

Multi-Phase Well Rehabilitations Coon Rapids, MN

The City of Coon Rapids August 2000 Water Master Plan Update included implementation of a new well and wellhouse maintenance program. The program was split into five phases. The City hired Progressive Consulting Engineers, Inc. (PCE) to provide design and construction services for all five phases involving 22 wells and two booster stations. The total construction cost for the five phases was \$3.90 Million, which averages to around \$162,500 per site.

In the early 1990's the City installed two Filtronics treatment plants on a system that previously had no treatment plants. The new plants required less head to pump from the wells through the filters and to the ground storage tanks then to pump directly into the system. To reduce head from the well pumps, the wells were throttled by partially closing the discharge valves. As part of this project, the throttled butterfly valves were checked for leakage and damage and replaced as necessary. Variable frequency drives (VFDs) were added at the wells to permit the well pump head to be reduced without throttling the valves.

All pumps and motors were removed and inspected. The City and PCE jointly decided on which components to replace based on condition and budget constraints. Each well was inspected using a down well video camera. An audible and visual recording was made to document the condition of each well and one well was redeveloped. Wellhouse upgrades included new roofs, siding, tuck-pointing, heating and ventilating systems, and new electrical systems.

PCE prepared preliminary design reports with construction cost estimates each year based on an initial concept of the work the City wanted completed. Using these preliminary cost estimates, the City and PCE worked together to revise the scope of work and stay within the City's budget for the final designs.

Drexelbrook pressure transducers were installed to permit the City to constantly monitor static and well draw down levels. With the pressure transducers and the VFDs, the City has the equipment needed to automatically adjust pump discharge to maintain water levels above the pump bowls.

PCE prepared the final plans, specifications, and cost estimate for each of the five phases of the project. PCE also provided construction period services including periodic site observations and certifying periodic contractors pay estimates.

The first phase was bid in August 2001 and the fifth phase was completed in December 2006.

Client: City of Coon Rapids

Client Contact: Steve Gatlin

Year Completed: 2001-2006

Total Construction Cost (5 Projects): \$3,901,762 (\$162,573 per site)



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