



## Presenter



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## Acknowledgements

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Shell U.K. Limited

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Shell U.K. Limited



# 24-months of continuous increased production using a topside desander

Olof Nilsson – BD & Marketing Manager

Date 28/11/2024





# Shell Gannet

Three choices in 2018

P&A



Recomplete



Topside solution



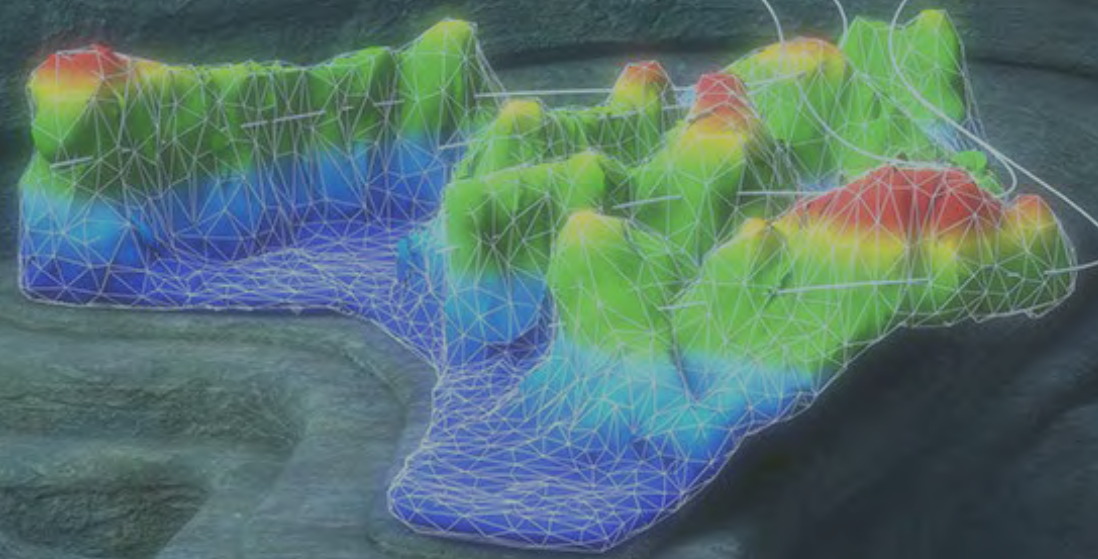
2/8 VALHALL  
FLANK WEST

Photo credit: Aker BP

Shell chose to recomplete with new screen

## Pros & Cons

- › Resolve problem downhole, no sand to surface
- › Restricted production due to screens
- › High CAPEX, Low OPEX



# Results



- › Well produced for approximately 6-months until the new zone started producing sand again
- › FourPhase was called out to mitigate sand topside as an intervention together with Coiled tubing (2018)
- › Shell could choose to recomplete well again (CAPEX) or use FourPhase topside (OPEX)

