

The Canadian Engineer

A Weekly Paper for Civil Engineers and Contractors

Dundas Has New Filter Plant on Gravity Supply

Expenditure of Only \$30,000 Provides Progressive Ontario Manufacturing Town With Modern Filtration Plant of 700,000 Imperial Gallons Daily Capacity—Concrete Dam Forms Conservation Reservoir and Provides Ample Head for the 1½-Mile Pipe Line to Filtration Plant

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DUNDAS, Ont., is situated at the base of one of the most precipitous points to be found along the Niagara escarpment. The limestone bluff rises like a wall on the north of the town to a height of 500 ft. At the other end of the town is the head of the old Desjardins Canal, where the water level is that of Lake Ontario, of which the canal is the extreme western limit. The escarpment at the west end of the town is broken by a deep, tortuous gorge, down which a small creek, known at this point as Dundas creek, flows from the tableland above, forming a cascade of about 100 ft. drop, called Websters' falls.

The town's first source of water supply was from certain small springs flowing out of the face of the escarpment at various points, which were piped to a reservoir 200 ft. above the town. As the demand increased the pipe line was extended to a mill dam on the Dundas creek, where sufficient head could be obtained to carry the water over the brow of the escarpment.

It was conveyed by an iron pipe line to a rapid sand filter of 250,000 gals. a day capacity, situated at the reservoir.

About six years ago, the dam was carried out by a flood, and the whole question of water supply came up for reconsideration. There were three possible sources to choose from:—

(1) The creek from which the water had been obtained in the past.

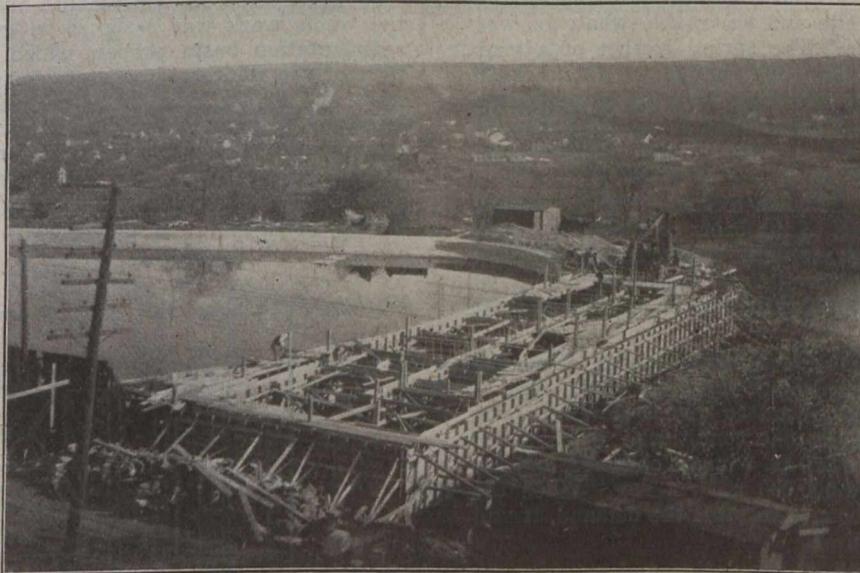
(2) Desjardins Canal, the water of which was virtually the same as the creek water with the drainage of the town added to it.

(3) Lake Ontario. The only practicable way of obtaining water from this source would be by connecting with the city of Hamilton system, which would mean a pipe line about six miles long. And Hamilton, like all growing cities, has difficulty in meeting its own demand at present. Moreover, the cost of piping and pumping would make it a very expensive proposition under existing conditions. However, if Hamilton should have a surplus of water in the future, and there is a possibility that some day it may have, then this might prove an economical and satisfactory source of supply.

The objections to the second source were the impurity of the water, which would require more careful filtering than the water from Dundas creek. It would also have to be pumped to the reservoir at the other end of the town, necessitating a new main in addition to the filter and pumping equipment.

The possibility of obtaining satisfactory water from deep wells also received consideration, but this idea was abandoned

in the absence of any definite information, the geological formation of the district not being promising in this respect. The Medina shale which crops out along the base of the Niagara escarpment is the formation in which natural gas is found in the Welland and Haldimand fields to the south and west of Dundas, and at several points along the escarpment "sulphur springs" flow from it; so the probability is rather against the finding of pure water from deep wells in this district. The Public Utilities Commission of Dundas, which has charge of



FORMS IN PLACE FOR FIRST STORY OF FILTER BUILDING

the water works system, therefore decided upon the development of Dundas creek as a source of supply.

Dundas creek has a watershed of about 50 square miles. The thick strata of limestone underlying it forms a shallow irregular basin which retains the rainfall and causes the formation of extensive bogs, once famous as beaver meadows and now known as Beverly Swamp.

The southerly part of the watershed is fairly well drained and cleaned of trees, and is under cultivation. The soil is light and rock comes to the surface in some places. The slope of the watershed is very slight, consequently the flow of the creek is sluggish except in flood time. These conditions result in a large volume of flow in the spring, and a very small volume during the summer, but at all other times the flow is well maintained. In the driest year this minimum flow is many times the volume required by the town. However, in order to guard against any possible danger from an unusual drouth, the town has formed a conservation reservoir about two miles from the brow of the escarpment, at Greenville, by building a concrete dam at this point.