



CUTTING EDGE ARTIFICIAL LIFT



Decrease Operating Costs by Replacing ESP with Hydraulic Jet Pump

Objective:

Decrease operating costs by installing JJ Tech Jet Pump. Customer replaced 6 ESP's (Electric Submersible Pump) in a 4 year period.

Results:

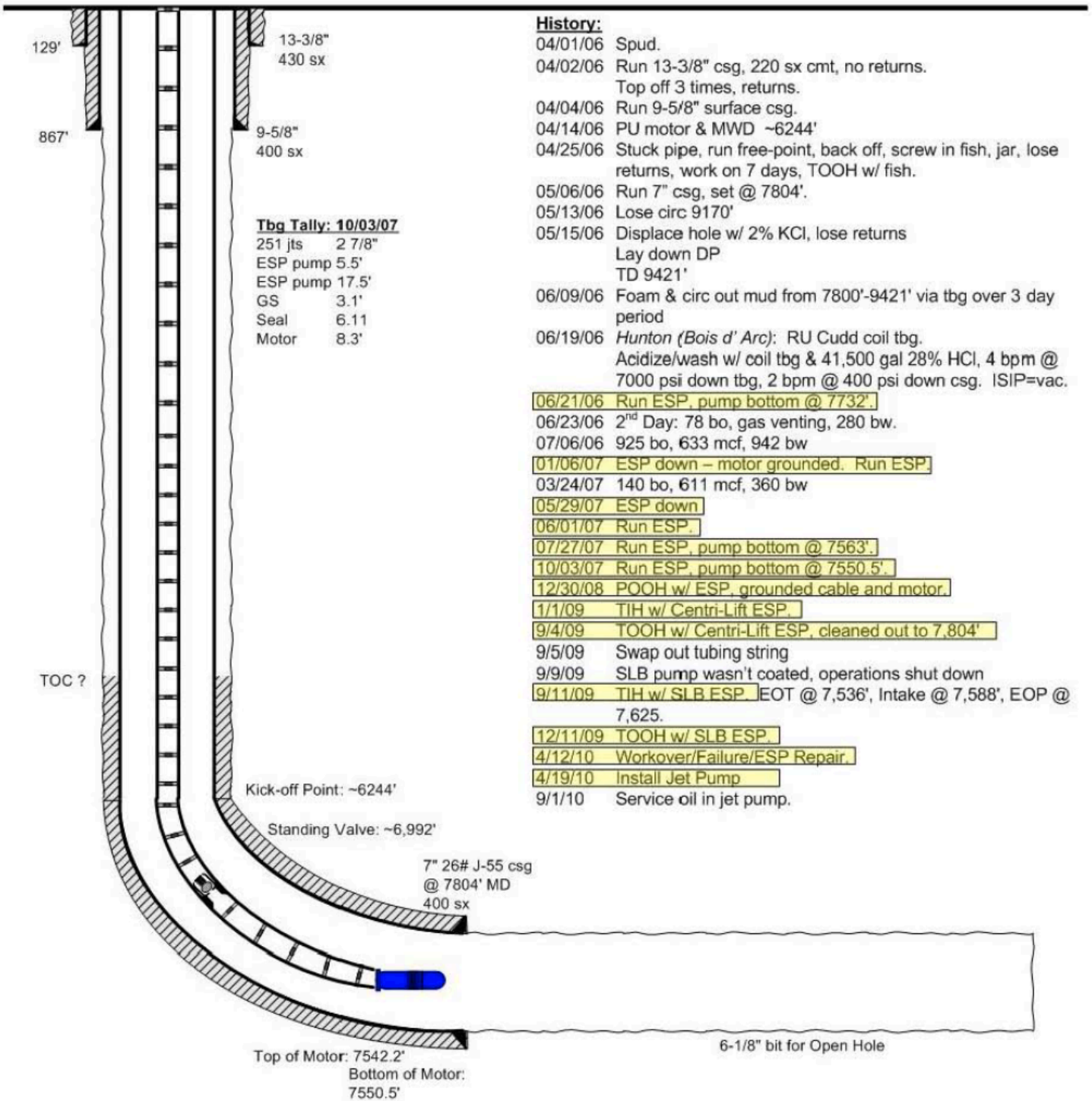
Seven months after installing JJ Tech Jet Pump, no workover rig has been needed, and well remains as productive as it was on ESP

