



## **Case Study: Gas Conditioning with Emergency Shutdown and Natural Gas Distribution Solutions for Dual Fuel Hydraulic Fracturing Equipment**

**Client:** ProFrac Services

**Project:** Natural Gas Distribution and Emergency Shut Down for Dual Fuel Fleets

### **Challenge**

ProFrac Services needed a consistent lean gas supply to optimize fuel substitution, prevent engine derating, and maintain peak performance and productivity. They aimed to monitor consumption rates, protect assets, extend system longevity, and reduce maintenance costs across their dual-fuel, hybrid, and e-fleet power generation operations. Advanced safety measures were also essential to safeguard equipment and personnel when handling natural gas in the field.

### **Solution**

LiveWire Power delivered a comprehensive gas conditioning and natural gas distribution solution, complete with emergency shutdown capabilities, tailored to ProFrac's operational needs.

#### **1.) Gas Conditioning Trailers with Emergency Shut Down (ESD)**

- Pressure regulation and overpressure protection
- Liquids separation with high liquid level monitoring to protect equipment downstream and avoid freeze-ups
- Gas and liquid measurement
- Integrated JP3 spectrometer for real-time gas quality analytics
- Enhanced safety with actuated valves, remote shut-in via WebApp, on-site controls, and emergency stop mechanisms

## **2.) Natural Gas Distribution (NGD) Trailers**

- Delivered in-house gas distribution solutions to support dual-fuel, hybrid, and e-fleets.
- Provided reel meters and actuated valves for precise gas consumption and substitution management

## **3.) Remote Monitoring**

- WebApp monitoring on the ESD to allow for real-time gas quality monitoring and remote shut-in capabilities
- WebApp monitoring on the NGD precise measurement of natural gas substitution and optimization at each individual pump level

## **4.) Current Asset Deployment**

- NGD Trailers: 8 units deployed on dual-fuel, hybrid, and full e-fleets.
- ESD Trailers: 14 units currently deployed across 9 field gas fleets, supporting dual-fuel, electric, and hybrid operations.

# **Results**

## **1.) Enhanced Fuel Management and Cost Savings**

- 85% Substitution Rate. ProFrac achieved precise measurement and optimization of natural gas substitution, significantly lowering diesel deliveries by up to 70% and reducing overall operating costs.

## **2.) Improved Safety and Asset Protection**

- Real-time gas quality monitoring and rapid shut-in capabilities safeguarded equipment and personnel, reducing risks associated with natural gas operations.

## **3.) Operational Flexibility**

- Modular NGD and ESD trailers supported various fleet types (dual-fuel, hybrid, and e-fleets), ensuring seamless integration across ProFrac's operations.

## **4.) Scalable and Reliable Deployment**

- With 8 NGD and 14 ESD trailers in the field, LiveWire delivered reliable, scalable solutions tailored to ProFrac's growing power generation needs.

## **5.) CO2 Reduction**

- Integration of LiveWire Power Gas Distribution system allowed for a 23% reduction in CO2 emissions.

## **Conclusion**

LiveWire's Natural Gas Distribution and Emergency Shutdown solutions enabled ProFrac to optimize fuel use, reduce costs, lower CO2 emissions, ensure real-time monitoring, and implement top-tier safety protocols. By providing precise gas management and unmatched reliability, LiveWire supported ProFrac's efficiency and sustainability goals.

### **Key Takeaway:**

*"Safety, precision, and performance – LiveWire delivers the tools to power smarter, safer operations."*