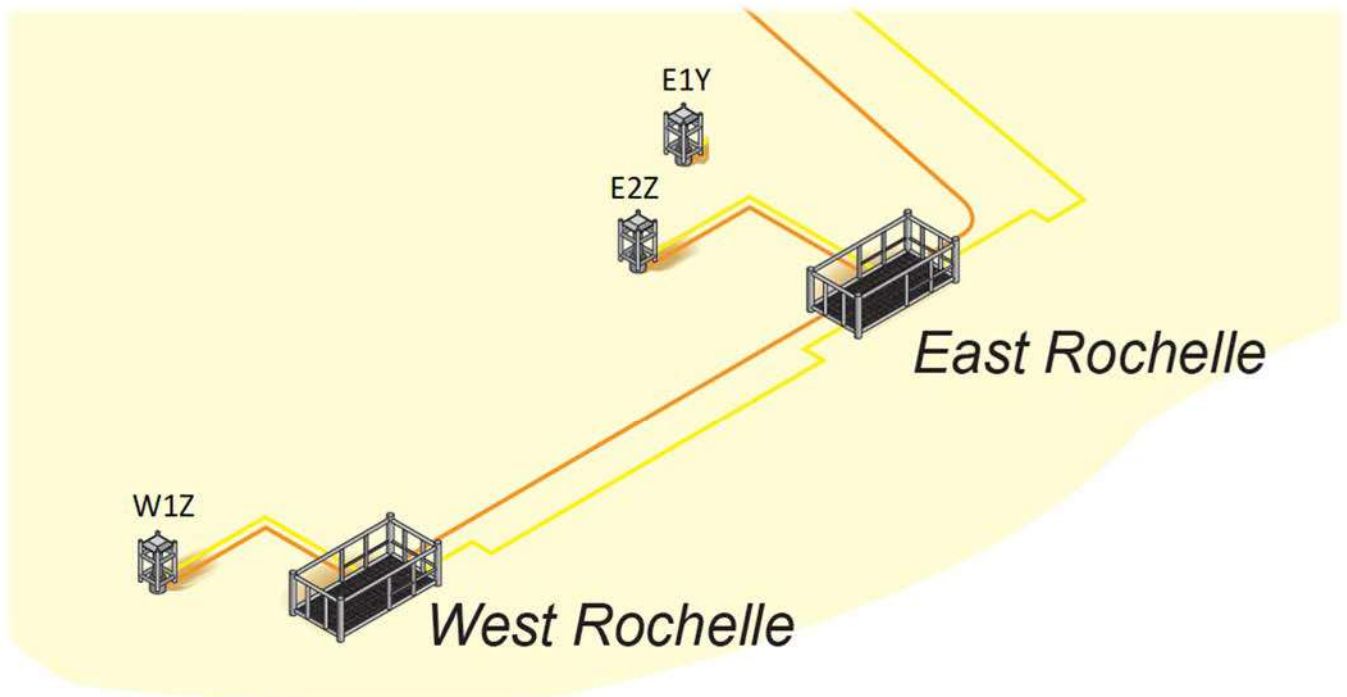




CNOOC Petroleum Europe Limited



**DECOMMISSIONING PROGRAMMES –
ROCHELLE JUMPER, SPOOL AND WELLHEAD PROTECTION
STRUCTURE REMOVAL**

Final Issue Including Letters of Support

17th January 2024

Document Control

	Name	Signature	Date
Prepared by	Glenn Whyte	<i>Glenn Whyte</i>	17/01/24
Reviewed by	Fraser McWilliam	<i>McWilliam</i>	17/01/24
Approved by	Innes Jordan	<i>I. Jordan</i>	17/01/24

Revision Control

Revision No	Reference	Changes/Comments	Issue Date
R1	PRJ-SCOTT0011-HS-00015-PL-01	Copy for internal review	23/05/23
U1	PRJ-SCOTT0011-HS-00015-PL-01	Issued for OPRED review	31/05/23
U2	PRJ-SCOTT0011-HS-00015-PL-01	Updated with comments from OPRED	28/06/23
U3	PRJ-SCOTT0011-HS-00015-PL-01	Updated post consultation	25/10/23
U4	PRJ-SCOTT0011-HS-00015-PL-01	Updated to reflect OPRED's queries received on 07/12/2023	17/01/24
U5	PRJ-SCOTT0011-HS-00015-PL-01	Final issue updated to include the letters of support	17/01/24

Distribution List

Company	No of Copies
Offshore Petroleum Regulator for Environment and Decommissioning (OPRED)	Electronic
Scottish Fishermen's Federation (SFF)	Electronic
Northern Ireland Fish Producers Organisation (NIPFO)	Electronic
National Federation of Fishermen's Organisations (NFFO)	Electronic
Global Marine Systems Limited (GMS)	Electronic
Waldorf Operations Limited	Electronic
Harbour Energy	Electronic

Contents

			INST	PL
1	Executive Summary	6		
1.1	Decommissioning Programme/Combined Decommissioning Programmes	6	√	√
1.2	Requirement for Decommissioning Programme(s)	6	√	√
1.3	Introduction	6	√	√
1.4	Overview of Installation(s)/Pipeline(s) Being Decommissioned	8	√	√
1.5	Summary of Proposed Decommissioning Programme(s)	10	√	√
1.6	Field Location Including Field Layout and Adjacent Facilities	11	√	√
1.7	Industrial Implications	16	√	√
2	Description of Items to be Decommissioned	17		
2.1	Installation(s): Subsea including Stabilisation Features	17	√	
2.2	Pipelines including Stabilisation Features	18		√
2.3	Wells	20	√	
2.4	Inventory Estimates	21	√	√
3	Removal and Disposal Methods	22		
3.1	Subsea Installations and Stabilisation Features	22	√	
3.2	Pipeline(s) and Pipeline Stabilisation Features	23		√
3.3	Wells	25		√
3.4	Drill Cuttings	26		
3.5	Waste Streams	27	√	√
4	Environmental Appraisal Overview	28		
4.1	Environmental Sensitivities (Summary)	28	√	√
4.2	Potential Environmental Impacts and their Management	31	√	√
5	Interested Party Consultations	34	√	√
6	Programme Management	35		
6.1	Project Management and Verification	35	√	√
6.2	Post-Decommissioning Debris Clearance and Verification	36	√	√
6.3	Schedule	37	√	√
6.4	Costs	37	√	√
6.5	Close Out	38	√	√
6.6	Post-Decommissioning Monitoring and Evaluation	38	√	√
6.7	Rochelle Facility Maintenance	38	√	√
7	Partner Letter(s) of Support	39	√	√

Terms and Abbreviations

Abbreviation	Explanation
CA	Comparative Assessment
CNS	Central North Sea
CNOOC	China National Offshore Oil Corporation
CPEL	CNOOC Petroleum Europe Limited
CSV	Construction Support Vessel
MODU	Mobile Offshore Drilling Unit
NORM	Naturally Occurring Radioactive Material
NSTA	North Sea Transition Authority
OEUK	Offshore Energies UK
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
PIP	Pipe in Pipe
PETS	Portal Environmental Tracking System
PLANC	Permits, Licenses, Approvals, Notifications, Consents
P&A	Plug and Abandonment
SCAP	Supply Chain Action Plan
STaR	Scott, Telford and Rochelle
SSIV	Subsea Isolation Valve
VMS	Vessel Monitoring System