Advantages of Jet Pump vs. Electric Submersible Pump:

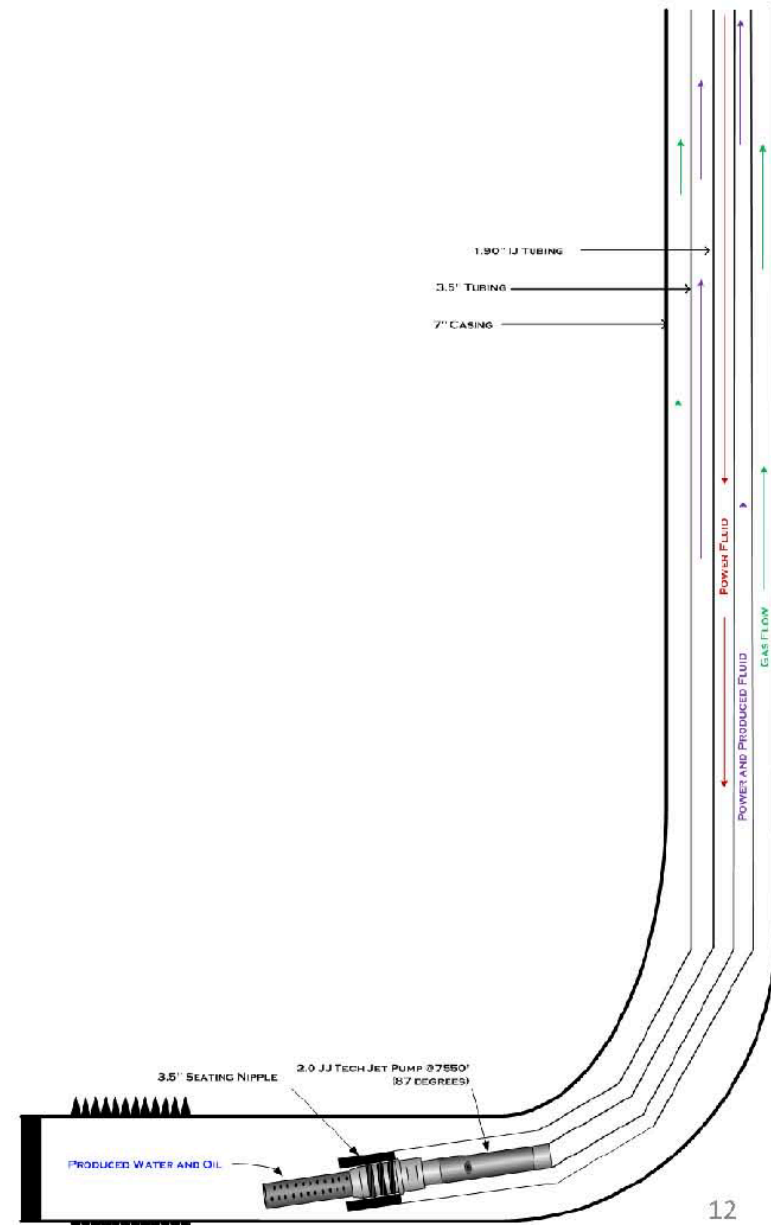
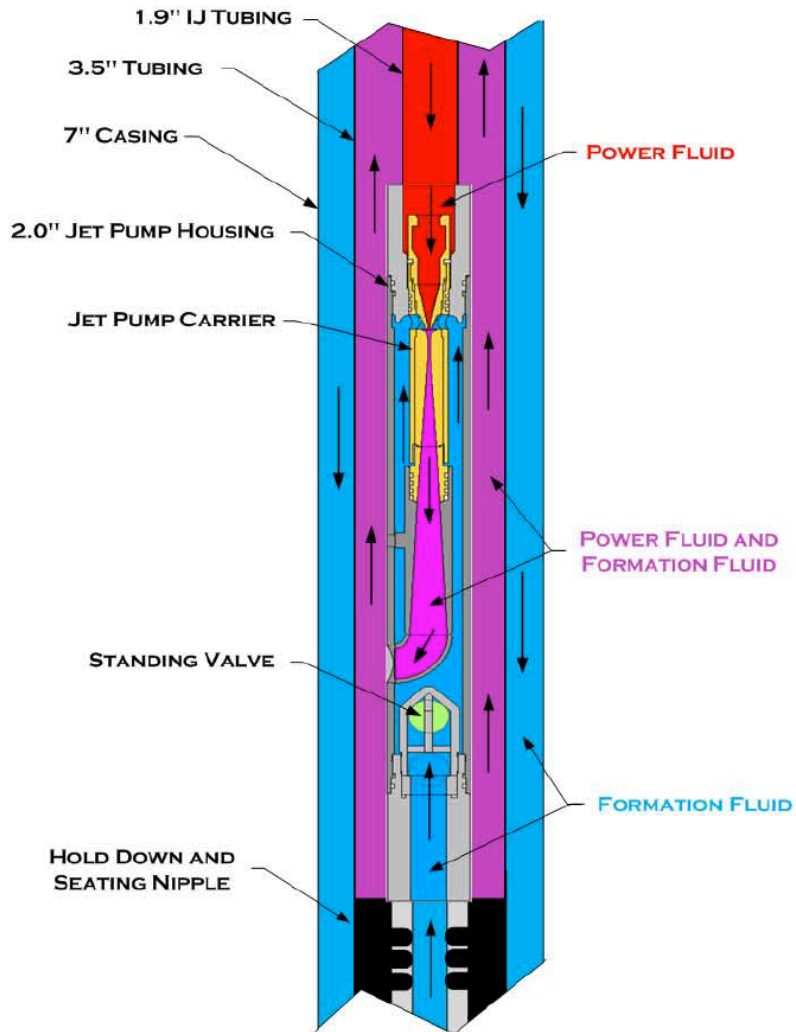
- Jet Pump can produce moderate to high volumes of solids
- Jet Pump has no moving parts downhole
- Jet Pump can produce high volumes of oil
- Software can calculate PBHP based on production volumes