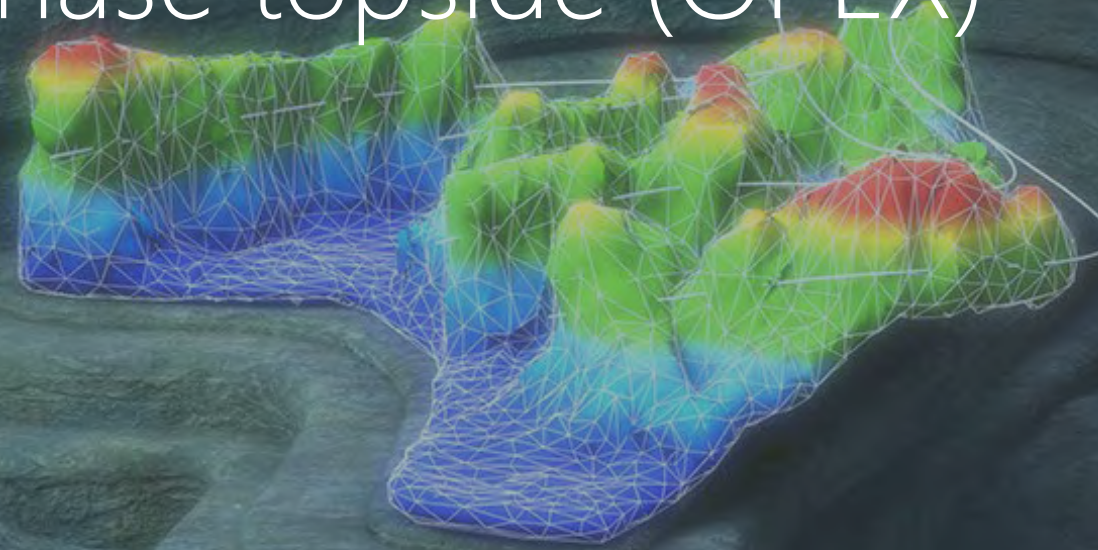


Photo credit: Aker BP

# Challenge

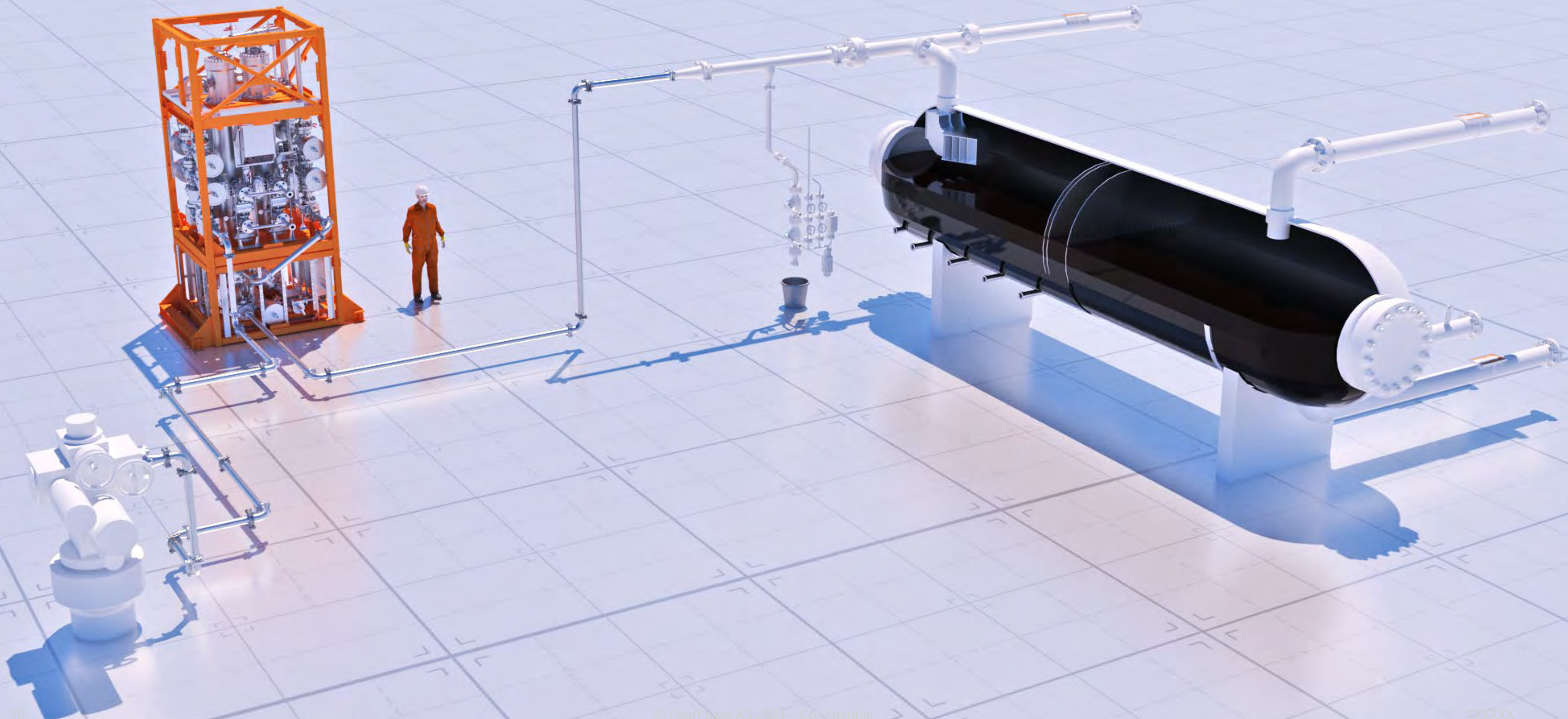
GA23 had not flowed for two years due to sand production being above the acceptable level for the platform facilities

