

PHASE 1 WATER SYSTEM IMPROVEMENTS

VILLAGE OF BELLOWS FALLS, VERMONT



Chemical Feed, Level Sensing, Raw Water Sampling Tubing to the Raw Water Intake on Minard's Pond (prior to sinking)



Master Meter Vault at Water Treatment Plant

A water system evaluation report prepared by Dufresne Group identified deficiencies with the raw water intake at the Bellows Falls Water Treatment Plant. The raw water intake is located beneath a gate house on Minard's Pond. The gate house was in disrepair with damage to the masonry substructure and the access pier was unsafe to walk on. As access to the intake valve is crucial in an emergency situation, improvements were required. In addition, the steel channels holding the stainless steel screens had shifted and the screens could not be easily removed for cleaning. A solid panel below the screens is supposed to prevent sand and silt from entering the raw water piping; however the panel had shifted and was no longer working. Pump tests on the raw water pumps indicated that the pumps were showing signs of wear and ultimately required rebuilding due to the entry of sand and silt into the raw water piping.

The chosen alternative was to remove the gate house, foundation, access pier, screens and intake valve and replace with an air actuated intake valve and an intake screen with an air purge cleaning system. In addition, level sensing, raw water sampling and chemical feed tubing was installed to the new intake valve along the bottom of the pond. The chemical feed tubing was installed for potential future use.

The project also included the installation of a master meter vault to allow the operators to monitor instantaneous and daily demand, as well as a river crossing meter for a buried river crossing at the Saxtons River.

KEY FEATURES:

- New air actuated butterfly valve installed for raw water intake valve
- New intake screen with an air purge cleaning system installed on the raw water intake
- New level sensing, raw water sampling and chemical feed tubing installed and sunk to the pond bottom.
- A master meter vault down-stream of the clearwell to allow monitoring of actual demand.
- River crossing meter pit installed at the Saxtons River for a buried water main
- DG provided preliminary, final design and construction phase engineering services, as well as funding assistance.