



CONTAMINATED GROUNDWATER MONITORING AND PUMP SYSTEM

BACKGROUND: It was found that decades ago sulfolane had contaminated the groundwater in a small community. The contamination was spreading as a plume affecting a large part of that community. We were hired to provide a monitoring system that would provide 24x7 monitoring and would be able to notify dispatchers operators in case any limits were exceeded. The remote panels would be outdoors in an environment that can reach -50°F in the winter.

SOLUTION: Remote panels would be built that provided a PLC that would monitor various parameters of the pumped groundwater. The remote PLC would stop the pump from running if the sulfolane exceeded a programmable limit. A master PLC would poll each of the remote stations continuously. The master PLC was then polled from a commercial SCADA package to provide system feedback to the operator's. The panels were UL508a listed and were insulated and heated to withstand the extreme conditions.

SYSTEM: The Schneider Modicon PLC was chosen to provide the remote station control as well as for the master polling station. This particular PLC would perform the Modbus register scanning autonomously providing immediate feedback if a particular station was lost. A 900MHz point to multi-point radio by MDS was chosen as it provided excellent long range performance with the use of Yagi antennas.

The remote panels were backed up by batteries to notify the master in case of power loss.

VTScada was used for the monitor and control interface for the system. This would give the dispatchers continual feedback as to the status of the system. It also provided a means by which to

send email and texts in the event of an alarm condition. An autodialer system by Sensaphone was provided as a second means of notifying via phone lines if an alarm went unnoticed for a preset interval.

RESULT: The system proved to be a great success and allowed the plant operator to utilize their operator's to perform other tasks rather than continually checking the status of the groundwater pumps.