



Well Decommissioning 2022 – The Future!
20th – 21st April 2022

Hydraulic Workover Unit proves an efficient
rig-less P&A method in the Celtic Sea

**KINSALE
ENERGY**

WellGear



Terry Toal (WellGear)

Laurie Phillips and Paul Williams (AGR Well Management)

Choi Yee Xiong (PSE Kinsale Energy - PETRONAS)

Introduction

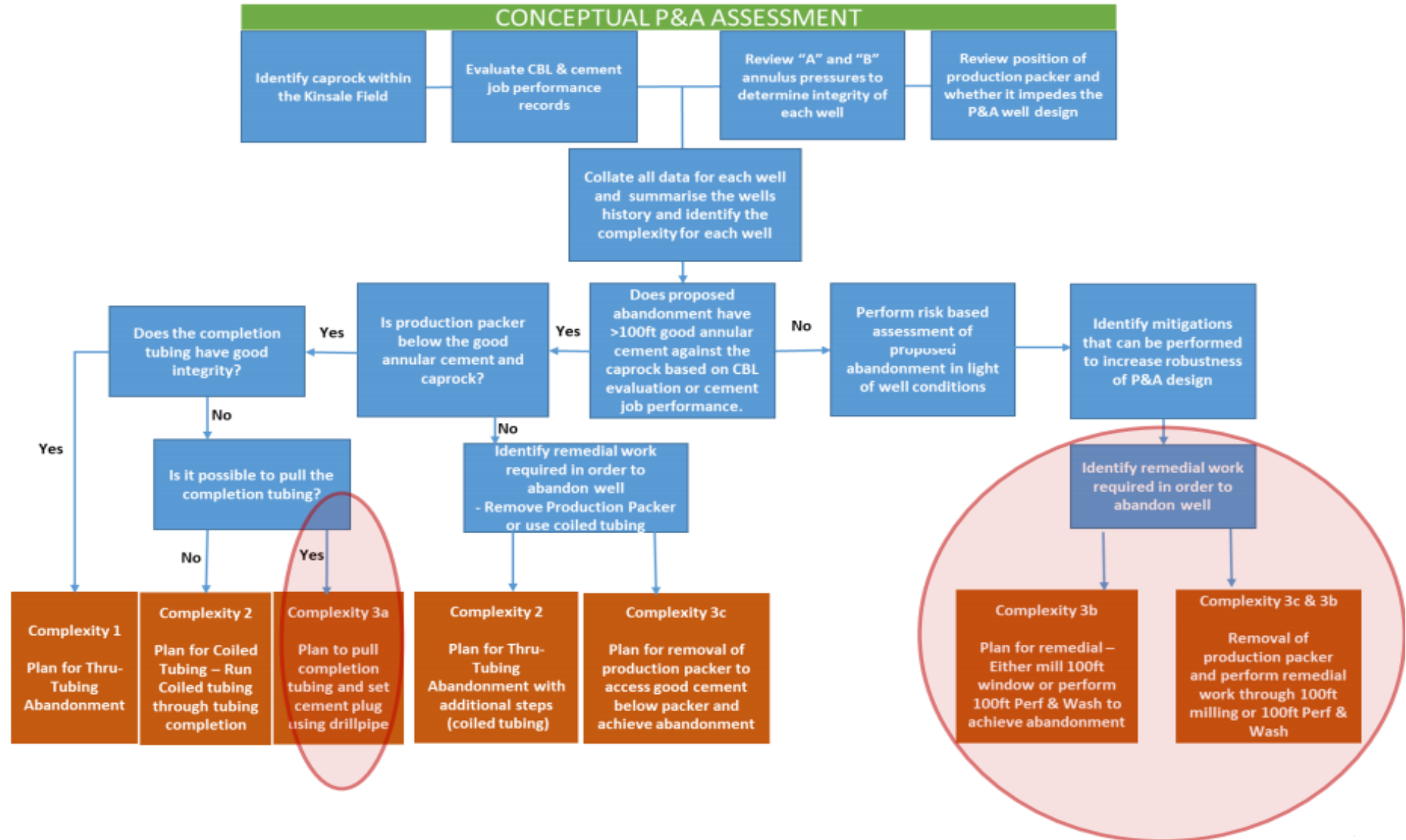
- Ireland's only offshore gas production platforms.
- Kinsale Energy is a subsidiary of PETRONAS, which acquired the company in April 2009, from its previous owners, Marathon.
- Production operations on-going since 1978. Field shut in 5th July 2020.
- Two platforms (Alpha & Bravo) in 90m of water (approx. 50km offshore)
- 14 Platform wells
- 10 Subsea wells with associated subsea equipment & protection structures



