



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

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Arizona Department of Mines and Mineral Resources Mining Collection

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09/30/87

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: WHITE CASTLE

ALTERNATE NAMES:

MARBLE MINE

YAVAPAI COUNTY MILS NUMBER: 1245

LOCATION: TOWNSHIP 10 N RANGE 5 E SECTION 22 QUARTER NW
LATITUDE: N 34DEG 15MIN SEC LONGITUDE: W 111DEG 45MIN SEC
TOPO MAP NAME: TULE MESA - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

STONE MARBLE CB

BIBLIOGRAPHY:

ADMMR WHITE CASTLE MINE FILE

MEMO

October 6, 1961

WHITE CASTLE MARBLE CORP.

Travis P. Lane

According to telephone conversation this morning this company is quarrying the White Castle Marble deposit, hauling 10 miles up to a crushing plant on the rim of Bloody Basin some 14 miles easterly by road from the Black Canyon Highway.

The plant is shipping around 500 tons per week of crushed marble. 12 to 15 men are employed.

- Paul Edwards is President.
- Merle " " is Vice President.

The company address is 2300 W. Broadway, Phoenix 41

Phone BR 6-2489

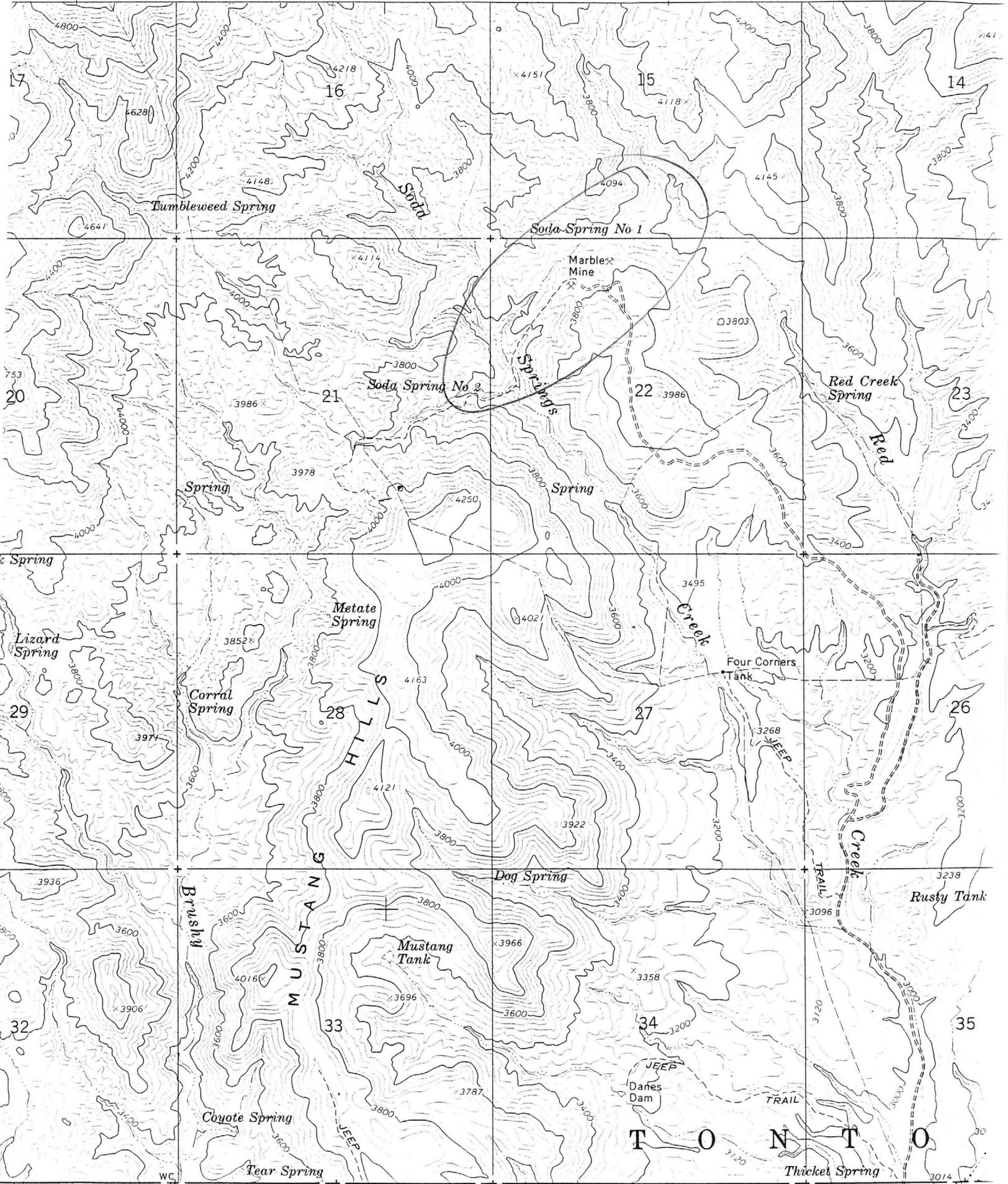
422

423 50'