FourPhase was contacted to address Production Restoration

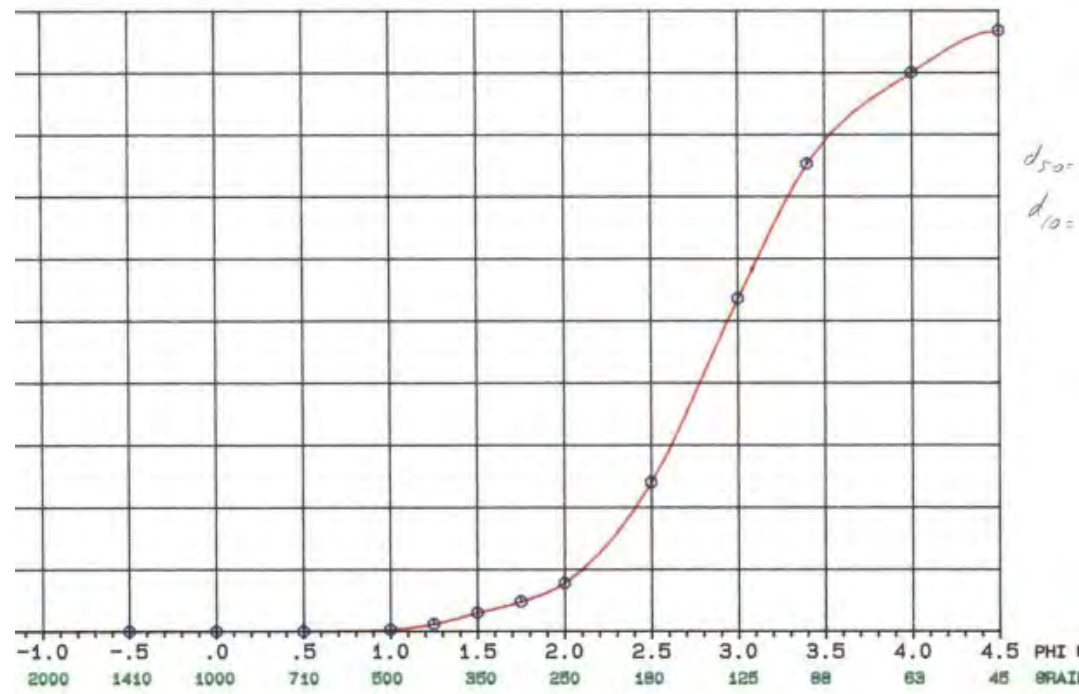
# FourPhase DualFlow would ensure solids free flow



