

JOHNSTON

Decommissioning Programmes

FINAL VERSION – 4 November 2022

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Perenco UK Limited	1
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Terms and Abbreviations

Abbreviation	Explanation
CA	Comparative Assessment
CPP	Central Processing Platform
DEFRA	Department for Environment, Food & Rural Affairs
Dia	Diameter
DoB	Depth of Burial
DSV	Diving Support Vessel
EA	Environmental Appraisal
EMS	Environmental Management System
EMT	Environmental Management Team
ENVID	Environmental Issues Identification
ESDV	Emergency Shutdown Valve
EUNIS	European National Information System
HSE	Health and Safety Executive
HSES	Health, Safety, Environment and Security
HP	High Pressure
ICES	International Council for the Exploration of the Seas
ins	Inches
JNCC	Joint Nature Conservation Committee
JONK	Johnston K Well
km	Kilometre
LAT	Lowest Astronomical Tide
LP	Low Pressure
LSA	Low Specific Activity Scale
m	Metre
MCDA	Multi Criteria Decision Analysis
MCZ	Marine Conservation Zone
MEG	Monoethylene Glycol
N/A	Not Applicable
NE	Northeast
NFFO	National Federation of Fishermen's Organisations
NNE	North-northeast
NNW	North-northwest
NORM	Naturally Occurring Radioactive Material
NSTA	North Sea Transition Authority
ODU	Offshore Decommissioning Unit
OEUK	Offshore Energies UK
OPRED	Offshore Petroleum Regulator for Environment & Decommissioning
OSPAR	Oslo Paris Convention – Convention for the Protection of the Marine Environment of the North East Atlantic

Abbreviation	Explanation
PL	Pipeline
PLU	Pipeline Umbilical
Premier	Premier Oil E&P UK EU Limited
PWA	Pipeline Works Authorisation
RN	Ravenspurn North
ROV	Remotely Operated Vehicle
S	South
SAC	Special Area of Conservation
SCAP	Supply Chain Action Plan
SFF	Scottish Fishermen's Federation
SMRU	Sea Mammal Research Unit
SOSI	Seabird Oil Sensitivity Index
SSS	Side Scan Sonar
TBA	To be agreed
Te	Tonne
TFSW	Trans Frontier Shipment of Waste
TUTU	Topsides Umbilical Termination Unit
UKCS	United Kingdom Continental Shelf
UTA	Umbilical Termination Assembly
WHPS	Wellhead Protection Structure
WMP	Waste Management Plan
WONS	Well Operations Notification System
WSW	West-Southwest

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1 EXECUTIVE SUMMARY

1.1 Decommissioning Programmes

This document contains the Decommissioning Programmes for the Johnston Field subsea pipelines and installations.

1.2 Requirement for Decommissioning Programmes

Pipelines:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Johnston field's pipelines (see Table 1.4) are applying to the Offshore Petroleum Regulator for Environment & Decommissioning (OPRED) to obtain approval for decommissioning the pipelines detailed in Section 2.1 of this programme.

Installations:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Johnston field's installations (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment & Decommissioning (OPRED) to obtain approval for decommissioning the installations detailed in Section 2.2 of this programme.

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 five year decommissioning project plan due to begin in 2026.

1.3 Introduction

The Decommissioning Programmes have been prepared to support the decommissioning of the Johnston subsea pipelines and installations.

The Johnston Field is located 85 kilometres northeast of Dimlington (Easington) in the Sole Pit sub basin of the Southern Gas Basin (blocks 43/26a and 43/27a). The field is located in 46 metres of water and 4.5 miles north-east of Ravenspurn North (RN) gas field. The Johnston field consists of six production wells and one exploration well. The field infrastructure comprises of a 4-slot subsea template and two standalone wells, tied-back to RN. The field was discovered in 1990 with exploration well 43/27-1 and was developed using a four slot subsea template tied back by a 12-inch gas production pipeline to RN, and came on-stream in 1994. Initially, 2 wells (J1 and J2) were developed and a third well (J3) was brought online in 1997. A fourth well (J4) was drilled and tied back with a 6.8km flowline to the existing Johnston Template in 2005. An additional fifth well (J5) was drilled in 2007 and tied back to J4 via an 8" 25m spool. The Johnston K Well (JONK- Well J6) was drilled in 2013 and consists of a single deviated well drilled from slot J4 on the Johnston template into the northwest region of the reservoir.

