

## **Avon Water Department Capital Projects Update**

### **New Pump Station Construction Update**

The new water pump station constructed on Argyle Avenue is nearing final completion. The new station consists of three wells connected together that are capable of producing 200 gallons per minute.

The permit for construction was filed with Department of Environmental Protection on September 24, 2007 and we received final approval for construction on December 6, 2007.

The project was publicly bid and awarded to Weston & Sampson CMR of Peabody, Massachusetts. The pump station was designed by Amory Engineers, PC of Duxbury, Massachusetts.

Construction of the new wells commenced in late March of 2008, and final completion is expected in early September of 2008. It is anticipated that construction will be completed ahead of schedule.

The pump station has a 20 horsepower motor and a vertical turbine pump controlled by a variable frequency drive (VFD). The VFD allows for an adjustable rate of flow to meet existing distribution system water demands. The flow is controlled by our computerized SCADA system which will turn on or off the pump stations based upon the elevation of water in our two standpipes.

The well field consists of (3) 10" x 16" gravel packed wells that are connected together by piping to an 18" x 36" central receiving well at the pump station. All of the wells are 28' deep which is the depth of the bedrock.

This project also involved the installation of a propane gas fired emergency generator that will run both Trout Brook Pump Station and the new Well Field No. 3 Pump Station. Both of the pump stations will be equipped with transfer switches that automatically switch to generator power in the event of a power outage.

### **Water Filtration Plant Construction Update**

The new Water Filtration Plant is capable of filtering 830,000 gallons of water per day, and includes two greensand pressure filters for iron and manganese removal, and two granular carbon adsorption filters for removing intermittent low levels MTBE.

The filtration plant will treat Trout Brook Pump Station, Well No. 3 Pump Station, the new Well Field No. 3 Pump Station, Well No. 4 Pump Station, and Memorial No. 1 Pump Station.

The permit for construction was filed with Department of Environmental Protection on March 6, 2008 and we received final approval for construction on July 21, 2008.

The project was publicly bid and awarded to Weston & Sampson CMR of Peabody, Massachusetts. The Water Filtration Plant was designed by Amory Engineers, PC of Duxbury, Massachusetts.

The treatment facility building will have a building footprint of 3,540 square feet and will include a pre-engineered metal building. The facility will also have both a lined and unlined filter backwash lagoon system per DEP requirements.

The facility will have a flow rate of 575 gallons per minute. Iron and manganese will be removed by two (2) 9-foot diameter by 6ft, vertical greensand pressure filters. After passing through the greensand filters, the water will be directed through two (2) 10-foot diameter by 18 feet vertical granular carbon activated absorption units that will remove intermittent low levels of MTBE. Each carbon unit will contain 20,000 pounds of granular carbon. The system will be able to process full plant flow of 575 gallons per minute with one carbon system off-line.

After passing through the carbon units, the water will be directed to a 21,000 gallon clearwell and pumped into the distribution system by two 60 horsepower vertical turbine pumps having a rating of 600 gallons per minute.

A natural gas fired 125 KW power generator will provide emergency power to this facility. The building will have a transfer switch that will automatically switch to generator power in the event of a power disruption.

Construction on the project commenced on July 14, 2008. The construction contract period is fourteen months, but I am looking to expedite the construction period to twelve months or less.

### **Central Street Standpipe**

The rehabilitation and painting of the Central Street Standpipe will commence in the spring of 2009.

In order to properly draft the contract specifications, a detailed inspection of the interior and exterior conditions of the tank had to be performed.

The tank interior was inspected in May 19, 2008 with a TankRover remotely operated vehicle (ROV). The submersible ROV recorded the condition of the interior of the tank with its high definition color video camera system. The exterior of the tank was inspected by licensed tank inspectors, who physically climbed the tank. The inspection was performed by Extech, LLC.

Central Street Tank is 42' in diameter and 100 feet high with thirteen shell rings. The tank was built in 1962.

The interior coating system is vinyl, and the exterior is alkyd paint. Dry Film thickness samples were taken of the interior vinyl coating, and the results indicated significant coating failure which was supported by the color video inspection.

A sample of the exterior paint was collected and analyzed for the presence of lead. The paint was found to have a low level of lead (1840 PPM) but greater than the 600 PPM required to classify it as "No Lead".

Floor sediment was deep and estimated to be 6 to 8 inches deep. The sediment will be removed when the tank is drained for painting.

### **Water Main Replacement Project**

The water mains, hydrants, gate valves, and water services on the following streets will be replaced starting in the spring of 2009:

- East Main Street
- Glendon Street
- Robbins Street
- East Spring Street

Surveying of the streets is scheduled to begin September 29, 2008. This will allow us to create the plans and specifications for the project.

Several price increases for materials have been forecast prior to the end of the year, so the Water Department will be seeking bids for the materials in November of 2008 in order to purchase the materials at the lowest possible prices.

The construction bid for the installation labor is scheduled for February of 2009, and construction will begin in April of 2009. We will update you on the construction sequence early next year.