

Eliminate Workovers Due to “Sand Locking” Rod Pumps

Problem:

Operator can not produce well for more than 4-5 days due to leftover frac sand in wellbore.

Solution: Install Reverse Flow HSP Jet Pump to bring frac sand to surface along with production.

Results:

Well remained on Jet Pump system 18 months, recovering 1-5 gallons of 20/40 mesh frac sand to surface daily until well cleaned out.

Advantages of Jet Pump vs. Electric Submersible Pump:

- Jet Pump can produce moderate to high volumes of solids
- Jet Pump has no moving parts downhole
- Jet Pump can produce high volumes of oil
- Software can calculate PBHP based on production volumes



JJ Tech Jet Pump Software Analysis

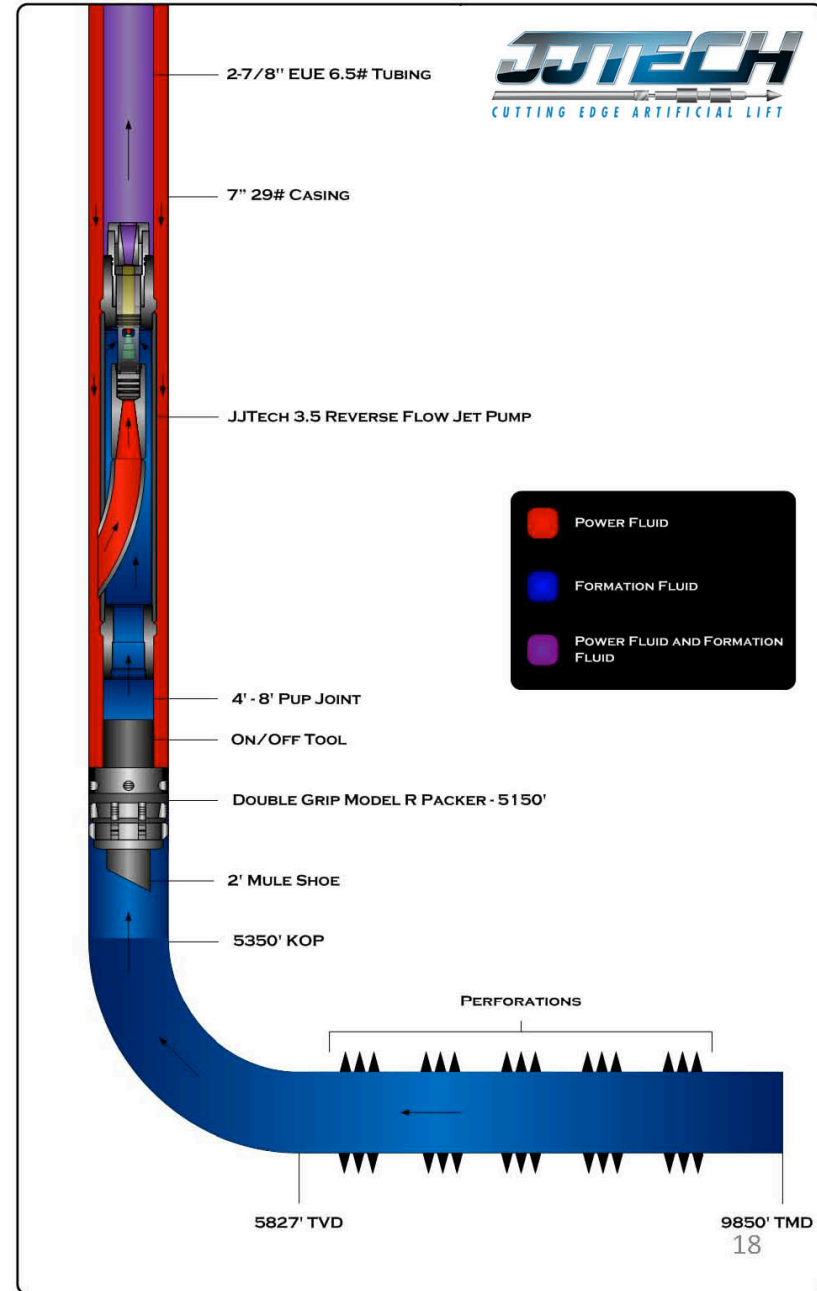
Input Data

COMPANY:.....XX	LEASE:.....XX
WELL IDENTIFICATION:.....XX	REPRESENTATIVE:.....CBL
PUMP DEPTH:.....4920Feet	TUBING LENGTH TO PUMP:.....4920Feet
TUBING ID:.....2.441Inches	TUBING OD:.....2.875Inches
CASING ID.:.....6.276Inches	POWER FLUID:.....Water
BH TEMP:.....115Deg F	FLOWING WH TEMP:.....90Deg F
GAS LIQ. RATIO:.....232SCF/BBL	DE SIGN LIQ. PROD. RATE:.....292BBL/DAY
PROD. RETURN:.....Tubing	PRODUCED OIL GRAVITY:......36API
PROD. WATER GRAV: (Sp.Gr.):.....1.15	PRODUCED GAS GRAVITY:.....0.6
WAT. FRAC.: (50% = 0.50):.....0.96	SURFACE HYD. PRE S.S.:.....5000psig
PUMPING BHP:.....775psig	FLOWING WH PRESS:......50psig