424

3652 IV SE
(TULE MESA)

426

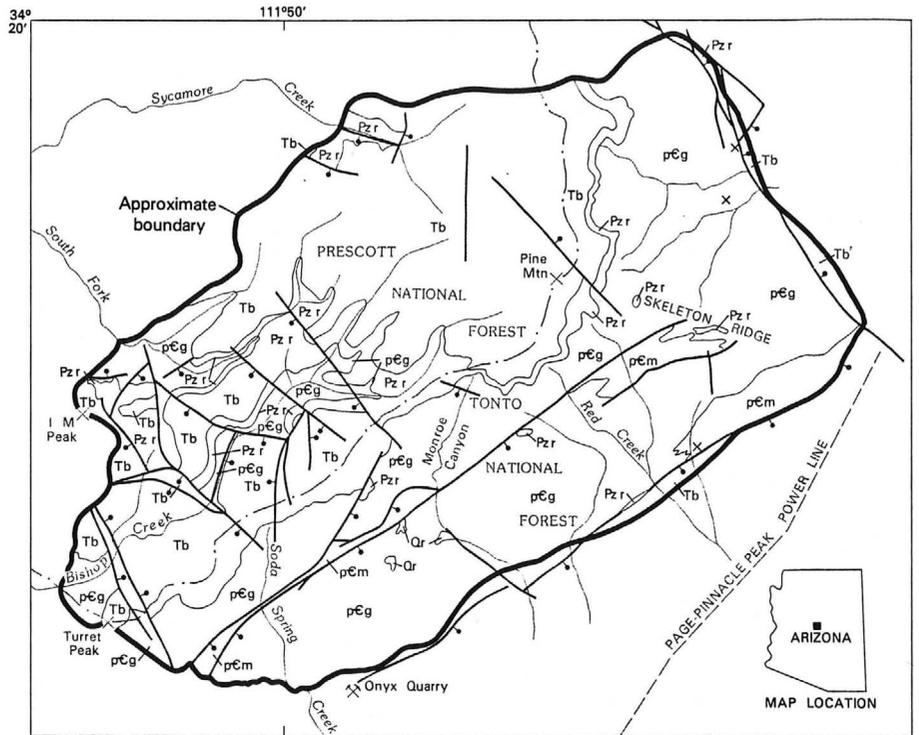


Cocklebur Spring

TION R 5 E

BLOODY BAIN 7-5

3014



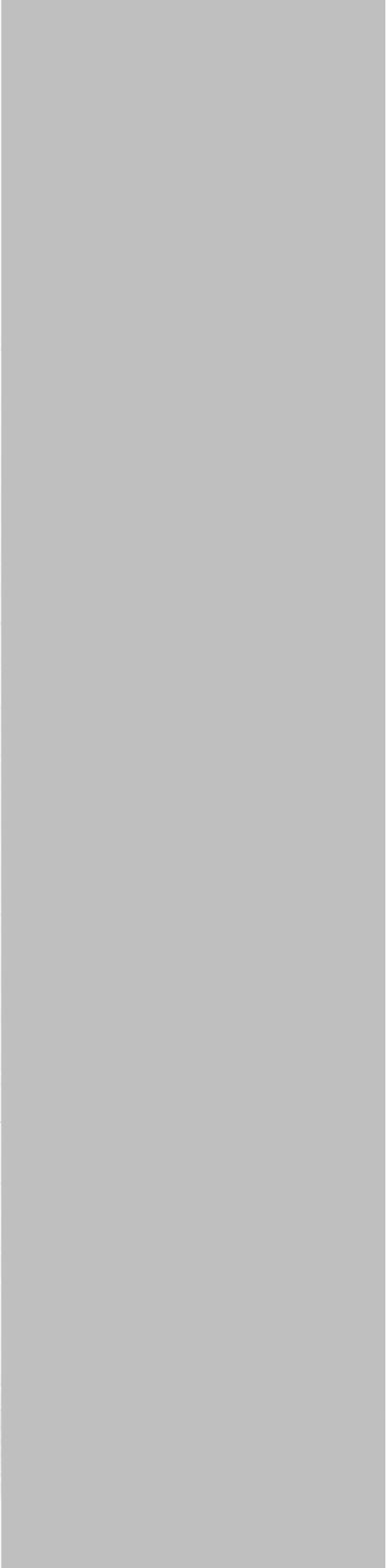
EXPLANATION

Qr	Rhyolite plugs (Quaternary)	pεg	Granitic rocks (Precambrian)
Tb	Basalt (Tertiary)	pεm	Metamorphic rocks (Precambrian)
Pz r	Limestone and sandstone (Paleozoic)	Contact Fault--Bar and ball on downthrown side Mineral occurrence	

Figure 25.—Pine Mountain Wilderness, Arizona.

USGS
PP 1300 P. 94

Repubblica
9/6/61



WHITE CASTLE

YAVAPAI COUNTY

NJN WR 8/28/87: Bill Enders visited with a sample of marble from the White Castle (file) Yavapai County. This is the same location as the Marble Mine. MILS had the wrong location for the White Castle. Delete the White Castle listing, change Marble Mine to White Castle, retain Marble as an aka, remove Renner Mine material to the appropriate.

