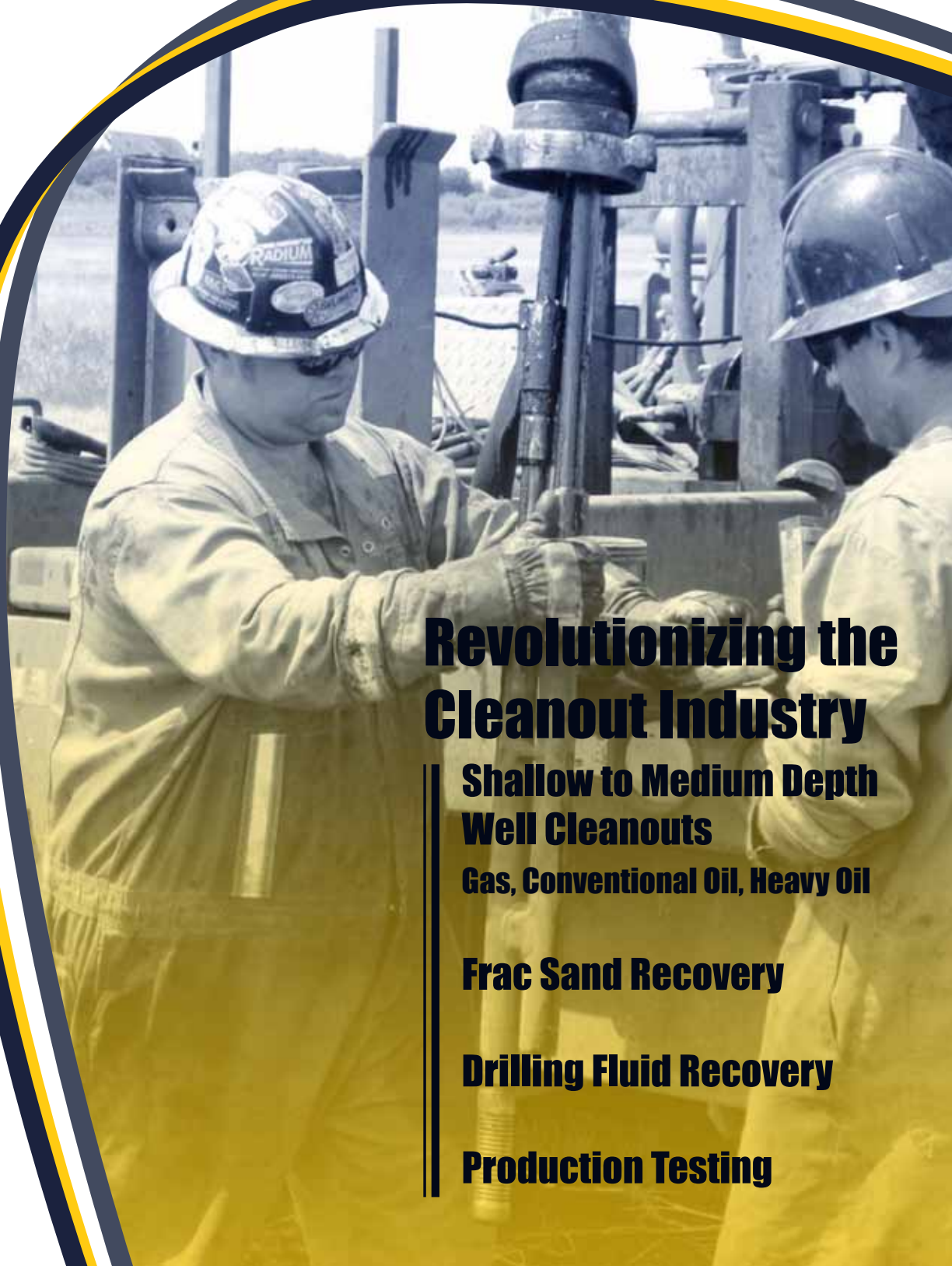


QUANTUM

DOWNHOLE SYSTEMS INC.