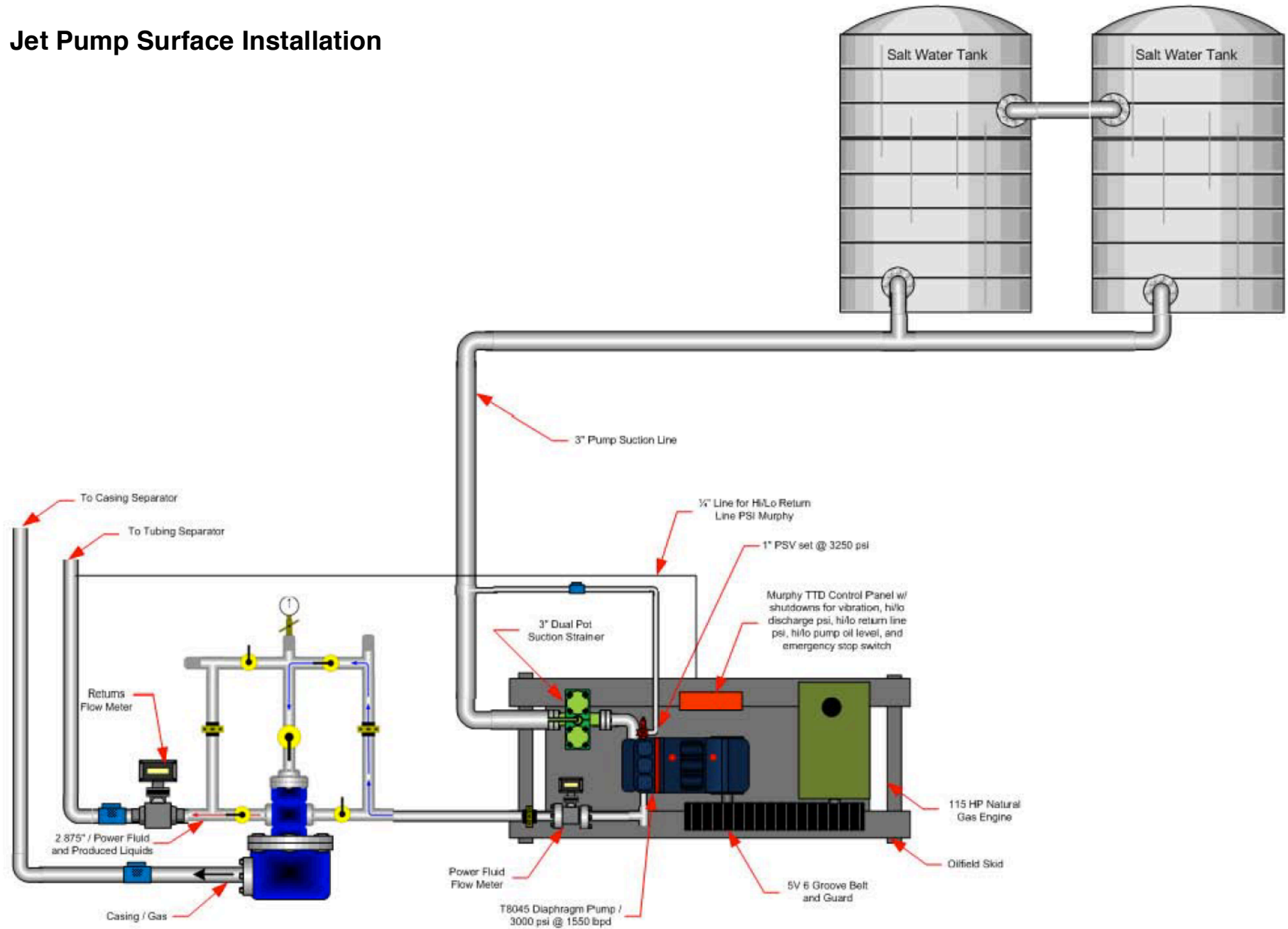
Customer Provided Schematic (High-lighted ESP failures)



