

MR 190/ -89

A BRIEF REPORT

GEOLOGICAL SURVEY OF WYOMING

on

THE WYOMING SULPHUR COMPANY PROPERTY,

near

THERMOPOLIS, FREMONT COUNTY, WYOMING



SITUATION

The land embraced in this property lies in Section 21, Twp. 43 N R. J95 W., on the South side of Owl Creek and about 3 1/2 miles north west of Thermopolis, in the northern part of Fremont County, Wyoming.

Until recently this section has lain remote from a railroad but the Burlington Route has built to within twelve miles of Thermopolis, and construction work is now going on between these two points, insuring a railroad within a short distance of the property in the near future.

EXTENT

The property consists of two claims and mill site as follows:

- THE CRIMSON FLAME PLACER
- THE HELL FIRE PLACER
- THE TAFT MILL SITE

This includes 185 acres of land held by location and discovery under the laws of the United States and the State of Wyoming.

GENERAL GEOLOGY

The Thermopolis vicinity shows a series of uplifts which have left exposed in a number of ridges and valleys, the various formations above the Carboniferous limestones, and the most prominent feature of these formations is the "Triassic Red Beds" which overlies the Carboniferous limestones and occurs at the famous Big Horn Hot Springs and extends northwesterly to point beyond this property and south easterly for several miles.

THE WYOMING SULPHUR CO.

As stated, these are situated in Section 21 and cover the land from a point south of the sulphur outcrop to Owl Creek.

Here the topography consists of a high ridge running northwesterly and southeasterly, caused by the elevation of a part of the upper Carboniferous limestones to a point above the surrounding formations and with the sides of this ridge showing a great deal of erosion or scouring away of the softer Triassic Red Beds lying on this limestone, which now forms one of the small tributary valleys or flat gulches leading down to Owl Creek.

The sides of these ridges show a lot of shallow dry gulches with small ridges or points between, leading down from the main ridge and the upper part of these points is usually the limit of the overlying formation where the erosion has not been complete.

OCCURRENCE OF THE SULPHUR

The sulphur occurs lying near the surface, outcropping in some places, along the north side of this ridge and usually lies in a bed dipping to the northeast, in common with the general formation. The ridge is formed by the hard limestone and the sulphur is noted in the formation a few feet above this limestone, indicating that it occurs in the lower part of the Triassic Red Beds.

A number of cuts and shafts and smaller holes have been sunk along the general line of this outcrop for a distance of about 2000 feet and the sulphur shown for about that distance.

Shaft No.2 which shows about 15' deep, with several small cuts adjacent to it, shows conditions which indicate it to be about on the upper or southerly line of this deposit and on or about the line of the break through which the sulphur came up.

It is evident that this sulphur was deposited from a series of hot sulphur springs situated along the line of the break, which extended northwesterly and southeasterly through the point now shown in shaft No. 2, and that the sulphur water flowed over and through the adjacent formation of that time, depositing the sulphur in its present state, and was covered by the natural erosion of the ridges above.

The soft gypsum deposit from the springs is found all through the workings now opened, outcropping on the surface and between the layers of gypsum, shale, and sandstone that compose the lower Triassic formation at this point, and there is no doubt that this sulphur is a springs deposit.

WORKINGS

These are 20 in number and may be briefly described, passing from east to west; Nos. 18, 19 and 20, lie on the easterly end of the property and show sulphur in quantity from five to ten feet thick, with rich streaks of lesser size.

Nos. 13, 14, 15, 16, and 17 are sunk in the thicker overlying formation and show no sulphur at the depth reached.

No. 12 lies next to the above and shows about 75 feet of cuts with a shaft 15 feet deep, and the sulphur shows nearly the whole depth.

No. 5 shows about 12'-14' of sulphur.
No. 6 " " 7' in cut
No. 7 and 4 are in overlying material
No. 3 shows sulphur impregnated material
No. 8 shows about 10 feet of sulphur rock
No. 9, 10, and 11 are in overlying rock

No. 2 is on the break that furnished the sulphur for the rest of the deposit and shows a shaft about 15 feet deep with cuts adjacent, all showing sulphur. Here is the only place where the sulphur shows pitching into the hill and the whole appearance, as well as well as can be judged by the limited work, is that it is a chimney or fissure in the formation and most probably the break above noted.

PROSPECTING

It is evident that this deposit covers a considerable area, the full extent of which may not now be given, and it is recommended that a number of drill holes be put down to this sulphur, beginning at a point northeast of the present holes and working that direction on a northwest and southeast line back or towards the valley.

The dip of the formation is northeast and each hole in that direction will be deeper until the limit of the sulphur or of profitable work is reached. As the formation is soft and none of the holes will be very deep, this work should not be expensive and should be done cheaply and rapidly by a small portable churn drill outfit, which will furnish all the information required.

A hole might also be put down at No. 2, to determine the depth of the present showing and whether it is a seam or simply a thick place in the deposit.

EXTENT OF THE DEPOSIT

No exact figures may be given now as to the extent of this sulphur deposit but enough has been shown by the present prospecting work to indicate that it is at least two thousand feet long and ten to fifteen feet thick at various parts of the shown area and of an unknown width or lateral extent.

QUALITY

The sulphur shown is of undoubted quality, some of the streaks being practically pure sulphur and a great deal of the remainder of high grade.

The following analyses show the quality.

Sample No.	Mark	% Sulphur	% Arsenic	Shaft No.
1	1	79.10	.055	19
"	2	66.35	.076	18
"	3	57.25	.043	18
"	6	62.60	.052	12
"	7	31.85	.030	5
"	8	83.45	.072	3
"	9	82.25	.063	2
"	10	57.75	.067	8

TIMBER AND WATER

There is no timber whatever on the group, the land being an open bare hillside and flat, down to the creek; lumber may be had at Thermopolis, for from \$40 per M. up, but the advent of the railroad should lower prices.

Water is obtained from Owl Creek which flows along the northwest side of the Taft Millsite and is sufficient for all purposes. Application for water for all purposes must be made to the State Engineer, Cheyenne, Wyoming.

CONCLUSION

It is considered that the present work has shown up a great deal of sulphur, that it is of good commercial grade and that exhaustive work to show up the full extent of the deposit is fully merited, and that enough is now shown to warrant the immediate erection of a small plant to treat the ores now available and what may be taken out in development.

Mining may be done here very cheaply by scraping off the soil and working in open cuts which may be varied as the deposit varies and require no ventilation or expensive machinery.

This sulphur is a good development proposition and fully justifies the expenditure necessary to open it up and demonstrate the showings now made.

Respectfully submitted,

/s/ Henry C. Beeler
State Geologist

Date of Examination

July 13, 1907