. Consequently the D. C. claims and adjacent ground were re-examined on February 18, 19 and 21, 1958, in order to determine the size of such bodies amenable to small low-cost open-cut mining operations.

This resulted in the conclusion that there were three widely separated bodies that might yield an aggregate of some 200,000 tons at low cost, but the quality of this material was somewhat dubious and the writer was not at all confident of the tonnage figure expressed above.

On February 22 the writer accompanied Mr. E. E. Brown to make a reconnaissance of another area well to the southeast, in and near Section 22. Here a very substantial body of sericitized rock was found. This is far larger than the total of the occurrences in and near Section 17, its quality is better, and it is so situated that relatively low-cost open-cut mining could be carried out.

Consequently no further attention was given to the sericite bodies in and near Section 17, and interest was transferred to the larger occurrence in and near Section 22. On February 25, Mr. Brown and the writer located five lode mining claims in and near Section 22 on behalf of D. C. Ranch Company, Mr. Brown signing the location notices as agent and the writer as witness.

Sections 17 and 22 are patented lands belonging to D. C. Ranch Company, with mineral rights reserved to the Federal Government and hence open to mining locations. If any portions of its lands are mineral-bearing and thus likely to be located, it is to the advantage of D. C. Ranch Company to make the locations and thereby prevent entry by others. Furthermore, if the mineral-bearing parcels are commercially valuable, D. C. Ranch Company should know their potential value.

Although the sericite bodies in Section 17 are of subordinate importance, the following observations are set down as a matter of record. Farther along a brief description is given of the occurrence in and near Section 22.

SERICITE BODIES IN AND NEAR SECTION 17

Map "A" accompanying this memorandum portrays the "D.C." claims and nearby bodies of sericite.

Claims designated "D.C.", "D.C.1", "D.C.2", and "D.C.3" were earlier located and they run in a general north-south direction. The writer carried a rough pace-and-compass traverse down the wash from near the northwest corner of the "D.C." claim to near the south end-center of "D.C.3" and thence easterly for about 1500 feet. This indicated that the "D.C.3" claim runs about N14E rather than true north-south and that its north end-line runs about N85W. The actual trend of claims "D.C.", "D.C.1" and "D.C.2" were not traced out, and consequently it was not determined whether the end-lines run east-west (along lines A-B and D-E), whether they follow lines A-C and D-F, as suggested on Map A, or whether they follow some other nearby course. Should the bodies of sericite in this area prove valuable, or should it be desired to prevent the location of fractions by others, then it would be necessary to survey accurately these claims and amend the locations where necessary.

It should be pointed out that the dimensions of the sericite bodies described in following paragraphs were determined by pace-and-compass traverses and are of only approximate accuracy.

Attention is directed to Sericite Body No. 1 on the north. This is a body of white, sericitized rhyolite containing abundant tiny quartz crystals. In places it is only partly replaced by sericite, with small residuals remaining of gray rock or of dense siliceous-appearing patches. This body is about 125 feet wide where it comes into the wash; here it dips about 55 degrees east,

with a true thickness (from footwall to hanging wall) of about 100 feet. This strikes southerly up a slope of about 10 degrees, and within a distance of about 400 feet it narrows down to a thickness of only 5 or 10 feet and dips into a very steep mountainside. On the surface this body appears to be rather free from iron-staining. Possibly 100,000 tons could be mined from it by a small open-cut.

The "Cave Area" Sericite Body occurs in the northeasterly part of "D.C.3" claim, where it is so-named because of a cave eroded out of its northerly end. It is a sericitized quartz-bearing rhyolite with limited sections of good, white color and considerable purity. It occupies a bluff just above the wash, above which the mountainside rises on a 20-degree slope. Near the wash this body has a true thickness of about 60 feet, but it narrows to 20-30 feet toward the south where it slopes down at 45-degrees into the very steep mountainside. Possibly 50,000 tons could be extracted at low cost from its lower portion.

Sericite Body No. 3 lies in unlocated ground east of the south end-line of "D.C.3" claim. It is a rather small body that quickly pinches out toward the north and has little interest from a mining standpoint. Still farther north up the very steep (20-degree) hillside, this zone reappears again as No. 2 Sericite Body. Both occurrences are sericitized quartz-bearing rhyolite, much of which is rather thinly foliated.

Sericite Body No. 4 is still farther east on open ground. It is a thick layer of rather platy sericitized rhyolite that is quartz-bearing. Its true thickness is about 60 feet. This zone

strikes up and into a steep (25-degree) hillside and dips about 35 degrees easterly. Downhill toward the south it is poorly exposed and it may narrow. Possibly 50,000 tons could be mined rather cheaply, but it would be costly to follow the zone north to gain more tonnage. The quality may be dubious because of lack of thorough replacement by sericite. The color near the surface appears to be good to fair.

