

A REPORT ON

GEOLOGICAL SURVEY OF WYOMING

THE SERPENTINE GROUP.

ON SMITH CREEK, NEAR CASPER, NATRONA COUNTY.

WYOMING.

SITUATION.

The Serpentine Group lies near the head of Smith Creek, in Sections 19 & 20, 29 & 30, Township 51 North, Range 70 West, about sixteen miles in an air line south-east of Casper and about 30 miles by wagon road, in the south-eastern part of Natrona County, Wyoming.

Casper, the county seat of Natrona County, is the nearest supply point and Big Muddy Station, on the Chicago and North-Western Railroad is the nearest railroad and shipping point, distant about twenty miles, the road being downhill from the mines to the station.

EXTENT.

The group consists of ten lode claims as follows:

- Serpentine Number 1.
- " " 2.
- " " 3.
- " " 4.
- " " 5.
- " " 16.
- " " 17.
- " " 18.
- " " 19.
- " " 20.

These claims comprise about 200 acres, held by location and discovery under the laws of the United States and the State of Wyoming.

GENERAL GEOLOGY.

Smith Creek heads in the chain of mountains that extend easterly and westerly in Central Wyoming easterly from the North Platte River, the western end of these ranges being known as Casper Mountain and the succeeding ranges east being known as, Muddy Mountain, Deer Creek Park and local names applied to the various peaks.

These ranges consist principally of a core of granite and similar rocks flanked by limestones and the succeeding sedimentary deposits, such as shales, sandstones, gypsum beds etc. These beds show dipping at various angles throughout this vicinity and in some cases lying flat on the granite on the top of these ranges but usually missing as the top of the range is reached.

Associated with the granites are dykes of diorite and allied rocks and serpentine is noted at Casper Mountain, Muddy Mountain and Deer Creek Park, and in this serpentine is found the asbestos that has attracted so much attention to this section.

The full extent of this serpentine has not yet been explored but it has been shown to carry asbestos of fine quality and the quantity may be said to be practically unlimited. The existence of this material has been known for many years and the quality of samples conceded to be the best but it is only recently that steps have been taken to put it on the commercial market, and the properties opened up on a commercial scale.

THE SERPENTINE GROUP.

This group covers a huge outcrop of serpentine lying on the north-west side of Smith Creek, having a north-west and south-easterly trend or direction but which has not yet been entirely opened up or exposed.

The principal work has been done on the Serpentine No. 1 claim, where a number of open cuts have been made and the asbestos bearing material has been exposed for a width of over one hundred feet, the total width of the serpentine rock being several hundred feet and it is probable that other veins will be opened here by the future work.

The cuts have shown a network of veins filled with asbestos, the fiber varying from a hair line to several inches in length, the usual small veinlets showing a width of from one-quarter to an inch in length, with the larger veins showing through the mass of small veinlets, and the whole forming an excellent milling rock.

The asbestos here is of the variety known as "chrysotile" and is of very fine quality of fiber. Samples taken at random from the rock may be rubbed up in the hand to a soft wool like mass and twisted into thread like silk or fine cotton and which then shows remarkable strength and spinning qualities.

Chrysotile Asbestos is a fibrous, greenish white mineral, possessing many remarkable heat, sound and electricity non-conducting qualities and the finer grades are capable of being worked up into cloth, roping, wicking etc, and the lower grades are used for fireproof coverings, plaster etc. of many grades and uses. This group shows both grades in abundance and of the very best quality produced.

With the Chrysotile variety occurs some of the brittle variety called Amphibole but at present this need not be considered: later it may become valuable in working up waste material into plaster etc.

Several cuts have been made on the Serpentine No.2 and small holes made on the southerly end of the group but the main work has been done on the No. 1 claim and for the present, work should be confined to this showing.

DEVELOPMENT.

It is recommended that the present open cuts be further opened up and the showing on the asbestos veins enlarged as rapidly as possible, by making new cuts adjacent to the present openings, connecting all the cuts and making a huge open face the full width of the serpentine showings and preparations made to push open cut mining on a large scale on these veins and produce the asbestos as cheaply as possible.

At the present time there is a considerable quantity of the ore on the present dumps ready for milling and market and it is recommended that a small milling plant be erected at a point below the present cuts on No. 1 claim, to roughly mill this fiber and enable it to be marketed at once.

For the present this mill should be arranged as follows:

- One rock crusher,
- one set of rolls,
- two shaking screens,
- one picking belt,
- Gasoline engine for mill power.

Such a plant properly arranged and installed will separate the rock from the contained fiber and enable the producer to market the fiber at once, especially for the lower grades, and the picking belt need only be

used when the better grade or longer fiber is being handled and it is desired to make two grades of product.

Such a mill should be built for about \$3500.00 as no expensive buildings or water connections need be made and at the present time all that is required is the separation of the fiber from the rock and the rough fiberizing by the rolls to put it in shape for market. A gasoline power plant is used on account of the long haul and that the plant may be used as required without long delays in getting up steam or other expense in maintaining when not in use.

Water for all purposes is obtained from springs on the property and Smith Creek runs about a mile away, and later, when an extensive plant is required ample power may be had in this stream for electric plant and power. There is practically no timber on the property but logs for building purposes may be obtained from the adjacent mountains. A road has been graded from the foot of the mountain and all materials may be readily transported as required. There are two log buildings now on the property and these may easily be enlarged to accommodate any force that may be required at the mine.

OWNERSHIP.

The Serpentine group is held as stated by the Wyoming Asbestos Mining, Milling and Manufacturing Company, of Casper, Natrona County, Wyoming, Incorporated under the laws of Wyoming for \$1,000,000.00, divided into 100000 shares of a parvalue of \$10.00 each.

SUMMARY.

It is considered that the Serpentine Group is a first class proposition for development, that it fully warrants the expenditure of money necessary to open up and equip the property and that the quality of the asbestos is such that it will always command a ready market for this product.

In my opinion, the mill suggested will handle all the ore produced for the present and the machinery may be used when the mill is enlarged or improved but the property should pay its own way as soon as the mill is up and running and enable the more active development of the property and erection of a larger and more complete mill when required, without further expense to the owners.

There is a large and constantly increasing demand for asbestos materials and there is no reason why this property should not be made to produce commercial asbestos at a commercial profit.

Respectfully Submitted,



State Geologist.

Date of Examination.
July 5th & 10th, 1907.

Casper, Wyo. 7-11-07.

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