

SUMMARY REPORT ON THE
POSSIBILITIES OF MANUFACTURING GLASS
AT LARAMIE, WYOMING

by

S.H. KNIGHT

APRIL 1922

HISTORY OF EARLY GLASS PLANT

Approximately 100,000 boxes of glass were manufactured at Laramie, Wyoming during the years 1892-93. The plant was constructed at an original cost of \$23,000. The original company was organized in 1886 under the name of the Laramie Glass Company. The organizer of this company failed to make glass owing to his ignorance of the glass-making industry. The company later secured a practical glass man from the east who succeeded in manufacturing a high-grade glass. The failure of the plant was due in part to poor management, and in part to competitive freight rates.

The following figures serve to give some appreciation of the cost of operating this plant.

The materials utilized by the Laramie Glass Co., laid down at the works, cost as follows:

Sand	\$.90	Per Ton
Limestone	.90	" "
Soda(calced)	10.00	" "
Slack Coal(Rk. Sprgs)	1.25	" "
Nut Coal " "	3.00	" "
Glass boxes(average)	.19	Each
Hay (for packing)	10.00	Per Ton

The charge used for the manufacture of the best quality of glass was as follows:

Sand	1000 lbs.
Lime	400 "
Soda	400 "

The freight-rate on glass in C/L lots to Denver was \$.25 per hundred pounds, and the glass was sold in Denver at the following prices:

Single Strength - 16 x 20 -	\$2.55	per box of 50'
Double Strength - 24 x 36 -	5.50	" " " 50'

The following prices were paid to glass makers while the plant was in operation:

Single-Strength glass, size 16 x 20

Blowers	\$.36 per box of 50'
Flatteners	.25 " " " 50'
Gatherers	.09 " " " 50'
Cutters	.135 " " " 50'
Total	\$.815 " " " 50'

Double-Strength glass, size 24 x 36

Blowers	\$.85 per box of 50'
Flatteners	.265 " " " 50'
Gatherers	.21 " " " 50'
Cutters	.20 " " " 50'
Total	\$ 1.725 " " " 50'

I submit these figures as they might serve as a basis of computing approximate costs under present operating conditions.

AVAILABLE RAW MATERIALS FOR THE MANUFACTURE OF GLASS AT

LARAMIE.

Sand.

Location: Two miles east of Laramie in Sec. 25, T.16 N., R. 73 W., and adjacent territory. The outcrop is 200' higher than the town.

Thickness: Two to four feet; average 3 feet.

Extent: The sand is present as a continuous bed over a large area, and it is covered with an overburden of from 0-10'. Resting directly upon the sand is 7 to 8 feet of flaggy calcareous sandstone, followed by 2 to 3 feet of limestone, which forms the cap rock over the entire area. Underlying the sand is 15 feet of red sand. The sand is sufficiently friable to be worked readily with a pick and shovel. The amount of sand available under the above conditions is practically inexhaustible.

Composition:	<u>Sample #1</u>	<u>Sample #2</u>
Chemical Composition		
Silica	99.04	97.92
Fe ₂ O ₃	.73	2.01

Mechanical Composition:

Limestone.

A 10-foot bed of limestone of a high grade of purity, and of unlimited amount occurs in the vicinity of the glass sand. The chemical analysis of a sample of this limestone is as follows:

Calcium Carbonate	98.83 %
Magnesium Carbonate	.45 "
Iron Carbonate	.02 "
Iron Bisulphide	.10 "
Aluminum Oxide	.43 "
Silica	<u>.05 "</u>
Total	99.88 %

Soda.

There are two natural soda deposits in the Laramie Valley from which soda for the manufacture of glass might be obtained:

The Union Pacific Soda Lakes: These so called lakes are a group of ponds which originally covered an area of 60 acres in the N. $\frac{1}{2}$ Sec. 4, T.14 N., R. 75 W. Approximately 10,000 tons of soda were produced from these lakes when the Laramie Glass Company's plant was in operation, at which time the deposit of soda was reported to have a thickness of 12 feet. A reliable estimate of the amount of available soda in these ponds would necessitate a detailed study of these deposits under their present conditions. Seepage water, which has been allowed to drain in these ponds may have materially reduced the original amount of soda present.

The Downey Lakes: These ponds are located 21 miles southwest of Laramie, There are three deposits arranged one below the other, with only a distance of a few hundred feet between them. A detailed study of these deposits has recently been made by the Geological Survey of Wyoming. A copy of the report is attached hereto.