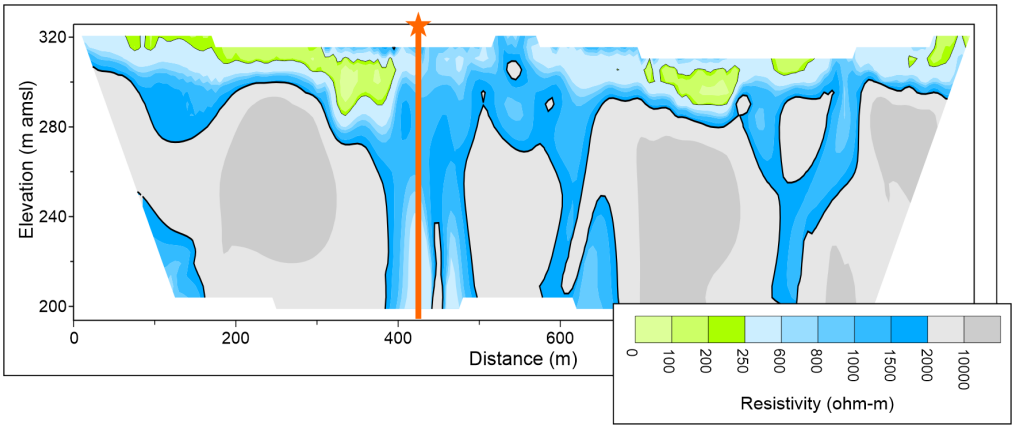
Case Study

Targeting High Yield Wells in Fractured Karst

Project Challenge/Solution:

A rural water district near the City of Tishomingo, Oklahoma needed to increase municipal water supply for its nearby residents. The state's well database indicated groundwater supply wells in the Arbuckle group rocks to depths of 700 feet BGS often yield only 5 to 10 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 leveraged to target drilling and place wells in more productive areas to maximize groundwater yield and reduce the number of wells needed to meet the needs of the project.



Targeted Test Well Yielded ~700 GPM in Production:

- Oklahoma groundwater professionals know that unless water wells are installed in Arbuckle formation fractures or fault zones, very low flow rates (~5-10 GPM) will likely result.
- Initial test well data indicated a flow rate of ~450 GPM at the above targeted fracture/fault location; subsequent full-scale production rate experienced ~700 GPM.
- Aestus' offers its clients the ability to "scan first and know where to drill". In this case study example the resulting groundwater well had 70 times (70X = over one order of magnitude) the flow rate of nearby untargeted well locations.



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Results

- ☑ High Yield Well: Achieved on first attempt (~700 GPM production well)
- ☑ Increased Efficiency: The rural water district was able to achieve its goals faster and avoid the inefficiency of drilling borings/wells with poor yields of 5-10 gallons per minute (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