

PIPELINE & PROCESS

Integrated delivery of services for decommissioning project

Country: UK

Year: 2021

Client: EnQuest

Technologies: **Nitrogen convertors** ● **HT400 pumps** ● **Air driven mechanical injection pumps** ● **Various mothballing chemicals** ● **Pipeline cleaning gel**

MAKING INTERVENTION
SMARTER

- Successful flushing programme across pipelines/flowlines and umbilicals
- Drain, Flush, Purge & Vent (DFPV) of the topside hydrocarbon facilities
- Integrated service delivery of Pipeline and Process services

CHALLENGE

A North Sea client required the following services as part of a decommissioning programme for their floating production facility and removal of associated riser systems from two fields:

- Cleaning and removal of hydrocarbons from pipelines.
- Disconnection and make safe all production and water injection wells and tie-in to export infrastructure.
- Disconnection of risers.
- DFPV and cleaning of topsides facilities and return to class where appropriate.
- Handover to vessel owner for removal of facility and mooring system.
- Removal of infrastructure within 500m zone.

SOLUTION

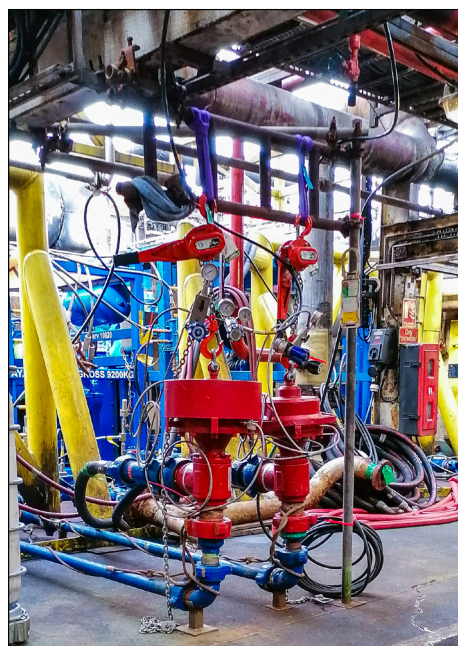
Altus Intervention mobilised their pipeline and process equipment package with an experienced multi-disciplined crew who were able to utilise their skills across both the pipeline and process tasks:

Round trip flush on both fields down the 3" gas lift and returned via the 8" production pipeline:

- Seawater taken from the water injection train
- Tied onto 3" GL line
- Gel breaker on the 8" production return line
- Inject MEG followed by treated seawater to flood the GL and place MEG across each well x-over
- 6.5m³ of crosslinked APG3 gel
- Treated seawater flush at 390 litres / min
- Up to a further 6 x line volume flush (1 x line volume = 87.5m³ / 148m³)
- Flushing of the methanol, scale inhibitor, corrosion inhibitor and wax inhibitor cores with treated seawater

Oil export flush – via another platform:

- Seawater taken from the water injection train
- Tie onto 8" oil export line
- Inject 2m³ APG3 gel in front of mechanical pig (no crosslinked)
- 1m³ treated seawater to place gel in riser
- Launch pig with treated seawater and flush / pig at 800 litres / min
- 1 x line volume to platform = 870m³



Drain, Flush, Purge & Vent (DFPV) program was required to inert the various vessels and pipework. Nitrogen gas was used to inert the system. This was done to render the process system free from hydrocarbons. The method the systems were purged with was Cycle / Displacement / Trickle / Dilution Purging. Systems successfully purged were:

- Flare
- Fuel Gas
- Oil
- Produced Water
- Closed Drains

During flushing activities, pressure was required on the 1st & 2nd stage separators to aid in the removal of liquids and expediate the flushing process.

RESULTS

All lines and topside were successfully cleaned and flushed and allowed the client to continue safely with their decommissioning programme. We had anticipated 6 x line volume flush of each of the two round trip flushes, however, due to the effectiveness of the APG3 gel, only 1 x line volume of each round trip was required to successfully condition and clean the pipeline. The Altus work scope was successfully delivered four days ahead of schedule. This saving equated to 40% of the overall saving made on schedule.

At Altus Intervention we fully understand the criticality of these operations in relation to efficient job execution where timing, efficiency and safety are paramount. By deploying our multi-disciplined crew and integrated services we achieved sustainable cost savings for the client.



“Great work from the Altus guys supporting the various scopes of work. The pre-planning, procedures, collaboration and execution of the work was instrumental in the overall safe delivery of this project.”

**- Andy McGuinness,
Decomm Project Engineer, EnQuest**