Facilities



P&A Methodology



Option Selection for Platform Wells



Semi-submersible tender adjacent to the platform



Jack up rig adjacent to the platform, and cantilevered over the main deck



Platform based 'rigless' solution, (MDR or HWU)



Jack up barge adjacent to the platform

Key Considerations:

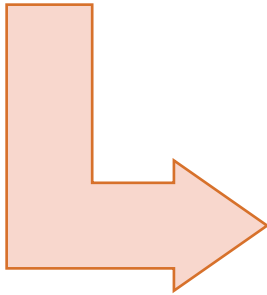
- Access for adjacent rig (geometry of platform)
- Soil Conditions (jack-up suitability)
- Structural Capacity
- Met Ocean conditions
- Cost
- Re-manning of Bravo

It became very apparent that the only real solution was the use of a platform based solution and with a Modular Drilling Rig (MDR) requiring significant modifications to be catered for it was clear that the temporary accommodation and HWOU was the best solution given the anticipated P&A durations.

Phased Approach to P&A's

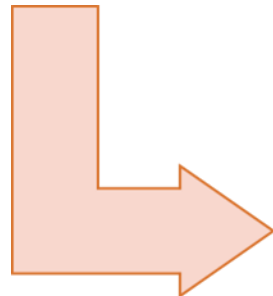
Phase 1

- Mobilise wireline & fluid package
- Recover SCSSV
- Set deep & shallow plugs
- Cut production tubing
- Displace annulus contents to water



Phase 2

- Mobilise HWU
- Remove Xmas trees
- Pull 7" Tubing (Mill out packer if required)
- Perform P&A activity (PWC, Cement Plug)
- Evaluate



Phase 3

- Shallow window cut in the 9 5/8"
- Cut 13 3/8" and 20" Casing
- Drill and pin all casing strings
- Perform test lift