Tables

Tables			INST	PL
Table 1.1	Installation(s) Being Decommissioned	8	√	
Table 1.2	Installation(s) Section 29 Notice Holders Details	8	√	
Table 1.3	Pipeline(s) Being Decommissioned	9		√
Table 1.4	Pipeline(s) Section 29 Notice Holders Details	9		√
Table 1.5	Summary of Decommissioning Programme(s)	10	√	√
Table 1.6	Adjacent Facilities	13	√	√
Table 2.1	Subsea Installations and Stabilisation Features	17	√	
Table 2.2	Pipeline/Flowline/Umbilical Information	18		√
Table 2.3	Subsea Pipeline Stabilisation Features	19		√
Table 2.4	Well Information	20	√	√
Table 3.1	Subsea Installation(s) and Stabilisation Feature(s) Decommissioning Options	22	√	
Table 3.2	Pipeline or Pipeline Groups Decommissioning Options	23		√
Table 3.3	Subsea pipeline Stabilisation Feature(s) Decommissioning Options	23		√
Table 3.4	Well Plug and Abandonment	25	√	
Table 3.5	Waste Stream Management Methods	27	√	√
Table 3.6	Inventory Disposition	27	√	√
Table 4.1	Environmental Sensitivities	28	√	√
Table 4.2	Environmental Impact Management	31	√	√
Table 5.1	Summary of Stakeholder Comments	34	√	√

Figures

Figures			INST	PL
Figure 1.1	Field Location in UKCS	11	√	√
Figure 1.2	Field Layout	12	√	√
Figure 1.3	Adjacent Facilities	15	√	√
Figure 2.1	Pie Chart of Estimated Inventories (Installations)	21	√	
Figure 2.2	Pie Chart of Estimated Inventory (Pipelines)	21	√	√
Figure 6.1	Gantt Chart of Project Plan	37	√	√

1 EXECUTIVE SUMMARY

1.1 Decommissioning Programmes

This document contains the Decommissioning Programmes for the removal of:

- Two subsea Xmas Trees, wellheads and protection covers on East Rochelle 15/27-E2z and West Rochelle 15/26-W1z. A third wellhead will be removed at East Rochelle 15/27-E1y (currently abandoned to AB2 status).
- Tie in spools and jumpers PL2923, PL2924, PLU2927 and PLU2928 between the well and associated manifold, along with mattress and grout bag protection will be disconnected and recovered in preparation for the P&A of the wells 15/27-E2z and 15/26-W1z.

To prepare for the Plug and Abandonment (P&A) at Rochelle, the flowlines and chemical cores will be flushed and disconnected. Methanol cores will be flushed either into the subsea production pipeline for the SSIV skid, or down hole at the East and West wells.

The removal of the Rochelle trees, wellheads, and jumpers is being treated as a standalone project. The remaining Rochelle pipelines, manifold and main control umbilicals are not being decommissioned at this time and will be subject to a separate decommissioning programme(s).

These Decommissioning Programmes will not preclude available decommissioning options for the Rochelle field and the wider STaR area.

1.2 Requirement for Decommissioning Programme(s)

Subsea Installations and pipelines:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Rochelle field are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning of the installations detailed in Section 2.1 of these programmes.

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Rochelle field are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning of the pipelines detailed in Section 2.2 of these programmes.

In conjunction with public, stakeholder and regulatory consultation, the Decommissioning Programmes are submitted in compliance with national and international regulations and OPRED guidelines. The schedule outlined in this document is for a decommissioning project to flush and disconnect Rochelle production pipelines and umbilicals, and to remove the jumpers and spools from the seabed. The flushing programme is due to commence in the first half of 2024, followed by Subsea spool disconnection and recovery work in the second half of 2024. The wells will then be plugged and abandoned in the first half of 2025 and final wellhead severance and recovery by the end of 2025.

1.3 Introduction

The Rochelle Field is located in the Central North Sea (CNS) in Blocks 15/26 and 15/27, approximately 30km south of the Scott platform. The field ceased production on 30 May 2020 due to continued production not being economically viable. The field consists of two accumulations; East Rochelle, mainly located in Block 15/27 and West Rochelle, located in Block 15/26. The development comprises a 10"/14" pipe-in-pipe (PiP) production pipeline from the West and East Rochelle Wells tied back to the Scott platform and was installed in 2012 and commissioned in 2013.

A re-use and repurposing study has been carried out to identify any possible future re-use or repurposing opportunities for the assets, including the potential for third party tiebacks. Re-use or repurposing of the wells has been ruled out by the study, however, the pipelines are currently being left in a condition suitable for potential re-use (as yet unidentified).

The initial workscope will include cleaning the production pipelines and umbilicals. Subsequently the well to production manifold tie in spools and associated control jumpers will be disconnected. A blind flange will be attached to each tree and associated production manifold. A deferral request will be submitted to leave the remaining pipelines and installations in place until decommissioning of the wider STaR assets. The jumpers and spools between the 2 suspended wells and the manifolds will be recovered and removed to surface for return to shore. This work is planned for February 2025 (refer to Figure 6.1 Gantt Chart of Project Plan).

The Rochelle field includes three subsea wells: West Rochelle 15/26-W1z, East Rochelle 15/27-E2z and 15/27-E1y. E1y experienced problems during its initial drilling and was subsequently P&A'd to AB2 status. Attempts to recover the wellhead were unsuccessful and this will be carried out during this campaign. The two production wells, currently shut in at the Xmas Tree, will be P&A'd from a suitable MODU and the removal of the wellheads including protection caps, and jumpers executed from an offshore support vessel. The water depth at each location is approximately 138m.

This document explains the principles of the removal activities that will be undertaken and a summary of the associated environmental impacts, which will be included in the relevant permit applications.

1.4 Overview of Installation(s)/Pipeline(s) Being Decommissioned

1.4.1 Installation(s)

Table 1.1: Installation(s) Being Decommissioned			
Field(s)	Rochelle	Production Type (Oil/Gas/Condensate)	Gas / Condensate
Water Depth (m)	~138m	UKCS block	15/26 and 15/27
Distance to median (km)	86.5 km	Distance from nearest UK coastline (km)	130 km (nearest coastline, nearest town Peterhead)
Surface Installation(s)			
Number	Type	Topsides Weight (Te)	Jacket Weight (Te)
N/A	N/A	N/A	N/A
Subsea Installation(s)		Number of Wells	
Number	Type	Platform	Subsea
2*	Xmas Trees with integrated protection cover, and wellheads	N/A	2
1**	Wellhead	N/A	1
Drill Cuttings pile(s)			
Number of Piles	N/A	Total Estimated volume (m ³)	N/A

*Wells to be plug and abandoned

**Currently suspended (AB2)

Table 1.2: Installation(s) Section 29 Notice Holders Details		
Section 29 Notice Holder(s)*	Registration Number	Equity Interest (%)
CNOOC Petroleum Europe Limited	01051137	79.29%
Waldorf Operations Limited	09110642	20.71%
Premier Oil UK Limited (Exited)	SC048705	0%
Waldorf Production UK PLC (Exited)	05030838	0%

1.4.2 Pipeline(s)

Table 1.3: Pipeline(s) Being Decommissioned

Number of Pipeline(s) Details given in Table 2.3	4
---	---

Table 1.4: Pipeline(s) Section 29 Notice Holders Details

Section 29 Notice Holder(s)*	Registration Number	Equity Interest (%)
CNOOC Petroleum Europe Limited	01051137	79.29%
Waldorf Operations Limited	09110642	20.71%
Premier Oil UK Limited (Exited)	SC048705	0%
Waldorf Production UK PLC (Exited)	05030838	0%

