Fairfield Energy Limited

Greater Dunlin Area Decommissioning Project

Collaboration & Innovation in Decommissioning Session

Challenges Presentation 12/09/2018

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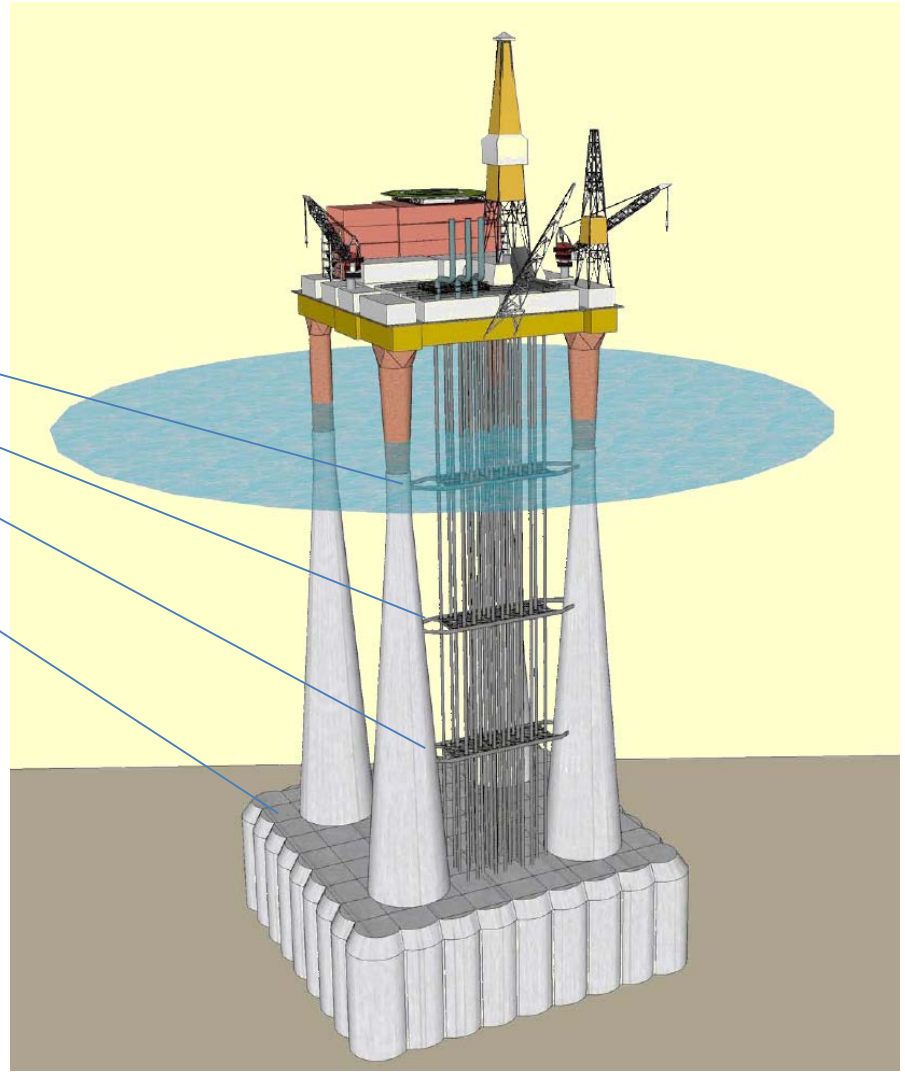
Fairfield Energy – Greater Dunlin Area Decommissioning Project

- 500km NNE of Aberdeen, 151M water Depth
- First Production August 1978, COP June 2015
- Four Leg Concrete Gravity Base (CGB), weighing 320,000 mT
- Modular Topsides design supported by a steel box girder Modular Support Frame (MSF), 22,000 mT
- 45 Wells to be plugged and abandoned from platform (P & A Operations commenced Jan. 2016)
- Osprey Development has 12 subsea water injection and production wells tied back to Dunlin Alpha
- Merlin Development has 4 subsea water injection and production wells tied back to Dunlin Alpha

Challenge 1. Dunlin Alpha Conductor Removal

- **Originally 48 Slots**
  - 45 Well Conductors (DA-11 now removed)