The Johnston field consists of one exploration well (abandoned), six production wells, four pipelines and 15 umbilicals.

Following public, stakeholder and regulatory consultation, the Decommissioning Programmes are submitted without derogation and in full compliance with OPRED and Offshore Energies UK (OEUK) guidelines. The Decommissioning Programmes explain the principles of the removal activities and are supported by a Comparative Assessment (CA) of decommissioning options and an Environmental Appraisal (EA).

At the time of writing, the Johnston field is still producing, and decommissioning operations will only commence after Cessation of Production has been formally approved by the North Sea Transition Authority (NSTA).

1.4 Overview of Installations/Pipelines Being Decommissioned

1.4.1 Installations

Table 1.1: Installations Being Decommissioned			
Field:	Johnston	Production Type (Oil/Gas/Condensate)	Gas
Water Depth (m)	46	UKCS blocks	43/26a, 43/27a
Subsea Installations		Number of Wells	
Number	Type	Platform	Subsea
3	1 x Manifold 2 x WHPS	N/A	7
Drill Cuttings pile(s)		Distance to median	Distance from nearest UK coastline
Number of Piles	Total Estimated volume (m³)	km	km
Please refer to section 3.4 Drill Cuttings		106 (UKCS median)	84.2

Table 1.2: Johnston Installations Section 29 Notice Holders Details		
Section 29 Notice Holders	Registration Number	Equity Interest (%) ¹
Premier Oil E&P UK EU Limited	02761032	28.75%
Dana Petroleum (E&P) Limited	02294746	Exited
Perenco UK Limited	04653066	71.25%
Harbour Energy plc	SC234781	0%
Dana Petroleum Limited	03456891	Exited
Neptune E&P UKCS Limited	03386464	Exited

¹ At Cessation of Production, Premier Oil E&P UK EU Limited's equity will change to 50.107%, Dana Petroleum (E&P) Limited's equity to 49.893% and Perenco UK Limited's equity to 0% or "exited" (as will be determined by OPRED at the time of the equity transfer).

1.4.2 Pipelines

Table 1.3: Pipelines Being Decommissioned		
Number of Pipelines	4	(See Table 2.1)
Number of Umbilicals	15	(See Table 2.1)

Table 1.4: Johnston Pipelines Section 29 Notice Holders Details		
Section 29 Notice Holders	Registration Number	Equity Interest (%) ²
Premier Oil E&P UK EU Limited	02761032	28.75%
Dana Petroleum (E&P) Limited	02294746	Exited
Perenco UK Limited	04653066	71.25%
Harbour Energy plc	SC234781	0%
Dana Petroleum Limited	03456891	Exited
Neptune E&P UKCS Limited	03386464	Exited

On the 31st March 2021, Premier Oil plc and Chrysaor Holdings Limited merged to form Harbour Energy plc. At the time of writing, the Premier Oil plc and Chrysaor Holdings Limited companies, including Premier Oil UK EU Limited as Johnston Operator and partial equity holder, are not affected by the completion of the merger, and there are no changes to the company registration details shown in Tables 1.2 and 1.4.

² At Cessation of Production, Premier Oil E&P UK EU Limited's equity will change to 50.107%, Dana Petroleum (E&P) Limited's equity to 49.893% and Perenco UK Limited's equity to 0% or "exited" (as will be determined by OPRED at the time of the equity transfer).