1.5 Summary of Proposed Decommissioning Programmes

Table 1.5: Summary of Decommissioning Programmes		
Selected Option	Reason for Selection	Proposed Decommissioning Solution
1. Subsea Installations		
Wellheads, Xmas Trees and integrated protection structures will be removed using a drill rig and a construction vessel and associated cutting equipment	To remove seabed structures and leave a clear seabed. To comply with OSPAR 98/3 requirements.	Wellhead will be cut minimum 3m below seabed. Wellheads, Xmas Trees and protection structures will be removed to shore for reuse, recycling or disposal.
2. Pipelines, Flowlines & Umbilicals		
Jumpers, hydraulic and chemical leads will be disconnected from the well and manifolds and be removed by CSV	Reduced risk to other seabed users – pipeline sections included in this DP are surface laid.	Pipelines, Spools & Jumpers will be removed from the seabed. Removal to shore for reuse, recycling or disposal.
3. Wells		
Abandoned in accordance with OEUK Well Decommissioning Guidelines, Issue 7.	Meets NSTA and HSE regulatory requirements and industry good practice.	A Portal Environmental Tracking System (PETS) application under the relevant regulations will be submitted in support of works carried out.
4. Drill Cuttings		
N/A	N/A	N/A
5. Interdependencies		
<p>The pipelines will be flushed and cleaned before being disconnected from the manifold. Jumpers and spools between the manifold and wellhead will be disconnected from wells and removed to surface. Pipelines and umbilicals between the manifolds and the platform, along with the manifolds themselves, will be left intact and decommissioned as part of the wider STaR Decommissioning Project at a future date.</p> <p>Jumpers and tie-in spools between the Manifolds and Xmas Trees are surface laid and will be completely removed and recovered to shore for re-use, recycling or disposal. Similarly, all mattresses and grout bags between the manifolds and wells will be completely removed and recovered to shore for re-use, recycling or disposal.</p> <p>The Xmas Trees (with integrated protection structures) will be completely removed, and wellheads removed to a minimum of 3m below seabed and recovered to shore for re-use, recycling or disposal. Small areas of seabed sediment local to the wellheads and jumpers will be disturbed. It is anticipated that only short term, localised impacts to the seabed will result and disturbed areas will have a rapid recovery.</p>		

