

The Davis Mine, or Mouse River Lignite Coal Company,

Township 155, Range 84, Section 12.—This mine is located one mile southeast of Burlington, on the Soo railroad, and eight miles from Minot. The entrance to the mine is about thirty-five feet above the level of the road and leads down an incline to the lignite, forty feet lower. The thickness of the seam as worked is ten feet. Below this 1 in, at a depth of from ten to fifteen feet, another seam three feet thick is known to exist. The seam worked has a two-inch clay seam about two feet above the bottom, and a layer of soft coal between three and six inches thick, eighteen inches below the roof of the mine. The seam varies considerably in the chemical properties of the lignite from the top to the bottom, as shown by the analyses. This mine is illustrated on plate XIX. Clay is found both above and below the seam. Between the seam now mined and the portion of the same seam worked out in the old mine a deep erosion channel, partly filled with boulder clay, exists.

The following analyses show the relative composition of the

lignite from different parts of the seam :	PERCENT
Volatile matter	35.83
Fixed carbon	51.58
Ash	11.88
Total	100.00

Moisture 32.00

Sample from the top of the seam :	PER CENT
Volatile matter	32.60
Fixed carbon	46.42
Ash	29.98

Total 100.00

Moisture 30.00

Sample sixteen inches above the clay seam:

	PER CENT
Volatile matter	42.14
Fixed carbon	47.36
Ash	10.50

• Total 100.00

Moisture 34.70

Sample from the lower twenty inches :

	PER CENT
Volatile matter	38.93
Fixed carbon	52.96
Ash	8.11
T o t a l	100.00
M o i s t u r e	34.70

The amount of moisture, as shown by the analyses, is nearly constant. In collecting material for these and subsequent analyses, great care was taken to prevent loss of moisture up to the time of analysis, and the amount shown may fairly be regarded as indicating the amount present in the lignite as it stands in the mine.

A section from the bottom to the top of the seam appears as

follows:

	FEET	INCHES
8. Clay above the seam		
7. Roof of lignite	2	
6. Upper sixteen to twenty inches of mine		18
5. Soft layer where miner begins work		
with pick		3-6
4. Solid lignite	4	
3. Clay seam persistent through the mine . . .		2
2. Lignite, best in the mine 1	8	
1. Clay (plastic)		

A section showing the number of seams and the nature of the clay above them is shown in figure 8. Entries run back under the hill over 900 feet, and many rooms have been worked out, the mine having been in operation four years.

quality.

No diminution in the thickness of the vein has yet been observed, and it remains fairly uniform in

The output of the mine varies with the season, running during the summer, at from seventy-five to 100 tons per day, and 200 tons a day from September 1st to April 1st. The record of the mine shows that 5,000 tons of lignite are won from every acre mined. Miners receive for room work 50 cents, and for entry work, 80

cents per ton, experienced men earning often River from \$3 to \$5 a day.

The mine is worked double entry with room and pillar plan modified to overcome floor heaving. Ventilation of the mine is accomplished through forced draft, the air being driven along temporary flues at the side of the entries.

The only peculiarity noticed in the mine was a clay-filled fissure, six inches thick, running for a distance of several hundred feet. Heaving of the floor, due to the extreme plasticity of the underlying clay, makes heavy timbering necessary. In several of the abandoned rooms the floor has raised until it is now within two or three feet of the roof. The same effect is noticed in the entries.

Associated with the mining, a brick plant is operated on a large scale. It is found that 220,000 brick can be burned with 115 tons of lignite.