1.5 Summary of Proposed Decommissioning Programmes

Table 1.5: Summary of Decommissioning Programmes		
Selected Option	Reason for Selection	Proposed Decommissioning Solution
1. Pipelines, Flowlines & Umbilicals		
Group 2*: Trenched & Buried Rigid Flowlines Leave <i>in-situ</i> .	Comparatively assessed as preferred option. The flowlines are sufficiently trenched and buried and stable posing no risk to marine users. Minimal seabed disturbance, lower energy use, reduced risk to personnel engaged in the activity.	Leave <i>in-situ</i> . The trenched and buried rigid pipelines will be cut back into the trench and these sections removed to shore for recycling or appropriate treatment and disposal. The exposed cut ends will be mitigated with local rock placement. There are no exposed areas of rigid pipeline which require to be remediated.
Group 4*: Trenched & Buried Flexible Flowlines & Umbilicals Full removal.	Leaves a clear seabed and meets regulations.	Full Removal. Returned to shore for recycling or appropriate treatment and disposal.
Group 6*: Spool pieces and jumpers Full removal.	Leaves a clear seabed and meets regulations.	Full Removal. Returned to shore for recycling or appropriate treatment and disposal.
Group 8*: Protection and stabilisation features Full removal.	Leaves a clear seabed and meets regulations.	Full Removal. Returned to shore for recycling or appropriate treatment and disposal.
2. Wells		
Wells will be plugged and abandoned to Premier standards which comply with "Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996" and align with OEUK Guidelines for the Suspension and Abandonment of Wells (Issue 6, June 2018).	Meets HSE regulatory requirements in accordance with OEUK and NSTA guidelines.	A Master Application Template (MAT) and the supporting Subsidiary Application Template (SAT) will be submitted in support of activities carried out. Applications to abandon the wells will be submitted through the Well Operations Notification System (WONS). Additionally, planned work will be reviewed by a well examiner to Premier standards, then submitted to the HSE for review.
3. Subsea Installations		
Group 7*: Installations Johnson Template, J4 WHPS and J5 WHPS	Leaves a clear seabed and meets regulations.	Full Removal. Returned to shore for recycling or appropriate treatment and disposal.
4. Interdependencies		
The Johnston infrastructure is tied back to the Ravenspurn North Central Processing Platform (CPP). There may be opportunities to synergise with other Ravenspurn area decommissioning works.		

* Refers to the Inventory Group Categories as defined in the Comparative Assessment Report

