AVENUES FOR IMPROVEMENT
- Casing design, coupling selection optimization
- Bit selection, 311 mm hole interval

REASONS FOR NPT
- Casing design, coupling selection optimization
- Bit selection, 311 mm hole interval
- Remedial job – 178 mm wiper plug system failed

TIME DISTRIBUTION, DAYS
<table>
<thead>
<tr>
<th></th>
<th>TD</th>
<th>END OF WELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Time</td>
<td>44.1</td>
<td>80.6</td>
</tr>
<tr>
<td>NPT</td>
<td>2.4</td>
<td>6.8</td>
</tr>
<tr>
<td>Total Time less NPT</td>
<td>41.8</td>
<td>73.8</td>
</tr>
<tr>
<td>% NPT</td>
<td>5%</td>
<td>8%</td>
</tr>
</tbody>
</table>
AVENUES FOR IMPROVEMENT
- Downhole Tool reliability

REASONS FOR NPT
- MWD and Logging Tool Failure
- PDC Bit Failure resulting in Milling Trip

TIME DISTRIBUTION, DAYS

<table>
<thead>
<tr>
<th></th>
<th>TD</th>
<th>END OF WELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Time</td>
<td>45.0</td>
<td>61.7</td>
</tr>
<tr>
<td>NPT</td>
<td>4.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Total Time less NPT</td>
<td>41.8</td>
<td>73.8</td>
</tr>
<tr>
<td>% NPT</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>
**Hole Problems**

- Rig Related: 25%
- Remedial Cementing: 1%
- Downhole Tool Failure: 16%
- Others: 4%
- WOW: 39%

**Avenues for Improvement**
- Rig Inspection and Acceptance
- Hole conditioning prior to running casing strings

**Reasons for NPT**
- Loss circulation and hole bridging
- Rig Repair
- WOW

**Time Distribution, Days**

<table>
<thead>
<tr>
<th>End of Well</th>
<th>Total Time</th>
<th>NPT</th>
<th>Total Time less NPT</th>
<th>% NPT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>56.5</td>
<td>9.3</td>
<td>47.2</td>
<td>16%</td>
</tr>
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</table>
3.0 OVERPRESSURE SHELF WELLS

In contrast to the normal pressure shelf wells, the overpressure shelf category had close to triple the NPT time at 18 days. While well control issues were present the majority of the problem time related to hole problems and downhole tool failures. The more challenging wells escalated the well time an average of 101 days but a Technical Limit time to TD of 57 days exists to be targeted.

3.1 Average and Technical Limit Performance

- Well times escalated to an average of 101 days
- Technical limit Time to TD of 57 days
- Triple the NPT time of normal pressure shelf wells at 18 days
- Majority of the problem time related to hole problems and downhole tool failures

3.2 Wells in Category

As follows:
EMMA N-03  
D-365

**AVENUES FOR IMPROVEMENT**
- Primary Cement Integrity
- Downhole tool reliability

**REASONS FOR NPT**
- Remedial Cementing of Casing Shoe
- Directional and Logging Tool Failures

**TIME DISTRIBUTION, DAYS**

<table>
<thead>
<tr>
<th></th>
<th>End of Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Time</td>
<td>94.4</td>
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<tr>
<td>NPT</td>
<td>7.1</td>
</tr>
<tr>
<td>Total Time less NPT</td>
<td>87.3</td>
</tr>
<tr>
<td>% NPT</td>
<td>8%</td>
</tr>
</tbody>
</table>
Hole Problems
- Rig Related: 2%
- Downhole Tool Failure: 26%
- WOW: 13%
- Fishing/Milling Operations: 45%
- Well Control: 6%
- Others: 7%
- Others: 1%

AVENUES FOR IMPROVEMENT
- WellBore Condition
- Downhole tool reliability

REASONS FOR NPT
- Stuck Dril string and Wireline Tools
- Directional Tool Failure
- Bridge Plug and Casing Shoe Failure

TIME DISTRIBUTION, DAYS
- Total Time: 94
- NPT: 15
- Total Time less NPT: 79
- % NPT: 16%
AVENUES FOR IMPROVEMENT
- WellBore Condition
- Downhole tool reliability

REASONS FOR NPT
- High Pore Pressure and Loss
- Casing Cementing Blockage

TIME DISTRIBUTION, DAYS

<table>
<thead>
<tr>
<th></th>
<th>END OF WELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Time</td>
<td>101</td>
</tr>
<tr>
<td>NPT</td>
<td>31</td>
</tr>
<tr>
<td>Total Time less NPT</td>
<td>70</td>
</tr>
<tr>
<td>% NPT</td>
<td>31.4%</td>
</tr>
</tbody>
</table>
HOLE PROBLEMS

- Hole Problems: 28%
- Rig Related: 22%
- Tool Failure: 9%
- Fishing and Milling: 5%
- WOW: 19%
- Others: 17%

AVENUES FOR IMPROVEMENT
- Drilling Fluids Management
- Rig and Wellhead Equipment Reliability

REASONS FOR NPT
- Induced mud losses
- Rig and Wellhead Equipment Failure

TIME DISTRIBUTION, DAYS

<table>
<thead>
<tr>
<th>Description</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Time</td>
<td>129</td>
</tr>
<tr>
<td>NPT</td>
<td>25</td>
</tr>
<tr>
<td>Total Time less NPT</td>
<td>104</td>
</tr>
<tr>
<td>% NPT</td>
<td>19%</td>
</tr>
</tbody>
</table>