1.6 Field Location Including Field Layout and Adjacent Facilities

Figure 1.1: Field Location in UKCS

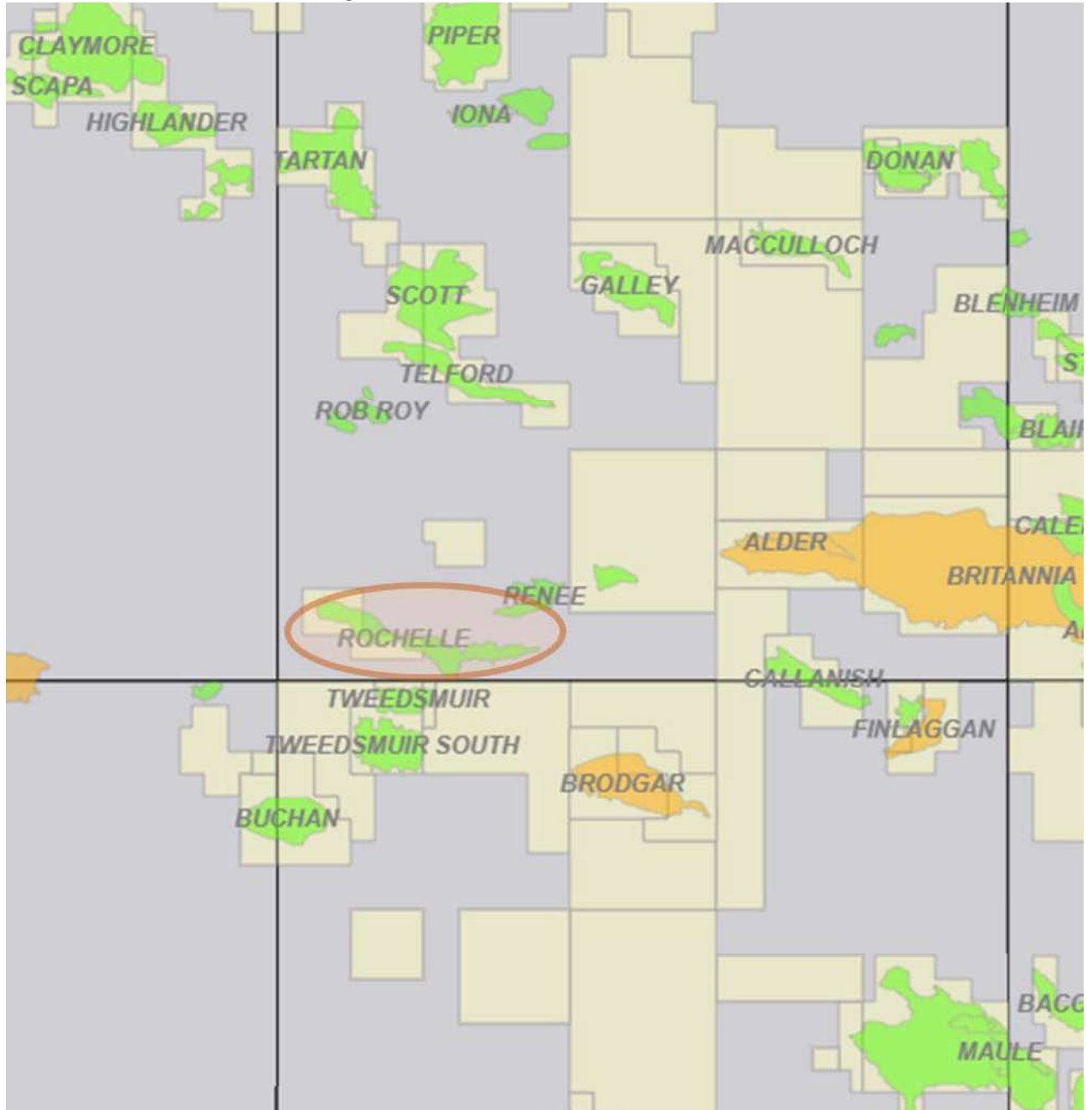


Figure 1.2: Field Layout

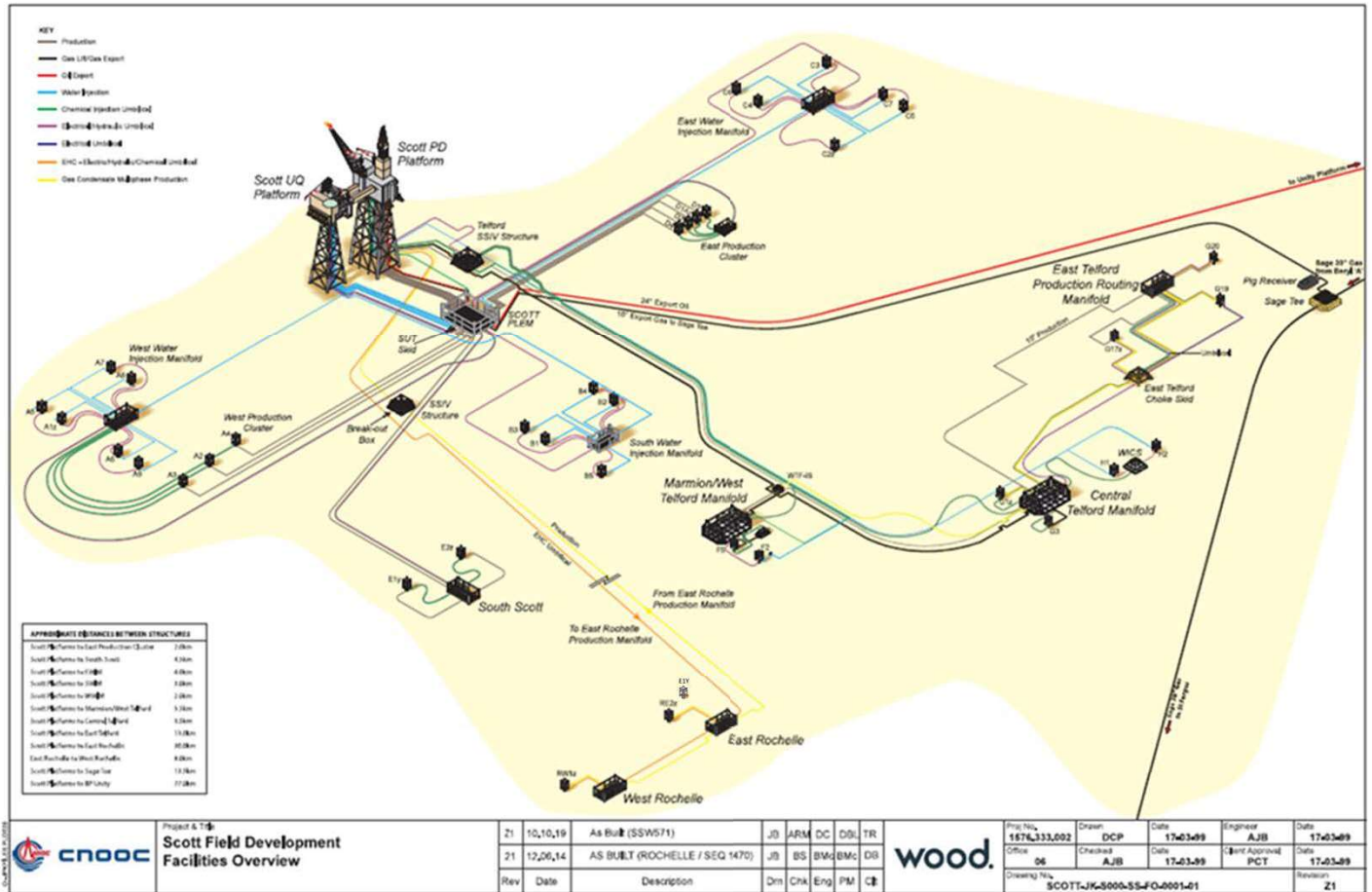


Table 1.6: Adjacent Facilities

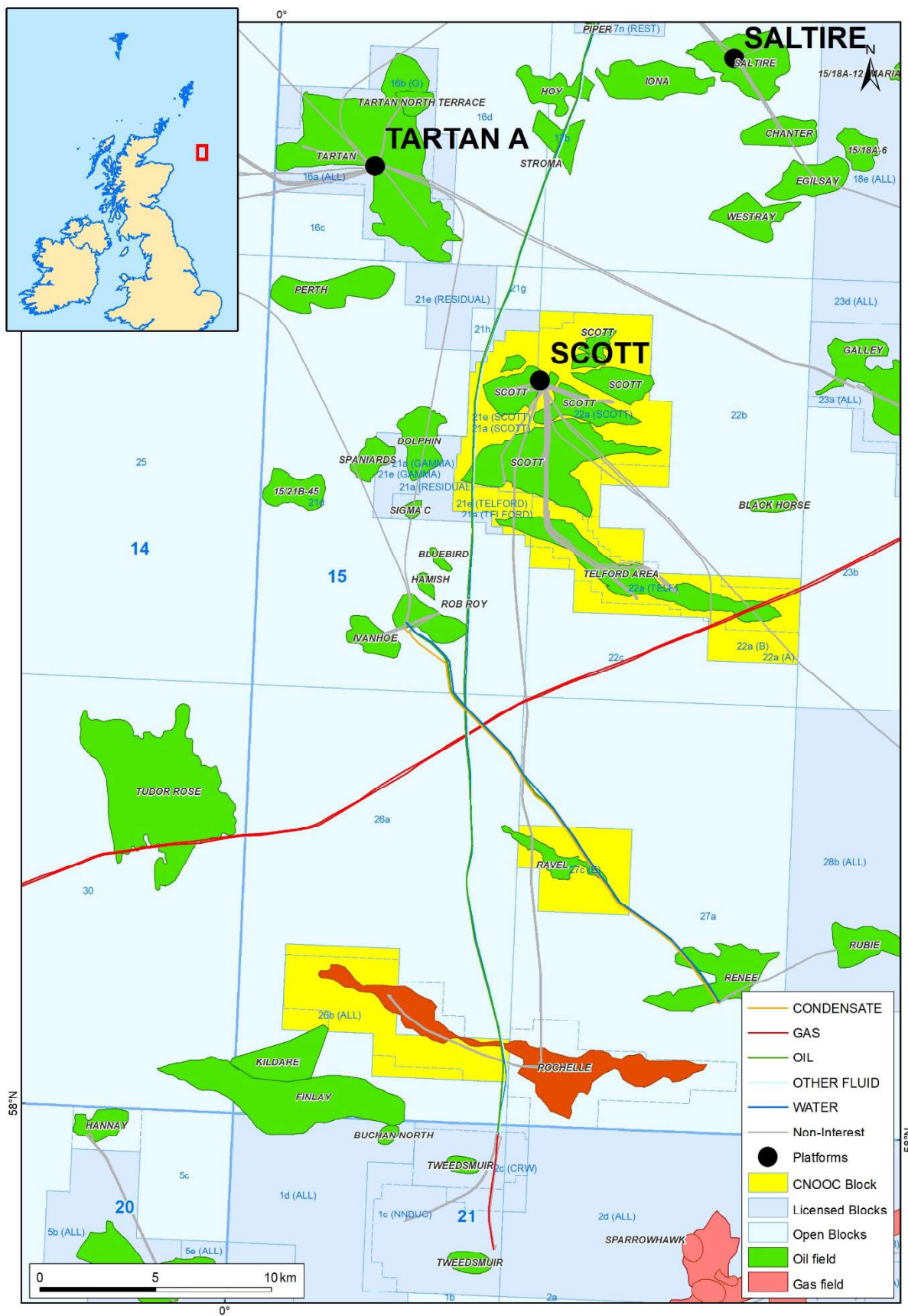
Operator	Name	Type	Distance/Direction	Information	Status
CPEL	Scott	Platform	29.7km North	Gas/liquids processing	Active
Repsol Sinopec	PL2130 TWEEDSMUIR 4IN GL TO SOUTH MAN	Pipeline	Pipeline crossing 1.25km west from East Rochelle Well.	Gas	Active
Repsol Sinopec	PL2127 TWEEDSMUIR 10IN WI	Pipeline	1.25 Km west from East Rochelle well	Water injection	Active
Repsol Sinopec	PL2125 TWEEDSMUIR12IN PRODUCTION	Pipeline	1.25 Km west from East Rochelle well	Oil	Active
Repsol Sinopec	PL2131 UMBILICAL	Pipeline	1.25 Km west from East Rochelle well	Chemicals	Active
Repsol Sinopec	TWEEDSMUIR	Subsea Production Well and WI Well	3.5 Km South	NA	Active
Repsol Sinopec	TWEEDSMUIR SOUTH	Subsea Production Well and WI Well	10Km South	NA	Active
BP Exploration	PL720 Miller to St Fergus	Pipeline	9.6km north of West Rochelle well	Gas	Not in use
Ancala Midstream	PL762 SAGE	Pipeline	9.6km north of West Rochelle well	Gas	Active
Waldorf Operations Limited	PL1617	Pipeline	11km north of West Rochelle well	Oil	Abandoned
Waldorf Operations Limited	PL1620	Pipeline	11km north of West Rochelle well	Water	Abandoned
Waldorf Operations Limited	PL1619 UMBILICAL	Pipeline	11km north of West Rochelle well	Condensate	Abandoned

Waldorf Operations Limited	PL1616	Pipeline	11km north of West Rochelle well	Oil	Abandoned
Waldorf Operations Limited	PL1618	Pipeline	11km north of West Rochelle well	Oil	Abandoned

Impacts of Decommissioning Proposals

There are no direct impacts on adjacent facilities from the decommissioning work described in this DP.

Figure 1.3: Adjacent Facilities



DH STaR Facilities - 21/06/2023

1.7 Industrial Implications

The work covered by this scope will be carried out under a standalone project and will be managed by CPEL. The work will be awarded through CPEL's contracting strategy that is based around competitive tender. A pre-FEED study has been carried out to confirm market availability and highlight the best times to carry out the work.

