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# Well Integrity Management System

**Suparna Das**
Quest Global, India

Quest Global, an engineering services company address the challenges of the global industry with technological solutions that drive process, project, production and operations. With the rise in crude oil demand, oil and gas companies are required to boost their production without compromising the safety & integrity. The "Well Integrity Management System (WIMS)" at Quest contributes to the industry by providing a uniform and structured approach for maintaining well integrity parameters, ensuring safe well operations during the lifetime of a well without the sacrifice of safety and environment. This paper reviews WIMS in Quest. WIMS is structured to include wellhead (surface) equipment, down hole equipment & monitoring MAASP (evaluation of casing and tubing integrity). The objective of developing Well Integrity Management System (WIMS) is to provide standard guidelines to ensure that technical integrity of all the wells is maintained throughout their life cycle, they operate under safe condition and are capable to function continuously to achieve the targeted production/ injection requirements. Well integrity is based on the establishment and maintenance of confinement barriers in the particular well. As per WIMS standards, a well is considered integral if at least two separate and sound confinement barriers across each flow path between the potential reservoir and surface are available all the time.

There are different definitions of what is Well Integrity. The most widely accepted definition is given by NORSOK D-010: "Application of technical, operational and organizational solutions to reduce risk of uncontrolled release of formation fluids throughout the life cycle of a well". Other accepted definition is given by ISO TS 16530-2 Containment and the prevention of the escape of fluids (i.e. liquids or gases) to subterranean formations or surface. WIMS is one of the vital element in the successful, economic and safe operation of all assets. Started in Dec, Quest WIMS team focusses solely on onshore oil and gas affiliates. By providing daily test reports for SCSSV & X-mas Tree valves, Well Integrity QA / QC report & a consolidated report of Problem Well in Well View, WIMS objective is to:

1. Reduce risk of uncontrolled release of formation fluids throughout the life cycle of a well
2. Analyze pressure test results that were captured during leak test
3. Track whether all wells are being tested timely and comply with Exxon Mobil standards
4. Evaluate annulus pressures trends and highlight anomalies to the affiliate
5. Monitor integrity of wells that have been previously abandoned and tracked in SAP.

**Different tools used by Quest Team to come up with the report deliverable are :**

1. Business Focus: WIMS Data Analytics tool, able to analyze the pressure & leak rate trends
2. SAP: Validate data feeding into Business Focus, extract bad actor pressure data to provide previous test results
3. Well View: Provides well schematic, tubing string components to calculate allowable leak rate based on tubing size, well history, and well type (producer / injector / disposal & lift method)
4. XHQ: QAQC WIMS test data using real-time trend data.