Still communication with the well – no need for CT



# FourPhase tasked with proposing a topside solution



Investigate



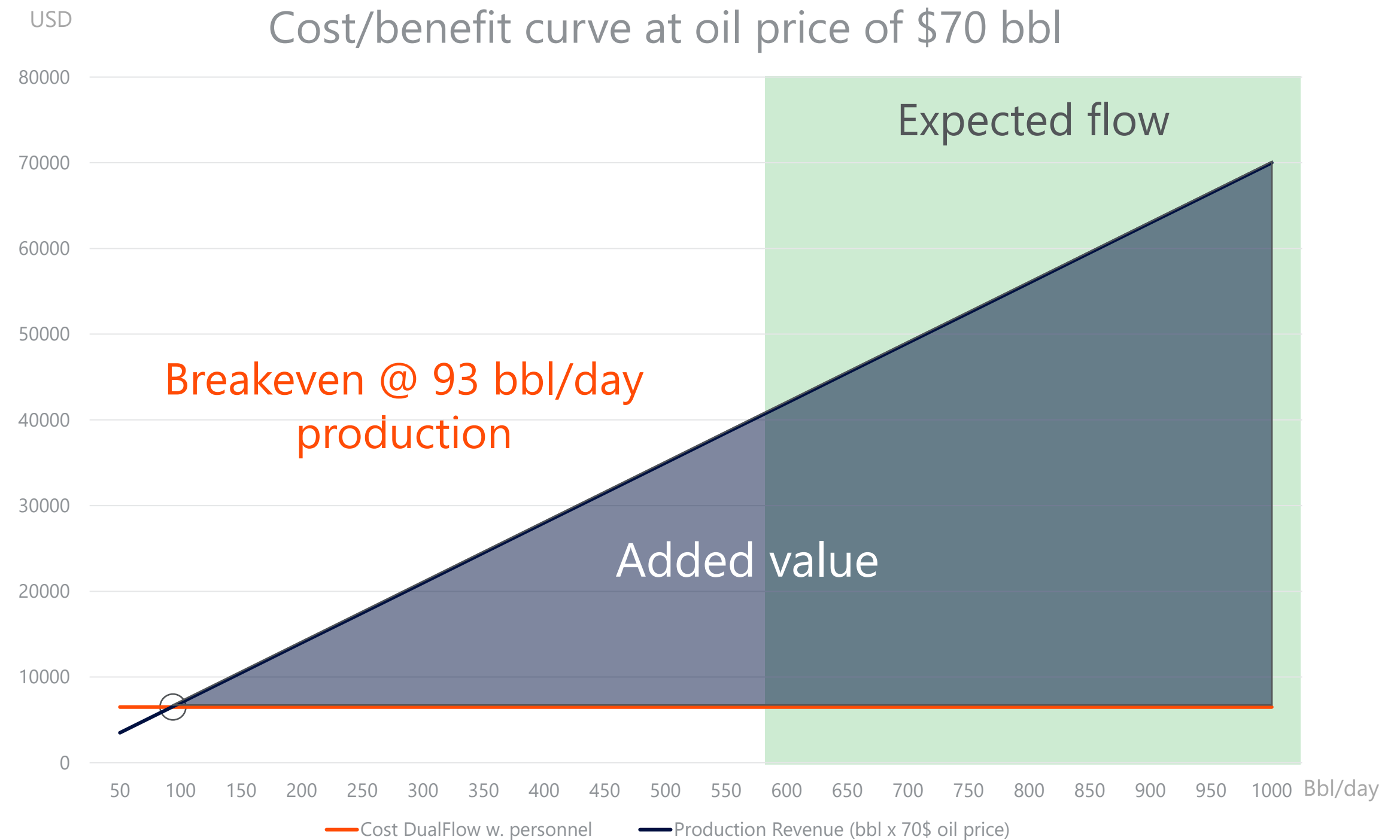
Plan



Produce

# Investigate – is there a business case?

- OPEX
- Expected flow:  
600 -1 000 bbl/day



Sand - What particles are we dealing with?

Approximately 45 to 425  $\mu\text{m}$

# Solution

# Why choose a topside solution?

- › Already proven on Nelson (N20) platform with similar challenges
- › No CAPEX – favourable for late life production
- › Immediate remediation and production (typically 4 weeks from P.O.)

# DualFlow – DNV certified separation efficiency



The most refined solids management technology in the world

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Compact footprint – 2 x 2m (H=3,28m)

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Unique location for data capture from individual wells

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Operational uptime currently 99.9% per 160 000h

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Automated closed loop system

