

RSI Provides Fully Automated Off-Grid Water Supply for TX Cattle Operation

Customer Name: Brien Water Wells & Irrigation

System Application: Cattle trough water supply

Installation Location: Marlin, TX

Installation Year: 2022

Grundfos Products Used: 5.5kW RSI, 3 x 208-230V 5HP MS4000, 35S50-19 SP

Solar Array: 40 x 330W panels (10 in series, 4 in parallel)

This solar powered water supply system was installed by Brien Water Wells & Irrigation. Brien Water Wells & Irrigation is a fifth-generation water well service company based in Hearne, TX. This system is installed on a 900-acre cattle ranch just north of Marlin, TX. The ranch owner initiated this project for two main reasons: 1) reduce costs associated with municipal water supply and utility power consumption, and 2) provide independent redundancy to their existing water supply.



The submersible well pump is set 50 feet below ground and pumps up 150 feet of vertical elevation and ½ mile horizontal distance to the top of a set of two connected storage tanks. A float valve is installed where the discharge piping terminates into the tanks. When the tanks fill and the float valve closes, a pressure transducer installed on the discharge piping near the wellhead signals the RSI to turn off. As the water level in the tanks drops, the float valve opens and pressure in the discharge piping is released. This drop in pressure is signaled to the RSI by the transducer and the RSI turns on and resumes pumping until the tank is full again.

These two storage tanks are positioned at the highest point on the property and gravity feed 19 water troughs. Each of these troughs has its own float valve to prevent overflowing. With this system, the water supply to all 19 water troughs is totally automated and self-sufficient without the need for utility power or municipal water.