Wells Data

TD (ft MD) range 3200 – 4260ft

Perf. range 2841 – 4008ft

Avg. Inclination 51°

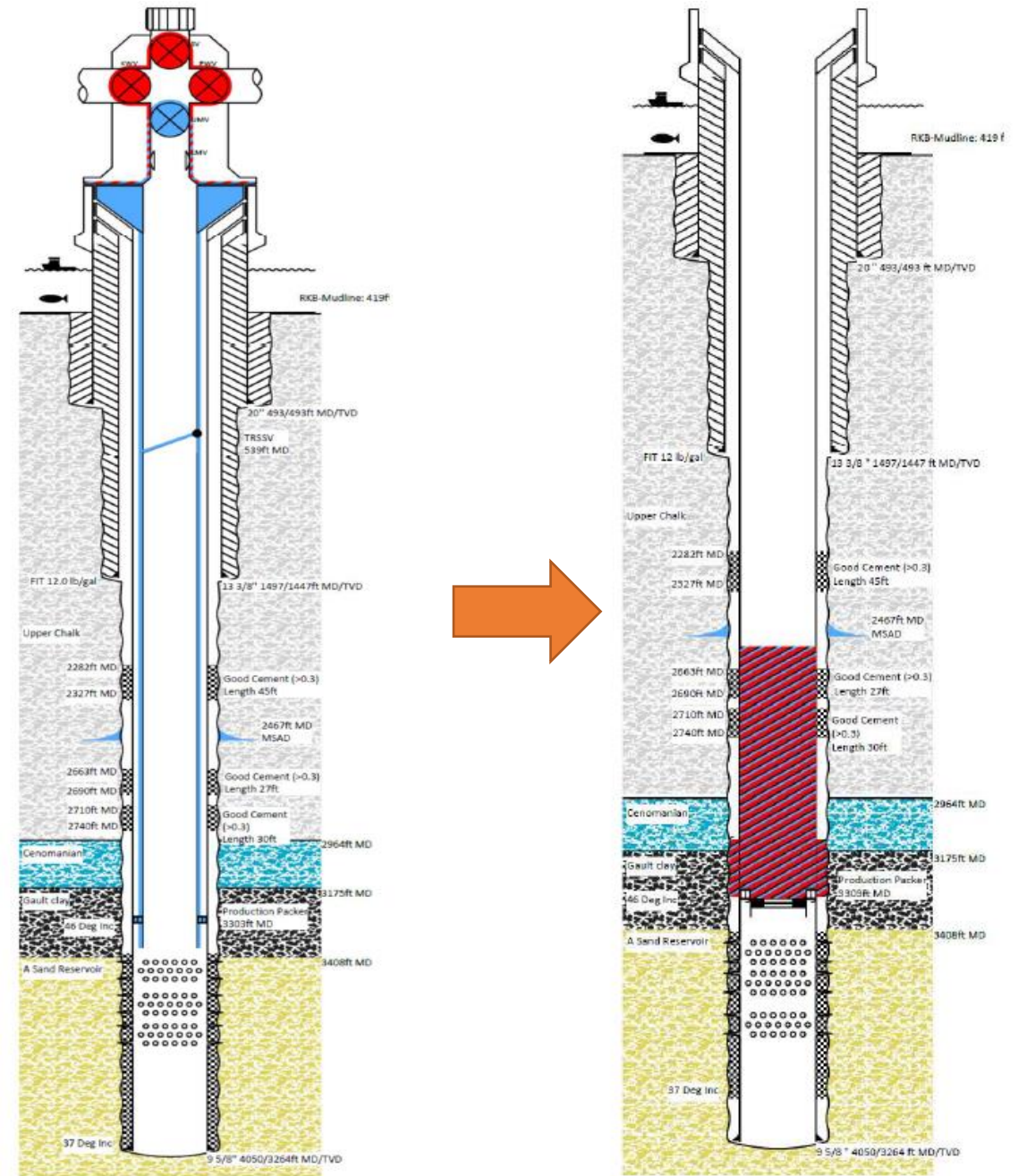
Water saturated gas

Shut-In Wellhead Pressure (psi)– 25-30

