

ROAM-AI Awarded U.S. Patent for Physical AI Wellsite Technology

Patent protects a field-proven approach that gives AI the ability to autonomously control well backpressure and ESP performance in real time.

OKLAHOMA CITY, OK, UNITED STATES, August 25, 2026 /EINPresswire.com/ -- [ROAM-AI](#), an innovator in cutting-edge energy technology, today announced that the United States Patent and Trademark Office has granted U.S. Patent No. 12,662,918 for its system for dynamically optimizing backpressure on producing oil wells. Designed for wells using electric submersible pump (ESP) artificial lift, the patented invention has already been deployed across the most prolific oilfields of North America, including the Permian and Williston basins.

Traditional ESP optimization often depends on periodic engineering analysis and trips to the field for manual adjustment. Even when software identifies an opportunity, recommendations can accumulate faster than field and engineering teams can review and execute them. ROAM-AI's approach closes that gap by combining artificial intelligence, edge computing, and physical wellsite control to continuously adjust a well's backpressure choke valve based on real-time operating data and machine learning models. The result is a new form of physical AI that moves beyond models and recommendations to directly execute setpoint adjustments in the field within engineer-defined guardrails.

"This patent represents a fundamentally different approach to artificial lift management that accelerates ESP performance optimization to machine speed," said David Benham, CPTO and Co-Founder of ROAM-AI. "Beyond the autonomous optimization benefit, the valve controller makes it possible to hold tubing pressure within a fine-grained operating window, within plus or minus 5 psi in many cases. That level of precision brings greater consistency and stability to ESP-lifted wells while increasing oil production."

The invention supports rapid, automated adjustments to changing well conditions while operating within predefined physical constraints. It can optimize backpressure based on factors





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including oil, gas, and water flow rates, equipment performance, downhole conditions, failure risk, and production economics.

For the oil and gas industry, the patent marks an important advancement from people-intensive wellsite operations to autonomous execution. By combining real-time data, intelligent control, and hardware at the wellhead, ROAM-AI enables operators to move beyond monitoring and advisory analytics toward a new intelligent wellsite capable of closed-loop production optimization, advancing safety and well performance.

“More than recognition of a new technology, this patent validates the operating model ROAM-AI was built around,” said Brandon Brown, CEO and Co-Founder of ROAM-AI. “Rather than only generating setpoint recommendations that field teams cannot possibly execute at scale, our patented approach gives AI the hands to do real work at the wellsite, around the clock. Physical AI provides operators with a practical, scalable path to protect deployed capital by extending run life, reduce operating costs, and deploy autonomous solutions across the field.”

The patent, titled “System for Dynamic Optimization of Back Pressure on a Fluid Well,” was granted on June 23, 2026, and names David Benham as the inventor and ROAM-AI LLC as the assignee.

[About ROAM-AI LLC](#)

Headquartered in Oklahoma City, ROAM-AI empowers operators with patented, AI-driven solutions that transform ESP performance, chemical management, and wellsite monitoring. Built by operators, for operators, ROAM-AI bridges the gap between data and decision-making by delivering actionable insights that maximize uptime, increase production, extend pump life, reduce costs, and ultimately give back time to engineers to focus on the next value-driving priority, such as strategic asset planning and long-term production optimization. ROAM-AI's secure, future-ready platform integrates seamlessly with existing infrastructure, enabling operators to deploy autonomous solutions at any scale. For more information visit: roam-ai.io

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