

# MAR 19570016: GRANDE PRAIRIE

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WR:IJH

PLEASE QUOTE FILE NO. 86693

GOVERNMENT OF THE PROVINCE OF ALBERTA  
DEPARTMENT OF MINES AND MINERALS  
MINERAL RIGHTS DIVISION

NATURAL RESOURCES BUILDING  
EDMONTON, ALBERTA

December 16, 1957.

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ECONOMIC MINERALS  
FILE REPORT No.  
BNT-AF-09

ATTENTION: Dr. Grovenor

Gentlemen:

Re: Reservation for Quarrying (Bentonite)  
located in townships 71 and 72, ranges  
3 and 4, west of the 6th meridian

19570016

I am enclosing for your records a Final Geological Report by Mr. J. S. Carter pertaining to the above application.

This application has been surrendered without leases being selected.

Yours very truly,

Robert A. Seaton,  
Asst. Director of Mineral Rights.

Research Council of Alberta,  
University of Alberta,  
EDMONTON, Alberta.

REGISTERED MAIL

Encl.

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BENTONITE - Grande Prairie, Alberta.

OBJECTIVE - Magnet Cove Barium Corporation Limited, being suppliers of drilling fluids to the oil industry have been conducting a limited exploration program to find an economical deposit of Bentonite in Alberta for the past few years.

LOCATION: Mr. P.J.S. Byrne of the Research Council of Alberta published a report entitled "Bentonite in Alberta" in 1955. It was from this source of information that a company geologist, Mr. Fred Fox, visited the area North-east of Grande Prairie, Alberta in late summer of 1956.

The Bentonite outcrop described by Mr. Byrne as in the Kleskun Hills about 12 miles North East of Grande Prairie was examined and sampled on a road cut in S. E.  $\frac{1}{4}$ , Section 27, Township 72, Range 4, West of the 6th meridian.

This area lies on the north flank of the Kleskun Hills and under light overburden and appeared to have economic possibilities for mining by stripping off the overburden. The general topography consists of gentle rolling cultivated lands rising about 200 feet in elevation to scattered groups of hills.

GEOLOGY - The formations in which the Bentonite Beds occurred was upper Cretaceous in age and classified by Rutherford 1930 as being the upper portion of the Wapiti formation consisting of Grey sandstone, Carbonaceous shale, and thin coal seams. The Bentonite is overlain and underlain by silty Bentonites and Bentonitic sands and was believed to be a thin bed of unknown lateral extent.

The strike of the beds was judged by Mr. Fred Fox, Company Geologist, to be approximately N 83 W and the dip approximately 40 feet to the mile southwards.

SAMPLING - Three samples were taken from the exposed portion of the Bentonite Bed for laboratory tests to evaluate the clay for suitability in drilling fluids.

Sample No. 1 was taken on the road cut in north east portion of SE  $\frac{1}{4}$ , Section 27, Twp. 72, Rge. 4, W 6 M. It occurred under 2 - 5 feet of overburden and tested with a yield of 64 bbl/ton. The sand content was low with 0.85% by weight.

Sample No. 2 taken approximately half mile to south east was found to have a yield of 52 bbl. per ton with 0.46% sand content.

Sample No. 3 was found to be similar to the above samples and was taken  $\frac{1}{4}$  mile to east.

Although the Bentonite showing was only of fair quality it was decided that a preliminary drilling program should be undertaken to prove extent of the deposit and see if quality of the Bentonite would possibly improve.

Reservations for a Bentonite Exploration Permit were granted by the Government, Dept. of Mines and Minerals on the following lands:-  
Sections 1, 2, 3, 4, 8, 9, 10, 11, 12, 15, 16, 23, 25 and 26 of Twp. 72, Rge. 4, W6M.  
Sections 13, 23, 24, 25, 26, 27, 34, 35, 36, of Twp. 71, Rge. 3, W6M.

(2)

a total of 30 sections.

EXPLORATION -

A post hole auger type drill was contracted and 3 holes were drilled in line to north from road at sample No. 1 which as previously described was taken in area north east of S.W. 1/4, Sec. 27. These holes were drilled to a depth of about 30 feet and 15 feet apart.

A thin bed was found with thickness of only less than one foot. Six holes were similarly drilled to south and the conclusions of Mr. J. F. Brown, Company Geologist were that the clay bed was in the form of a thin lense and not sufficient size to warrant further work.

Sixteen more holes were dug in the area. These were scattered northwards both east and west spaced about fifty feet apart. No trace of Bentonite was found.

The area to south was also covered in the same manner with holes 50 feet apart and no Bentonite beds found.

It was concluded that only a small lense or pocket existed and this produced a low yield of about 43 bbl/ton.

The preliminary drilling program ended in mid January 1957, due to poor results and winter conditions.

A total expenditure of \$2,500.00 was spent for drilling this area.

The conclusions were that the Bentonite found in this area was in the form of small lenses of low quality, clay and extremely small tonnage, which would not warrant further exploration work.

Respectfully submitted,

J.S. Carter, (signed)

J.S. Carter.  
Geologist.