Flowing Wellhead Temperature (°F) - 66

All wells had the same casing and production tubing design

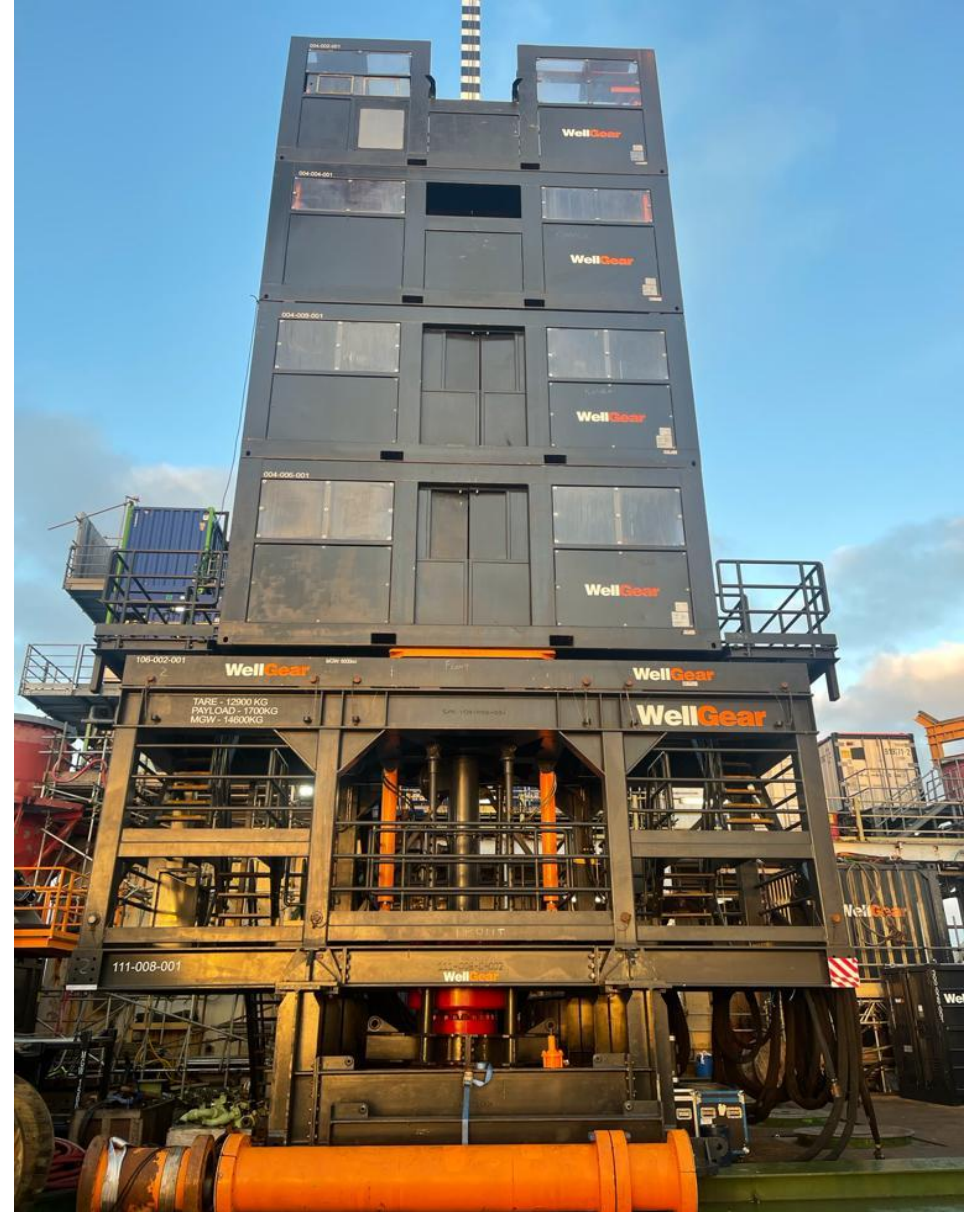
- 20" casing
- 13 3/8" casing
- 9 5/8" casing
- 7" casing