KAP WR 8/28/87: Ralph Andrist, R.A. Material, Inc., Carefree, Arizona, 85377, phone 488-2461 was in for information on the White Castle Mine (file) Yavapai County. He had just visited the property with the current claim owner, Billy Sherling, 120 N. Hunt Drive E., Mesa, Arizona and wants to try to develop the deposit which had produced in the past. He reported that there is still a large quantity of white marble exposed. Also the access road to the deposit needs repair, especially the last mile plus after climbing out of the stream bed. He is investigating possible markets. The claims are the Marble #1 - #4 located in Sections 21 and 22, T10N R5E: specifically:

Marble #1 NW Sec 22 T10N R5E

Marble #2 NE Sec 21 T10N R5E

Marble #3 N2 Sec 22 T10N R5E

Marble #4 W2 Sec 22 T10N R5E

located January 25, 1986 and filed as AMC 248501 through AMC 248504.

KAP WR 9/4/87: Bob Andrist reported he is submitting a letter of intent to the Cave Creek Ranger District to made road repairs to the White Castle Marble property (file) Yavapai County.

RRB WR 4/15/88: Billy sherling, 964-2830 reports that there is marble suitable for building stone or carving at his White Castle Mine (file) Yavapai County. Will appreciate any references of possible markets.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine White Castle

Date June 10, 1958

District Bloody Basin, Yavapai County

Engineer Travis P. Lane

Subject: Visit to property

Owner: United Copper and Uranium Company
c/o J.L. Willis, 318 N. Westwood Avenue, Mesa, Arizona

Operator: ^{BEN} W. E. Humphrey, Box 492, Cashion, Arizona, and
Charles E. Van Hook, 28 N. Center Street, Mesa, Arizona

I visited the property of the United Copper and Uranium Co. in the company of Mr. Humphrey and Mr. Van Hook, to whom it is optioned, on May 29, 1958. The trip from Cave Creek to the mine was made in Mr. Van Hook's Jeep station wagon.

The property comprises 82 unpatented claims in sec. 20, T. 9 N., R 5 E., and secs. 4, 5, 8, 9, 17, 20, 29, 30, 31 and 32 T. 10 N., R. 5 E. The claims are located in contiguous blocks up to 5 claims wide along the strike of a contact between granitic rocks on the west and vesicular basic rocks (Malapai) on the east. The strike of the contact is roughly N-S in the northern portion of the group of claims and veers easterly in the southern portion. The principal minerals of value are copper, gold, silver, and marble, occurring in or near the fairly broad contact zone.

Bloody Basin occupies a rugged foothill area and is bounded on the north by Pine Mountain and on the west by steep mountain slopes descending from Huck Mesa and Crook mesa. The mining claims are situated in the western part of the basin. The region is remote and difficultly accessible. Few roads traverse the area, the most important being the county road which in a westerly direction connects Seven Springs and the basin area with the Black Canyon State Highway No. 69 at a point near and south of Cordes Junction. This and the several tributary ranch roads are all rough and torturous with many steep gradients and they are sometimes impassable during wet periods. The White Castle claims are reached from Phoenix by travel northerly over 32 miles of paved road to a point 2 miles beyond Cave Creek, thence easterly and northerly 15 miles over gravel to Seven Springs, thence northerly 16 miles by dirt road to a turnoff point, thence easterly 7 miles over extremely rough steep dirt road to the claims; total distance from Phoenix 70 miles. The last stretch of road is not negotiable by passenger car.

The owners are now building a short new piece of road, to apply as assessment work for all the claims, which follows a less rough route and will replace the present final piece of road. The claims may also be reached from Phoenix by travel over state highway 69 to the point where the Cordes-Seven Springs connects with the highway, thence easterly over and down the mountain into Bloody Basin. This route is somewhat longer however and the mountain grades are very steep.

Past interest in the property has been directed principally toward surface copper showing, with accompanying small gold-silver values, along the contact zone. These showings have received some scattered development, the work being

inspired mainly by the belief that the reddish oxidized iron coloration of the granite bordering the contact might represent a leached capping or gossan overlying a large copper ore body. However, in the absence of a detailed geological evaluation and systematic exploration the possibilities in this direction must be considered only conjectural.

The present operators hold all the claims of the United Copper and Uranium Company under option but their interest is centered in the possible economic importance of the marble occurring in the claims at the north end of the property, more particularly in the White Castle claims Nos. 1 & 2. Accordingly, most of the field time available on this trip was spent investigating the marble exposures on these claims.

White marble croppings are seen in various places along the contact zone, the most important being on the White Castle claims No. 1 & 2, where reef-like croppings jut up conspicuously above the surrounding surface. The name of the claims derives from a fancied resemblance to a white castle on the top of a small knoll. The marble deposit crops on two such knolls some 500 feet apart and its continuity between the knolls is clearly indicated by croppings and abundant float on the slopes and in the bottom of a gulch separating them. Also, it is traceable northerly down slope from the north and largest knoll to the top of a saddle, where it butts against granite with apparently a fault cut-off. The reef cropping extends southerly with diminishing width from the southern knoll down the top of a gently sloping ridge and finally feathers out into a series of stringers at about 500 feet horizontal distance from the top of the knoll.

