CAS DATALOGGERS

Water Flow Monitoring Helps Avoid Costly Fines

Water Distribution Company Refines Pumping System

Many water distribution companies use a similar process: Collect water from a well with the help of water pumps, utilize a pond or reservoir to temporarily store the water, and maintain a loading center to fill water trucks for transport. The problem is how to pump the maximum allowable volume of water on a day-to-day basis without exceeding the limits as dictated by local rules and regulations. Exceeding these limits can lead to costly fines—cutting profits in an already tightly competitive market. A water distribution company contacted CAS looking for a water flow monitoring solution to help them ensure compliance with local regulations.

The regulations, in this case, required that the distribution company not exceed 400,000 gallons of water in one day. In addition, the storage pond had a water level capacity of 18 feet; however, regulations stipulated that the water level could not exceed a maximum of 16 feet at any time. After review from the CAS Solutions Team, it was determined flow sensors be installed to record the amount of water pumped from the well, and a pressure-based water level sensor was installed to record the height within the storage pond at all times.

INSTALLATION

CAS provided this company with a [Water Flow Monitoring Solution](#) capable of monitoring multiple flow and level sensor inputs. The data logger would track the flow data on a 24-hour cycle. If the 400,000-gallon output level was reached, the data logger would signal to automatically shut down the water pump to prevent exceeding this limit. At the beginning of the next 24-hour cycle, the system would automatically reset to begin pumping again. If water levels in the pond exceeded the 16-foot level limit, the data logger would also shut down the water pump and would only begin the pumping process again when the pond water level declined.

A [dataTaker DT82E](#) data logger was used as the heart of the well and storage pond monitoring system. The DT82E would record the data from two pulse output flow sensors and the submersible pressure transducer. The first flow sensor monitored the input of the water being pumped from the well while the second flow sensor monitored the output to the storage pond. The submersible pressure transducer positioned at the bottom of the ponds monitored the water level. The relay output of the logger was used for the pump shut down control.

USAGE

To monitor the water being pumped from the storage pond to the trucks used for distribution to the end-users, a [DT80 model logger](#) was monitoring and recording readings from the five flow sensors, one for each filling station. The flow sensors were strategically located to fully monitor the actual volume of water being pumped. The loggers

were connected via Ethernet to a wireless router to collect the data for analysis, reporting, and permanent storage. Data could also be easily retrieved directly from the dataTakers via the built-in USB memory stick port. Data files are automatically labeled with the serial number of the data logger and a date/timestamp which ensures that the data can be properly organized for reporting and archiving.

The complete data logging solution included the DT82E & DT80 data loggers, seven (7) flow sensors, and one (1) water level sensor. The setup provided a complete, stand-alone water flow monitoring solution. The dataTaker's were programmed using the dEX software included with the loggers to measure the sensors and manage the operation of the water pump. dEX also provides a convenient dashboard to display all of the current data including the total flow for the day, the level in the pond, and the individual flows for each truck filling station. Built-in math and alarm functions of the logger combined with its real-time clock allowed the system to totalize the pumped volume for the day starting at midnight and to utilize the relay output of the logger to send a signal to the pump controller to shut down if the volume limit had been reached or if the pond level got too high.

For more information on the dataTaker DT82E, or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or **www.DataLoggerInc.com**.