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Smooth Rock Falls Power Development

Preliminary Survey Work—Plant Completed and in Operation One Year After the First Concrete Was Poured—Paper Read Before the Association of Ontario Land Surveyors

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THE site of this plant is at Smooth Rock Falls on Mattagami River, thirty miles west of Cochrane on the Transcontinental Railway and three miles north of the track. (Fig. 1.)

Five years ago Duncan Chisholm, of Toronto, secured from the Ontario government the lease for a pulp wood limit of 25 townships on the Mattagami River, between Porcupine and the Transcontinental Railway. It covers an area of 684 square miles and is considered one of the best limits in Ontario.

Preliminary surveys of three falls (one below and two above) were made by our firm during the summer of 1914, and about 18 miles of river traversed by the micrometer and stadia method and rough contours taken. With the data secured, Smooth Rock Falls was chosen as the site of this plant. A direct line was run between Yellow and Smooth Rock Falls to be used in locating a railway spur, the line crossing the Transcontinental Railway about a mile east of the river. On running section lines on that

river, worked out to the best advantage. These lines were carefully lettered and numbered and permanently established for future reference. Each 100-foot square was then sectioned as the character of the ground and the importance of the location demanded. It was in this man-

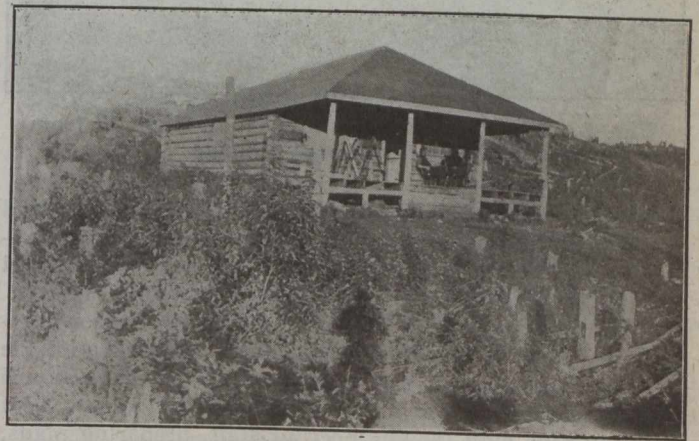


Fig. 2.—First Camp Built Near Site



Fig. 1.—Site of Plant

portion between the railway and Smooth Rock Falls, it was found that the line could not be improved on, and this is now the location of the company's spur line.

The general character of the river and banks having been ascertained, some time was spent in taking cross-section and soundings at the various falls, a camp being built for better accommodation (Fig. 2). It was found that lines running parallel to, and at right angles to the

ner that the sections were taken at Smooth Rock Falls and the data thus acquired was constantly referred to during the entire design and laying out of the plant.

A slightly different procedure was found necessary in taking soundings but they were done along the parallel lines referred to. A 1½-inch manilla rope was swung across the river above the falls and supported at 100-foot intervals by rafts designed to keep the rope clear of the water, and to let any driftwood pass through. The banks were cleared back for about 50 feet on either side and pickets carefully set and plumbed at 10-foot intervals. A similar line was set half-way down the falls and points set by means of improvised bridges over the east and west channels. Cards were tied to the ropes at 10-foot spaces, thus marking the place to set the lead line when soundings were being taken. A 20-ft. canoe was used with three men, two to handle the lead rope and one to use the sounding rod. The sounding rod, which was a length of drill steel, marked in feet and half feet, was dropped at 10-foot intervals as the canoe came in the range of the pickets placed on the shore. The depth was called by the rear canoeman to the observer on the shore and in this manner over 300 soundings were taken in 2½ hours, the maximum depth of water being 9 feet. Elevations of the water were taken in several places and bottom elevations computed for the soundings. In fairly smooth swift water this method