How It Works



Jet Pump Surface Installation



T80-45 Electric Skid / 2.0 Jet Pump / N. Oklahoma Oil & Gas Well



Input Data

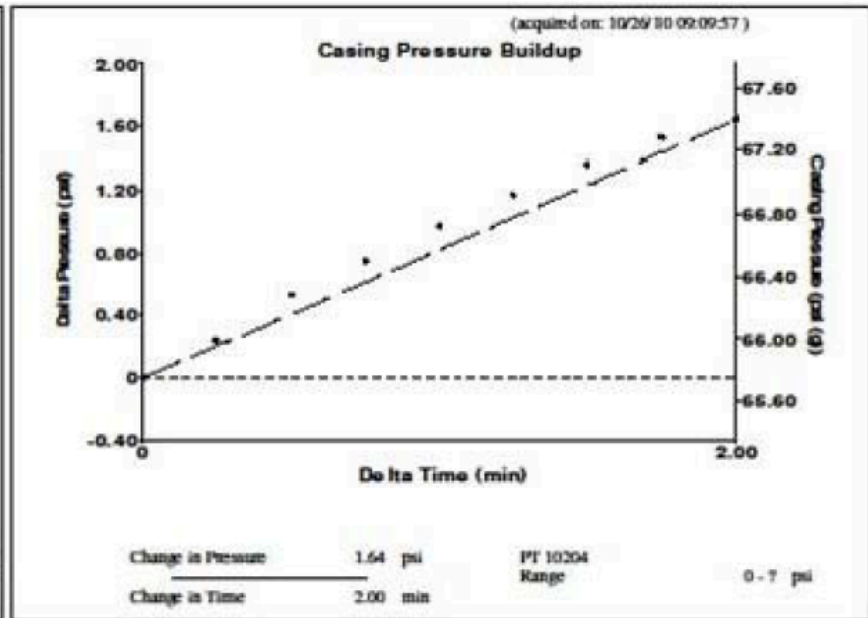
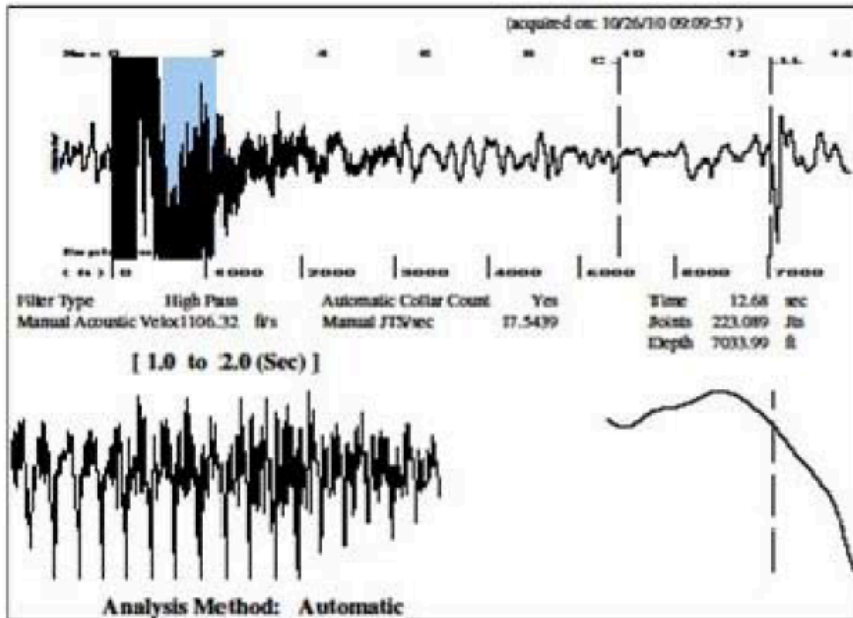
COMPANY:
WELL IDENTIFICATION:
PUMP DEPTH:6975Feet
TUBING ID:.....1.61Inches
CASING ID.:2.992Inches
BH TEMP.:.....155Deg F
GAS LIQ. RATIO:.....20SCF/BBL
PROD. RETURN:.....Annulus
PROD. WATER GRAV: (Sp.Gr.):.....1.13
WAT. FRAC.: (50% = 0.50):.....0.45
PUMPING BHP:.....100psig
Date: 11 - February - 2010