Revolutionizing the Cleanout Industry

**Shallow to Medium Depth
Well Cleanouts**

Gas, Conventional Oil, Heavy Oil

Frac Sand Recovery

Drilling Fluid Recovery

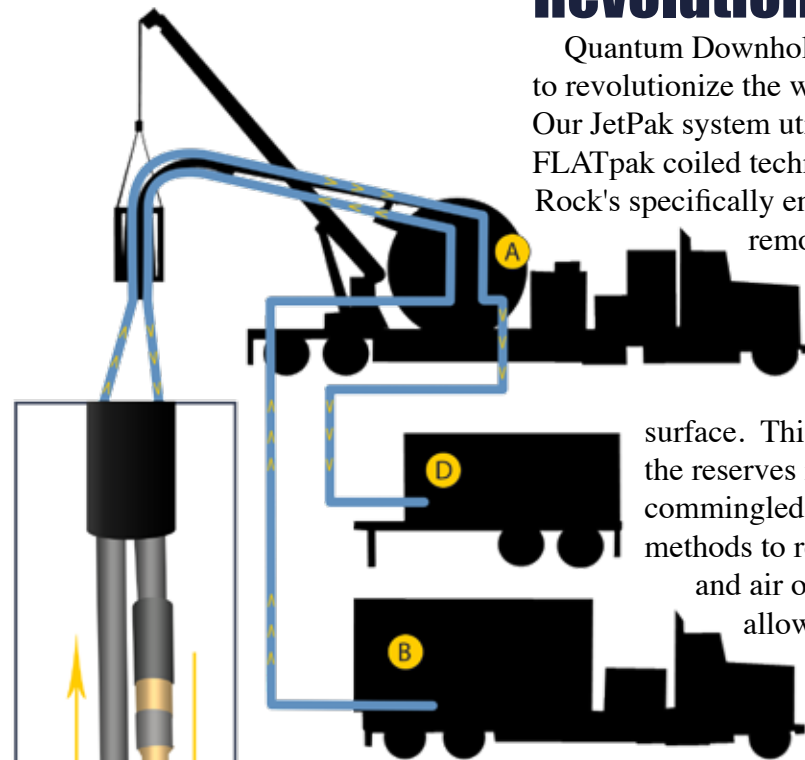
Production Testing

Revolutionizing the Cleanout Industry

Quantum Downhole Systems has combined two technologies to revolutionize the well bore cleanout services industry.

Our JetPak system utilizes CJS Coiled Tubing's FLATpak coiled technology as well as Source Rock's specifically engineered jet pump to

remove solids and liquids from well bores. The primary function of this technology is to create a low pressure environment in the well bore to pump the fluid and/or solids to surface. This technology helps E&P companies to better exploit the reserves in their properties. A very common problem among commingled low pressure wells is liquid loading. The current methods to remove the liquid on a service basis are swabbing and air or nitrogen coiled cleanouts. Quantum's technology allows E&P companies a unique solution to production and completion challenges.



How It Works

Pumping Mode

- A** A conventional coiled tubing unit is out-fitted with the JetPak system and the pump at depth.
- B** On surface, a pressure truck is connected and pumps a predetermined amount of fluid into one side of the FlatPak string.
- C** As the fluid passes through the pump, pressure and velocity change. This creates a negative pressure which allows the well bore fluid to enter the pump.
- D** The pumped fluid and wellbore fluid are both returned to a catch tank. This fluid can then be reused on other cleanouts.

Jetting Mode

- E** To break through sand bridges or liquefy solids, fluid is pumped down both sides of the FlatPak. This activates a high pressure application-specific nozzle that liquifies the solids. The JetPak can then be put back on pump mode.

