

# State Department of Geology and Mineral Industries

702 Woodlark Building  
Portland, Oregon

February 20, 1941

OFFICE MEMO:

TO: E.K. NIXON

SUBJ: Grain examination of "Beryllium Ore" samples from north of Medford.

Under the hand lense, the rock is pale green, composed mostly of angular to subrounded lithic fragments from a few mm. to several cm. in diameter in a finer-grained matrix.

The composition, although somewhat variable, is generally as follows:

<u>Lithic fragments:</u> 85%	
Dense pale green pumice, 0.5-20 mm. dia., subangular to rounded R.I. 1.512 (87% SiO <sub>2</sub> )	60%
Porous yellow pumice, 0.5-10 mm. diam., tubular structure	8%
Brown perlite (black when unweathered) 1-5 mm. diam., sub-rounded	5
Fine-grained yellow tuff fragments, 10-50 mm. diam., sub-rounded	5
Dense grey to red lithic fragments (andesitic?) 3-30 mm. diam., sub-rounded	5
Argillite (?) 2-10 mm. diam., sub-rounded	2
<u>Groundmass:</u> 15%	
quartz, euhedral to angular, 2-5 mm.	2
Feldspar, mostly striated (plagioclase) 2-6 mm. diam., euhedral to platy	3
Fragmental material, less than 0.5 mm. diam., mostly green pumice	8
Other types as listed above	2
	100%

The green groundmass and opaque green material is a pumiceous glass, with the tubular texture usually well defined. The glass is isotropic, with only a very small amount of devitrification as exhibited by infrequent gray interference lights under crossed nicols. Its index of refraction is approximately 1.512, which is that of a glass containing 87% silica. The volcanic rock which approximates this silica content is a dacite, so the pumice can tentatively be called a dacite pumice, especially since quartz grains are common in the tuff-matrix. The color is due to abundant inclusions of globules, patches, and longulites of pale green color. Between these inclusions the glass is perfectly clear and colorless. The green color is evidently a surface feature--applied to the surfaces of all the pumice tubes, bubbles, and smaller openings.

The average analysis for this rock would probably approximate:

SiO <sub>2</sub>	66.9	Na <sub>2</sub> O	4.1
Al <sub>2</sub> O <sub>3</sub>	16.6	K <sub>2</sub> O	2.5
Fe <sub>2</sub> O <sub>3</sub>	2.5	H <sub>2</sub> O	1.1
Fe O	1.4	Ti O <sub>2</sub>	.3
Mg O	1.2	MnO	
Ca O	3.3	P <sub>2</sub> O <sub>5</sub>	.1

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## BERYLLIUM CLAIMS

Cascade area  
Jackson County

Owner: A syndicate, Wendell P. Hubbard, 1015 Security Bldg., Los Angeles, trustee; Donald J. Heintzelman, Medford Hotel, Medford, Oregon, local representative.

Location: Property is located in sec. 27, T. 33 S., R. 1 E., and secs. 3, 10, 15, 17, and part of 18, T. 34 S., R. 1 E., Butte Falls quadrangle, Big Butte Creek.

Area: It is reported that 81 claims have been staked.

Development: The locality of section 3 only was visited. Development work consists of a series of shallow pits.

Geology: The area is one of recent lavas and volcanics. The "orebody" consists of a greenish tuff bed, composed of  $\frac{1}{8}$  inch fragments of volcanic ejectamenta overlain by a vesicular lava (probably acidic) that has a number of cavity fillings. The greenish tuff weathers to a sticky clay and the soil derived from the tuff swells and checks, - characteristic of bentonitoid soils. Geodes and vugs are filled with quartz and chalcedony; these weather out of the rhyolite(?) and scatter over the hillside.

The bedding in the tuff suggests a south dip of about  $20^{\circ}$

Microscopic examination of the greenish tuff suggests that the greenish material is one of the bentonitic clay minerals (montmorillonite?) or perhaps some of the zeolites.

It appears that the tuff has been hydrothermally altered in part. This greenish material undoubtedly will analyze some  $Al_2O_3$  but in the form of silicate, so that it would be valueless as an aluminum ore. The presence of beryllium is questioned, but tests will indicate the accuracy of this statement.

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The rocks of this area belong to the series of Western Cascade Volcanics of Callaghan and Buddington 1/, probably of middle Miocene age. They are underlain by Eocene? sediments and overlain by lavas of the High Cascade series, probably Pliocene and Pleistocene. No suggestion of pegmatite could be found in the area, nor is any reported by any of the geologic surveys.

General: Claim notices of two adjacent claims were found, - location notices were made out to James E. Ryno, and Ruth F. Inks, dated July 1, 1936, and located as "glucium deposits."

The deposit was sampled by E. K. Nixon and Ray C. Treasher. #1 was from the company's #16 pit and consists of material dug from a 10 foot pit. It was weathered to sticky clay. No. 2 from the same locality but dug from the bank (in place) No. 3 and No. 4 were taken from material piled alongside the road into the property. No. 5 was taken from a shallow trench near the entrance to the property. The samplers were advised that these localities showed high grade beryllium ores.

Spectrographic examination of the samples indicated that no beryllium was present.

Informants: E. K. Nixon and RCT  
Report by: RCT, Feb. 14, 1941.

On April 23, 1943, press releases indicated that a big discovery of beryllium ore had been made "20 miles north of Gold Hill". The property owners are Charles Lull and James Ryno of Grants Pass. Checking indicated that the deposit described above is part of the deposit mentioned in the press release of 4/23/43.

RCT.

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## BERYLLIUM CLAIMS

Cascade Unclassified area  
Jackson County

Beryllium has been reported from this area, but to date no samples from any authenticated locality in Oregon have been submitted to this Department for assay that showed beryllium.

