

Drake AI

For Oil and Gas Production Optimization & Field Monitoring



Production Optimization

Overview

Oil and gas operations are data-rich but increasingly complex. Production rates fluctuate, reservoir conditions evolve, and pressure dynamics shift in unpredictable ways.

Drake AI's Production Optimization platform introduces intelligence and stability into this uncertainty. It combines physics-informed machine learning with real-time analytics to optimize operational parameters continuously, achieving measurable gains in output, efficiency, and reliability.

By integrating field sensors, SCADA systems, and historical performance data, the platform converts every well into a self-learning asset that adapts to dynamic reservoir behavior. The result is consistent, data-driven production across your entire field.

Core Capabilities

- **AI-Driven Analysis:** Learns from historical and live data to identify hidden performance patterns and recommend optimal pressure and choke settings.
- **Real-Time Insights:** Monitors flow rates, pressure levels, and reservoir conditions to guide operational decisions instantly.
- **SCADA and Historian Integration:** Connects seamlessly with field data systems for automated optimization.
- **Cross-Well Benchmarking:** Compares wells and identifies underperforming assets to improve overall field output.
- **Unified Dashboards:** Provides complete visibility of production efficiency across all sites and regions.



Key Benefits

- Up to 20 percent improvement in production efficiency through adaptive optimization
- Reduced manual monitoring and field downtime
- Increased hydrocarbon recovery through predictive AI recommendations
- Consistent and transparent field performance



Technical Insight

Drake AI's hybrid optimization models are built on engineering physics and calibrated to each reservoir's unique geology and operational dynamics. Unlike generic AI systems, this approach evolves continuously, refining predictions and control recommendations as real-time data changes.

Lift Failure Prediction

Overview

Artificial lift systems such as ESP, SRP, and PCP units are essential for maintaining production flow. Even minor deviations in their performance can cause unplanned shutdowns and maintenance costs.

Drake AI's **Lift Failure Prediction** solution uses predictive analytics to detect issues long before they escalate. The platform continuously evaluates vibration, load, and pressure signals, enabling early detection of anomalies and timely intervention to prevent lift failures.

Core Capabilities

- **Continuous Monitoring:** Collects vibration, torque, and pressure data from every lift system around the clock.
- **AI-Powered Detection:** Uses domain-trained machine learning to identify patterns that precede equipment malfunction.
- **Predictive Alerts and Diagnosis:** Generates early warnings with root-cause insights and severity assessment.
- **Maintenance Integration:** Works with maintenance management systems to automate service scheduling.
- **Multi-Lift Support:** Compatible with ESP, SRP, and PCP systems across diverse operating environments.



Key Benefits

- Up to **30 percent reduction** in lift-related downtime
- Extended equipment life and improved reliability
- Lower maintenance costs through proactive response
- Fewer false alarms due to highly specialized AI models



Technical Insight

The system correlates live sensor readings with historical lift data to recognize early signs of degradation. By understanding normal operational noise and identifying true precursors to failure, Drake AI ensures timely and precise action, improving reliability and safety.

Unified Field Intelligence Overview

Drake AI's **Unified Field Intelligence** ecosystem integrates production optimization and lift failure prediction into one command platform. It provides a comprehensive view of production, equipment, and reservoir behavior across all operational layers.

Through continuous learning, the platform connects on-site sensors with cloud-based analytics, turning raw field data into actionable intelligence. The result is a smart, connected oilfield capable of anticipating problems and optimizing performance autonomously.

Platform Highlights

- Centralized dashboards for wells, lifts, and performance indicators
- Real-time alerts and visual analytics for engineering teams
- AI models that continuously retrain on live operational data
- Secure hybrid architecture with both edge and cloud processing



Strategic Outcome

With Drake AI's unified approach, operators evolve from reactive troubleshooting to proactive and predictive management. This enables improved uptime, optimized production, and sustainable long-term performance across all assets.

Drake AI – Engineering Intelligence for the Energy Future

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