



**CNR International**

INDEPENDENT OIL & GAS OPERATOR



# **AB3 Abandonment**

## **Developing Good Practice**

## April to September 2024 on the Island Valiant – 20 AB3 Abandonments

6 Field  
21 Well Locations  
12 E&A Wells  
9 Development Wells  
7 Environment Plugs  
20 Wellheads Recovered  
7 Explosive Severance  
13 Abrasive Severance



# Location and Duration



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116 Days on the Island Valiant

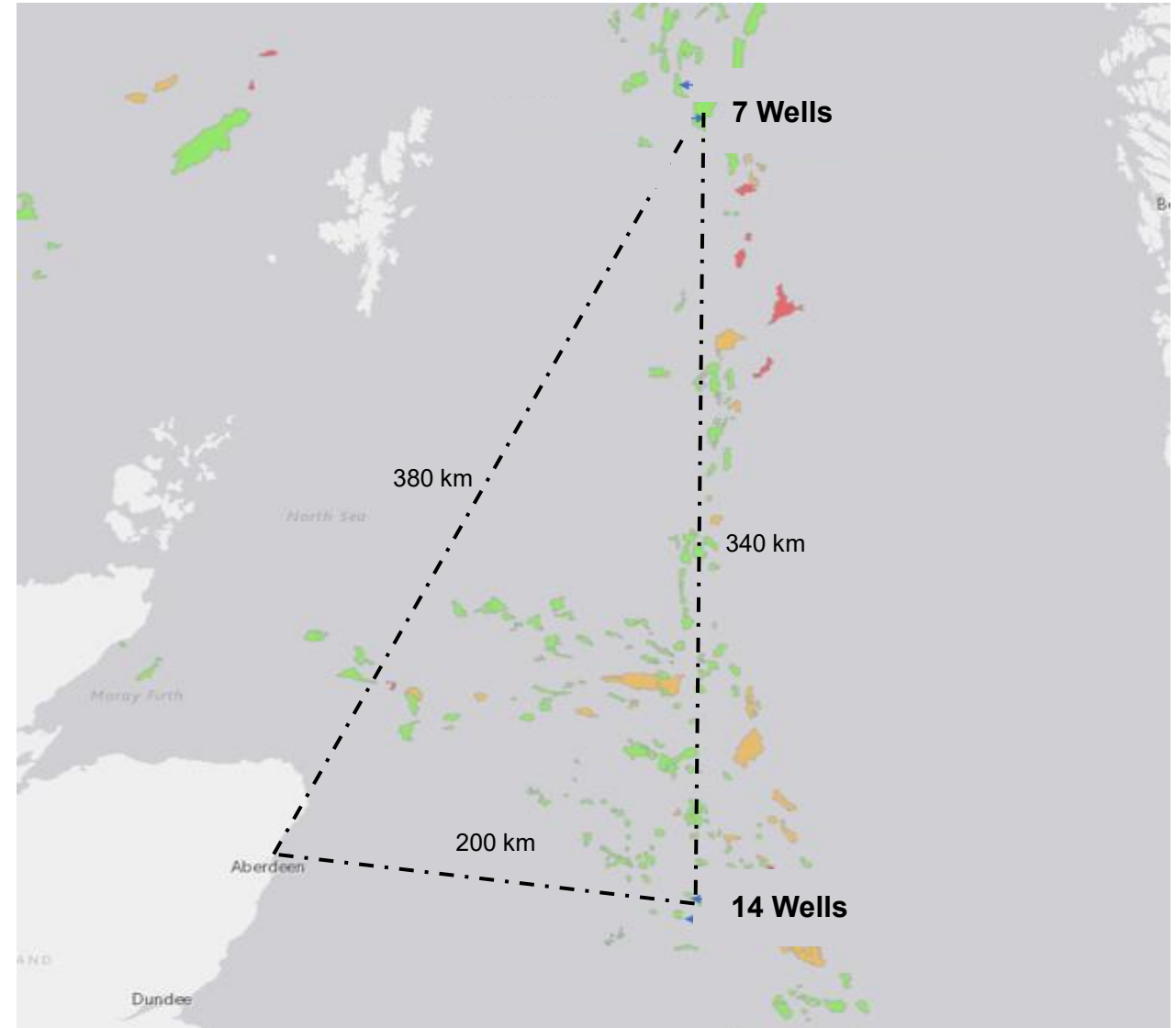
63 Operational

22 In Port

21 In Transit

5 NPT

5 Waiting on Weather



# Scope – Planned vs Delivered

## ■ AB3 Abandonments 21 vs 20

- 1 well not completed due to 9-5/8" casing restriction
  - Unable to achieve access for environmental plugs and severance

## ■ Environmental Plugs 8 vs 7

- Planned – 2 category 2.1 & 6 category 2.2
- Delivered – 7 x 2.2 category
  - 2.1 plugs redesigned as 2.2 due to well architecture

## ■ Wellhead Severance and recovery 21 vs 20

- Explosive 14 vs 7
- Abrasive 7 vs 13
  - Poor regulator alignment

## ■ Seabed Surveys (70m radius) 6 vs 6

- Unable to achieve 70m survey due to remaining infrastructure

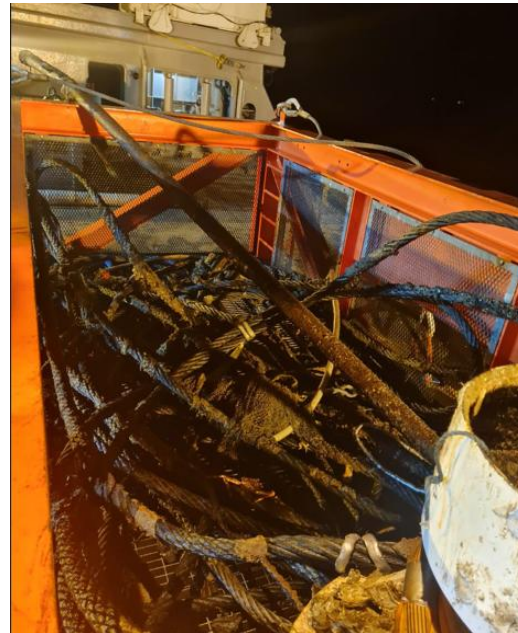
E&A	Dev	Enviro Plug	Explosive Severance	Abrasive Severance