2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Installation(s): Subsea

Table 2.1: Subsea Installations and Stabilisation Features

Subsea installations including Stabilisation Features	Number	Size/ Weight (Te)	Location		Comments/Status
Wellheads including Xmas Tree with over trawl structure	2	243 Tonnes (15/27 E2z)	WGS84 Decimal	58.022731 0.221542	Both wells are suspended and will undergo plug and abandonment, and wellhead and Xmas Tree removal.
			WGS84 Decimal Minute	58° 01' 21.832" N 0° 13' 17.550" E	
		159 Tonnes (15/26 W1z))	WGS84 Decimal	58.048119 0.108384	
			WGS84 Decimal Minute	58° 02' 53.229" N 0° 06' 30.182" E	
Wellhead removal	1	16 Tonnes (15/27 E1Y)	WGS84 Decimal	58.022898 0.220848	Well has been Plug and Abandoned. Wellhead removal only.
			WGS84 Decimal Minute	58° 01' 22.433" N 0° 13' 15.051" E	

2.2 Pipelines Including Stabilisation Features

Table 2.2: Pipeline/Flowline/Umbilical Information									
Description	Pipeline Number (as per PWA)	Diameter (inches)	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content ⁵
East Well Production tie-in spools	PL2923	6"	0.044	Insulated Steel Spools	Gas	East Well to East Production Manifold	Surface laid. No free spans	In service. To be removed.	Hydrocarbon
West Well Production tie-in spools	PL2924	6"	0.081	Insulated Steel Spools	Gas	West Well to West Production Manifold	Surface laid. No free spans	In service. To be removed.	Hydrocarbon
Hydraulic and chemical umbilical leads & Electrical cable	PLU 2927	3/4 inch, 1/2 inch, 3/8 inch	0.09	3/4 inch Hose for Chemical Connections. 1/2 inch Hose for LP Connections. 3/8 inch Hose for HP Connections. 3 off 22.5mm electrical cable. Steel and polymer.	Hydraulic Fluid, Chemicals & Electricity	East Rochelle Production Manifold to East Rochelle Production Well 1	Surface laid. No free spans	In service. To be removed.	Chemicals
Hydraulic and chemical umbilical leads & electrical cable	PLU2928	3/4 inch, 1/2 inch, 3/8 inch	0.09	3/4 inch Hose for Chemical Connections. 1/2 inch Hose for LP Connections. 3/8 inch Hose for HP Connections. 3 off 22.5mm electrical cable. Steel and polymer.	Hydraulic Fluid, Chemicals & Electricity	West Rochelle Production Manifold to West Rochelle Production Well 1	Surface laid. No free spans	In service. To be removed.	Chemicals



Table 2.3: Subsea Pipeline Stabilisation Features

Stabilisation Feature	Total Number	Weight (Te)	Location(s)	Exposed/Buried/Condition
Concrete mattresses	37	5.13 tonnes each	PL2923 (20) and PL2924 (17)	Exposed Will be lifted to surface and returned to shore.
Grout bags	21	2000kg each	Around the wellhead and manifold	Exposed. Will be lifted to surface and returned to shore.
Grout bags	513	25kg each	Around the wellhead and manifold	Exposed. Will be lifted to surface and returned to shore.

2.3 Wells

Table 2.4: Well Information			
Well Identification	Designation	Status	Category of Well
15/26-W1Z	Production	Suspended	SS 3-3-1
15/27-E1Y	Production	Reservoir Abandoned	SS 0-0-1
15/27-E2Z	Production	Suspended	SS 3-3-1

2.4 Inventory Estimates

Figure 2.1: Pie Chart of Estimated Inventories (Installations)
Estimated Inventory For Subsea Installations (2 x Trees ,3 x Wellheads)

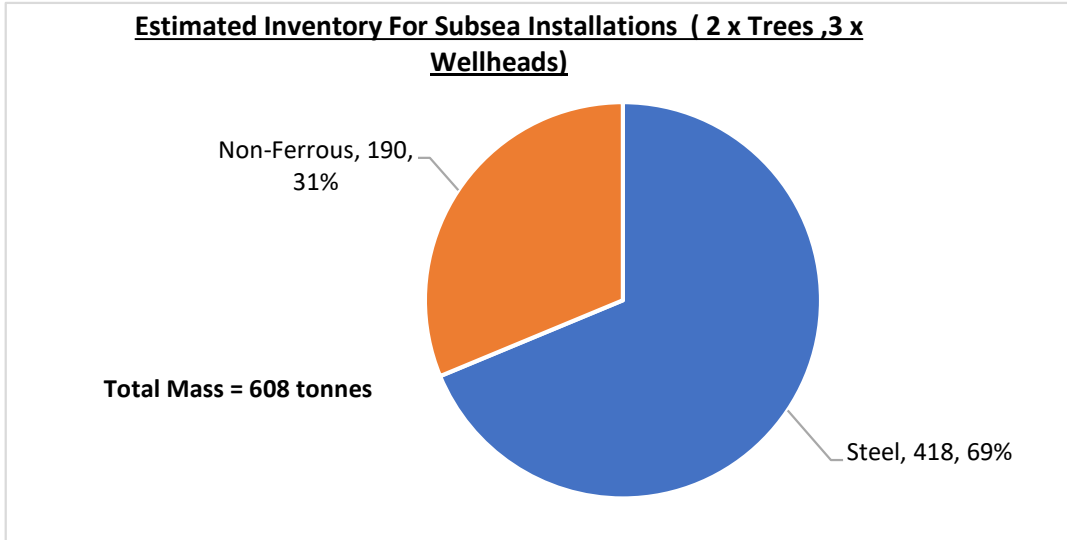
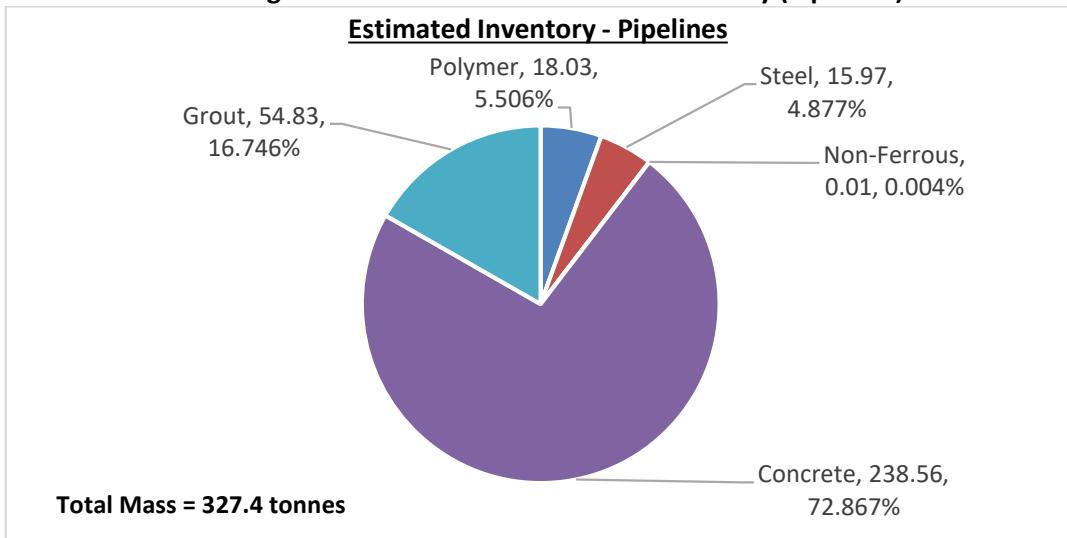


Figure 2.2: Pie Chart of Estimated Inventory (Pipelines)



3 REMOVAL AND DISPOSAL METHODS

All waste removed to shore as part of this project will be managed in line with the Waste Framework Directive, as outlined in the CPEL Waste Management Standard.

It is not expected that any NORM will be found during this operation. However, in the unlikely event of NORM contamination any waste will be sent to CPEL's approved NORM contractor for decontamination prior to being sent onward for disposal.

