openings made, into which the suction of a centrifugal pump was introduced (the diver manipulating it), and the sand pumped out between the shore crib and the lake shore. It was not possible to extend the pumping out into the lake, so that any sand beyond the shore had to be left, although it was known to be there.

On the 5th September, 1895, with the water in the lake 13½ inches below zero, 2½ feet of sand in the 6-foot conduit and a water logged plank 3″ x 16″ x 8′ 6″ standing vertically in the conduit at the lake shore manhole, the combination proved more than the system could stand and the 5-foot pipe rose in two places and the 4-foot one its whole length, cutting off the supply. Temporary relief was obtained by separating the 4-foot pipe north of Hanlan's so as to provide water for fires or flushing sewers, a limited domestic supply being maintained by water waggons. There being reason to fear a further fall in the lake (it dropped to 25 inches below zero), the means taken to maintain the supply were as follows. The old 4-foot wooden pipe was connected to the shore crib and at a point 2,500 feet north of the shore crib a small basin was constructed, both the 4-foot wooden and 5-foot steel conduits were opened and disconnected in this basin and made to discharge the water delivered by them into it, the supply from this point going to the city through the 5-foot steel conduit as formerly. The effect of this, in the reduction of friction head, was the same as if the lake level had been raised two feet. After the repairs were completed the conduits, where there was danger of their again rising from any cause, were covered with an embankment, and an electrical alarm and float placed in Hanlan's crib and connected with the main pumping station.

Mr. Mansergh having reported in favor of Mr. Keating's recommendation of a tunnel under the Bay, connected with a 6-foot steel conduit carried across the Island and out into the lake, as the proper means of supplying the city needs, contracts were let in 1896 for the construction of the pipe, tanks, flexible joints and connections, necessary for carrying a new 6-foot steel conduit out into the lake and connecting it with the 5-foot steel conduit and 4-foot wooden conduit at the existing shore crib. Contracts were also let for laying these and the work was completed by the 14th September, 1898. In doing this work the contractor was required to disconnect the 365 feet of 6-foot steel conduit from the old 6-foot wooden conduit and connect it to the new 6-foot steel conduit, the construction of a new intake and 365 feet of steel conduit being thereby rendered unnecessary.

In 1904, the city determined to proceed with the construction of the tunnel under the bay and the 6-foot steel conduit from the shore crib across the Island to the south tunnel shaft. Contracts