

	Cubic Feet.
would be	7,100,000
and the volume discharged into Baie Verte would amount to	3,984,000
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The whole would thus be equivalent to a daily discharge of ..	11,084,000
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or to a semi-diurnal discharge of	5,542,000
The quantity likely to be discharged or wasted in addition thereto, for scouring purposes, leakage, evaporation and absorption, is.....	858,000
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The total semi-diurnal discharge, will therefore probably amount to	6,400,000

As tide water supplies are intermittent and variable according to the phases of the moon, it is evident that in order to be constantly in a position to meet the daily consumption of 12,800,000 cubic feet, the total volume of water kept in reserve and available at elevations varying from 85 feet upwards above datum, must necessarily be large enough to allow of keeping up the supply the whole of the time during which the semi-diurnal tidal influxes fail to make up the corresponding losses sustained.

Although such a deficiency in the supply might occur for as many as ten consecutive days, during an unfavorable succession of tides similar to that observed in August, 1870, when the water rose scarcely to an elevation of 88 feet, or to the height proposed for the summit level of the upper reach of the projected canal (see tidal fluctuations, page 37)—it may be safely assumed that the volume of water that would have to be drawn from the surplus kept in reserve between the elevations of 85 and 88, would never exceed the total quantity necessary to work the canal during 6 days, viz :—76,800,000 cubic feet ; this quantity is considered sufficient to supply the total deficiency during a range of tides such as that referred to.

Out of the total volume required, 44,000,000 cubic feet are admitted directly into the canal ; the remaining 32,800,000 cubic feet, and a surplus quantity of 5,000,000 are held in reserve in the River Au Lac between the same elevations of 85 and 88, by means of a dam constructed across it towards its outlet ; the water from this reservoir must be furnished to the canal by means of supply weirs and raceways, as indicated on the plan at the points marked A. B. C. D. E.

If a greater quantity of water is required any time, on account of the deepening of the canal, for the passage of vessels of eighteen feet draught, instead of fifteen, or for other purposes, the portion of the River Tintamarre before referred to, may be converted into a reservoir, thus adding 25,000,000 cubic feet to the volume of water in reserve.

The main feeder at the western entrance of the canal, as shown on the plan, is about 5,000 feet in length, and varies in width from 500 feet at the shore end, to 250 feet at its junction with the canal ; its elevation at bottom is 84 feet above datum, and its water surface corresponds with that of the tide above this elevation.

The bottom elevation of the supply weirs and raceways should be the same as that of the main feeder, the water surface being the same as that of the reservoirs.

The dam at the mouth of the Au Lac should be constructed with sluice gates for the purpose of emptying the reservoirs when necessary at low tide, and for draining the canal ; it should also be built so as to maintain the water at the required height in the reservoirs, and so as to shut out the tide if found necessary.

Two of the supply weirs should be sunk to a depth of one foot below the bottom level of the canal or to an elevation of sixty-eight above datum at B and D, so as to drain off the water into the River Au Lac, and two waste weirs should be constructed at the points H and I, so as to drain the canal, or let off the surplus water into the River Tidnish, independent of the three waste weirs shown at the points F, G and J, for the efflux of the surface water.