3.1 Subsea Installation(s) and Stabilisation Feature(s)

Table 3.1: Subsea Installations Feature(s) Decommissioning Options			
Subsea installation(s) and stabilisation feature(s)	Number	Option	Disposal Route (if applicable)
Wellheads and Xmas Tree with over trawl structure	2	Complete Removal	Returned to shore for recycling
Wellhead	1	Complete Removal	Returned to shore for recycling

3.2 Pipelines

Decommissioning Options:

*Key to Options:

1) Remove - reverse reeling

2) Remove - Reverse S lay

3) Trench and bury

4) Remedial removal

5) Remedial trenching

6) Partial Removal

Table 3.2: Pipeline or Pipeline Groups Decommissioning Options

Pipeline or Group (as per PWA)	Condition of line/group (Surface laid/trenched/buried/spanning)	Whole or part of pipeline/group	Decommissioning options* considered
PL2923, PL2924	Surface Laid	Whole Tie in spools from wellheads to manifolds	4
PLU 2927, PLU2928	Surface Laid	Whole Hydraulic, Chemical & Electrical Leads from wellheads to manifolds	1,4

Table 3.3: Subsea pipeline Stabilisation Feature(s) Decommissioning Options

Subsea installation(s) and stabilisation feature(s)	Number	Option	Disposal Route (if applicable)
Concrete mattresses	37	Complete Removal	Returned to shore for recycling or disposal
Grout bags (2000kg)	21	Complete Removal	Returned to shore for recycling or disposal
Grout bags (25kg)	513	Complete Removal	Returned to shore for recycling or disposal

3.2.1 Comparative Assessment (CA) Method

CPEL chose Comparative Assessment evaluation method 'A' from the BEIS Guidelines for the Decommissioning of Offshore Oil and Gas Installations and Pipelines. This method used a paired comparison system, which allows the relative importance of each differentiating criteria to be judged against each other in a qualitative assessment.

Qualitative assessment was considered an appropriate level of detail for the assessment given the lack of complexity of the decommissioning options. The criteria used in the Comparative Assessment were taken from the BEIS Guidelines for the Decommissioning of Offshore Oil and Gas Installations and Pipelines, as follows:

- Safety – the safety of personnel directly involved in the decommissioning programme activities offshore.

- Environmental – the environmental impact of the activities on the immediate environment of the pipeline and structures
- Technical – the practicalities of cleaning the pipeline system and removing the PLEM and Tee structures and associated protection systems, in close proximity to operating oil and gas infrastructure.
- Societal – the benefit/disbenefit of the decommissioning activities to impacted stakeholders and onshore communities.
- Economic Method: - the cost of decommissioning activities and end-disposal.

3.2.2 Outcome of Comparative Assessment:

The comparative assessment has delivered the following outcomes:

- PL2923, PL2924 – option 4 is recommended for the tie-in spools. The spools need to be disconnected before the trees can be removed. The spools are surface laid and will require recovery to shore from the seabed. Due to the comparatively short lengths to be recovered between the manifolds and wellheads section removal is preferred.
- PLU 2927, PLU2928 - – option 4 is recommended for the umbilicals. The umbilicals require to be disconnected before the trees can be removed. The umbilicals are surface laid and will require recovery to shore from the seabed. Due to the comparatively short lengths to be recovered between the manifolds and wellheads section removal is preferred.

3.3 Wells

Table 3.4: Well Plug and Abandonment

The wells, which remain to be abandoned, as listed in Section 2.3 (Table 2.4) will be plugged and abandoned in accordance with OEUK Guidelines for Well Decommissioning, Issue 7.

Environmental Permits will be submitted through the Portal Environmental Tracking System (PETS) in support of any such work that is to be carried out.

3.4 Drill Cuttings

There are no drill cuttings associated with these programmes.

3.5 Waste Streams

Table 3.5: Waste Stream Management Methods	
Waste Stream	Removal and Disposal method
Bulk liquids	N/A – Chemical cores will be flushed into the well or pipeline and will be included in relevant Environmental Permits.
Marine growth	Removed onshore. Disposed of according to guidelines.
NORM/LSA Scale	Any NORM contaminates will be sent ashore to CPEL's approved contractor and decontaminated as per CPEL's waste procedures.
Asbestos	N/A
Other hazardous wastes	Mercury (in spools) – spools cleaned by approved waste company, cleaning medium collected and sent to approved mercury treatment site.
Onshore Dismantling sites	<p>The wellheads and Xmas Trees will be sent onshore along with the jumpers, spools, and any protection/stabilisation materials. All waste will be returned to shore to an appropriately licensed waste contractor. The disposal yard has not yet been selected pending a tender and contract review process.</p> <p>The dismantling site shall demonstrate a proven disposal track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver re-use and recycling options.</p> <p>CPEL intend to remove waste to a UK site. If a non-UK yard is selected, appropriate Trans-frontier Shipment of Waste licences will be applied for. OPRED shall be informed once a disposal yard has been selected.</p>

Table 3.6 Inventory Disposition			
	Total Inventory Tonnage	Planned tonnage to shore	Planned left <i>in situ</i>
Installations	935.4	935.4	0

All recovered material will be transported onshore for reuse, recycling or disposal. It is not possible to predict the market for reusable materials with any confidence.

4 ENVIRONMENTAL APPRAISAL OVERVIEW

4.1 Environmental Sensitivities (Summary)

Table 4.1: Environmental Sensitivities	
Environmental Receptor	Main Features
Conservation interests	<p>The closest designated Annex I habitat site to the Rochelle Field is the Scanner Pockmark Special Area of Conservation (SAC) which is located approximately 51 km to the North East of Rochelle and 45 km to the east of the Scott Platform. This site is designated for the Annex I habitat 'submarine structures made by leaking gases' under the EU Habitats Directive (92/43/EEC) (JNCC, 2021c).</p> <p>The Rochelle Field is located within an area with characteristics likely to produce Annex I submarine structures', however, the most recent site environmental baseline survey concluded that this specific habitat was not present (Fugro, 2012).</p> <p>There are no Nature Conservation Marine Protected Areas (NC MPAs) located within 40 km of the Scott installation or the Rochelle Field. There are five Nature Conservation Marine Protected Areas (NC MPAs) located within a 112 km radius of the Rochelle field; Central Fladen NC MPA (60 km to the north), Norwegian Boundary Sediment Plain NC MPA (84 km to the east), Turbot Bank NC MPA (87 km to the southwest), East of Gannet and Montrose Fields NC MPA (83 km to the southeast) and, the Southern Trench NC MPA (102 km to the southwest) (NatureScot, 2020b).</p> <p>The closest NC MPA, Central Fladen, has been designated for the protection of burrowed mud including seapens and burrowing megafauna and tall seapen components (JNCC, 2021c).</p>
Seabed	<p>An Environmental Baseline Survey including geophysical, habitat investigation and environmental monitoring was commissioned and completed by Fugro in 2012. As part of the survey, video and still photography and seabed samples were collected to assess the existing environmental conditions.</p> <p>Sediments within the Rochelle field comprise of mud, sandy mud and slightly gravelly sandy mud. Sediments in the area have been found to be relatively homogeneous, comprising predominantly fine material (i.e. silt and clay, or mud), with low, but variable, proportions of sand and minimal coarse material. There was also varying degrees of modification to the surficial sediments through bioturbation. Specifically, the European Union Nature Information System (EUNIS) biotope present throughout the area is classified as 'Circalittoral fine mud' (CPEL, 2022).</p> <p>The Rochelle field is located within an area of potential fluid seeps (JNCC, 2021a), which is used as an indicator of the potential presence of the habitat 'submarine structures made by leaking gases' (which is listed under Annex I of the European Union (EU) Habitats Directive (92/43/EEC)). There was no evidence of active pockmarks, shallow gas releases or evidence of the Annex I habitat 'Submarine structures made by leaking gases' such as Methane-derived Authigenic Carbonate (MDAC) mounds. Pockmarks alone are not considered to be protected under the Habitats Directive (JNCC, 2015a). Therefore, there is no evidence of 'submarine structures made by</p>

