

## KUBIC-FLUX™

DIFFERENTIAL CONTROL FROM METROL

KUBIC-FLUX can help pressure equilibrate the formation when gauges are isolated by creating an under-balance or over-balance below a barrier. This is beneficial for barrier integrity checks / pressure tests especially when a zone is abandoned using a cement plug. The process can be enhanced by activating CROSS-FIRE™ to wirelessly perforate the casing below the cement plug, and then triggering KUBIC-FLUX™ to create a pressure under-balance to verify the integrity of the cement plug in the annulus and the bore.

### DESCRIPTION

Metrol have designed a system for introducing a temporary under balance in an isolated zone by wirelessly opening an atmospheric chamber to the formation pressure.

This overcomes the problem of trying to monitor pulse and interference tests in a zone which has been over pressured and/or has the perforations affected or blocked by pressurised mud cake.

KUBIC-FLUX is run in the shut position with any number of sections of empty tubing which act as an atmospheric chamber. When required the wireless signals are sent via the PARAGON wireless Relays to fire and

open KUBIC-FLUX. When KUBIC-FLUX is opened the mud cake in the perforations is displaced by the sudden drop in pressure.

Therefore any over pressure at the formations is eliminated, allowing Metrol OCULUS "talking" wireless gauges to respond and record the interference pulses and small pressure changes at the reservoir formation.

The KUBIC-FLUX chamber can also be pre-charged with nitrogen or acid to facilitate a controlled over-pressure or "frac" at an isolated zone. This can enhance understanding of rock fracture gradients and reservoir properties.

### FEATURES & BENEFITS

- > Any over pressure at the formation is eliminated allowing gauges to respond and record the interference pulses and small pressure changes at the formation
- > Mud cake in the perforations is displaced by the sudden drop in pressure
- > Will function and seal with H2S, CO2 or any combination
- > Suitable for all completions and DST strings
- > Shock resistant wireless activator
- > Integrity of isolating packer or straddle can be verified by wirelessly interrogating gauges
- > Useful when running a completion to create an under balance at the formation
- > Pressure and temperature data can be collected at a fast sampling rate of up to 64 samples per second using Metrol's OCULUS wireless gauges.

### SPECIFICATIONS

<b>Pressure:</b>	100 - 15,000 psi working pressure
<b>Pressure differential across tool from below:</b>	15,000 psi
<b>Temperature:</b>	350°F (175°C) MAX working temperature

