

Project 18-4 McMicken Well Repair



In 2012, the District completed construction of the McMicken Well and Treatment Plant project. The initial well production was 500 gpm on a continuous basis; however, over time, production began to decline. In September 2017, production was 375 gpm. The District elected to have PumpTech, Inc., the pump supplier, to remove and diagnose any problems the pump and motor.

The pump removal process involves pulling the pump and pipe column from within the well by crane to the surface. Each 20-ft length of pipe connects to the next section by way of a threaded coupler. The pump and motor connect the last section of pipe approximately 300-ft below the surface. The contractor pulls the pump column up to the surface, 20 feet at a time, and secures the column at the coupler, before unthreading the top section of pipe above ground. The pump is the final component removed.

During the removal process by PumpTech, the piping separated at a joint coupling causing the pump and motor to drop into the bottom of the well. The piping exhibited extensive corrosion on the pipe and threads along with the presence of iron-oxidizing bacteria.

PumpTech removed the pump on November 6th. Once examined, the District can determine its condition and root cause of the failure. The preliminary indication for the pipe separation is the bacteria corroded the threads resulting in the pipe to detach from the coupler. The pump appears severely corroded and damaged. The manufacture will examine to determine if it is salvageable.

The District budgeted \$275,000 in 2018 for replacement of the pump, motor and piping with corrosion resistant materials. The well will be offline for a minimum of six months. Staff will need to retain a consultant to assist in the process.

