

FIRE-FIGHTING FACILITIES. (WATER SUPPLY.)

City Hall, Waterworks Engineer's Office and Residence, and at St. Valier and Boisseau Streets.

From Lake des Roch the water is conveyed in a single 10-inch diameter cast iron pipe from the reservoir to an 8-inch on St. Foye Road in Belvedere Ward, a distance of 37,000 feet, where distribution commences. The St. Charles River is crossed by this main at a point about one mile from St. Foye Road, in double line, with valves each side.

Consumption.—No data is available for the consumption within the City of Quebec. It is

Pleasant, and in the different fire stations. Between September 14th and 17th, 1920, pressure readings were taken at 124 hydrants well distributed throughout the entire system. (See Table No. 4.) The observed pressures under same method of supply, i.e., with the 18 and 30-inch mains supplying "Lower Town" and the 40-inch main supplying "Upper Town," are generally considerably lower than those tabulated in re-inspection report of July, 1916. Comparative average minimum and maximum pressures are shown in Table No. 1.

TABLE No. 1—PRESSURES

DISTRICT.	POUNDS PRESSURE PER SQUARE INCH, WITH HYDRANT OUTLETS CLOSED.					
	JULY, 1916.			SEPTEMBER, 1920.		
	Average.	Minimum.	Maximum.	Average.	Minimum.	Maximum.
Upper Town.....	65	42	85	61	25	95
Lower Town.....	86	47	104	80	40	117
Belvedere Ward.....	71	57	85	66	50	85
Limouilou Ward.....	83	55	135	90	77	104
Whole City.....	77	42	135	75	25	117

estimated by the Water Department, however, that the consumption is 15,000,000 gallons per day—a per capita rate of about 126 gallons. Observations made at time of inspection would indicate that the rate of consumption is higher than that given, and in connection with which the department has made little effort in the past to control.

The maximum consumption occurs when temperatures are at the lowest, and continues for extended periods when water is allowed to run in order to prevent the freezing of the plumbing, much of which is installed in buildings of frame construction.

Of the 11,000 service pipes throughout the city, 65 only are metered; these are mostly set on large services such as cold storage plants, charitable, religious and educational institutions.

Pressures.—Recording pressure gauges located in the caretaker's dwelling at St. Charles River Bridge, at elevation 20, show a fairly uniform pressure of 142 pounds on the 18-inch, 135 pounds on the 30-inch and 195 pounds on the 40-inch supply mains. Gauges located in No. 8 fire station, Massue Street, at elevation 45 and attached to the 18-inch, 30-inch and 40-inch mains, show pressures of 115, 110 and 175 pounds, respectively. Pressures at St. Charles River Bridge indicate a loss of head from Lake St. Charles of 59 pounds on the 18-inch, 66 pounds on the 30-inch and 6 pounds on the 40-inch main. Gauges are also installed in caretaker's dwelling at Mount

A portable automatic pressure recording gauge was attached for a period of 24 hours to a hydrant in a number of important districts; the location and elevation of each hydrant outlet, together with fluctuation in pressure, follow:—Hydrant, corner of Palace Hill and St. John Street, elevation 107; difference between day and night pressure about 5 pounds. Hydrant, corner Dambourges and St. Paul Streets, elevation 18; difference between day and night pressure about 3 pounds. Hydrant, corner Boisseau and Bayard Streets, elevation 50; difference between day and night pressure about 10 pounds. Hydrant, corner St. Valier and Caron Streets, elevation 50; difference between day and night pressure about 8 pounds. Hydrant, corner Grand Allee and Scott Street, elevation 324; difference between day and night pressure about 3 pounds.

DISTRIBUTION SYSTEM.—General.—Distribution is practically in two services, the upper levels of the city being supplied by the 40-inch main and the lower levels by the 18 and 30-inch mains. A number of valves along the south side of St. John Street are closed in order to increase the pressure at high points. Limouilou, formerly supplied by the 40-inch, is now supplied by the 18-inch main, and Belvedere Ward, from the old waterworks system of Montcalmville (Lake des Roch source) reinforced by the 6-inch main laid on St. Cyrille from the intersection of Bourlamaque Street.

The 18, 30 and 40-inch supply mains are, as previously stated, laid alongside to the St. Charles