Altogether from the northern base of the north knoll to the point of this feathering-out the outcrop has a continuous length of upwards of 1,000 feet. The cropping is widest at the north knoll with a hard rib 40 to 50 feet wide on the west side standing up almost vertically to a height of about 50 feet. East of this rib the reef has been eroded down to ground level where croppings together with abundant float indicate an additional width of 100 feet making the total width of the marble some 150 feet. From the base of the knoll in a southerly direction two prongs appear to branch off easterly from the main rib and appear, by occasional croppings, to continue southerly for several hundred feet and possibly more. The main marble body is 40 to 50 feet wide in the south knoll and the reef south from here diminishes to a solid width of about 5 feet before feathering out. The marble exposure in the gulch between the knolls indicates a depth of marble of at least 150 feet at this place with quality similar to that on the knolls.

The contact zone between granite and malapai evidences pronounced longitudinal shearing and at places intensive metamorphism. The marble is the result of metamorphism of travertine beds probably deposited before the granite intrusion. The metamorphism has been of variable intensity and where most intense (in most of the deposit), the travertine has been converted to a pure dense crystalline marble. Where less intense the mammalian structure and banding of the travertine has been preserved to some extent. Some rhyolitic dikes with variable strike and a fair amount of dike float material were noted in the area under consideration. A heavy mantle of overburden commonly masks the rock outcrops and it was not

possible to determine the nature and disposition of the rocks in any more than general fashion during the brief field inspection.

Little serious exploration and no development has been done on the marble exposure and the little that has been done has consisted of blasting in weather cracks in an attempt to break out and study fresh faces of marble. As might be expected the surface of the cropping has been pitted and fissured and a thin gray coating of weather products covers the marble surfaces and extends deeply into the cracks and fissures. A notable feature is the erosion resistance of the material as evidenced by bold reef croppings, and this attests to the hardness and denseness of the marble. Blasting in the surface fissures produced little fine material but instead much spalling into chunks up to 24" in diameter and this is justification for the belief that it might quarry out in large blocks.

The marble is exceptional for its purity and hardness and its pure white crystalline texture. The broken material contains some small vugs and fine cracks and in some places a faint green or blue coloration due no doubt to oxidation of copper and possibly silver minerals. It seems probable that these small blemishes will not persist below the thin zone of surface weathering. Proof of this fact and also whether the hardness and other good qualities continue at depth can be obtained only by development, and the most practical manner for exploration here would be by core drilling. The steep slope of the knolls affords an excellent site for preliminary testing of the marble body at a depth of 40 to 50 feet below its cropping and, following upon favorable results, by deeper steeply inclined holes. The first testing could be done in a short time and at moderate cost.

The principal uses for this marble would be for building blocks or slabs or, in crushed form, for mosaic patterns, also for decorative work such as frescoes and statuary and cemetery monuments.

In appraising the possible economic value of a bulk product such as this the factors of transportation and market outlet are equally as important as the quality, volume, and mineability of the deposit. On the last point the showings presently visible offer good promise. The remote location with long transport distances and poor roads is an unfavorable factor and while the condition of the roads is susceptible of some improvement at best they would still be rough and mountainous in about the last third of the distance traversed. As for a market, this is a specialty product, and outlets could be found only by studying the trade demands and contacting all prospective buyers in a given region. Because of the exceptional quality of the marble (assuming that this is established certainly by exploratory work as noted above) it seems possible that it might command sufficient premium over competition products to offset the unfavorable differential in transport cost.

Casa Grande, Ariz.
Jan. 11, 1958

Mr. O. C. Williams,
802 First Natl. Bldg.
Phoenix, Ariz.

Dear Mr. Williams:

On Jan. 8th and 9th, I was shown the claims of the United Copper and Uranium Company, in Yavapai County Arizona, lying in Township 10 and 9 $\frac{1}{2}$ N. and Range 5 East, and located in an North-S line thru Sections 20 in Township 9 $\frac{1}{2}$ N. and sections 31-32-30-29-20-17-8-9-5-4, and probably extending into section 33 of Township 10 North.

The claims are roughly about 30 miles North of Seven Springs, and 30 miles East of the Black Canyon Hiway, and are intersected by the graveled road that goes thru Camp Creek, Cave Creek and the Seven Springs area and which joins the Black Canyon Hiway, about 3 miles South of this roads fork to Camp Verde and to Prescott.

The claims numbering 40-50, are strung out along a series of reddish hills for a distance of 6 miles, and there is also another series of claims farther south which is owned by the company and a Mr. Jim Fenner.

The reddish hills are supposed to be the Gossan covering large copper deposits, thus claiming resemblance to the gossan coverings of the Morenci Globe and Ray Districts of Arizona. Undoubtedly this can be claimed, but there has been no drilling or mapping of the very complex intrusives in this area, and until a detailed mapping of the area is made, this can be only a conjecture.

