

REF TYPE

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

AXFORD-HUNT PERLITE DEPOSIT (perlite)

Wasco County

Owners:

Joseph M. Axford, Route 1, Box 350, Troutdale; Clarence N. Hunt, Maupin.

Substituted

Area:

Large acreage owned by the Hunt Livestock Company, mineral rights owned jointly by the above.

Location:

No. 11

The perlite zone extends through the SW $\frac{1}{4}$ of section 16 into the SE $\frac{1}{4}$ of section 17, T. 6 S., R. 14 E., in southern Wasco County, about nine miles airline south of Maupin, on the north side of the Deschutes River, at an elevation varying from 2300 to 2450 feet (see *Fig. 1*).

History:

Perlite in central Oregon was first definitely identified in 1919, when Axford sent samples from this deposit to the Oregon Bureau of Mines. When Dant and Russell became interested in perlite early in 1945, and was told of the Wasco County deposits by the Department of Geology and Mineral Industries, Axford took the engineers for Dant and Russell over the ground, and they located the deposit, three miles due west of the Axford-Hunt deposit, which is now being developed as the Lady Frances Mine.

Topography:

The perlite zone lies from 1300 to 1450 feet above and north of the Deschutes River, which at this point is flowing west. The deposits are less

* Geologist, O. D. GAMZ

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

-2-

than 3500 feet air line from the river, so steep are the cliffs below.

Both above and below the zone the hillside is steeply cliffed, but it would not be too difficult to build a road in from the north, a distance of about one mile.

Geology:

The general geology of the district has been treated by Wilkinson (1932) and the perlite deposits immediately adjacent to the west ~~location~~ ^{connected} have been discussed by Allen (1946). The perlite zone on this property has not been ~~connected~~ with the zones to the west, but it is believed to represent the upper perlite of the Frieda area. It overlies banded, lithophysal rhyolite at least 300 feet thick, and is overlain for a distance of ^{more than} over 1000 feet by 10 to 100 feet of andesitic scoria, thin flows and ash, overlain in turn by massive rhyolite at least 500 feet thick. The entire series appears to dip gently to the north (from 4 to 5 degrees) although the dips in the red scoria are steeper in places, probably representing initial dips in a cinder cone.

The perlite zone varies in thickness from 40 to 180 feet, the thickest section visible appearing at the west edge of section 16 ~~(fig. 2)~~. The lower 10 to 40 feet of the perlite section is made up of a dark gray crumbly perlite ^(black glass) containing occasional marekanite ^{cores} (Sample #4), and is in places penetrated by chalcedonic crusts and seams. This is overlain by a 5 to 10-foot bed of dark colored, brown to gray dense massive pumiceous rock (Sample #1). Above this bed, which is particularly prominent at the west edge of section 16, lies ^{P. 12} 120 to 140 feet of pale gray perlite breccia, containing angular fragments of granular perlite from a few inches to several feet in diameter, in a matrix

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

-3-

of finer grained perlitic material. The upper 10 to 30 feet consists of a fine grained sandy perlite (Sample #5) having almost the appearance of a pumicite.

Relationships are actually not as simple as the above, which is generalized. The gray crumbly perlite is found in zones of variable size within the breccia and throughout the section.

Samples from the perlite zone were crushed, screened to -14 and +20 mesh, and expanded in an electric furnace at $1850^{\circ}F$ to give the following results:

	Approx. Expansion	Pounds per cu. ft. (calc)
5 Fine sandy perlite	x3	20.4
4 Gray crumbly perlite	x5½	15.6
2 Light colored massive pumiceous rock	x3½	18.5
1 Dense brown to gray massive pumiceous rock	x3	17.2

Results of these preliminary tests indicate that the best material, #4, is *commercial in grade* ~~equal or better in grade to that now being mined farther west~~, and that the other samples, with proper expansion technique (not obtainable with laboratory equipment available) may also be of *economic* ~~commercial~~ value. Tonnage estimates cannot be made on this material on the basis of prospecting work now done. Further trenching, sampling, and tests must be made before it can be told how large an amount of expandable material is present, but it may be large.

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

-4-

Economics:

The value of perlite, as with other nonmetallic products, depends in large part upon the ease of access and transportation facilities. This property is located about 14 miles by road from the railroad at Maupin, but it is only 3500 or 4000 feet from the railroad across the river in the gorge below. If the deposit should prove to be of sufficient grade and size, an aerial tramway to the ~~grate~~ mill and railroad siding site across the river might ~~be the solution of this~~ ^{solve the transportation} problem.

Report by: John Eliot Allen

Date of examination: May 13, 1947

Bibliography:

Allen

Wilkinson