FRACTURING SOLUTIONS

Equipment Specifications and Service Expertise

Hydraulic Fracturing Solutions

STEP's conventional fracturing fleet currently represents 290,000 pressure pumping horsepower (160,000 active HP) with capabilities designed for operations in large, equipment intensive plays such as the Montney and Duvernay. Significant opportunities have also been recognized in the Cardium, Viking and Shaunovan; specifically in integrated services and refracturing operations in the WCSB.

Our team of fracturing professionals and business strategy has been built with the same attention to execution, preventative maintenance, HSE, engaged culture and core values that led to the rapid growth of our coiled tubing and fluid pumping solutions.

Features and Specifications

HP Pumping:

- High Rate Quintuplex Pump (QNT3000 Thunder Pump)
  - Single continuous service pump
  - 3,000 brake horsepower (2,237 kw)
  - 251,000 lbs rod load
  - 11" stroke length
  - 36% more displacement than other 8" stroke models
- 115,000 HP (premium CAT 2500 HP)
  - 4" – 5" fluid ends enable maximizing rates and pressures as required
  - 4" – 103 MPa; 4.5" – 84 MPa; 5" – 69 MPa
- Data Van
  - Remote satellite monitoring and pump control up to 16 units
  - Infrared cameras utilized to help find leaks and hotspots

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- HP Manifolds (not pictured)
  - Equalized discharge pressure to ensure adequate fluid end suction pressure
  - Designed to connect two 8-port manifolds for optimal location setup
- 1502 FMC/SPM and 15K SPM Safety Iron
  - Hydraulic actuated valves
  - 3” and 4” treating iron

Blending and Chemical Addition:

- Blenders
  - NOV, 16 m^3/min - 6 t/min max; 6” flow meters for clean and slurry; slip stream capable
  - High-rate, 20 m^3/min - 8 t/min max; 8” flow meters for clean and slurry, 10” on slip stream; ambidextrous; increased HP, rate and tub-life; stainless manifold
- Hydration Units (not pictured)
  - 20 m^3/min max
  - Dry add capable with scaled delivery
  - Advanced hydration tank for optimal shear and polymer hydration (38 m^3 vol)
- Chem Vans (eight tote capacity)
  - Isolated lab facility and operating cab
  - Flow loop sample point

- Bulk Transport (three compartment, 15 m^3 capacity)
  - Dry chem delivery, scaled and accurate
  - Bulk liquid chemical transport with precision delivery system

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High Rate / High Capacity Nitrogen Pumping:

- High Rate Nitrogen Pumper
  - 1350 HP
  - 310 scm^3/min at 15K
  - Fully automated, direct fired vaporizer
- Storage Kings (not pictured)
  - 60,000 scm storage capacity for onsite storage with remote control operation
  - Enhanced delivery system to prevent nitrogen loss

Sand Handling:

- Mobile Sand Storage (not pictured)
  - 150 tonne, five compartments
  - Dust control
- Sand Belts (not pictured)
  - Scaled automation to remove field professionals from the operating area
  - Dust control and collection
- Sand Storm and IPL (integrated proppant loader)
  - 2 x 3 packs, or 1 pack of 6, 250 tonne, single compartment
  - IPL capable of moving 4 t/min (8 min/truck) and programmable delivery

Logistics

Services provided in a reliable, safe and efficient manner:

- 24/7 dedicated logistics professionals
- Assured supply of Northern White and domestic sand
- Multiple trans load sites available to maximize efficiencies
- Proppant staging to prevent supply issues (on time delivery)
- Chemical bulk delivery

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Engineering Services

- Customized fracturing stimulation treatments using specialized software (GOHFER, FRACPRO) for the development of frac growth simulations.
- Real-time treatment monitoring and technical support in STEP's newly designed frac rooms
- Unsurpassed knowledge regarding fracture growth behavior modelling, fracture mapping, production data analysis
- Onsite "real-time" analysis of diagnostic data (DFITs, mini-frac and other injection tests)
- Production of operational and efficiency related KPIs as part of daily and end of job reports

Chemical Laboratory Services

STEP's team of laboratory professionals includes almost 40 years of combined experience in stimulation chemistry (fracturing, acidizing, and production chemistry). Chemists work with operators to engineer optimal frac fluids and fit-for-purpose solutions, and create the optimal modelled geometry to maximize production, formation permeability and proppant conductivity.

Remote Fracture Monitoring – Fieldview

STEP offers a web-based real-time viewing platform to monitor Hydraulic Fracture Stimulations. Powered by MRL, Fieldview is accessible to all clients and STEP professionals to observe live treatments and evaluate previous stimulations. The application is fully customizable to suit each client's needs.