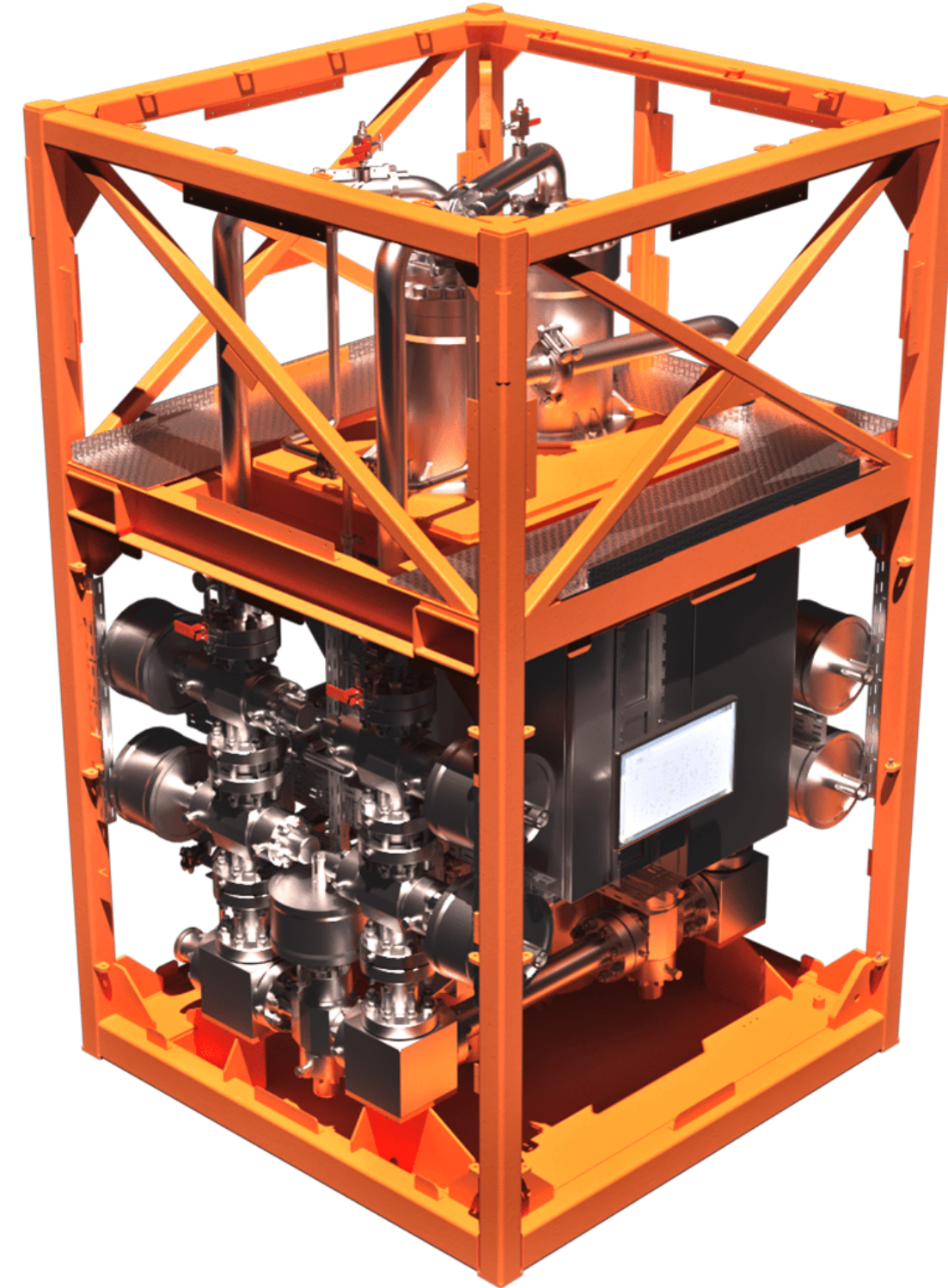
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Proven 99.8% separation efficiency (DNV certified)

