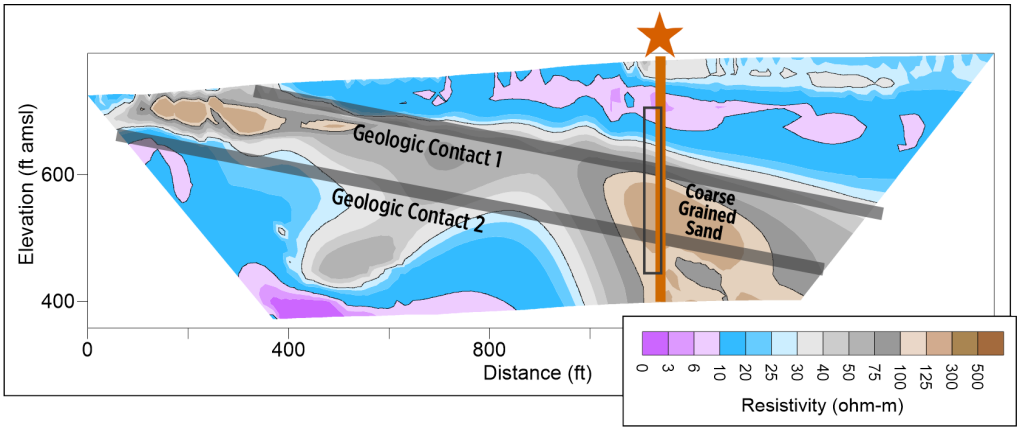
Case Study
Targeting High Yield Wells in Sand Aquifers

Project Challenge/Solution:

A rural water district in Marshall County, Oklahoma needed to increase municipal water supply for nearby communities. The state's well database indicated groundwater supply wells in the Antlers Sand formation screened to depths of up to 500 feet typically had variable yields as low as ~8 to 35 gallons per minute (GPM). The rural water district desired to solve its supply problem quickly and efficiently by avoiding drilling test wells with low/insufficient yields.

Aestus' GeoTrax SurveyTM subsurface imaging technology was utilized to target drilling in more productive areas to maximize groundwater yield and reduce the number of wells needed to meet the needs of the project. Aestus scanned the subsurface and identified an electrically resistive anomaly suspected to represent a coarser-grained (i.e., presumably higher K) saturated zone.



Targeted Test Well Yielded ~110 GPM in Production:

- Oklahoma groundwater professionals know that groundwater conditions are highly variable in this region and drilling at random can result in poor yields which wastes valuable resources.
- Test well data indicated a flow rate of ~110 GPM in the coarse grained sand zone (9-inch diameter with 5-inch PVC casing)
- Aestus' offers its clients the ability to scan first and know where to drill. In this case study example the resulting groundwater well had nearly 3 times (3X) the flow rate of nearby untargeted well locations based on the State of Oklahoma well database.



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Results

- ☑ High Yield Well: Achieved on first attempt (~110 GPM test well)
- ☑ Increased Efficiency: The rural water district was able to achieve their goals faster and avoid the inefficiency of drilling borings/wells with poor yields of 8-35 GPM
- ☑ Cost Savings: Fewer wells and more efficient drilling reduced both initial capital costs and long-term operational expense
- ☑ Sustainability: Having distinct drilling targets reduces the number of wells which minimizes energy and resources required and better protects the aquifer

See Below. Succeed Above.

Fiscally responsible and data driven water resource managers typically crave more certainty in their subsurface data. Integration of existing site data, Aestus' GeoTrax Survey™ electrical images, and targeted test well data resulted in a more complete understanding of the subsurface and allowed them to:

- ☑ Make better technical/business decisions
- ☑ Have clear road map for next steps
- ☑ Achieve project goals faster and cheaper

Aestus