✓		✓ 2.1	✓	
✓		✓ 2.2	✓	
✓		✓ 2.2	✓	
✓				✓
✓				✓
✓				✓
✓				✓
✓		✓ 2.1		✓
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✓		✓ 2.2	✓	
	✓		✓	
	✓		✓	
✓			✓	
	✓		✓	
	✓	✓ 2.2	✓	
12	9	2 x 2.1 & 6 2.2	14	7

- **Debris & net clearance, cleaning & dredging**
- **Trash cap removal**
  - Obsolete design, difficulty obtaining data
- **Explosive severance (7 Wells)**
  - Secondary detonations require on 5 of 7 wells
- **Abrasive severance (13 Wells)**
  - Second cut required on 2 wells
  - Increased number of passes on 4 wells
- **Wellhead recovery**
  - Difficulty recovering wellhead & guidebases
  - Overpulls >150t
  - Guidebases parting
  - Casing strings releasing from 30"



# Debris Clearance & Net Removal

- 6 x 70-meter seabed clearance certificates
- 14 x 10-meter surveys
- 18t of debris - three baskets full
- 13t of fishing gear recovered from 1 well
  - Not documented on last GVI





# Dredging – Guidebases & Casing Fill

- 2.5 days online dredging
- Reacting to technical challenges – bespoke dredging equipment
- ROV access challenges
- Visibility during dredging ops



# Significant Marine Growth

- Difficulty identifying trash cap type / design – poor records
- Online time cleaning