No development of the claims has been attempted except on the North and where a shaft has been sunk about 30 feet on a fracture that can be traced for several hundred feet, and which shows on the surface, with oxidized copper minerals and with some sulphide copper.

Very little copper has been found on the surface except along this fracture except in an old drift that was driven into a hillside about 300 feet South of the shaft, and which does not appear to be on the fracture exposed in the shaft. Good copper specimens have been found dispersed throuth the tunnel.

The shaft has had several tons of ore taken from it, which is claimed to have run from 6 to 13% Copper. Specimens are to be seen on the dump, and there is exposed in this fissure in the shaft, for a width of a foot ore that will undoubtedly run in this grade. Grabs of the surface rock are said to run up to 1% with very little visible copper.

This shaft is located in about the center of White Castle No.1, Claim, with White Castle No. 2 and No. 3 Claim adjoining No. 1, on the North end. Rainbow claims No. 4-5-6-7-8-9-10 on each side of the White Castle claims. Rainbow No. 7 claim is undoubtedly White Castle No. 3. (Correction)

Oxidation of the surface rock is nearly complete from the supergene or descending waters. Most changes in the original minerals are caused by the supergene waters thru direct or indirect oxidation.

The depth of the oxidation cannot be determined except thru drilling or development work. It will probably proceed to the level of the present ground water.

On these north end claims are many outcrops of Hypothermal veins of Calcite or lime that have been metamorphosed to hard marble. These veins crop from within 300 feet of the shaft to a distance of 3500 feet North and probably to the N. end lines of the claims.

These veins are nearly vertical with the main crops from 2 ft to 20 ft thick in places there are smaller parallel veins. The largest outcrop on the North end was not inspected, as time did not allow. The hardness of these crops is shown by their dike like form, and extension above the surface of the igneous ground masses.

For a distance of 1000 feet the outcrops of lime where the surface is broken show a beautiful white crystalline appearance, somewhat like a magnesite, and whiter and harder than any outcrop of similar rock that I have encountered. In fact I do not ever remember having ever seen any marble outcrop of similar nature except with very small veinlets, of marble.

It appears from a limited examination of the outcrops that even above the surface of the ground chunks of solid Marble of 1 ft. square can be cut. As the elements have taken a considerable slice from the exposed sides of the crops the actual width cannot be determined, and as weathering has scalloped and cracked the exposed crops the possibilities of this outcrop as the source of white Marble slabs, blocks and other shapes for frescoes statuary etc., cannot be ascertained without doing extensive work thru drilling or dozing and tunneling.

The outcrops are so situated on ridges and hillsides so that diamond drilling with short holes can be used to show the possibilities of the deposits.

Some drill holes should be cored as far below the surface as can be economically drilled. This is to give a picture of the mineralization below the surface for the chance to see if the Marble will continue its hard and white texture where it encounters the residual ground waters. Also from the drilling an idea of the possible tonnage can be had.

The outcrops that show possibilities of quality marble are from 1500 to 3000 feet in length, and should average over 5 feet of solid marble. Taking 100 feet as their depth which is extremely conservative, and 2000 feet as their length, with 10 Cu. Ft. to the ton, where there is 100,000 tons of marble above the 100 ft mark and water level. It is my estimate that water level will be around 200 ft. in depth.

Whether this marble will get softer and discolored at depth can be found out by Diamond drilling. If it holds to its surface texture and color it should be a very valuable decorative marble, of dazzling whiteness.

The second factor to be found out about this marble deposit, is the size of the blocks that can be mined. The larger the blocks that can be mined without splitting fractures and discoloration, the more valuable is the marble for marketing. In the appraisal of the surface crops for fracturing and discoloration very little foreign matter was found even in the surface fractures. The most prevalent discoloration was a greenish yellow in the small fractures, (some fractures were white) that comes from Chlorides of Copper and Silver.

The Marble veins undoubtedly have as their source the limey conglomeritic basal mud flows that are very limey, and that are shown in the lower ends of the draws and gulches and in the Verde Valley to the East with a thickness of from 200 to 500 feet. I do not know the local name for this formation but similar ones are found over a very extensive territory in N. W. Arizona.

The veins where examined outcrop in a dark brown surfacr rock that has the surface appearance of porphyry. Where the surface has been dug away, there is found some mica and the rock appears to have a gneissic base. Along the Calcite veins there is a great alteration of the country rock.

This host rock to the Marble, has a very sharp contact on the East with a dark gray basic appearing rock that the locals have dubbed Malpai, or lava. It has some crystalline structure, and weathers on the surface to a gray pockmarked appearance. This is probably the metamorphism source.

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It is my opinion that 50% of the Marble veins can be sawed into slabs 4x6 inches. With many a great deal larger. This deposit needs only a market.

