

STIMULATION SERVICE



Range of activity:

- Acidizing and fracturing design (FracproPT and StimPT software)
- Hydraulic fracturing and acid fracturing
- Acid treatment and fracturing process data acquisition
- Micro-fracturing
- Hydro-slotting perforation
- Matrix acidizing
- Well clean out
- Leak off test
- Minifrac tests
- High pressure pumping jobs

We provide high level technology for blending, pumping, control and data acquisition.

Well problem can be anticipated and planned for the initial stages of job design, possible solution can be placed in the computer simulator to check their validity prior to job execution at the well site. The core of the frac fleet is the Stewart & Stevenson equipment, comprising of:

- Pumping units
- Manifold
- Blender
- Liquid Additive Unit
- Sand transporter
- Monitoring Van

Fluid technology at EXALO Stimulation Service:

- EXALO engineers in cooperation with Polish Oil and Gas Institute has elaborated own acidizing and fracturing fluid formulas
- The fluids are tailor made and customized for specific geological condition
- The fluids formulas are based on the chemicals delivered by the worldwide well-known manufactures and service companies
- EXALO is strictly cooperating with Lubrizol having full access to their technology and comprehensive line of products
- The full laboratory tests are done before each treatment according to the best API standards



EXALO Stimulation Service uses a StrateGen, FracPro and StimPro state-of-art stimulation software technology in order to design most cost-effective customized treatment and to analyze treatment execution for best further process optimization. This powerful engineering tool has been used in every our treatment design ensuring the best treatment performance and bringing the Client satisfaction.



EQUIPMENT



Pumping Unit single triplex FC 1251

- Chassis: Mercedes truck
- Engine: Detroit Diesel 1250 KM
- Hydraulic Power: 1100 KM
- Piston: OD 5, 6" and 3,75"
- Transmission: Allison DP 8962
- SPM Triplex Pump 1300 H KM
- Max. working pressure:
 - 10 000 PSI – nur 5", 6" ; 15 000 PSI – nur 3,75"
- Pumping rates:
 - 0,45 m³/min at 700 bar
 - 0,9 m³/min at 514 bar
 - 1,3 m³/min at 363 bar
 - 1,7 m³/min at 281 bar
 - 2,2 m³/min at 206 bar

Pumping Unit single triplex HPS 600

- Chassis: MAN TGX 6x4
- Engine: Caterpillar C18A ATAAC of ACERT/ 620KM at 2100 rpm
- Hydraulic Power 600 KM
- Piston: OD 3"
- Transmission: Allison S type 6610M
- Additional reducing transmission: Eaton AT 1202 2:1
- Triplex pump Manifold System Ironworks (MSI) - TI 600 type
- Max. working pressure:
 - 14 140 PSI (975 bar) at 70 l/min
 - 15 000 PSI – nur 3,75"
- Pumping rates: 950 l/min at 225 bar
- Pumping rates: Klaus Union TYP SLM NVS
- Working tanks - 2 pcs 3000 l capacity each
- Electronic measurement and data record system

Monitoring and Registration Data System – Data Van

Whole system is mounted on Mercedes Van with a complete set of instrumentation to monitor, control and record a progress of treatment operations:

The system can monitor:

- Sand concentration
- Working pressure
- Annulus pressure
- Bottomhole pressure (calculated)
- Pumping rate Flow rate

Computerized data acquisition system enables data recording on a disk, as well as real time display and reviews the data after job completion.

Pumping Unit single triplex TPT 2250

- Chassis: Trailer
- Engine: Detroit Diesel 2250 KM
- Hydraulic Power: 2000 KM
- Piston: OD 5"
- Transmission: Allison DP 6610
- SPM Triplex pump 2250 H KM
- Max. working pressure: 13 900 PSI – nur 5"
- Pumping rates:
 - 0,6 m³/min at 790 bar
 - 1,0 m³/min at 790 bar
 - 1,2 m³/min at 700 bar
 - 1,4 m³/min at 600 bar
 - 1,7 m³/min at 500 bar
 - 2,1 m³/min at 400 bar

Blender

- Chassis: Mercedes truck
 - Maximum fluid rate: 9.5 m³/min
 - Maximum proppant rate: 7 t/min
- Computer controlled blender for mixing different fluids and feeding pumping units. Possibility of setting different fluid and proppant rates, as well as volume of dry and liquid chemical additives

Sand transportation truck

- Trailer mounted proppant transport box with feeding system
- Capacity load: 40 tons + 40 tons by crane on "bigbag"
- Lifting feeding system

Liquid Additive System

This unit has 10 liquid tanks and chemical additive pumping system.

The unit is comprised of:

Control panel which adjusts and controls all functions and work parameters and additionally is equipped in Data Acquisition System (DAS)

Liquid chemical pumping system:

- 3 pumps with rate 0,6 – 9,5 l/min
- 5 pumps with rate 1,9 – 30 l/min
- 2 pumps with rate 3,8 – 64 l/min

Each chemical system is provided with its own individual coriolis chemical flow meter and transmitter and can be controlled in either manual or automatic mode

2 transfer pumps with rate 7,6 – 132,5 l/min

10 chemical tanks with a capacity of 1m³ each

High Pressure Manifold

- Mercedes truck mounted unit capable to connect up to six Pumping Units
- Low and high pressure manifolds
- Max. working pressure: 13 500 PSI

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