

## Well Integrity Solutions



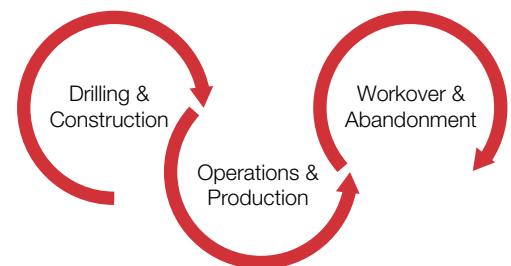
In 2012, an industry survey identified more than 760,000 wells with integrity issues. Of those, 10% were permanently shut in and 9% were temporarily shut in, leaving more than 600,000 wells with integrity issues producing each and every day. It was also noted that 45% of the wells in the Gulf of Mexico have annular pressure issues.

Identifying well integrity issues often requires close examination. As wells age, issues can become more pronounced due to lack of maintenance, poor zonal isolation, corrosion, erosion, etc. These can lead to wells being shut in or, in extreme cases, hydrocarbon releases requiring emergency intervention.

### A proactive well integrity management program can:

- Protect
  - Assets
  - Reputation
  - Right to operate
- Enhance
  - Risk Management
  - Well Life
  - Production
  - Opex Reduction
- Improve
  - Documentation
  - Cross organization communication
  - Engineering productivity
  - HSE performance

### Well Integrity Life Cycle



To support M&A activity, many times the first action taken is to conduct a non-invasive surface review of the wellhead. This may be performed on a smaller sample population or the entire field.

**A typical wellhead survey includes:**

- Inspection of the wellhead
- Annular pressure
- Updated wellhead and tree schematic
- Digital photos
- Identification and ranking of concerns
- Seal pressure tests (optional)
- Third-party radiography if required for problematic valves (optional)

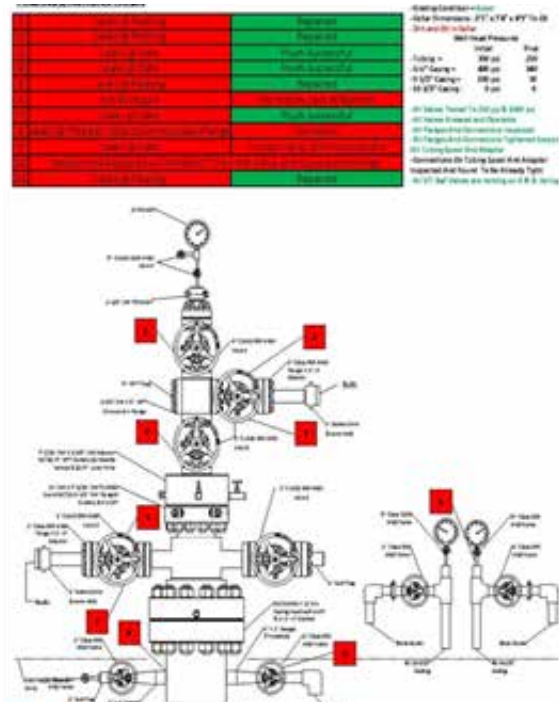
**These wellhead surveys provide the operator with data to:**

- Categorize the status of their wells
- Develop and prioritize additional intervention
- Quantify their risks and potential liabilities
- Update schematics to validate well records

**Upon completion of the wellhead surveys, our well integrity engineers can also assist with several specific tasks to assist in risk mitigation:**

- Well integrity management system gap assessment
- Well integrity gap closure
  - Well operating limits assessment
  - Annular casing pressure management
- Post-wellhead survey surface intervention programs
  - Valve drilling; Freeze jobs; Hot taps; Re-heading; Resin applications
- Subsurface intervention technical support
  - Surveillance
  - Conventional workover
  - Hydraulic workover
  - Abandonment

We at Wild Well are celebrating 40 years of dealing with some of the industry's most difficult well problems. Initially, our efforts were focused primarily on emergency response. Over time, that has evolved to include well control and advanced engineering, emergency response planning, and more proactive measures, including well integrity. With more than 1,000 employees, we respond to our client's concerns anywhere in the world.



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