Produced Water Management

Break-out Session – DHRTC Technology Conference

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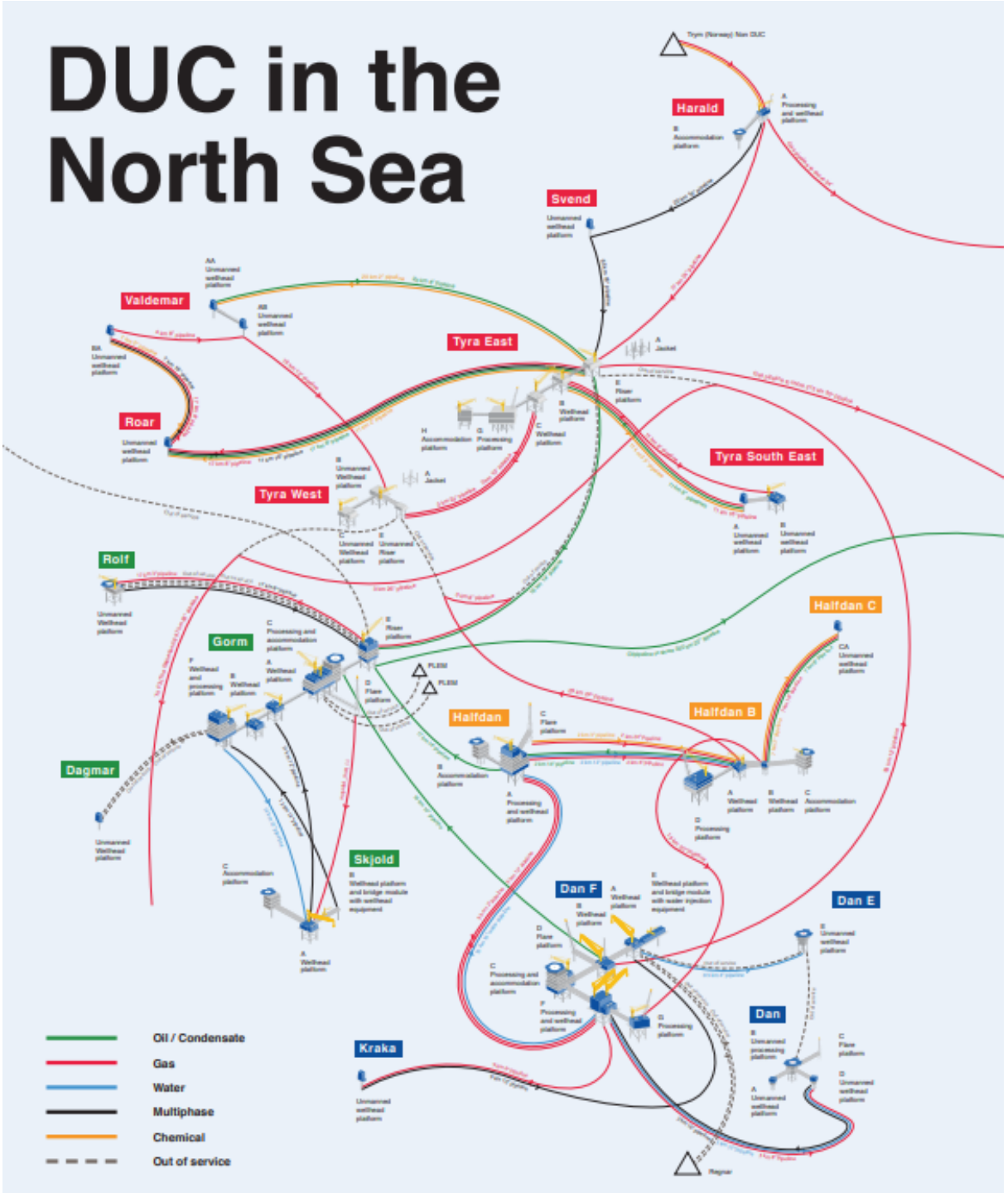

Produced Water Management

Where Does It Go?

- Re-injection
- Discharged To Sea
- Exported with Oil (small fraction)

Re-injection (primarily)

- Gorm

Discharged to Sea

- Dan
- Halfdan
- Tyra (currently not in production)
- Harald (currently not in production)

Break-Out Session Topics and Total

1. Environmental Impact Factor (EIF) Assessment – Our tool to monitor discharge risk and contininuously improve performance
   - ➢ *Project on improved EIF documentation*

2. H2S scavenger is the most important chemical used offshore and when discharged it contributes to our discharge risk
   - ➢ *Project on recirculating unused scavenger and reduce consumption significantly*

3. Our environmental risk from PW arise from naturally occurring components in the produced water and the addition of production chemicals
   - ➢ *Project on MBBR bioreactor on seabed for biological cleaning of the produced water*

4. Efficient separation of oil and water is a critical performance parameter for our operation offshore
   - ➢ *Project on microfluids to better understand how chemicals affect oil/water separation*