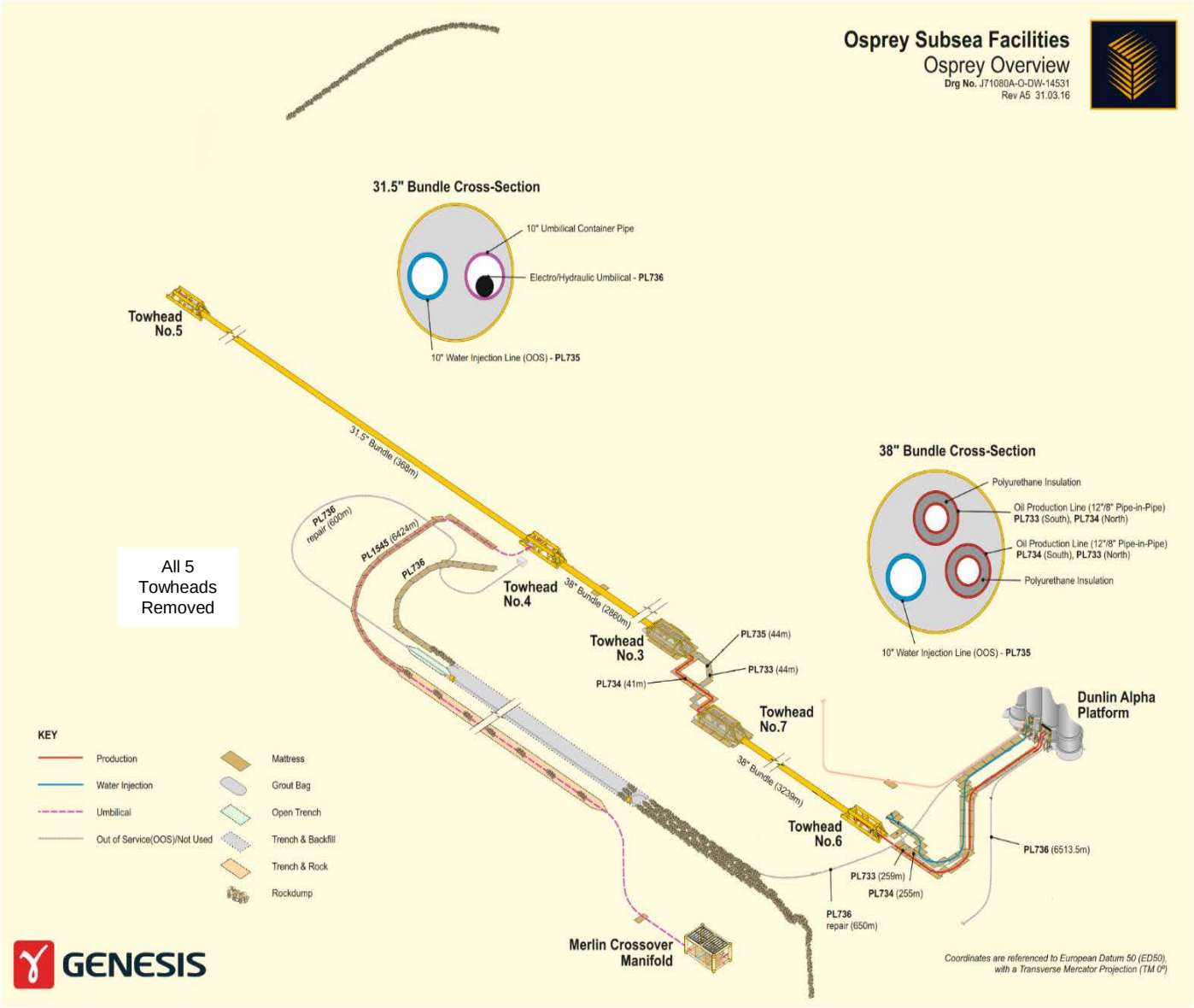


- RIS system currently working along side RIG
- Oil and Gas Technology Centre looking at recovery to sea
- No “Golden Bullet” Solutions yet
- Half Shell Handling difficult “Quick Deck” has been installed along with underdeck steel handling rails
- Conductor section cutting and drilling tools slow
- Recovery to sea options to be further explored

Challenge 2. Osprey Bundle Removal

Osprey bundle ends to be rock-dumped to provide an over-trawlable profile as part of the approved Decommissioning Programme (DP) scope of work.

- Leaving bundles results in liability in perpetuity (further survey and Rock Dump requirements)
- Cutting up is vessel and diver intensive and creates significant disturbance
- Re-burial can result in less coverage than already exists (stiff clay soils).
- Bundles not designed to be re-floated.
- New concepts welcome !



Challenge 3. More Effective Re-Use of Inventory

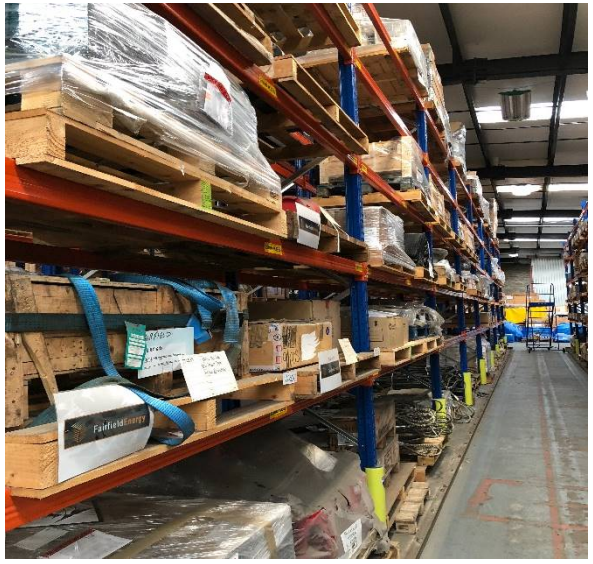
Three ESP Control Units

Mitsubishi Offshore Specification Diesel Engine

- Decommissioning releases a lot of inventory
- re-sale value of inventory is generally negligible
- We would be happy to give some equipment away
- Each Operator has their own computerised purchasing and stock management/warehousing systems which are incompatible with each other.
- Re-use opportunities are being missed.
- No Operator has the time, resources or inclination to standardise their inventory coding and material management, (see point 2.)

Could industry "mine" Operators data with AI Algorithms to match up "Like for Like" inventory and find Operators that have similar equipment.

All The Rest !



Inventory Successes

- Recovered Osprey Subsea Xmas Tree sold to Anasuria Operating Company
- Three Platform Xmas Trees sold to Taqa
- All our recovered well casing is being purchased by RAM tubulars for re-use in the Civils construction industry
- Entire subsea controls inventory sold to Anasuria Operating company

There must be more of these opportunities ? Perhaps data matching is the key ?