



PERSONAL, INDIVIDUAL ATTENTION

June 15, 2021

Denis Beauchesne & Yingtian Huang
998266 Tosoronto Town Line
Mulmur, Ontario L3R1J9

Re: **Private Firefighting Water Supply System Design**
998266 Tosoronto Road – Town line
East Half of Lot 25, Concession 8 EHS
Cannabis Grow Facility

Attn.: **Denis Beauchesne, Owner**

Dear Sir:

In reference to provision of a water supply for fire department use in the event of a fire occurring at the above noted facility in accordance with the provisions of the Ontario Building Code B-3.2.5.7 and as calculated from the formula provided in the Appendix A-3.2.5.7, We have determined the required water supply to be: **135,000 litres** contained within a sealed tank with an approved type fire department connection located within 3 meters of and along the fire access driveway to the building. The Owners have suggested that (3) 50,000 litre tanks will provide adequate water reserve plus additional water supply to cover other buildings or provide longer firefighting time at minimal additional expense at time of installation. Please refer to the calculations below that are based on the volume of the proposed building.

Facility description:

Group F-2 Industrial processing plant
Building Classification: 3.2.2.70.A
Building Area: 160' X 110' = 17,600 SF ~ 1635.09 SM
Building Volume: 17,600 X 17'-9.5" = 313,133 CF ~ 8,867 CM



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Fire Water Calculation:

$$Q = K \times V \times S$$

Where Q = minimum supply of water in litres
 K = water supply coefficient from Table 1
 V = total building volume in cubic meters
 S = total of spatial coefficient values from property line exposure on
 all sides obtained from $S = 1.0 + [S(N) + S(E) + S(S) + S(W)]$
 $S = 1.0 + [0 + 0 + 0 + 0] = 1.0$
 From Table 1: K = 17

$$Q = 17 \times 8867 \times 1.0 = 150,739 \text{ Litres}$$

From Table 2: Required minimum water supply flow rate, L/min. = 4,500

Recommended hose stream use duration is 30 minutes or $30 \times 4500 \text{ L} = \mathbf{135,000 \text{ L}}$
(1350 QM) reserve water capacity.

Fire Department Connection:

Size and connection type to be as specified by the local Fire Department and installed at the height above grade noted by fire department and suitable for pumper truck connections. Provide equivalent sized gooseneck vent pipe at opposite end of fire water reservoir tanks.

Water storage tank:

Wilkinson Heavy Concrete (3) fire water reservoir tank Model H50.1S 50,000 L capacity tanks for 150,000 litre total capacity. Tanks to be installed level with each other and have interconnected piping to ensure continuous draw-down as needed.



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Maintenance Risers

One per tank plus one for pump chamber, height as required by finished grade – Wilkinson AC300 with drip-proof and lockable covers; Roth Star Riser system with lockable lids.

Pump Chambers (If required)

Acton Precast 600 c/w 1 ½” vent stack and Polylok lid; Roth hanging pump. Franklin Electric - Little Giant WSV50HAM. The pump should be equipped with a “Smart Failure Sound and Visual Alarm” wired to panel inside the building for easy observation.

Operation and Maintenance

An operation and maintenance program should be engaged with a reputable local contractor or trained company employee to provide regular and periodic checks on the firefighting water system to ensure the system is operating properly and ready in case of an emergency.

Reported by,

John Dorris

John Dorris, OAA, CBCO
Architect
Lic. No. 2751

1908FireFightingSystem04