1.6 Field Location Including Field Layout and Adjacent Facilities

Figure 1.1: Field Location in UKCS

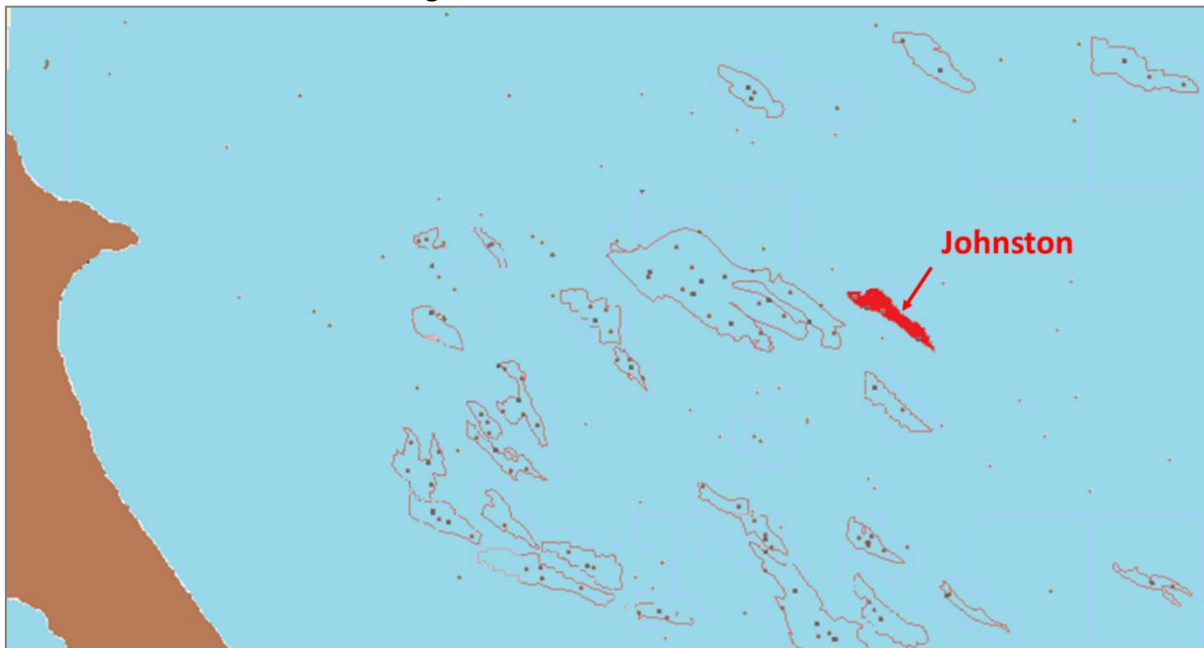


Figure 1.2: Field Layouts

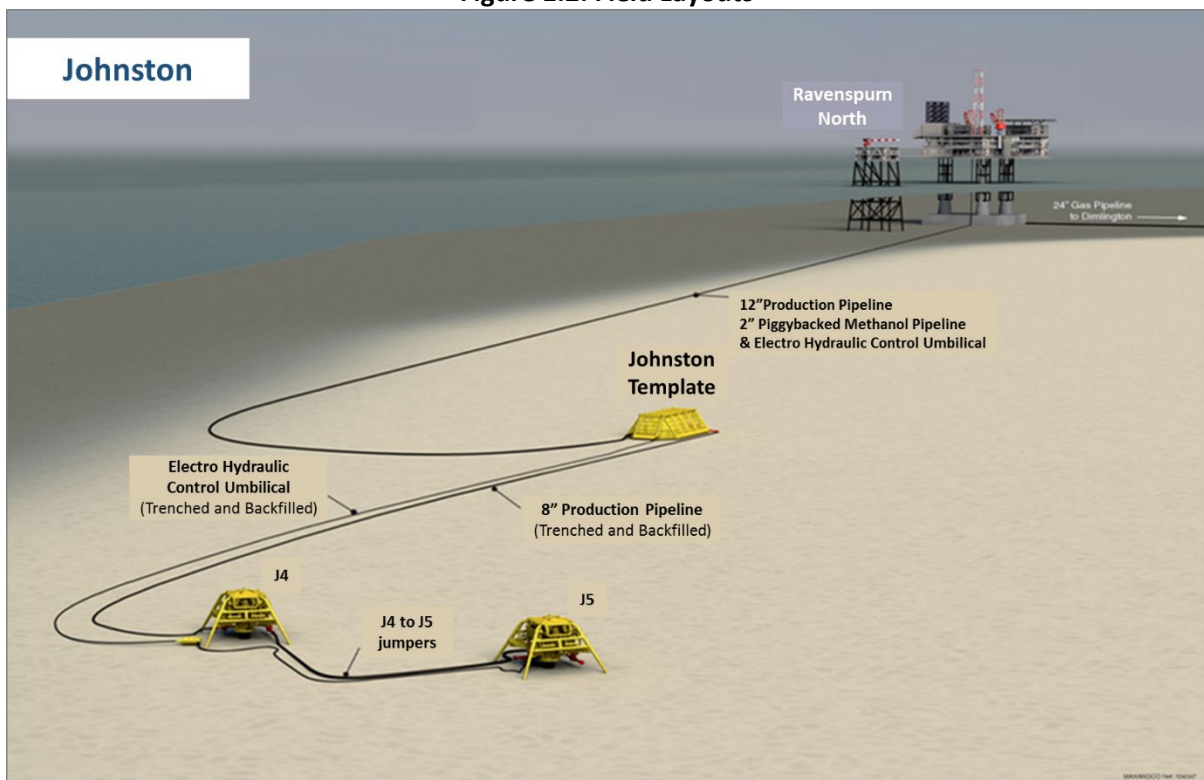
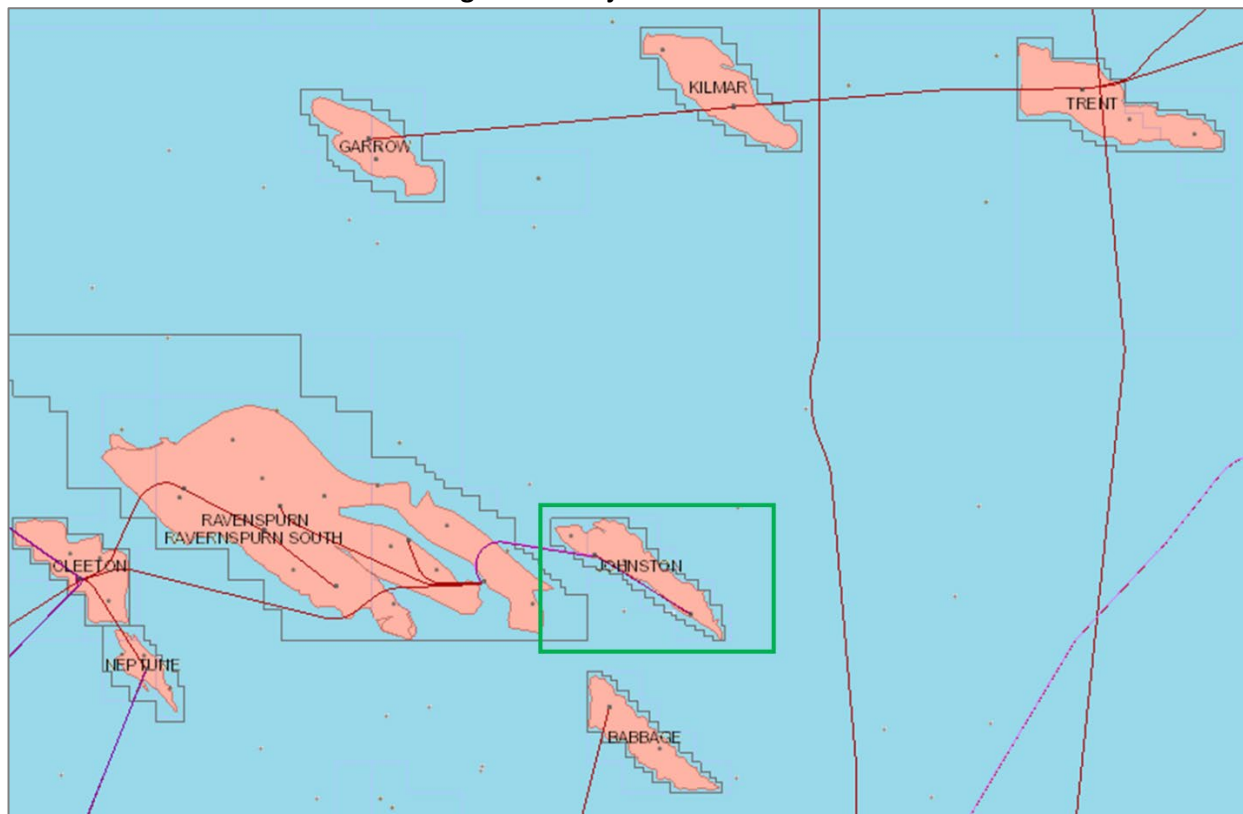