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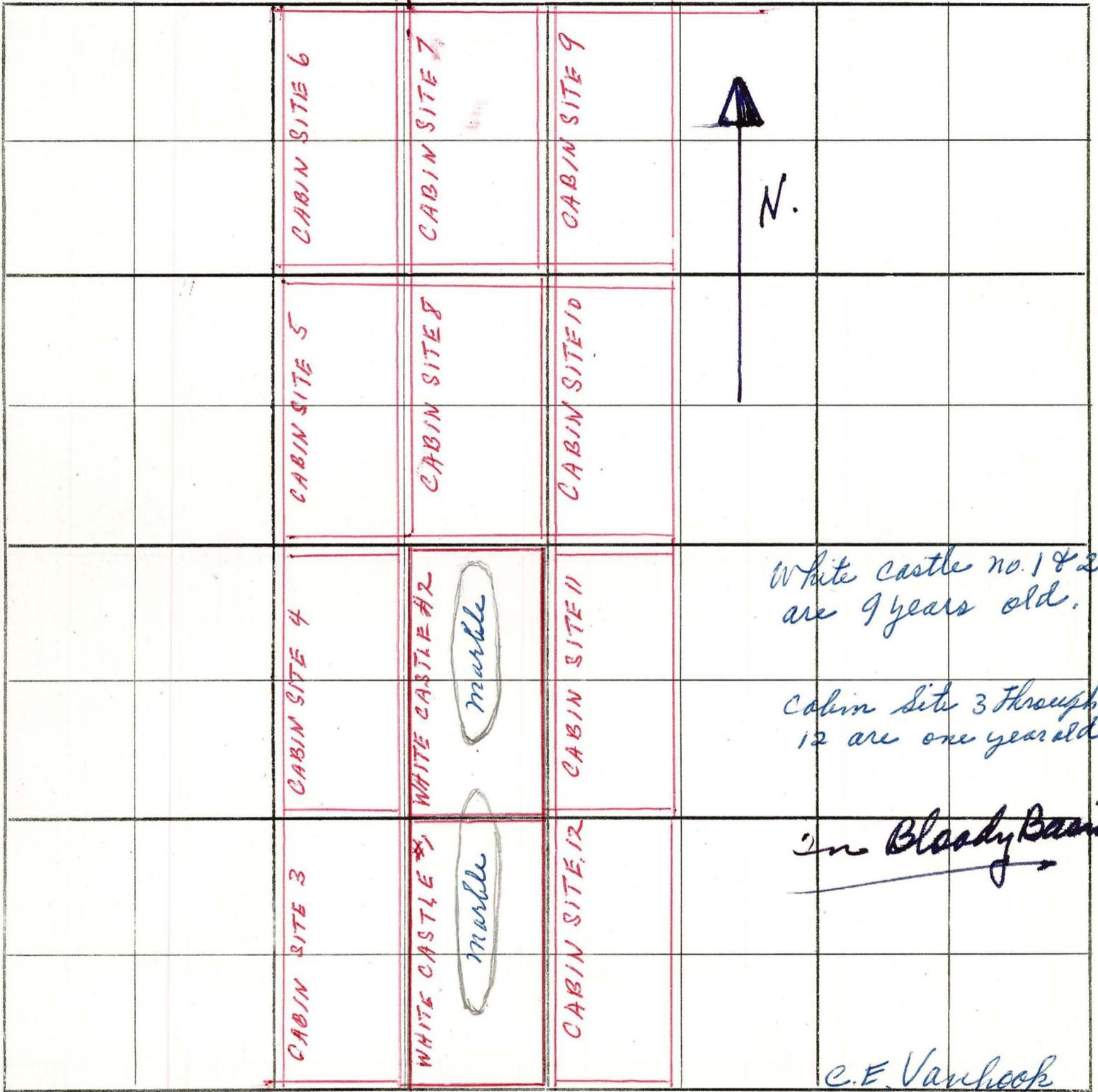
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P. M. Mosier, E.M.

PLAT

Section _____ Township _____ Range _____

Maricopa County, Arizona



5280 ft. }
320 rods } 1 Mile
1760 yards }
80 chains }

2640 ft. }
160 rods } 1/2 Mile
880 yards }
40 chains }

1320 ft. }
80 rods } 1/4 Mile
440 yards }
20 chains }

4 rods } 1 Chain
66 ft. }
16 1/2 ft. } 1 Rod
25 links }

10 sq. chains }
160 sq. rods } 1 Acre
4840 sq. yards }
43560 sq. ft. }

Scale:
660' = 1 inch

This is a sketch only and not a survey or recorded plat. It is made on the assumption of a normal sized section and is furnished without responsibility for the correctness thereof.

MEMO

October 6, 1961

WHITE CASTLE MARBLE CORP.

Travis P. Lane

According to telephone conversation this morning this company is quarrying the White Castle Marble deposit, hauling 10 miles up to a crushing plant on the rim of Bloody Basin some 14 miles easterly by road from the Black Canyon Highway.

The plant is shipping around 500 tons per week of crushed marble. 12 to 15 men are employed.

Paul Edwards is President.
Merle " " is Vice President.

The company address is 2300 W. Broadway, Phoenix 41

Phone BR 6-2489

$CaCO_3$: 97.80
 $MgCO_3$ 1.10

Hardness 5.5

Sam Turner gone 1,500,000 tons

Being used at GE plant addition - some
planting for marble for surf.