LEASE:
REPRESENTATIVE:.....CBL
TUBING LENGTH TO PUMP:.....7550Feet
TUBING OD:2.0Inches
POWER FLUID:.....Water
FLOWING WH TEMP.:.....90Deg F
DESIGN LIQ. PROD. RATE:.....80BBL/DAY
PRODUCED OIL GRAVITY:.....42API
PRODUCED GAS GRAVITY:.....0.79
SURFACE HYD. PRESS.:.....4500psig
FLOWING WH PRESS.:.....70psig

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Computed Output Data - English Units
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Pump Size	Power Press psig	Power Fluid Rate bblpd	Horse Power	Non-Cav Rate bblpd	Prod. Rate bblpd	Pumping Bot-hole psig	Nozzle Area inches	Throat Area inches
B:2	2048	817	31	92	80	100	.0095	.0189

Fluid Level Shot (Shows 95.4 PSI Pump Intake Pressure)



(acquired on: 10/26/10 09:09:57)

Production Current	Potential	Casing Pressure	Producing
Oil 68	- * - BBL/D	65.8 psi (g)	
Water 10	- * - BBL/D	Casing Pressure Buildup 1.6 psi	
Gas 650.0	- * - MscFD	2.00 min	
		Gas/Liquid Interface Pressure 83.8 psi (g)	Annular Gas Flow 91 MscFD
IPR Method Vogel		Liquid Level Depth 7033.99 ft	% Liquid 28 %
PHHFSHHP	- * -	Main Depth to Liq Level TVD 6851.65 ft	
Production Efficiency 0.0		Tubing Intake Depth 7411.00 ft	
Oil 40 deg API		Formation Depth 7411.00 ft	
Water 1.05 Sp.Gr.H2O		Formation Depth TVD 6975.16 ft	
Gas 0.88 Sp.Gr.AIR			
Acoustic Velocity 1109.46 ft/s			
Formation Submergence			
Total Gaseous Liquid Column HT (TVD) 124 ft			
Equivalent Gas Free Liquid HT (TVD) 34 ft			
CASING SHOT. PUMP NOT RUNNING			

Tubing Intake 95.4 psi (g)
Producing BHP 95.4 psi (g)
Static BHP - * - psi (g)

