**Spotfire**®

# Liberty Energy: Real-time insights drive operational agility

## 50B+
### DATA POINTS ANALYZED IN 2024-2025

Liberty Energy is a fast-growing oilfield services company with over 5,700 employees, specializing in hydraulic fracturing and completion services across North America and Australia. As a leader in technology-driven energy solutions, Liberty is deeply committed to innovation, safety, and operational excellence.

## Challenge

In the high-pressure world of oilfield operations, data is critical; however, managing it at scale presents a significant challenge. Between 2016 and 2020, Liberty Energy saw a 650 percent increase in active crews and a 4,000 percent spike in data volume. Engineers and customers relied on daily uploads and emailed reports that lacked immediacy, customization, and depth. Legacy workflows limited real-time decision-making, visibility into operations, and efficient collaboration between field engineers and clients.

With billions of telemetry points streaming in from remote locations and increasing customer expectations for transparency and insight, Liberty needed a better way to unify real-time and historical data, enable secure and intuitive user access, and maintain high-quality data collection without overburdening field teams.

"Spotfire supports in-depth analysis, going far beyond basic data visualization, but in an accessible way. With Spotfire, our development window is much shorter than it would be with any other kind of tool."

—David Van Akkeren, Intelligence Development Engineer, Liberty Energy

## Solution

To meet these evolving demands, Liberty developed Atlas, a real-time operational dashboard built on the Spotfire® visual data science platform. Spotfire was selected for its unique ability to blend real-time and static data, provide robust security, and deliver an intuitive user experience at enterprise scale.

Atlas ingests telemetry from frac equipment, including pumps, sensors, and blenders, at one-second intervals. This data is streamed via a Kafka event broker, processed and standardized, and displayed in Spotfire dashboards that update continuously. Streaming, Automation Services, and Python Services are all deployed in a containerized Kubernetes environment to ensure scalability and high availability.

Field engineers and customers access Atlas through customizable, role-based dashboards. With native support for user filters, scripting, and visual controls in Spotfire, users can configure the platform to fit their specific needs, from viewing live KPIs to analyzing historical stage data. Deployment was accelerated using Spotfire documentation, templates, and integrated support for R, Python, and custom visualizations.

## Benefits

With Spotfire at the core of its Atlas platform, Liberty Energy transformed real-time operations and customer collaboration. The company gained measurable improvements across key areas:

### Real-time operational awareness

Spotfire enables Liberty to visualize and analyze streaming telemetry data delivered every sec-ond from frac equipment. Continuous streaming helps the Liberty team to uncover timely insights and make informed decisions. Engineers and clients can monitor live frac jobs and key metrics as they happen. This capability reduces delays, catches anomalies early, and ensures each job is executed to plan.

### Faster, more accurate decision-making

Atlas empowers users to interact with data through customizable, intuitive dashboards. Engineers can explore live telemetry, compare it to historical trends, and respond to changing conditions. Customers can tailor their views to monitor the data that matters most to them, thereby improving situational awareness and facilitating joint decision-making.

### Increased efficiency without added complexity

Engineers configure Atlas once per job, and data transmission continues automatically. Spotfire automation and reusable templates reduce manual reporting and free up time for engineers to focus on execution, quality control, and customer communication.

# 1-second
DATA UPDATES FROM FRAC FLEETS AT THE EDGE AND SENT TO THE CLOUD

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—David Van Akkeren, Intelligence Development Engineer, Liberty Energy

## Enterprise-grade scalability and governance

With Spotfire deployed in a containerized environment, Liberty ensures high uptime and performance at scale. Granular access controls enable internal users to oversee operations, while external users view only their data. These security measures help Liberty to maintain transparency and trust without compromising security.

## Accelerated innovation and cross-team adoption

Extensibility in Spotfire allows Liberty to rapidly deploy new applications across departments. From fuel consumption tracking to supply chain logistics and data validation dashboards, Spotfire supports a wide range of analytics use cases, positioning Liberty for continued innovation and growth.

"Spotfire checked all the boxes for us. We're able to integrate live and static data into a single dashboard...it's really been able to provide an experience for users that just makes sense," says David Van Akkeren, Intelligence Development Engineer, Liberty Energy.

## Cutting-edge solutions with Spotfire Copilot

Using the latest technology from Spotfire, the Liberty team is getting started with the natural language extension, the Spotfire Copilot™ AI assistant. "Liberty is a fast adopter of new technologies," says Craig Haywood, Senior Architect, Liberty Energy. He continues, "We want to embrace AI to augment our internal Spotfire developers, aid our field personnel, and eventually help our end customers." The team is using the tool to increase productivity for developers, speeding dashboard and data function creation.

Liberty Energy Inc. (NYSE: LBRT) is a leading energy services company. Liberty is one of the largest providers of completion services and technologies to onshore oil, natural gas, and enhanced geothermal energy producers in North America. Liberty also owns and operates Liberty Power Innovations LLC, providing advanced distributed power and energy storage solutions for the commercial and industrial, data center, energy, and mining industries. Liberty was founded in 2011 with a relentless focus on value creation through a culture of innovation and excellence and the development of next generation technology. Liberty is headquartered in Denver, Colorado. For more information, please visit www.libertyenergy.com and www.libertypowerinnovations.com, or contact Investor Relations at IR@libertyenergy.com.

# Future

Looking ahead, Liberty is expanding its use of Spotfire Copilot functionality, enabling users to ask natural language questions and receive contextual insights based on decades of petroleum engineering data. Additional dashboards are in development for sustainability metrics and 24/7 materials logistics.

"We're continuing to push the bounds of Spotfire and Atlas as we develop other dashboards," notes Justin Schneider, Intelligence Development Engineer for Liberty Energy.

By combining advanced streaming infrastructure with the power and flexibility of Spotfire, Liberty Energy is redefining what real-time data means for oilfield operations.

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Spotfire

Spotfire® is a visual data science platform that makes smart people smarter by combining interactive visualizations and advanced analytics to solve complex, industry-specific business problems.