Hydraulic Workover Units.



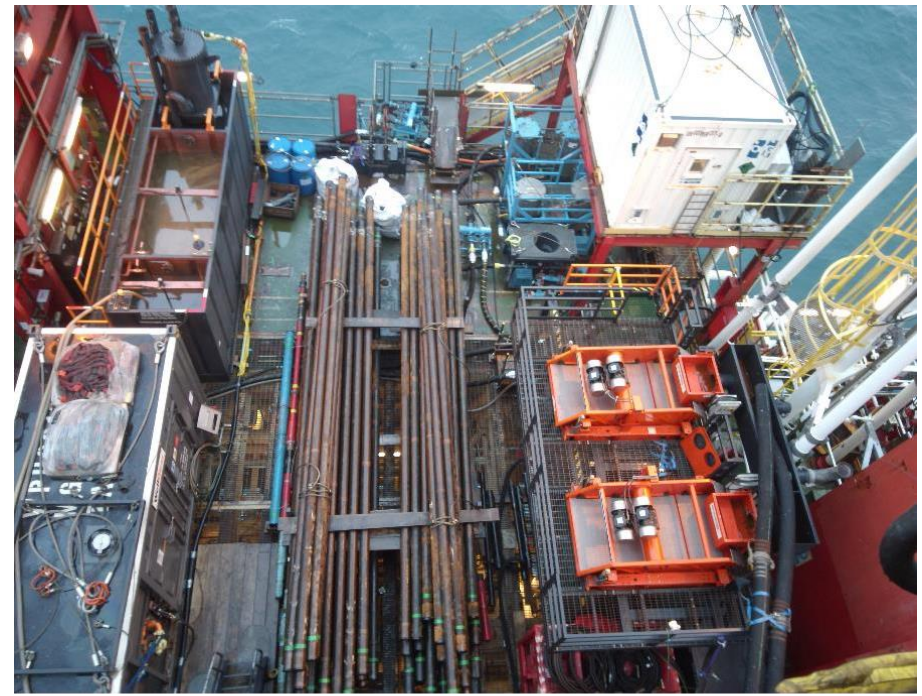
340K Unit on Alpha



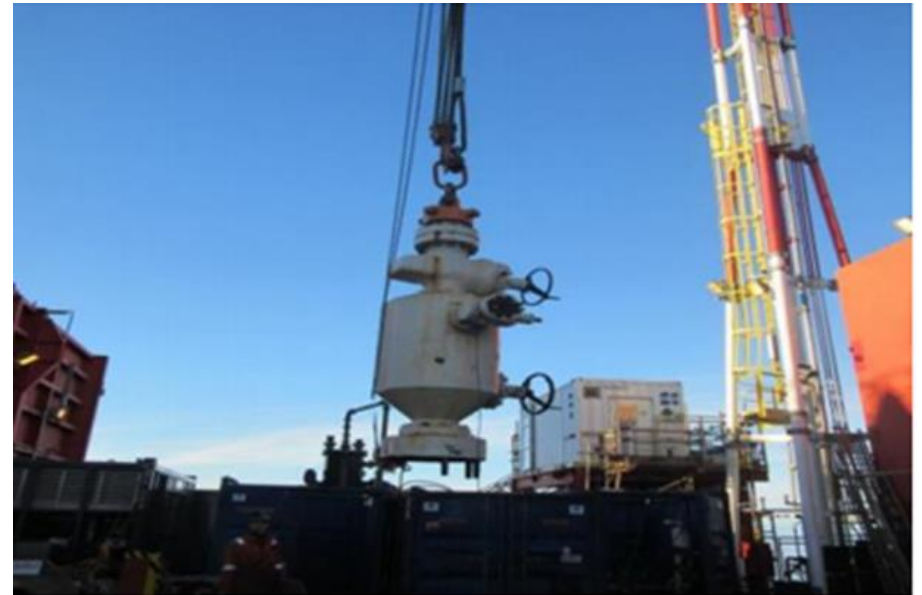
460K Unit on Bravo

Challenges

- Logistics
 - Brexit rules came into effect mid campaign
- Limited Deck Space
 - Detailed vessel loading plan
 - Fixed layout plan structurally verified by Kinsale Energy.
 - Increased vessel handling throughout
- Platform Integration
- Reinstatement of Bravo accommodation modules
- Tree Removal
- Performing PWC jobs
- COVID -19 - Operational schedule
 - Reacting to government isolation and travel restrictions.