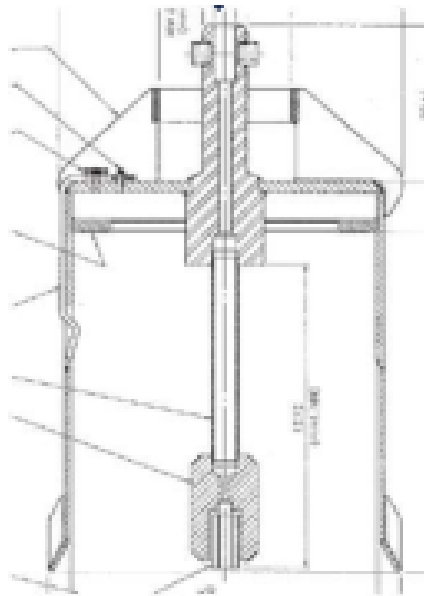




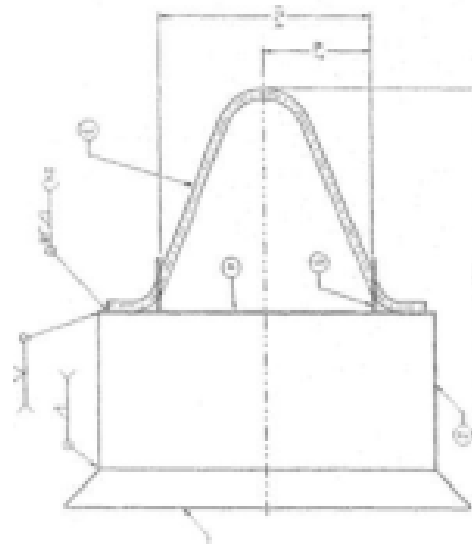
# Trash Cap Removal

- OEM obsolete equipment
- No recovery tooling
- Uncertainty over functionality
- Poor well records

