

# State Department of Geology and Mineral Industries

1069 State Office Building  
Portland 1, Oregon  
~~Lower~~ <sup>Upper</sup> Burnt River District  
Baker County

## MUD SPRING CLAIMS (Bentonitic Clay)

**Owner** Frank Armstrong, 1069 Elm Street, Baker, Oregon

**Location** T 12 S, R 38 E, Sec 32 and 33. These claims are situated about one mile from the John Day highway and are reached by a county road turning off at the Jefford ranch near Hereford. This road skirts the deposits about one half mile distant therefrom.

**Area** 8 placer claims called the Mud Spring and Mud Spring annexes Nos. 1 to 7. These were taken August to October, 1945.

**History** From the standpoint of past operations, this property has no history. Samples were submitted to this Department by Mr. Armstrong and upon examination these were found to be a good grade of bentonite. Because of this, the current examination was made to obtain more information concerning the nature and extent of the occurrence.

**Development** None.

**Geology** Bentonitic clay is to be seen in abundant and widespread croppings in an area of some 320 acres with less abundant and more scattered occurrences being known to exist in adjacent areas. A complete lack of prospect trenching and significant natural sections obscures the facts concerning the nature of the occurrences and their extent, but it is evident that the whole region was one of volcanic activity, especially hot springs making siliceous depositions with minor amounts of rhyolitic flows. Seemingly mud flows were predominant however, and the indications are that extensive and thick occurrences of bentonitic material of variable grades may be found underlying some of the siliceous capped hills. These hills appear to be remnants of early deposition from numerous scattered and individual sources. By and large, the deposits as seen today reflects original topography modified by erosion, with most of the deposits coalescing so that few clean-cut, individual deposits are to be seen. In some instances, the deposition is clearly clay, cut at about 3 to 4 foot intervalls by steeply dipping siliceous material a foot or so thick. In other instances, the indications are that very appreciable thickness of clay may occur free of closely spaced siliceous partings. One "mud spring" exists. This measures about 12 feet across its crater which can be defined only by proding the mud, the whole surface of which will rock when agitated. This "spring" has built a low cone, and reportedly, it fills with mud as fast as the material is dug out. Reportedly also,

four 10 foot rails were joined and sunk in this crater without sounding bottom. This spring remains today as a relic of the sort of conditions which apparently prevailed throughout the whole area when it was active.

Economics      The grade of the Bentonitic material obviously varies appreciably in the area. Samples were taken of these variations at places where indications suggested the occurrence of appreciable tonnage. If laboratory examination of these samples (FB- 182-183) shows that a promising grade does occur, a program of systematic prospecting to determine the existence of minable quantities of good grade materials appears warranted.

Report by:      N. S. Wagner

Date of exam:   November 7, 1945

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