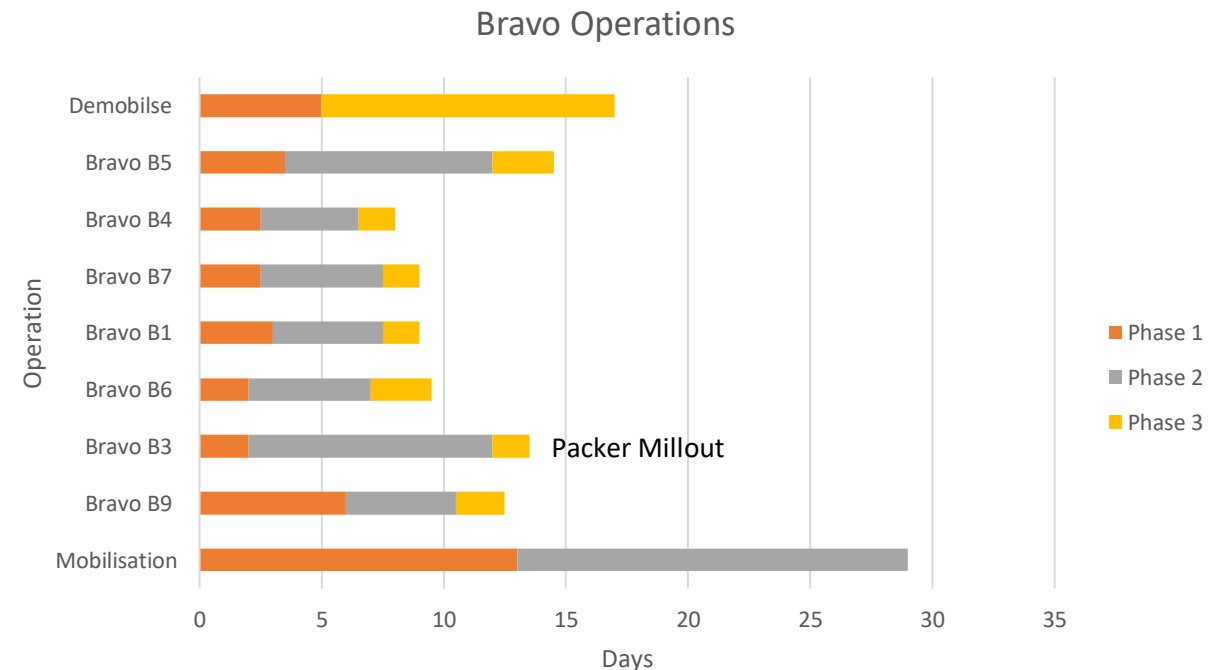
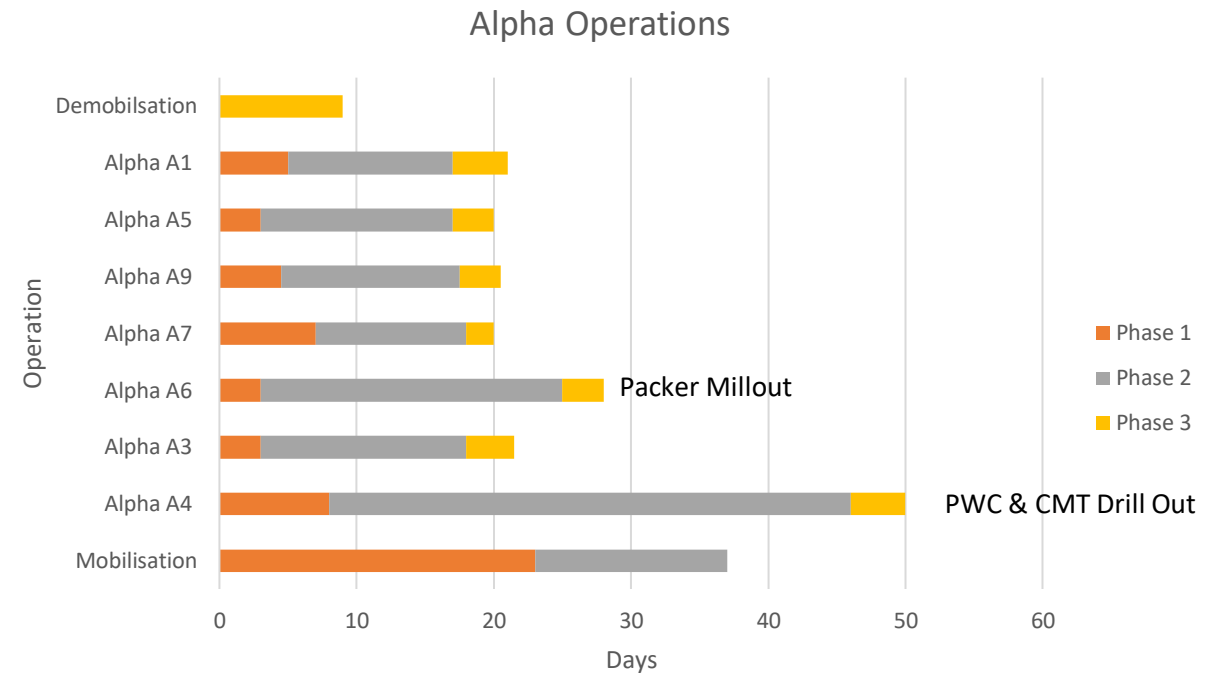


Kinsale Alpha Pipe Deck



Operational Performance

- Phase 1 mobilisations were completed with 12hr working pattern
- PWC operation completed and approved as planned.
- CMT plug drill out & verification with HWU proved efficient with an average of 22ft / hr.
- Packer milling was completed efficiently.
- Cutting at seabed as oppose to 10ft below proved successful – avoided conductor jamming.
- Removing BOP's for skidding during phase 3 operations saved significant time per well.
- Quick reaction to pull 9 5/8" on the last well due to backed off casing joint.



Operational Highlights

- No Health and Safety Incidents throughout either Alpha or Bravo operations.
- Full regulatory compliance throughout all operations.
- Abandonment campaigns delivered ahead of time and well under budget.
- Lessons learned from Alpha were implemented and delivered incredible performance on the Bravo operations
- Deck layout optimisations on the Bravo platform
 - Design and manufacture of a mezzanine deck
 - Optimised treating iron layout
- Dedicated crews retained throughout and ensured transfer of lessons learned from Alpha to Bravo campaign.
- Phased operations and optimised well sequencing ensured optimal equipment usage, personnel allocation and operational efficiency.
- Bravo platform operations showed significant improvement in performance.



Acknowledgement

The authors would like to express thanks to the management of Kinsale Energy for the permission to publish this presentation.

Thank you also to the offshore crews and management from all third parties that made this project a huge success. It was a great team effort.