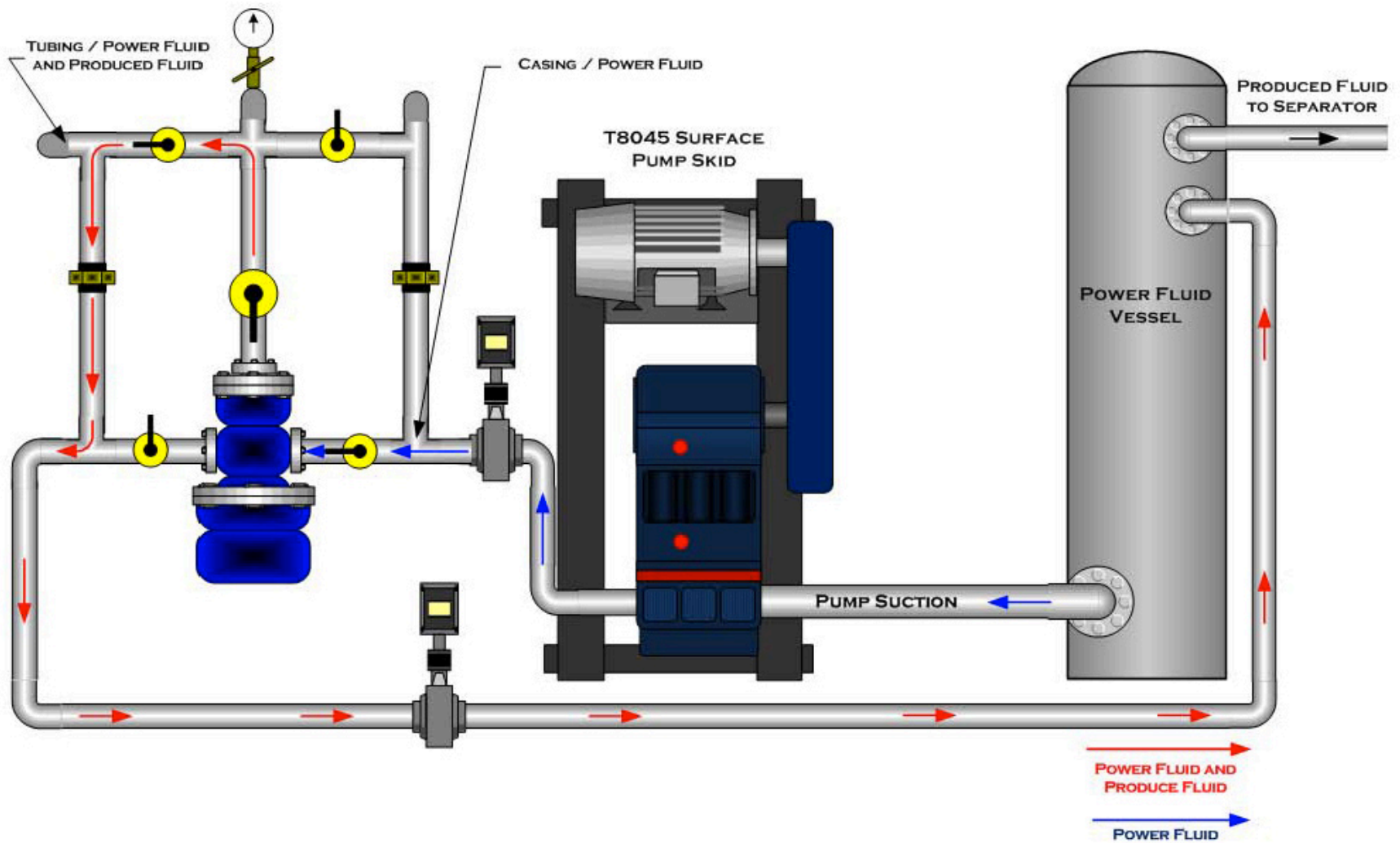
Date: 11 - January - 2011

Computed Output Data - English Units

Pump Size	Power Pres psig	Power Fluid Rate bblpd	Horse Power	Non-Cav Rate bblpd	Prod. Rate bblpd	Pumping Bot-hole psig	Nozzle Area inches	Throat Area inches
D:5	1970	1259	46	417	292	775	.0177	.038



Reverse Flow Jet Pump Surface Diagram



T8045 Electric / 3.5 Reverse Flow Jet Pump / North Oklahoma



Diaphragm Pump Skid In Front of Pumping Unit



Sand Produced with Jet Pump