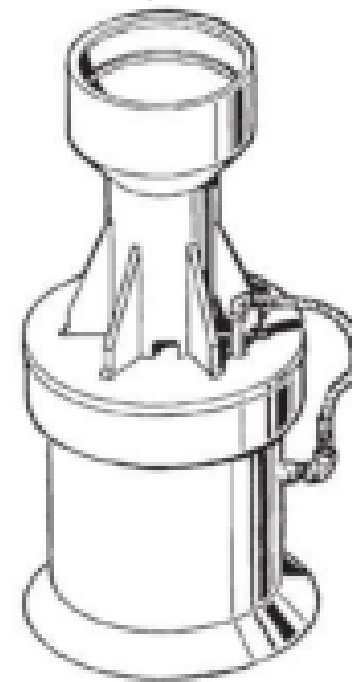
A



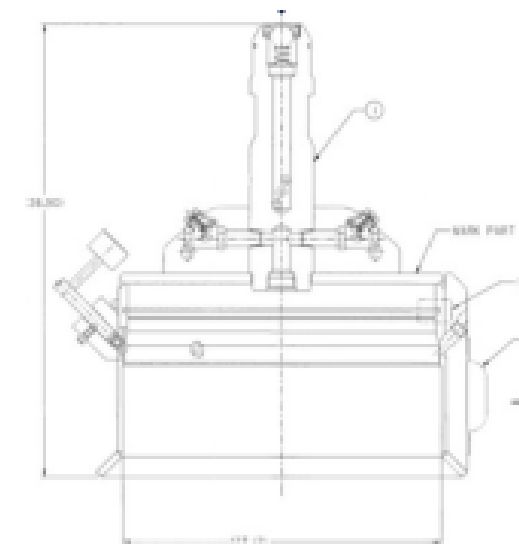
B



C



D

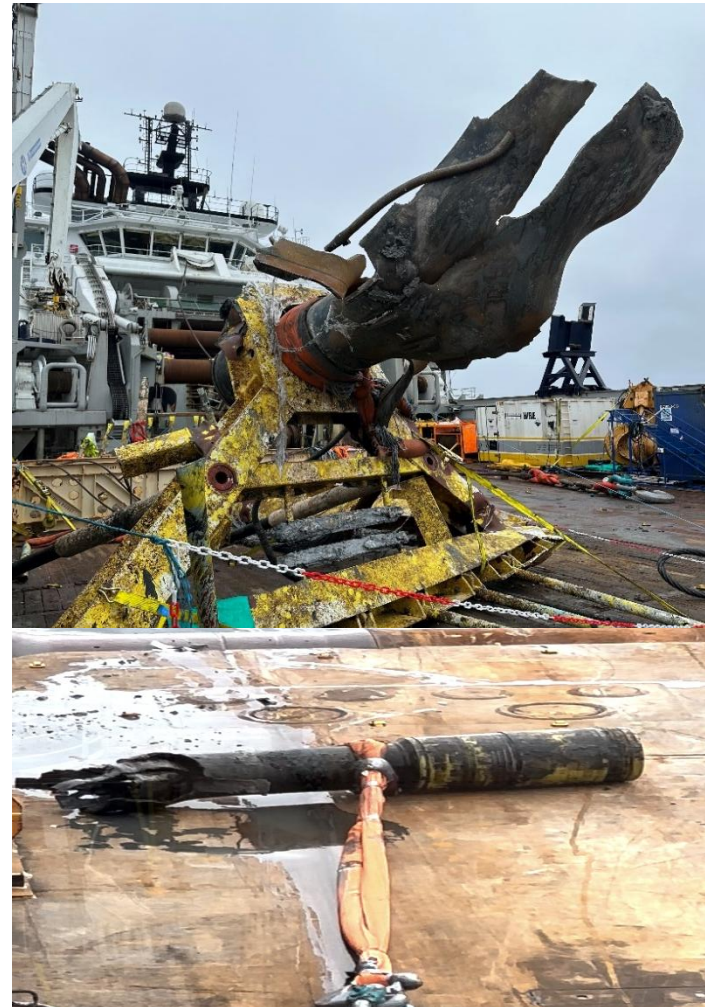


# Explosive Severance (7 wells)

- 5 of 7 wells required second charge to recover

## An example:

- Charge #1 detonated at 11ft BML
- 40t pull – 20” came free
- >150t pull - Unable to recover
- Charge #2 – unable to gain access
- Internal dredging
- Achieved 9ft BML
- Charge #2 detonated at 9ft BML
- 7 attempts at >150t – recovered
  - Guidebase tore apart
- >44 hrs



# Abrasive Severance (13 Wells)

- 2 of 13 wells required second cut
  - Failed cut due to sensor issues. Re-run tool for successful second cut
  - 20" sprung once cut, jamming the nozzle. Re-run tool for successful second cut
  - Some wells required up to 7 passes for full penetration >20hrs cutting

## An example:

- Cut depth 12ft BML
- 4 strings cut
- 3 passes +/-10hrs cutting time
- 2.5t copper slag
- 30t pull – recovered
  - Overpulls ranging 15t to 120t





# Abrasive Severance (13 Wells)



- **Strong focus on FEED – at the right time!**

- EARLY project definition - avoid surprises and improving cost / schedule predictability
- Data-driven decision making, highlighting data gaps EARLY, supporting risk management
- Identifying opportunities EARLY providing suitable time to mature
- Get the experts around the table EARLY

- **Engagement with all stakeholders**

- Set expectations EARLY and align with Regulators and Stakeholders ensuring compliance and appropriate management of residual risk

- **Flexibility if key**

- Design technical and schedule flexibility into the project
- PLANC readiness

- **Contingency and risk management**

- Build clear and robust contingency plans – expected the unexpected!



# And Finally...



CNR International

**It's always Good  
Practice to keep  
the moonpool full!**





# 116 days on the Island Valiant



Thank you for your time