

*Druid City Hospital, Tuscaloosa, Alabama, USA*

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PELA was retained by Druid City Hospital (DCH) in 2011 to address DCH's concerns regarding sustainability, security of utilities in the event of a disaster, and reducing water utility cost.



DCH was affected by a mammoth F-4 tornado that ripped through the City of Tuscaloosa, Alabama on April 27, 2011. The tornado interrupted the hospital's access to the City of Tuscaloosa's municipal supply for several hours. Meanwhile, those injured and dying as a result of the tornado were being transported to the hospital for treatment.

The hospital wanted to ensure that in the event municipal sewer and water lines were damaged during another crisis, the hospital could still function and adequately treat patients. PELA and its partner, Tempest Environmental, developed a plan to not only provide the hospital with a water supply

independent of the municipal supply, but that would also result in significantly less water usage.

The project had a dual purpose:

- (1) Supply the hospital with medical, domestic, and industrial- grade water for a maximum of 96-hours in the event of an interruption in the municipal supply; and
- (2) Supply the hospital with industrial-grade water on a daily basis, regardless of municipal supply interruption.

To begin, PELA needed to determine if there were adequate groundwater resources to provide all the hospital's medical, domestic, and industrial needs for a 96-hour period. Pumping tests were performed on existing wells at the site to determine if there were enough water resources available and to understand how to best manage the available water resources. In addition, water quality testing was completed to decide the type of filtration required to treat the water. Once the pumping tests were completed and best management practices determined, a water treatment system specifically designed for DCH was commissioned.

Upon installation, the treatment system will be immediately used to treat the well water for everyday industrial (non-potable) uses at the hospital. To further reduce the hospital's water usage and costs, the treatment system is also used to recycle the tower's blowdown water for reuse as makeup water in the tower. The treatment system also has the capability to provide potable and non-potable water for up to 96-hours in the event the hospital is met with another crisis where municipal lines are interrupted. As a result of this project, DCH not only has water security in the face of a disaster, but is projected to reduce daily industrial water usage by as much as 33% per month.