

Case Study: AirBurst Revitalizes Municipal Well by Removing Decade-Old Drilling Mud

Client: Municipal Utility in Central Illinois

Well: 311' deep, 10" stainless steel, 0.055" slotted screen

The Challenge

In Central Illinois, a 10-inch sand and gravel well drilled to a depth of 311 feet, was showing significant signs of underperformance. With a pumping rate of 300 gpm, the well had a drawdown of 33 feet, resulting in a specific capacity of just 9.09 sc. This inefficiency was a growing concern for the municipality. A well contractor was brought in to find a solution, who partnered with AirBurst Well Services to rehabilitate the well. The initial assessment suggested that the screen and gravel pack were blocked up with sediment and minerals and that the well may never have been fully developed when it was first drilled 19 years earlier.

The AirBurst Solution

The AirBurst team arrived on-site on August 6, 2025, to execute a comprehensive rehabilitation plan. Using a 2800SL model air gun with a 40ci chamber, the crew performed five passes through the 16-foot screen interval with 0.055" slot size (295' to 311'), delivering two high-pressure bursts of compressed gas (500-1,000 PSI) per foot on each pass.



Almost immediately, the return water showed a heavy brown discharge. During subsequent pumping tests between passes, it became evident that the discharge was drilling mud that had been masked by the formation for over ten years. This discovery confirmed that the well's poor performance was directly linked to a blocked screen and formation as well as incomplete development at the time of its construction. The AirBurst process was effectively breaking up and purging the restrictive mud layer from the borehole wall and surrounding gravel pack.



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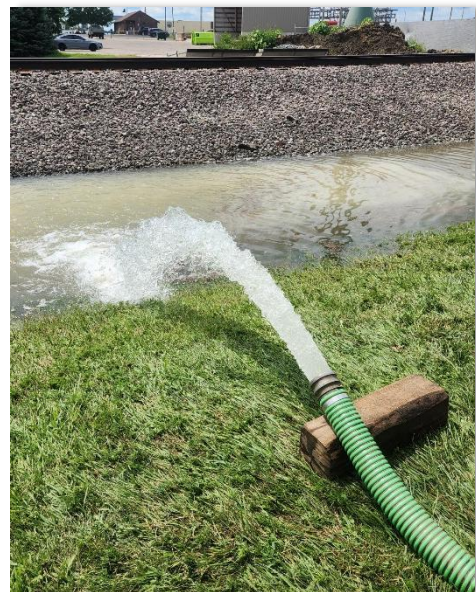


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The Results: A More Than 100 % Improvement

The results after the AirBurst procedure were immediate and dramatic. The well's performance was not just restored; it was elevated to a level likely never achieved before. By removing the mineral contamination and residual drilling mud, AirBurst successfully re-established a powerful hydraulic connection between the well and the aquifer. The specific capacity was increased by 115%, and the significant reduction in drawdown means the pump will operate more efficiently, leading to lower energy costs and reduced wear over time.

Performance Metric	Post-Completion 2007	Before AirBurst - 2025	After AirBurst - 2025	Improvement (pre and post rehab)
Pumping Rate	450 GPM	300 GPM	340 GPM	+13%
Pumping Water Level	247'	258'	244.5'	-13.5'
Drawdown	37'	33'	17.4'	-47%
Specific Capacity	12.16 sc	9.09 sc	19.54 sc	+115%



Conclusion

This project for this client demonstrates two key capabilities of AirBurst Well Services:

1. **Effective Rehabilitation:** AirBurst is a powerful tool for restoring performance in aging wells that have become clogged or encrusted over time.
2. **Superior Well Development:** The discovery and removal of decade-old drilling mud proves that many new wells are not fully developed with traditional methods. AirBurst should be considered an essential step for all newly-drilled wells to ensure that drilling fluids are completely removed and the well's maximum potential is realized from day one.



For more information on how AirBurst can improve your new or existing wells, visit www.airbursttechnology.com.

