INDUSTRY INVOLVEMENT

Bibby Offshore an active member of Decom North Sea and were the first Subsea Contractor to join. We now have representation on the both the board and steering committees.

Bibby Offshore have been involved with remote decommissioning studies and a mattress removal study. Following our involvement in these we have provided support in further decommissioning initiatives.

Bibby Offshore presented earlier in 2016 at Decom North Sea’s March Lunch and Learn and also presented at the Decom Offshore Conference in May.
AGENDA

• Introduction & Track Record
  • Projects Completed
  • Materials Recovered

• Challenges & Lessons Learned
  • Information Gathering
  • Onshore Planning
  • Offshore Execution

• Case Study
  • MacCulloch Decommissioning
BIBBY’S TRACK RECORD IN DECOMMISSIONING

- CNR Well Abandonment Project 2005
- ExxonMobil Beryl & Linnhe Decommissioning 2009
- ExxonMobil Linnhe Decommissioning 2010
- Granby Tristan Decommissioning 2010
- Perenco UK Welland Field Decommissioning 2010
- Hess FFFA 2012
- Hess IVRR 2013
- Maersk Leadon Decommissioning 2014
- Endeavour Renee / Rubie 2015
- ConocoPhillips MacCulloch Decommissioning 2015
- Tullow Thames Decommissioning 2015
- *ConocoPhillips Viking Decommissioning 2016
- *CNR Murchison 2016

*ongoing projects
# MATERIALS RECOVERED TO DATE

<table>
<thead>
<tr>
<th>Items recovered</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete mats</td>
<td>1100+</td>
</tr>
<tr>
<td>Structures</td>
<td>40+</td>
</tr>
<tr>
<td>Flexibles</td>
<td>23000m+</td>
</tr>
<tr>
<td>Rigid pipe</td>
<td>1500m+</td>
</tr>
<tr>
<td>Flowlines</td>
<td>14000m+</td>
</tr>
<tr>
<td>Umbilical's</td>
<td>17000m+</td>
</tr>
<tr>
<td>Spools</td>
<td>20+</td>
</tr>
<tr>
<td>Piles cut</td>
<td>20+</td>
</tr>
</tbody>
</table>

Numerous:
- Isolations
- Flushing / degassing
- Disconnections
- Debris recovered
CLIENT RECEIVED INFO
TYPICAL FIELD LAYOUT

Field Infrastructure – 3rd Party Tie-in:
• MacCulloch Tie-in Skid – GP III.
• PLEM – Piper Bravo.

Field Infrastructure:
• 1 x FPSO.
• 11 x Risers.
• 2 x MWA.
• 1 x Riser Lateral Restraint.
• 1 x PLEM.
• East Drill Centre (EDC).
  • 1 x Production Tree
• West Drill Centre (WDC).
  • 3 x WDC Manifolds.
  • 10 x Production Trees
  • 1 x WI Flow-base
INFORMATION GATHERING

Key aspect of delivering a successful campaign

- Client received info at tender phase
- Additional survey carried out (if required) provides up to date data
  - You know what you have to contend with
  - No hidden surprises
  - No reliance on historic data to shape your recovery programme

Techniques Used/Required

- Sidescan sonar
- ROV pipeline survey with MBE & Pipetracker
- Wellhead inspection
- GVI of structures
- CP Surveys
- Environmental Assessment
- Cuttings Mound Surveys
Structured approach to data management that allows for the model to be updated quickly and easily relative to the work scope.

Data can be streamlined for reporting to DECC or other compliance queries.
EXAMPLE SURVEY IMAGES
• Creating an efficient offshore schedule

• Right tools for the job
ISOLATIONS AND DISCONNECTIONS
FLOWLINE RECOVERY

- Even flushed lines may contain residual hydrocarbons (trapped in high spots or coming out of walls when pressure reduced).
- Bunding must be sufficient to contain spillages and further responses (cleaning, processing) must be in place.
GAS RELEASES

Fully controlled (held in safe area whilst releasing), but major learning that even flushed lines can have pockets of gas within them.
NORM MONITORING

• Bibby Offshore vessel personnel trained as RPA – all considerations managed in-house

• Recording and reporting for disposal contractor and;
• DECC reporting / OSPAR compliance
CASE STUDY -
MACCULLOCH DECOMMISSIONING
MACCULLOCH DECOMMISSIONING

[Diagram of offshore decommissioning components with labels for slots and functions such as production, water injection, gas lift, and gas export.]
MACCULLOCH DECOMMISSIONING
OPTIMISATION OF SERVICE PARTNERS

• Making sure we are using the most effective and cost efficient methods the industry has to offer

• Our constant engagement with the supply chain has ensured we are aware of the most effective solutions available to us

• Managing our subcontractors constructively gives comfort to our clients and less interfaces for them to manage

• Relationships with key suppliers is an important factor in delivering a successful campaign
Our people are our best asset and our people are the ones who are best placed to make improvements.
THANK YOU