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date 2-5-58

- 1. Mine: White Castle (and Cabin Sites)
- 2. Location: Sec. TTN Twp. 9-10N Range 5E Nearest Town Cave Creek Distance 39
 Direction SN Nearest R.R. Phoenix Distance 65
 Road Conditions County Road with in 4 mi. of Clarnia Private Rd. 4 mi
- 3. Mining District and County: Bloody Basin Yavapai county
- 4. Former Name of Mine: _____
- 5. Owner: United Copper & Uranium Co. and or J.L. Willis J.R. Carpenter
 Address: 318 n. Westwood mesa ariz.
- 6. Operator: _____
 Address: _____
- 7. Principal Minerals: Marble and Copper
- 8. Number of Claims: Lode 177 Patented _____ Unpatented _____
 Placer _____ Patented _____ Unpatented _____
- 9. Type of Surrounding Terrain: West side is decomposed Granite East side Black Malapai. Copper & marble Lay between these two formations
- 10. Geology and Mineralization: Enormous shear zone. 5 miles to 7 miles long in two sections (Malapai butting against granite.) The accompanying report covers the marble (T9 1/2 & 10N, R-5E Sects. 20, 29, 30, 32, 31, 4-5-8, 9, 17.)
- 11. Dimension and Value of Ore Body: 1 mi long width 300 ft to a quarter of a mile.

Please give as complete information as possible and attach copies of engineer's reports, shipment returns, maps, etc. if you wish to have them available in this Department's files for inspection by prospective leasors or buyers.

12. Ore "Blocked Out" or "In Sight": *in Sight*

Ore Probable: *marble 100,000.00 tons in Sight*

Copper Several Out croppings and one 30 ft shaft one 75 ft. tunnel

13. Mine Workings—Amount and Condition: *assessment work done for past 10 yrs. up to date*

No.	Feet	Condition
Shafts... 1	30 ft	Open
Raises...		
Tunnels... 1	75 ft	Partly blocked out
Crosscuts... 1	shows Copper	
Stopes...		

14. Water Supply: *Spring water on property*

15. Brief History: *Two Claims 10 yr. Old
10 Claims 2 yr. Old*

16. Remarks: *There have been 10 ton of 25 %
Copper hauled from these Claims
We have Assay reports running from
11 to 25 %*

17. If Property for Sale, List Approximate Price and Terms: *Ninty thousand
dollars or will lease on terms*

18. Signature: *J. H. Willis for Co.
318 N. Westwood Mesa.*

Casa Grande, Ariz.
Jan. 11, 1958

Mr. O. C. Williams,
802 First Natl. Bldg.
Phoenix, Ariz.

Dear Mr. Williams:

On Jan. 8th and 9th, I was shown the claims of the United Copper and Uranium Company, in Yavapai County Arizona, lying in Township 10 and $9\frac{1}{2}$ N. and Range 5 East, and located in an North-S line thru Sections 20 in Township $9\frac{1}{2}$ N. and sections 31-32-30-29-20-17-8-9-5-4, and probably extending into section 33 of Township 10 North.

The claims are roughly about 30 miles North of Seven Springs, and 30 miles East of the Black Canyon Hiway, and are intersected by the graveled road that goes thru Camp Creek, Cave Creek and the Seven Springs area and which joins the Black Canyon Hiway, about 3 miles South of this roads fork to Camp Verde and to Prescott.

The claims numbering 40-50, are strung out along a series of reddish hills for a distance of 6 miles, and there is also another series of claims farther south which is owned by the company and a Mr. Jim Fenner.

The reddish hills are supposed to be the Gossan covering large copper deposits, thus claiming resemblance to the gossan coverings of the Morenci Globe and Ray Districts of Arizona, Undoubtedly this can be claimed, but there has been no drilling or mapping of the very complex intrusives in this area, and until a detailed mapping of the area is made, this can be only a conjecture.

No development of the claims has been attempted except on the North and where a shaft has been sunk about 30 feet on a fracture that can be traced for several hundred feet, and which shows on the surface, with oxidized copper minerals and with some sulphide copper.

Very little copper has been found on the surface except along this fracture except in an old drift that was driven into a hillside about 300 feet South of the shaft, and which does not appear to be on the fracture exposed in the shaft. Good copper specimens have been found dispersed throuth the tunnel.

The shaft has had several tons of ore taken from it, which is claimed to have run from 6 to 13% Copper. Specimens are to be seen on the dump, and there is exposed in this fissure in the shaft, for a width of a foot ore that will undoubtedly run in this grade. Grabs of the surface rock are said to run up to 1% with very little visible copper.

This shaft is located in about the center of White Castle No.1, Claim, with White Castle No. 2 and No. 3 Claim adjoining No. 1, on the North end. Rainbow claims No. 4-5-6-7-8-9-10 on each side of the White Castle claims. Rainbow No. 7 claim is undoubtedly White Castle No. 3. (Correction)

Oxidation of the surface rock is nearly complete from the supergene or descending waters. Most changes in the original minerals are caused by the supergene waters thru direct or indirect oxidation.

