

TECHNOLOGY: TERRA-SEAL™



MARKET PROVIDER

Falconridge Oil UAE provides and markets this two-time award-winning technology.

BENCHMARKING

- Reservoir engineering, numerical modeling, completion engineering design, economic evaluation, casing/rock analysis
- Cut dimensions are calibrated beforehand
- Real-time digital monitoring provided
- Orientation tool field-tested, high accuracy
- Confirm final measurements with cutting returns and DHV or well test logging

TECHNICAL PRINCIPLES & APPLICATIONS

Terra-Seal™ is a patented abrasive jet cutting completion process to cut smoothly through casing with high-pressure slurry (up to four or more casings).

Terra-Seal™ is designed to excavate vertical windows in the cement and deep into near wellbore rock in two 180°-phased directions (up to 4 sets).

The **Terra-Seal™** machine is the only downhole tool that can be pre-programmed to control itself at downhole point of engagement and not at surface, including azimuth orientation. This is a big advantage over competing technologies.

The application of **Terra-Seal™** is ideal in any cement squeeze repair of bad casing; new well completion; secondary recovery of oil or gas production from depleted zones; or where previous completion or fracturing was unstable or ineffective; any open-hole or cased wells that have low permeability, low porosity, high pressure, near-wellbore damage, or other production problems; can be run in vertical or horizontal wells; also to improve water-cut & increase production.

BENEFITS OF THE TECHNOLOGY

1. Re-distributes stresses away from near-wellbore zone
2. Porosity increases >> 4-5x; Permeability >> 15x
3. Drainage volume increases 6.2x greater than borehole
4. Very deep penetration (compared to perforation)
5. Eliminates screenouts, lamination, skin effects, etc.
6. Creates vertical permeability that does not normally exist in nature – full thickness through interbedding & layers
7. Has a longer lasting effect than any other technology
8. **“Managed balanced”** drilling – not overbalanced
9. So powerful it can cut multiple casings & deep into rock
10. Does not crack casing or cement / keeps hydraulic integrity
11. The only technology that actually excavates rock
12. Accurate & controllable connection / communication
13. Helps direct a hydraulic fracture (even near water)
14. Follow-up intensification methods also show increased results due to huge drainage surface (i.e. acidization, hydro-fracturing, acoustics, etc.)
15. Ecologically safe / environmentally friendly

RISKS AND COSTS

Risks of failing to cut are minimal, even for multiple casings and cement. Equipment is designed for deep cuts. Cutting and orientation ability can be demonstrated on surface prior to job. Cost ranges from \$500K to \$5M depending on size, depth, and number of terra-slices, and complexity of the job. Risk and cost can be reduced further by consulting with experienced engineering and geological team of Falconridge Oil UAE.

CHAMPION:

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