	<p>leaking gases' from the photographic ground-truthing recorded during the 2012 site survey or the 2021 ROV footage.</p> <p>Site surveys identified that the area was characterised by a moderately diverse macrofaunal community, dominated by the burrowing anemone <i>Cerianthus lloydii</i> and polychaete <i>Paramphinome jeffreysii</i>. The data acquired across the Scott field also shows the presence of burrowing megafauna, in addition to the seapens <i>P. phosphorea</i> and <i>V. mirabilis</i>. Sea pen density was low and not considered a 'conspicuous population', though it may meet requirements of the EUNIS Species Abundant Common Frequent Occasional Rare (EUNIS SACFOR) scale abundance threshold of 'frequent'; 1-9 individuals per 10 m² or 1-9 individuals per 100 m². The sea pens were estimated to be substantially less than 15 cm tall. Based upon the OSPAR (2008) and OSPAR (2010) definitions of the 'Sea-pens and burrowing megafauna communities' feature, the potential for the presence of this habitat is low. Although burrowing megafauna was observed during the Fugro (2012) survey and burrows were recorded at every station across the Scott field, burrow density was not recorded, therefore, the area cannot be categorically defined as this habitat. Across the wider area, surrounding the Rochelle field area (Block 15/22) seapens and burrowing megafauna have been observed (NMPi, 2023), however based on this and the survey data, it is apparent that the presence of 'Sea-pen and burrowing megafauna communities' is unlikely. Therefore, based on the definitions above, the potential for the presence of the 'Sea-pen and burrowing megafauna communities' habitat at the Scott site was considered to be low. No other species or habitat of conservation interest were recorded during this environmental baseline survey.</p>
Fish	<p>The Rochelle field is located in an area of spawning and nursery grounds for several commercially important species.</p> <p>The probability of juvenile fish species occurring in the area was low for anglerfish, blue whiting, European hake, herring, mackerel, horse mackerel, sole, plaice, sprat and whiting while probability was moderate for haddock and Norway pout.</p> <p>Whilst most species spawn into the water column of moving water masses over extensive areas, benthic spawners (e.g., Norway lobster) have very specific habitat requirements, and as a consequence their spawning grounds are relatively limited and potentially vulnerable to seabed disturbance and change. Of the species likely to spawn within ICES rectangle 45F0, only Norway lobster are benthic spawning species.</p>
Fisheries	<p>ICES rectangle 45F0 was targeted primarily for shellfish species in 2021, which accounted for approximately 59% of landings and approximately 71% of value within the area.</p> <p>Vessel monitoring system (VMS) data for bottom trawls from 2010-2020 indicates that fishing intensity within Blocks 15/26 and 15/27 is comparable to the surrounding areas, with a fishing intensity of 2 days to greater than 2 weeks (NMPi, 2022).</p> <p>Shellfish species were dominant in term of weight and value.</p>
Marine Mammals	<p>White-beaked dolphin, minke whale, common dolphin <i>Delphinus delphinus</i>, Atlantic white-sided dolphin, harbour porpoise and long-finned pilot whale have been recorded in the vicinity. White-beaked dolphin and harbour porpoise are the most frequently recorded species within the area,</p>

	<p>with recorded sightings all year round ranging from low to high densities. Since the Rochelle Field is located approximately 140 km offshore, grey and harbour seals may be encountered from time to time, but it is not likely that they use the area with any regularity or in great numbers.</p>
Birds	<p>Seabird sensitivity in the region varies between extremely high and low, peaking at extremely high in September, October and January, very high in November and December and is low in February and March as well as from May to August. This is based on the output of a Seabird Oil Sensitivity Index. The Scott installation is located approximately 140 km from the nearest UK coast and is therefore remote from sensitive seabird breeding areas on the coast, including Special Protection Areas (SPA) as designated under the EU Birds Directive (79/409/EEC). Rochelle is 30km from the Scott installation and is fully subsea.</p>
Onshore Communities	<p>The Rochelle Field is located approximately 125 km from the nearest UK coast and is therefore remote from sensitive seabird breeding areas on the coast.</p>
Other Users of the Sea	<p>The Rochelle Field is in an area defined as having a low shipping density. The Rochelle Field is located in an area of extensive oil and gas development with a number of fields located nearby. The closest field to Rochelle is Tweedsmuir (2km south).</p> <p>The location of the proposed operations is not within a Military of Defence (MoD) practise and exercise area and there are no military regulatory restrictions.</p> <p>All submarine cables are greater than 10 km from the proposed operations, with the closest, the CNS Fibre Optic telecommunications cable, located approximately 69 km to the south of the Scott installation.</p> <p>The closest windfarm is located approximately 38 km southwest of the Scott field.</p> <p>The Initial Acorn Carbon Capture Storage (CCS) project lease area is located approximately 20km East of the Rochelle Field.</p> <p>There are no known wrecks of historical importance (HMPAs) near the Rochelle Field.</p>
Atmosphere	<p>The prevailing winds in the CNS are from the south-west and north-north-east. Wind strengths in winter are typically in the range of 6-11 m/s with higher winds of force 17-32 m/s being much less frequent. In April and July, winds in the open, CNS to northern North Sea (NNS), are highly variable and there is a greater incidence of north-westerly winds. Given the remote offshore location and dispersive wind conditions, the local levels of atmospheric pollutants are anticipated to be low.</p>

4.2 Potential Environmental Impacts and their Management

Environmental Impact Assessment Summary:

Overview:

The following overview of potential impacts focusses solely on issues related to the recovery of the Xmas Tree protective structures, wellheads, spools, jumpers and associated protection/stabilisation features within the Rochelle field. The potential environmental impacts related to the wider decommissioning will be addressed in detail in an Environment Assessment supporting the related Decommissioning Programmes for those operations.

The potential environmental impacts of these operations will be assessed in the MAT EAJ that will be submitted prior to the works commencing. A summary of the impacts and environmental control measures identified is provided here.

Table 4.2: Environmental Impact Management	
Main Impacts	Management
Physical presence – seabed disturbance	<p>Seabed disturbance will be fully assessed during the preparation of the Environmental Permits when details of the work will be further understood. The work has the potential to impact the seabed through direct loss of habitat within the footprint and indirect peripheral disturbance and alteration of habitats and species through sediment suspension and resettlement.</p> <p>The wellhead removal will require a drilling rig to be held in position by anchor moorings, which will cause the greatest seabed disturbance. In addition, a vessel will be required to come into the field and sever the wellheads. The vessel will use dynamic positioning (DP) and will therefore not cause disturbance to the seabed (by anchoring). No installation of infrastructure or stabilisation materials is anticipated associated with the P&A or well severance operations. The potential use of explosives for wellhead removal will likely cause localised seabed disturbance. The seabed disturbance associated with the removal of the wellheads is estimated to be 0.2 km² this includes the anchors and chains, wellhead including 1m on each side for zone of impact.</p> <p>Jumpers and spools will be lifted along with associated mattresses and grout bags causing some local disturbance to the seabed.</p> <p>Following completion of the work the natural physical process of sediment transportation and biological settlement will be expected to restore the seabed to its original condition over time. Physical disturbance can cause mortality or displacement of benthic species in the impacted zone. Ocean quahog and 'sea pen and burrowing megafauna community' habitat are considered to be common in this area of the North Sea. Direct loss of habitat and direct mortality of sessile seabed organisms that cannot move away from the contact area would be expected at these locations. It is considered that the works will cause localised disturbance impacts that are not expected to result in persistent or significant changes to the benthic community and the</p>

