

# Permanent Monitoring Case Study



**Perm Technologies (a Joint Venture between Kuster Company, of Long Beach - California & Estrella Group of Companies of Buenos Aires - Argentina) successfully install first K Perm Permanent Monitoring Solution in THUMS Long Beach Company's Gas Well**

## Objectives:

Obtain life of well, reliable, accurate and cost effective data to assist reservoir knowledge and production efficiency. The system is designed to be cost effective and easy to install.

## Benefits:

- Enables understanding of the reservoir performance and connectivity and thus optimization of future wells
- Provides real time continuous data reducing the need of costly well interventions at a later date
- Provides data quality at or above international references at a cost that justifies use in marginal wells

## Enablers:

- Proven Downhole Gauge Technology, with highest quality Quartz sensors
- All connections pressure testable with metal to metal sealing mechanisms
- Remote retrieval of downhole Pressure & Temperature data
- Touch Screen Intuitive low power acquisition unit with human interface to eliminate the need for specialized operator training

## Well Completion:

A310 is a Gas Producer which is located on the contract operated THUMS Long Beach Company's artificial island off the coast of California. The completion has been designed for a deviated production well with 8-5/8" casing, utilizing 5-1/2" gravel packed screens, with 2-3/8" tubing with Kuster's permanent downhole quartz gauge. Various monitoring methods have been utilized by THUMS in the past, although this is the first time an independent, real time, continuous, Quartz gauge has been installed

## The Permanent Gauge and Acquisition System:

The K Perm digital quartz permanent downhole gauge was installed above the production zone on a mandrel ported to the tubular monitoring reservoir pressure and temperature. The gauge is installed in a mandrel and independently linked to the surface acquisition unit via a permanent downhole cable which is clamped to the completion string. The downhole cable is terminated through the tubing hanger and wellhead via a pressure sealed outlet and crossed over to a surface cable allowing the gauge signal to be transmitted and stored via the surface acquisition unit.

## Summary of Results:

Both primary objectives were achieved upon successful installation of the system and enabled data to be recorded throughout the start up of the well and on into the life of the well. The system was installed safely and efficiently, with minimal impact to rig time and the data acquisition is providing high resolution, quality data.