Owners: Report in 1943 indicates Charles Lull and James Ryno of Grants Pass as owners. In 1941 it was reported owned by a syndicate, Wendell P. Hubbard, 1015 Security Bldg., Los Angeles, trustee: Donald J. Heintzelman, Medford Hotel, Medford, Oregon, local representative.

Location: Property is located in sec. 27, T. 33S, R. 1 E, and secs 3, 10, 15, 17, and part of 18, T. 34 S, R. 1 E, Butte Falls quadrangle, Big Butte Creek.

Area: It is reported that 81 claims have been staked.

History: Beryllium was reported from this area several years ago. Many claims were staked and sold. In 1941, the syndicate mentioned above was working at the claims but their activity ceased early in the year. At various times, reports of activity at the properties has been reported. On April 23rd, 1943, P. M. Millsbaugh, director of the strategic minerals survey of the County Supervisors Assoc. of California, released information received from R.O. Hamilton, a mining engineer from Sacramento, about the deposit. A great deal of interest was shown in the press report.

Development: The locality in sec. 3 only was visited. Development work consisted of a series of shallow trenches and

# State Department of Geology and Mineral Industries

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-2-

assessment work adits. It is understood that a quarry face was  
ope  
opened in sec. 17 or 18.

Geology: The country rocks of this area are andesitic tuffs and other pyroclastics that are interbedded with lava flows. They have been called the Western Cascades Volcanics by Callaghan (38) and range in age from middle Miocene to late Pliocene. Some of the tuffs are very fine grained and resemble pumicites. Others are coarse grained and contain pumice fragments up to  $\frac{1}{8}$ -inch in size. No granitic or pegmatitic rocks have been found in the area. Color ranges from white, to buff, to light green.

Percolating ground water has altered many of the tuffs to bentonitoid clay material. The water also has taken silica into solution and redeposited the silica in cavities as chalcedony and crystalline quartz. Large masses of chalcedony with greenish streaks are common and vugs and geodes may be lined with beautifully terminated quartz crystals one-half-inch in diameter.

Microscopic examination of the greenish tuff indicates that the greenish material is one of the bentonitic clay minerals (montmorillinite?) or perhaps some of the zeolites which contain small amounts of green chlorite. The green streaks, and color, of some of the chalcedony, probably results from chloritic inclusions.

In general, there are three types of "ore" <sup>(?)</sup>. The greenish tuff is variously reported to contain from 5 to 12 percent beryllium oxide. The green streaked chalcedony is reported as phenacite, the beryllium silicate. The quartz crystals are

# State Department of Geology and Mineral Industries

-3-

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presumed to be beryl crystals.

Spectrographic examination of these materials shows blank, to traces of beryllium. Even the traces are of no concern as many rocks contain traces of beryllium, as well as other valuable minerals, but the insignificant amount cannot be considered as anything but of academic interest. Use of index oils quickly disproves that the chalcedony or quartz is phenacite.

General: Five samples were taken from an area in section 3, the only deposit that was accessible in February, 1941. The "ore" is a greenish tuff that has been weathered to a sticky clay in spots. The samples came from localities represented as assaying high grade beryllium.

The deposit was sampled by E. K. Nixon and Ray C. Treasher. #1 was from the company's #16 pit and consists of material dug from a 10 foot pit. It was weathered to sticky clay. No. 2 from the same locality but dug from the bank (in place) No. 3 and No. 4 were taken from material piled alongside the road into the property. No. 5 was taken from a shallow trench near the entrance to the property. Spectrographic examination of the samples indicated that no beryllium was present.

Claim notices were made out to James E. Ryno, and Ruth F. Inks, dated July 1, 1936, and located as "glucium deposits."

References: Callaghan 38  
Wells

Informants: E. K. Nixon and Ray C. Treasher, Feb 14, 1941

Report by: RCT.

4/24/43

# State Department of Geology and Mineral Industries

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BERYLLIUM CLAIMS

Cascade Unclassified area  
Jackson County

The Medford Main Tribune and the Richfield Reporter on April 23 announced the discovery of an enormous deposit of beryllium in the area north of Gold Hill. The announcement was made from Sacramento by P. M. Millsbaugh, director of the Strategic Mineral Survey of the California county supervisor. The Richfield Reporter said that Charles Lull of Grants Pass was the discoverer.

Saturday morning Herbert Hawkes of the U.S.G.S called upon Mr. Lull to get full particulars. Mr. Lull pointed out that he would be very glad to give him the information, however, had he come from the State Department of Geology, he wouldn't have gotten anything. Hawkes turned the following information to us and requests that neither his name nor the U.S.G.S. be used in connection with it.

The owners of the property are <sup>Jama</sup> H. E. Ryan and Charles Lull. There are 81 claims located in sec. 27, T. 33S, R. 1E, and secs. 3, 10, 15, 17, and part of 18, T. 34S., R. 1E. The deposit is a little less than a mile wide and over a mile long. Lull's estimate of tonnage is 10 million tons, but a noted engineer has upped the tonnage considerably. The proven depth is 150 feet. There are two kinds of material; material which Hawkes said looked very much like chalcedony with some green streaks in it and a green tuff. Lull did not permit Hawkes to copy any assay data, but as nearly as Hawkes could remember there was 46 percent beryllium oxide, 55 percent silica, 23 percent alumina, and 1½ percent nickel. It's noteworthy that there was no iron, potash, or soda.

This is approximately the same locality that has been visited several times; once by the Hodge Mineral Survey, three times by the State Department, and at least once by the U. S. G. S. The general locality is the same and the material is the same. Your attention is called to the Jackson County Mines Catalog for a report dated February 14, 1941.

Ray C. Treasher