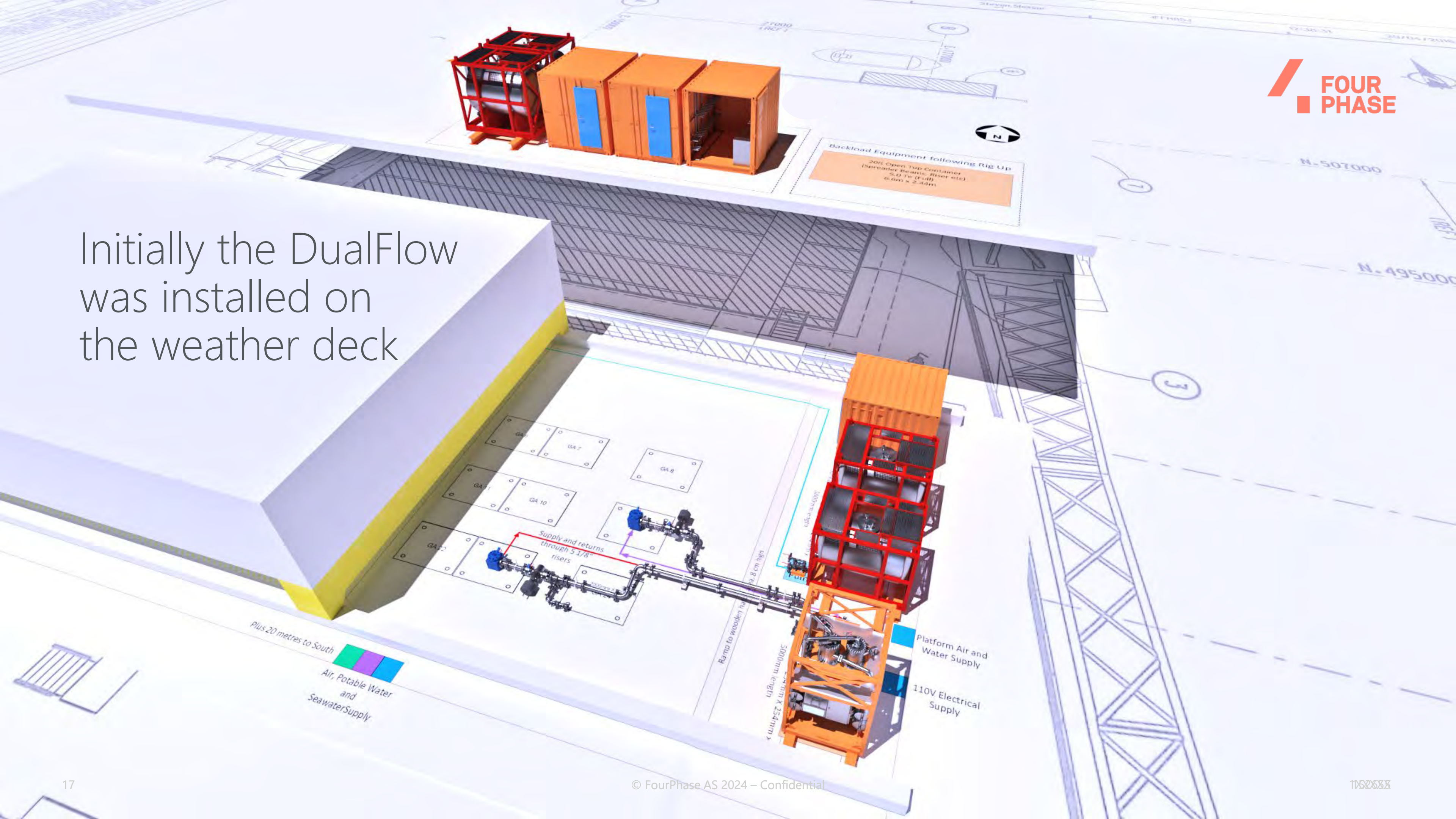
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Interlocked system – minimize human error

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Initially the DualFlow was installed on the weather deck



New solution, installed in the well bay



# Results

# SHELL GANNET GA23: 1,000+ BOPD & 1 MMSCF/D

The highest-ever output in the field

**+2 yrs**

**Operation**

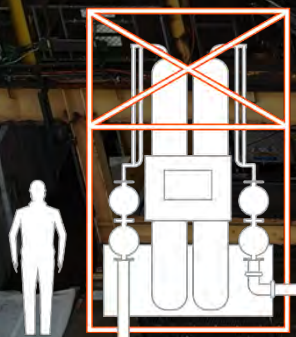
**43,009 kg**

**Sand  
removed**

**99%**

**Operational  
uptime**

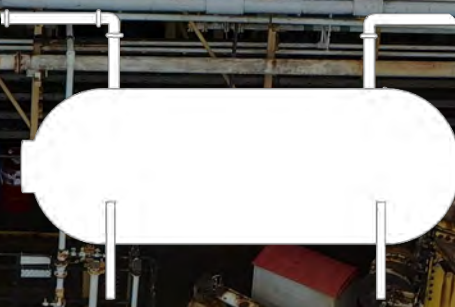
# Success factors – communication and working together to create value