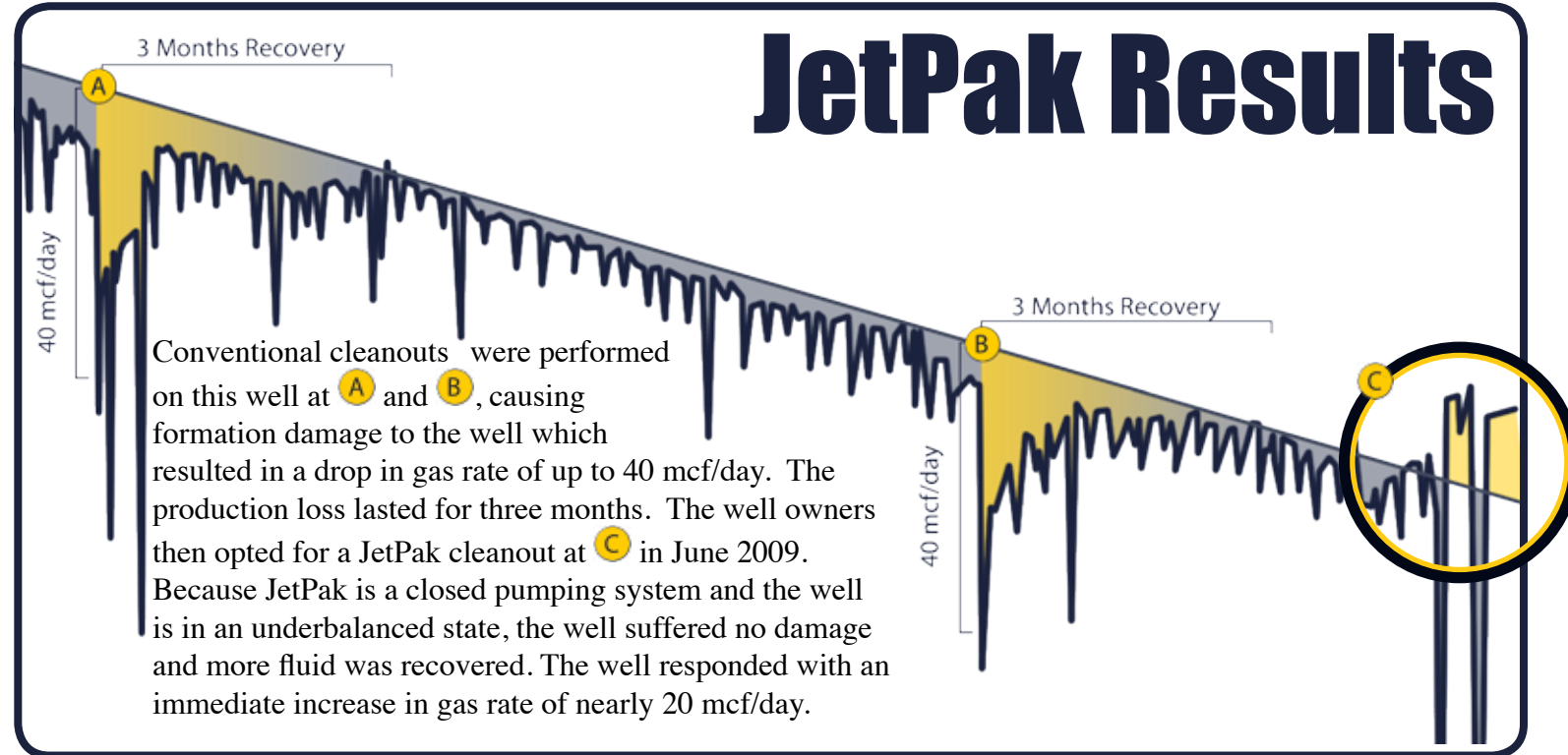
A Green Technology

The equipment utilized on location to deploy and operate JetPak uses 75% less fuel than a conventional cleanout operation, providing both economical and environmental benefit. Furthermore, JetPak is directive 033 compliant; UEL and LEL are no longer a concern. JetPak utilizes produced or fresh water to run the pump and virtually no gas is vented to the atmosphere.

Cleanout Damage

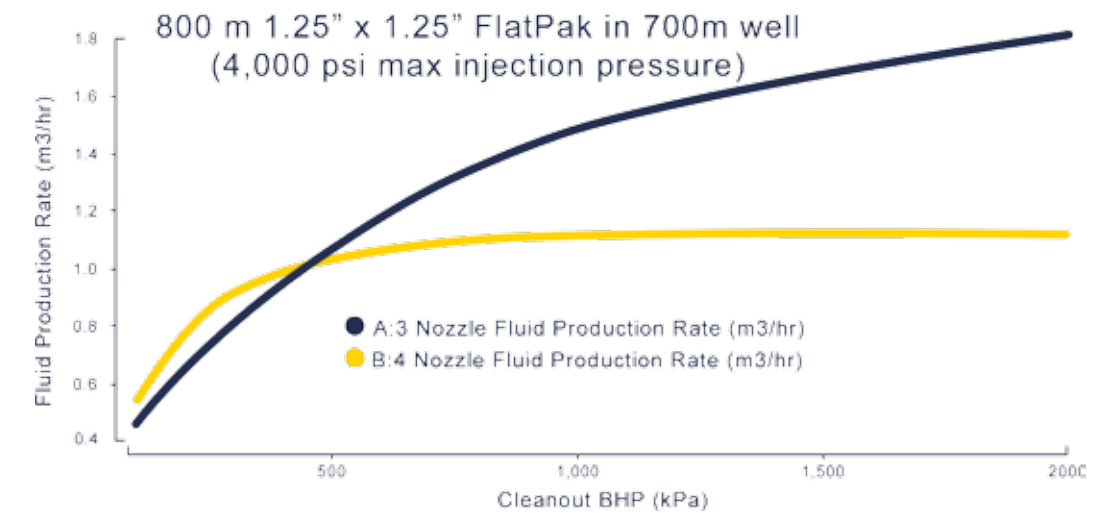
Cleanout damage is a relatively recent but common problem in our mature basin, many wells have upper zones that can experience short or long term damage using current cleanout techniques. The JetPak technology allows E&P companies the ability to economically and effectively clean these wellbores out while not risking temporary or permanent damage to these sensitive zones. Well productivity increases immediately after the JetPak has been run.

JetPak Results



Reduce the Number of Interventions

When using JetPak, the number of cleanouts done on the well will be reduced. Since the well is in an underbalanced state during the cleanout, JetPak removes both the well bore fluid and the fluid that has built up near the well bore area. With the JetPak process, a higher volume of fluid is recovered out of the well than with conventional cleanout techniques.



Safe

With JetPak no air or oxygen enters the well bore eliminating concerns about the creation of explosive mixtures downhole.

Efficient

JetPak drastically improves well cleanout efficiency; with a compact pump assembly, multiple wells can be cleaned out in one day without disassembly of the pump from the coiled tubing between wells.

Reliable

JetPak has no moving parts, making it less prone to wear and failure.

Additional Uses

Production Testing

This is an excellent system to evaluate wells that are in a two phase flow regime. The subject well may be a candidate for a permanent installation or an abandonment candidate. None the less, the JetPak will remove the fluid so accurate well data can be collected.

Frac Sand Cleanouts

Due to the low pressure of our reservoirs, frac sand cleanouts are a common technique used during the completion process in the WCSB. One of the unique features the JetPak offers is the ability to jet through a high pressure nozzle on the bottom of the pump to break through or liquefy sand. The pumping process can then be restarted and the solids removed from the well.

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