Sericite Body No. 5 occurs in and near the location shaft on the "D.C." claims and was described in the writer's memorandum dated December 7, 1957. Its tonnage possibilities appear to be very limited although its quality is good. It is a sericitized volcanic ash free from quartz crystals.

As a result of the study of the sericite bodies on and near the D. C. claims it is obvious that most of them are lenticular and that they pinch and swell unpredictably. Consequently their thicknesses down-dip into the ground cannot be assumed to remain constant, and it would be necessary to drill them in order to make any tonnage estimates that would be reliable. Therefore the tonnage figures expressed in foregoing paragraphs are not to be considered as estimates; they are only expressions of the approximate magnitude of bodies that we might reasonably hope to find as a result of exploration and to extract by cheap open-cut mining methods. Obviously they contain greater tonnages that would be more expensive to mine.

Another variable that cannot be predicted at depth is the thoroughness of the replacement of rhyolite lava flows and ash by sericite. The amount of staining by iron oxide is also unpredictable. Consequently drilling or mine openings would be needed

to ascertain these qualities.

Most of the sericite bodies on and near the "D.C." claims are associated with small bodies of milk-white "bull quartz". These generally occur at or near the edges of the sericite.

There are other occurrences of sericite in addition to those described, but most of them appear to be small and discontinuous. However, Mr. Brown advises that he has very recently found another body of substantial size a few hundred feet east of Sericite Body No. 4.

Sericite Bodies 2, 3 and 4 were on open ground and subject to location by outsiders at the time of my examination. More recently the two claims outlined in green on Map A have been located by Mr. Brown on behalf of D. C. Ranch Company to cover these showings, and he will probably locate a third claim immediately to the east of these to cover the most recent discovery.

SERICITE IN AND NEAR SECTION 22

The sericite-bearing ground in and near Section 22 has not been mapped and studied, but it is sufficiently large to insure a very substantial tonnage provided that staining by iron oxide is not excessive.

The zone is immediately north of the boulder-covered wash that leads down westerly from Frazier or Mountain Spring. It appears probable that there is a fault going down the wash under the bouldery gravel and that the schist (of volcanic derivation) along and beyond the north wall of the fault has been partly converted to sericite rock by mineralizing action. Along and north of the fault there is a great amount of sericite, but going north

of and away from the fault it is expected that it will diminish in amount.

The sericite rock is layered, and the layers or beds strike northerly up the mountainside and dip steeply toward the east. For an east-west distance of around 2000 feet (across the strike) most but not all of the schist is converted to abundant sericite. There are unreplaced layers and zones of gray schist here and there, but they appear to be subordinate in amount; however, their abundance and location cannot be described without mapping them. The sericitized beds extend up the mountain and away from the wash for at least several hundred feet, and a very substantial tonnage exists that can be readily mined at low cost by open-cut mining methods.

Much of the sericitized rock is of white color at the surface, but a hole dug for a bulk sample for metallurgical testing showed a surprising amount of irregular staining by streaks of red iron oxide. The results of the testing have not yet come in and we do not presently know how serious this color contamination is.

The amount of rock that is stained at shallow depth is not known, and it will require digging or drilling to find out. When the discovery shafts have been put down on the claims recently staked we shall have some additional information on this matter.

The sericite-rock is mostly free from tiny quartz crystals and appears to be a replaced volcanic ash.

The claims recently located in or near Section 22 are shown on accompanying Map B.

E. N. Pennebaker

E. N. PENNEBAKER
Scottsdale, Arizona
March 3, 1958

58

January 10, 1958

Mr. E. E. Brown
P.O. Box 386
Scottsdale, Arizona

Dear Mr. Brown:

I have recently learned that Mr. Ed Whipple has a plant at Glendale for beneficiating sericite mica, and that he is interested in obtaining sericite to put through this plant. Mr. Leslie Hoag of National Equipment Company supplied me with this information and advised that Mr. Whipple is a reliable party and that his plant is a good one.

I suggest that you contact Mr. Whipple, as he might be interested in opening up your claims to determine just how big the deposits actually are.

I understand that Mr. Whipple has an office at Tungsten Refining Company, at Henshaw Road just west of 24thStreet.

With best regards,

Yours sincerely

E. N. Pennebaker

ENP:mc

December 7, 1957

Mr. E. E. Brown
P.O. Box 386
Scottsdale, Arizona

Dear Mr. Brown:

Enclosed is a short report covering my recent examination of your mining claims near Pinnacle Peak.

I am enclosing my bill in duplicate.

Yours very truly

E. N. Pennebaker

ENP:mc
encls.