**50%**  
POB  
reduction



**50%**  
Increased  
maintenance  
intervals



**84%**  
Thermal  
imaging  
reduced

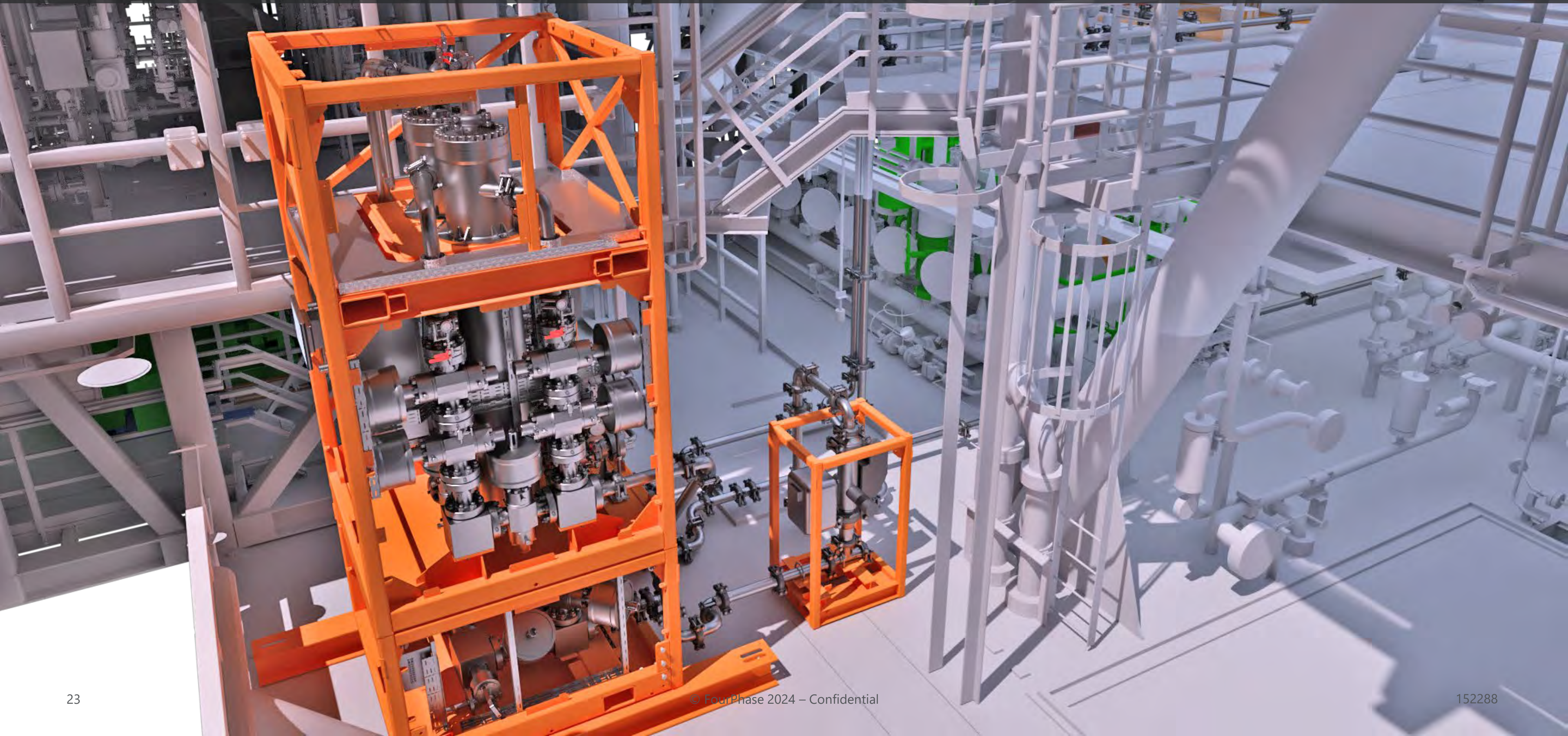


**100%**  
Separator  
clean-outs  
eliminated



# Future

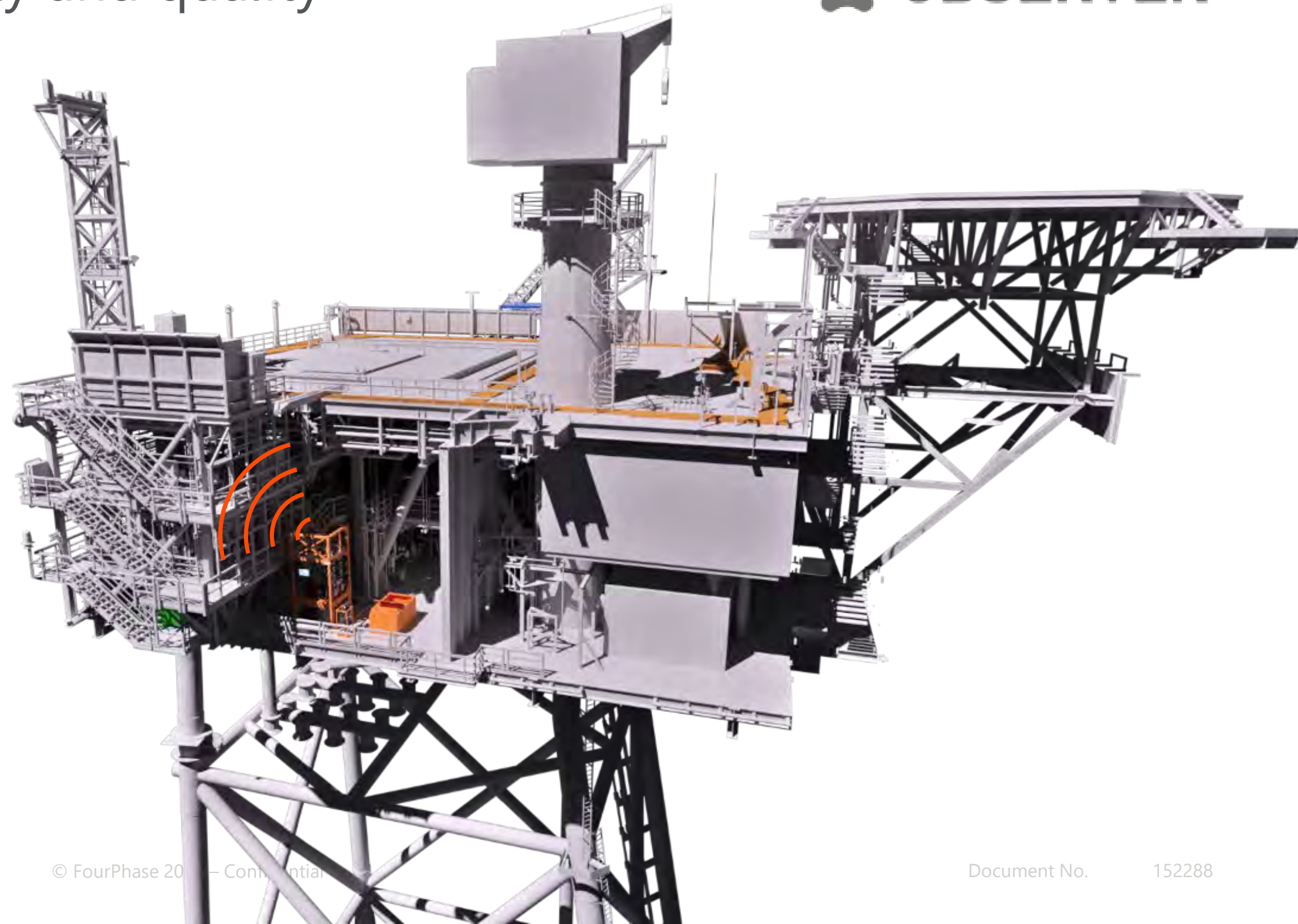
# Future possibilities - Further improve operations with MPFM



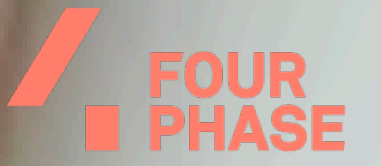
# Next steps – remote monitoring to improve data availability



- Improving (sand) data availability and quality
- Optimise production
- Reduce maintenance frequency



Currently being installed on our systems



## FourPhase Operational highlights:



We enable revenue from numerous previously shut-in and choked back wells:

- › Average operational uptime is 99.9%
- › 30% average customer production increase
- › +140 sand management operations

Questions?

Want to increase production on sand producing assets?

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