	<p>seabed sediments.</p> <p>Seabed disturbance also has the potential to impact benthic spawning fish species. Known spawning grounds for four species on the seabed occur in the wider area: whiting, lemon sole, sandeel and cod. The area is also recognised as important for Norway pout, sprat and Nephrops; although spawning is pelagic, larvae settle in the sediment. Given the small area of impact and the temporary nature of the sediment resuspension associated with this work there is not expected to significantly impact populations of spawning fish species.</p>
Marine discharges (planned)	<p>Pipelines and umbilicals will be flushed either to the subsea production pipeline, or down hole at the East and West wells. All chemical and oil discharges will be assessed under the associated Environmental Permits.</p>
Atmospheric emissions	<p>Atmospheric emissions will be generated from the vessels used during the proposed operations.</p> <p>Atmospheric emissions have the potential to impact on local air quality or contribute to regional or global effects including global warming or acidification. Wind conditions in the area will ensure that local levels of atmospheric pollutants are anticipated to be low. It is anticipated that the percentage of global emissions for this work is low, the impacts will be assessed as part of the Environmental Permits.</p>
Physical presence – other users of the sea	<p>The operations will be carried out within 500 m exclusion zones and therefore there is no potential to disturb other users of the sea, in particular fishing and shipping.</p>
Underwater noise	<p>Some noise will be generated from the vessels</p> <p>It is considered that routine operations have negligible impacts on cetaceans as the majority of noise generated is of low frequency (<1 kHz). It is expected that there will be small increase in noise levels associated with the proposed operations. However, operations will be of short duration (10 days) and are not expected to be significant.</p> <p>There may be the requirement for the use of explosives to sever the wellheads. Noise associated with this work will be modelled and assessed as part of the Environmental Permits associated with the P&A of the wells and any required mitigation measures will be put in place prior to work commencing.</p>
Accidental event – hydrocarbon release	<p>A large spill of hydrocarbons is very unlikely during the proposed operations as all subsea infrastructure involved in the operations will be appropriately isolated and integrity proven. In addition, the proposed pipelines will have been flushed prior to the work commencing.</p> <p>The main release risk associated with the proposed operations is a loss of diesel inventory from the vessel being used. Diesel has very high levels of light ends, evaporating quickly on release. The low asphaltene content prevent emulsification, therefore reducing its persistence in the marine environment. As such, it is not considered to present a major risk. In addition, the vessels will have a Shipboard Oil Pollution Emergency Plan (SOPEP) in place.</p>
Cumulative impact	<p>Atmospheric emissions are considered not to represent a significant proportion of the UK offshore emissions and consequently are not significant in cumulative terms.</p> <p>The vessels involved with the proposed operations will be on-site only for the short period of operations (21 days for subsea work plus approximately 7 days for wellhead removal); cumulative impacts from noise of the</p>



	<p>vessels and with other projects in the area are not expected. There is no decommissioning work or noise survey activities planned during this period, however, this will be further assessed during production of the environmental permits.</p>
--	---

5 INTERESTED PARTY CONSULTATIONS

Table 5.1: Summary of Stakeholder Comments		
Who	Comment	Response
Statutory Consultations		
National Federation of Fishermen's Organisations	Consultation email sent to nffo@nffo.org.uk on the 21 st of August 2023.	No responses were received.
Public consultation	Public consultations posted within the Press and Journal and the Daily Telegraph on the 30 th of June 2023.	No responses were received.
Scottish Fishermen's Federation	Consultation email sent to SFF@sff.co.uk on the 21 st of August 2023.	Response received from SFF on the 17 th of October 2023 which was accounted for in the U3 update to this decommissioning plan.
Northern Ireland Fish Producers Organisation	Consultation email sent to info@nifpo.co.uk on the 21 st of August 2023.	No responses were received.
Global Marine Systems Limited	Consultation email sent to info@globalmarine.group on the 21 st of August 2023.	No responses were received.

6 PROGRAMME MANAGEMENT

6.1 Project Management and Verification

A project management team has been established that is part of CPEL's Decommissioning department. This team consists of a specialist decommissioning project manager, technical engineers with both subsea and P&A experience and support functions including contracts, cost and HSE. This team will manage specialist sub-contractors for the subsea flushing, subsea removal, rig-based P&A activities and finally wellhead severance and removal. All phases of the project will be controlled through detailed, company accepted, operational procedures and relevant hazards removed where possible otherwise mitigated through hazard control procedures. Any changes in scope will be managed through company approved MoC process.

A PLANC register has been set up to manage all permits and consents related to this work.

6.2 Post-Decommissioning Debris Clearance and Verification

This Decommissioning Programme covers removal of pipelines and wellheads with protection structures, following completion of the work a visual debris survey will be carried out. Any additional survey requirements will be examined and carried out in the STaR Decommissioning Programmes at a future date.

6.3 Schedule

Project Plan:

Figure 6.1 Gantt Chart of Project Plan



6.4 Costs

Decommissioning costs will be provided to OPRED and NSTA.

6.5 Close Out

In accordance with the OPRED Guidelines, a close out report will be submitted to OPRED within **1 year** of the completion of the offshore decommissioning scope and verification of seabed clearance through an ROV visual survey following completion of this work. The report will detail the outcomes of surveys as well as explain any major variances from the programmes.

6.6 Post-Decommissioning Monitoring and Evaluation

Post-decommissioning environmental seabed survey will be incorporated into the future STaR field post-decom monitoring and evaluation activity.

6.7 Rochelle Facility Maintenance

Following disconnection and removal of spools and jumpers the remaining pipelines and manifolds will be left filled with inhibited seawater. The pipelines and manifolds will continue to be inspected under CPEL's pipeline integrity programme to ensure all decom options remain viable.

7 PARTNER LETTER(S) OF SUPPORT



Waldorf Operations Limited
40 Queens Road
Aberdeen AB15 4YE
T: +44 (0) 1224 202850

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

11th April 2024

Dear Sir or Madam,

**ROCHELLE JUMPER, SPOOL AND WELLHEAD PROTECTION STRUCTURE
REMOVAL DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998**

We acknowledge receipt of your letters dated 11 April 2024.

We, Waldorf Operations Limited confirm that we authorise CNOOC Petroleum Europe Limited to submit on our behalf abandonment programmes relating to the Rochelle Jumper, Spool and Wellhead Protection Structure Removal as directed by the Secretary of State on 11 April 2024.

We confirm that we support the proposals detailed in the Rochelle Jumper, Spool and Wellhead Protection Structure Removal Decommissioning Programmes dated 17 January 2024, which is to be submitted by CNOOC Petroleum Europe Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully



Gordon Rorrison
Interim Chief Operating Officer
For and on behalf of **Waldorf Operations Limited**



Waldorf Production UK plc
40 Queens Road
Aberdeen AB15 4YE
T: +44 (0) 1224 202850

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

11th April 2024

Dear Sir or Madam

**ROCHELLE JUMPER, SPOOL AND WELLHEAD PROTECTION STRUCTURE
REMOVAL DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998**

We acknowledge receipt of your letters dated 11 April 2024.

We, Waldorf Production UK plc confirm that we authorise CNOOC Petroleum Europe Limited to submit on our behalf abandonment programmes relating to the Rochelle Jumper, Spool and Wellhead Protection Structure Removal as directed by the Secretary of State on 11 April 2024.

We confirm that we support the proposals detailed in the Rochelle Jumper, Spool and Wellhead Protection Structure Removal Decommissioning Programmes dated 17 January 2024, which is to be submitted by CNOOC Petroleum Europe Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully



Gordon Rorrison
Interim Chief Operating Officer
For and on behalf of **Waldorf Production UK plc**

Harbour Energy
Upper Denburn House
Kingswells
Aberdeen, AB15 6PU
harbourenergy.com



1 May 2024

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

Dear Sir or Madam

ROCHELLE JUMPER, SPOOL AND WELLHEAD PROTECTION STRUCTURE REMOVAL DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 11 April 2024.

We, Premier Oil UK Limited, confirm that we authorise CNOOC Petroleum Europe Limited to submit on our behalf abandonment programmes relating to the Rochelle facilities as directed by the Secretary of State on 11 April 2024.

We confirm that we support the proposals detailed in the Rochelle Jumper, Spool and Wellhead Protection Structure Removal Decommissioning Programmes dated 17 January 2024, which is to be submitted by CNOOC Petroleum Europe Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully



Michael Burnett (May 2, 2024 07:19 GMT)

Mike Burnett
Senior Manager - Decommissioning

For and on behalf of Premier Oil UK Limited (Company Number SC048705)