

# State Department of Geology and Mineral Industries

702 Woodlark Building  
Portland 5, Oregon

## GLASSY ROCK ASSOCIATED PLACER CLAIMS (Perlite)

Upper Burnt River District  
Baker County

Owner: Ned Thomas, 1460 - 2nd Street, Baker, Oregon.

Location: T. 12 S., R. 40 E., secs. 17 and 19. Fractional locations include the SW $\frac{1}{4}$  of the SE $\frac{1}{4}$  of sec. 17 and the SW $\frac{1}{4}$  of the SW $\frac{1}{4}$  of sec. 19. This location places the property adjacent to the Dooley Mountain highway on the Burnt River side of the mountain. The distance to Baker by the Dooley Mountain highway (State Highway 7) is 21 miles. The distance to a rail siding near Durkee by the water grade county road down Burnt River is about 25 miles.

Area: The property is comprised of four full sized unpatented placer claims. These were taken September 15, 1945 and are recorded in Baker County. The bulk of the exposed perlite in this particular occurrence is included within the bounds of these claims. Marginal fringes of perlite occur on an adjacent tract of deeded land owned by Warren A. Spencer, 4th Street, Baker, Oregon.

Development: No development work has been done on these claims due largely to the fact that the perlite is abundantly exposed by natural outcrops. While no tonnage estimates can be given here because of this lack of development work and a lack of any survey of surface distances, it is evident from casual inspection that a large tonnage exists.

Geology: The perlite is exposed at the head of a short gulch on the west side of Mill Creek. It covers a steep canyon slope and is practically devoid of overburden and vegetation. Near its crest the slope assumes cliff-like proportions which are not readily accessible for examination purposes, but perlite appears to be present in the entire exposure from the slope base to near its crest. The vertical distance involved is estimated at 500 feet.

All of the perlite is glassy and rather dark gray in color. Several variations exist, the most conspicuous of which is a flow banded texture. The Dooley Mountain rhyolites, tuffs and tuff breccias constitute the prevailing country rock associated with the occurrence.

The occurrence has been sampled by several people possessed of experience in the perlite-expansion field. The results of the many tests given samples from here indicate that this perlite has good expansion capacity. Somewhat different expansion capacities are reported, however, between the different perlite variations to be found, but no negative, or non-expanding samples have been reported.

General: The prevailing topography in the area in general is steep and rugged but neither access to the occurrence nor mining conditions are greatly hindered thereby. Elevation on the Dooley Mountain highway adjacent to the occurrence is 3900 feet. The ridge top is 4,623 feet according to the U. S.

topographic sheet of the Baker quadrangle. The distance of an access road to the occurrence from the highway would vary between 1/4 and 3/8 miles depending on the route selected. Such a road would be without any significant grade. Snowfall at the property would not greatly hamper mining, but trucking over Deoley Mountain would be impeded during the height of winter. The foregoing factors are clearly shown on the aerial photograph accompanying this report.

Report by: N. S. Wagner  
Examination: Several occasions during years 1946-7 and 8  
Informant: Mr. Thomas, Elko Zeradi, and Phillip Hoyt.

NAME

OLD NAMES

PRINCIPAL ORE

MINOR MINERALS

12 S

40 E

17 & 18

PUBLISHED REFERENCES

T

R

S

..... Baker ..... COUNTY

..... Upper Burnt River ..... AREA

..... Between 3900' 4,623 ..... ELEVATION

MISCELLANEOUS RECORDS

..... Dooley Mt. .... ROAD OR HIGHWAY

..... DISTANCE TO SHIPPING POINT

PRESENT LEGAL OWNER (S) ..... Ned Thomas .....

Address ..... 1460 2nd St. Baker, Ore. ....

OPERATOR .....

