



STORE, TREAT, AND TRANSFER: A HOLISTIC VIEW OF WATER

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Water – our world’s most abundant resource and undoubtedly an essential commodity in the hydraulic fracturing process. From a distance, water may seem to be ever-abundant; but, a closer look at the traditional well pad causes operators to consider how they manage and maximize their use of this resource.

The management of water in shale play comes down to three simple words: store, treat, and transfer – each greatly impact the productivity and life cycle of a well – from drilling to completions. With a holistic view, Comtech Industries has developed cradle to grave solutions for safe and sustainable water management – from pad to pad – or tank farm to pad. By engineering diverse offerings, the company has combined water storage and treatment to successfully manage all water on each well pad serviced.

The concept lies in the DYNA Tank, a patented aboveground water storage tank that is the only tank of its type. Meeting AWWA 103-9 specifications, the DYNA Tank’s steel infrastructure is bolted together to hold 1 Million gallons (25,000 bbls) of either fresh or produced water. The tank’s construction allows for durability, reliability, and greater production rates. Standing 36 feet tall and 72 feet in diameter, the environmental footprint of the DYNA Tank offers a significant savings. Three DYNA Tanks can fit into one standard 150’ x 300’ impoundment. The tank offers 33,500 ft² footprint reductions (based on the average pit size) and has substantially saved operators pad design and excavation costs.

Even with these statistics, this innovative design steps further outside the conventional box to address safety, environmental, and economic concerns. The tank’s dimensions and capacity have helped eliminate the needs for pits and impoundments. In the past three years, the tanks’ 0% spill rates have contributed to the high environmental standards set forth by operators and regulatory agencies. While the DYNA Tank remains the focal point of Comtech’s operations, the entire life cycle of the pad is a critical part of Comtech’s operations. What occurs within and around the unique storage system have created opportunities for operators to maximize the use of their water (fresh and produced). A holistic view of water looks at the pad from cradle to grave. Comtech has achieved this through the development of Drilling Services, Pad Construction, Water Storage and Treatment, and NORM Surveying Work.

From the early stages of the pad’s life cycle and during the drilling process, solids change in both composition and quantity. Adapting operation and chemistry that complement the consistency of the drill cuttings generated from the drilling rig is one way in which Comtech focuses on managing water. Through the engineered implementation of shakers, centrifuges, and fluid processing systems, the need for solidification materials has been eliminated. By recycling water produced from the cuttings, trucking water for treatment or disposal has also been eliminated – ultimately reducing operational costs.

As the life cycle of the pad continues, DYNA Tanks are constructed to hold water pre and post-frac. Using a unique manifold, Comtech has engineered a turn-key solution to direct the fluid needed for hydraulically fracturing the earth. Across the Marcellus and Utica plays, as regulations become increasingly stringent and prominent within each shale play, it is important to forecast operations that abide by regulatory standards. Being mindful of the storage, treatment, and transfer process is a critical component to this proactive approach.

Post-frac, during the flowback stage, Comtech utilizes a patented treatment technology that allows for 100% of flowback to be recycled and reused. During a typical flowback period, 10%-40% of water is returned from each well. Multiple wells on a single pad create the need for treatment and management of what can easily exceed 1 million gallons (25,000 bbls) of flowback. As water becomes increasingly scarce and environmental regulations tighten, Comtech continues to offer the technology and expertise required to manage and treat flowback. Consequently, Comtech has found that this step in the process has helped lessen operators’ dependence on freshwater.



A diverse approach to water treatment means: removal of suspended solids, inorganic scale forming compounds, petroleum hydrocarbons/organics, and friction reducers and other polymer additives. In addition to this, sterilization is achieved and water is treated to the operator’s desired specification.

Store, treat, and transfer: three very important words facing the unique water challenges within the industry. By using engineered systems to maximize use of the world’s (and the industry’s) most valuable natural resource, natural gas exploration is becoming increasingly safe, efficient, and effective for all members of the shale play.

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