The depth of the oxidation cannot be determined except thru drilling or development work. It will probably proceed to the level of the present ground water.

On these north end claims are many outcrops of Hypothermal veins of Calcite or lime that have been metamorphosed to hard marble. These veins crop from within 300 feet of the shaft to a distance of 3500 feet North and probably to the N. end lines of the claims.

These veins are nearly vertical with the main crops from 2 ft to 20 ft thick in places there are smaller parallel veins. The largest outcrop on the North end was not inspected, as time did not allow. The hardness of these crops is shown by their dike like form, and extension above the surface of the igneous ground masses.

For a distance of 1000 feet the outcrops of lime where the surface is broken show a beautiful white crystalline appearance, somewhat like a magnesite, and whiter and harder than any outcrop of similar rock that I have encountered. In fact I do not ever remember having ever seen any marble outcrop of similar nature except with very small veinlets, of marble.

It appears from a limited examination of the outcrops that even above the surface of the ground chunks of solid Marble of 1ft. square can be cut. As the elements have taken a considerable slice from the exposed sides of the crops the actual width cannot be determined, and as weathering has scalloped and cracked the exposed crops the possibilities of this outcrop as the source of white Marble slabs, blocks and other shapes for frescoes statuary etc., cannot be ascertained without doing extensive work thru drilling or dozing and tunneling.

The outcrops are so situated on ridges and hillsides so that diamond drilling with short holes can be used to show the possibilities of the deposits.

Some drill holes should be cored as far below the surface as can be economically drilled. This is to give a picture of the mineralization below the surface for the chance to see if the Marble will continue its hard and white texture where it encounters the residual ground waters. Also from the drilling an idea of the possible tonnage can be had.

The outcrops that show possibilities of quality marble are from 1500 to 3000 feet in length, and should average over 5 feet of solid marble. Taking 100 feet as their depth which is extremely conservative, and 2000 feet as their length, with 10 Cu. Ft. to the ton, where there is 100,000 tons of marble above the 100 ft mark and water level. It is my estimate that water level will be around 200 ft. in depth.

Whether this marble^{le} will get softer and discolored at depth can be found out by Diamond drilling. If it holds to its surface texture and color it should be a very valuable decorative marble, of dazzling whiteness.

The second factor to be found out about this marble deposit, is the size of the blocks that can be mined. The larger the blocks that can be mined without splitting fractures and discoloration, the more valuable is the marble for marketing. In the appraisal of the surface crops for fracturing and discoloration very little foreign matter was found even in the surface fractures. The most prevalent discoloration was a greenish yellow in the small fractures, (some fractures were white) that comes from Chlorides of Copper and Silver.

The Marble veins undoubtedly have as their source the limey conglomeritic basal mud flows that are very limey, and that are shown in the lower ends of the draws and gulches and in the Verde Valley to the East with a thickness of from 200 to 500 feet. I do not know the local name for this formation but similar ones are found over a very extensive territory in N. W. Arizona.

The veins where examined outcrop in a dark brown surfacr rock that has the surface appearance of porphyry. Where the surface has been dug away, there is found some mica and the rock appears to have a gneisic base. Along the Calcite veins there is a great alteration of the country rock.

This host rock to the Marble, has a very sharp contact on the East with a dark gray basic appearing rock that the locals have dubbed Malpai, or lava. It has some crystalline structure, and weathers on the surface to a gray pockmarked appearance. This is probably the metamorphism source.

On the West the host rock is granite. Which is extensive in the area.

The claims located in the center and the South end are on outcrops of a different igneous rock. Some are mostly granite. Some are gneiss and others cover a basic porphyry.

The road to the Calcite crops is rough where it branches from the county Hiway, and should have a blade over it. If the deposits are found to be commercially valuable, then a cut off road to the Hiway can be made that will lead to the paved Black Canyon State road, and furnish a closer and easier entry and egress.

There are several camp sites for development work, and water for diamond drilling and exploration work.

Diamond drilling in the rock and the Marble should be done for a total of \$5.00 per ft. At least 1000 ft. should be done. Two short tunnels should be driven into and thru the veins to check the appearance and the color and the size of the blocks capable of being mined. This should be done with an overall cost of \$30.00 per ft.

A Dozer, a compressor with air drill etc., and a truck with water tank, two ground water tanks, with pipe, and two diamond drill outfits are the main equipment needed to evaluate this property, quickly and correctly.

A camp site can be made with tents, as the altitude is just over 3000 ft.

The possibilities of developing a large copper ore body on these claims is good if one can rely on the assay claims of the owners.

They claim that from .5 to 1.0 is what grabs of the surface dirt around and shaft and alongside of the Marble veins runs. That in places that show no discoloration or visible copper. Sampling for copper from the work done, if and when done on the marble veins, and a few holes drilled to depth for the locating of copper sulphides, with correct sampling of the work, should show the possibilities of this theory.

It is my opinion that 50% of the Marble veins can be sawed into slabs 4X6 inches. With many a great deal larger. This deposit needs only a market.

P. M. Mosier, E.M.