Name of claims	Area	Pat.	Unpat.
4			X

EQUIPMENT ON PROPERTY

Sample from Glass Rock Associated Placers - taken by Ned Thomas - Nov, 1948  
Tested by the U.S. Bureau of Mines, Tuscon, Ariz. - - Samples submitted to the  
Bureau by K. E. Hamblin.

*Confidential*

Preliminary expansion tests were made on the samples of perlite which you recently submitted.

An examination of the samples under the binocular microscope revealed that the samples from the Upper Stratum and Talus of the Thomas deposit were quite similar in appearance. Both were a subglossy dark gray and contained many spherulites, "onion skin" fragments, and fragments of acicular or columnar shape. The lower Stratum perlite was composed of similar material with an admixture of light gray and white fragments of more massive structure.

The samples were stage-crushed in rolls to pass 10 mesh and representative portions were expanded in the vibrator-actuated tube furnace. In addition to bulk weight determinations, the expanded portions were fractionated in water to determine the percentage of unexpanded gangue. Similar tests were also made on a 10 or 20 mesh portion of each sample to observe the relative degree of disintegration. The expanded products were sized on the 10 and 20 mesh sieves and the percentage undersize give a measure of the disintegration due to thermal shock.

The upper Stratum and Talus samples of the Thomas deposit were substantially free of gangue. Expansion at 1045 degrees c. gave gray products with a bulk weight of about 14 pounds per cubic foot. The expanded particles were hard but friable. Microscope examination revealed an exfoliated appearance; the columnar sections of the particles were not firmly welded along the fractures. As a result, the expanded particles broke easily into columnar segments. Expansion of the Lower Stratum perlite gave a 13 pound product on the sized feed and an 18 pound product on the undersized feed. A large percentage of fine in the unsized feed was in part responsible for the high bulk weight of the expanded product. The Lower Stratum material showed a higher (but not excessive) gangue content than the Upper Stratum or Talus samples. The expanded product from the Lower Stratum sample was composed of a mixture of hard, gray, exfoliated material and a lesser amount of more highly expanded soft, white particles. The three samples of the Thomas deposit puffed in expansion with little breakdown to form fines. Moderate preheating at 400 degrees C. inhibited expansion of the gray perlites, but did not adversely affect the white component of the Lower Stratum sample.

In summary, the Thomas perlite is a puffing variety which expands into a relatively hard but friable, gray product. The tests indicate that a feed in which fines are minimized should yield an expanded product having a bulk weight of about 14 pounds per cubic foot. A higher expansion temperature might yield a lower weight and less friable product on the Thomas material.

A sillimanite tube furnace for expansion tests at high temperatures (1100-1250 degrees C.) is being assembled. Additional high temperature tests will be made on the Thomas sample and reported to you later.

Expansion of Talus Perlite Samples

Sample	Size of feed	Preheating Conditions			Expansion		Bulk Wt (lb/cu.ft)	Expansion Ratio	Percent sink Expanded Product	Screen Analysis % oversize	Screen Analysis % Undersize
		Temp.	Time	Moisture Content	Temp. Deg. C						
Thomas	-10	None	-	3.4	1045	14.0	5.7	1.3	---	---	
Upper Stratum	-10 +20	None	-	3.4	1045	10.0	7.7	1.0	76.0	5.6	
Stratum	" "	400	5	1.8	1030	18.0	4.5	2.3	54.0	6.0	
<hr/>											
Lower Stratum	-10	None	-	3.9	1070	18.0	5.0	7.6	---	----	
Stratum	-10+20	None	-	3.9	1050	13.0	5.5	3.4	70.4	4.0	
	-10+20	400	Deg 5	2.0	1030	16.6.	4.6	25.4	59.0	3.0	
<hr/>											
Talus	-10	None	-	3.1	1045	13.8	6.0	0.6	----	----	
	-10+20	None	-	3.1	1045	13.0	6.5	1.0	65.6	4.9	
	-10+20	400	Deg 5	1.2	1030	19.8	4.2	3.4	42.7	5.8	