Well Integrity

Instructor
Mr. Ron Roberts / Esanda Engineering

Objectives
The course objective is to comprehensively learn about well planning, completion and operation management from the perspective of well integrity throughout the whole well life. This will include case history and the latest techniques and trends in the industry in relation to drilling and completion technology, including:

- Understand and apply relevant HSE legal and mandatory requirements
- Understand well barrier policy, philosophy, selection and principles
- Develop well integrity procedures to suit all wells in the operating field(s)
- Gain and apply knowledge in oil and gas fields’ reservoir management
- Discuss real-life Well Integrity Management Examples and Case Histories and their impact on reservoir and surface operations
- Discuss innovative techniques to maintain / restore high productivity
- Develop and implement a well integrity maintenance / monitoring program
- Calculate completions and tubing dimensions for optimum integrity operation of well head equipment

Course Outline
The outline of the course is tailored and balanced to satisfy JOGMEC requirements whilst recognizing the knowledge level of the workshop attendees. The prescribed outline will be adhered to as much as possible, but where attendees raise specific and relevant issues from their own place of work these will be addressed during course-work.

It is important that relevant well integrity items falling out with the course outline as raised by attendees are captured within the course. These issues will be discussed and investigated to the point where suitable and attainable solutions are realized. The outline includes (but is not limited to) the following issues:

- Basic design concepts to Increase the life span and value of wells
- Set well production parameters
- Discuss enhanced well production techniques
- Discuss well safety equipment
- Enable accurate data collection for well completions and well integrity
- Workshop on best practices in well intervention and workover
- HSE Issues in well integrity operations, workover and wireline operations
- Specify components catering for sand production, corrosion & other harsh production environments
- Develop well integrity procedures and implementation plan
Course Contents
The course provides an overview of well integrity practices in the petroleum industry, including:
- General theory
- Process of drilling and completion
- Productive operation
- Problems related to wellbore operation
- Measures related to well integrity of the well life
- Industry standards
- Wells Management Systems-Policy-Standards and Procedures
- Discuss regulatory requirements for integrity assurance in wells and related production facilities
- Changes to Well Design (Management of Change)
- Well Handover / Bridging Documents
- Enhanced Oil Recovery (EOR)
- Gravel Packs
- Wells Emergency Procedures
- HSE issues
- Workshop exercise to analyze well integrity proposal versus economic viability
- Case Study – Well Control Incident

Who Should Attend
This course is intended for the disciplines listed below, as well as anyone with a specific interest in the topic.
- Geologists
- Geophysicists
- Production and Maintenance personnel
- Drilling / workover personnel
- Well servicing personnel
- HSE advisors
- Reservoir engineers
- Drilling engineers
- Petroleum engineers

Prerequisites
None

Course Method
The course method will be a combination of the following,
- 40% Lectures
- 20% Workshops & Work Presentations
- 20% Case Studies & Practical Exercises
- 20% Videos, Software & General Discussions
**Daily Course Schedule**

The course schedule will include a morning and afternoon break as appropriate during throughout the training sessions.

<table>
<thead>
<tr>
<th>Time</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morning Session</strong>&lt;br&gt;10:00 – 12:45 (2h45 min)</td>
<td>Well Completion Design</td>
<td>Wellhead equipment</td>
<td>Wells Barrier Policy and Barrier Types</td>
<td>Subsurface Completion and Tubing Accessories to Maximize Production</td>
<td>Emergency Procedures&lt;br&gt;Workshop on well integrity HSE issues</td>
</tr>
<tr>
<td><strong>Afternoon Session</strong>&lt;br&gt;13:45 – 17:00 (3h15min)</td>
<td>Well Completion Design (cont’d)</td>
<td>Well Integrity Policy and Procedures</td>
<td>Well Integrity during Perforations and Well Stimulation</td>
<td>Well servicing and Coiled tubing operations</td>
<td>Develop Well Integrity, Maintenance and Implementation Plan</td>
</tr>
</tbody>
</table>

Lunch