Table 1.6 Adjacent Facilities				
Operator	Name/ Type	Distance/ Direction	Information	Status
Perenco UK Limited	Ravenspurn North CPP	7.2 km WSW	Gas production through Cleeton to the Dimlington Gas Terminal	Operational
NEO Energy (SNS)	Babbage Platform	9.1 km S	Gas production through West Sole to the Easington Gas Terminal	Operational
Perenco UK Limited	Trent Platform	40.8 km NE	Gas production to Bacton Gas Terminal	Operational
Alpha Petroleum Resources Limited	Kilmar Platform	28.3 km NNE	Gas production through Trent to the Bacton Gas Terminal	Operational
Alpha Petroleum Resources Limited	Garrow Platform	28.2 km NNW	Gas production through Trent to the Bacton Gas Terminal	Operational
Impacts of Decommissioning Proposals				
<p>The Johnston Field decommissioning activities are planned so they will not affect the decommissioning of other fields or the operation of other developments in the area. The environmental appraisal will consider the potential cumulative implications of decommissioning activities in context of other oil and gas / other industry activities in the area.</p>				

Note: Adjacent facilities refer to those potentially impacted by this programme.

Figure 1.3: Adjacent Facilities



1.7 Industrial Implications

The Johnston decommissioning activities will be managed by Premier in Aberdeen. All decommissioning activities will be planned to realise synergies and efficiencies in offshore execution, including scope aggregation with other Operators in the area.

A Supply Chain Action Plan (SCAP) will be developed in support of these Decommissioning Programmes in accordance with NSTA guidance. Premier have some pre-existing Master Service agreements with specialist contractors, which were the result of previous tender exercises. These contractors will be asked to quote for services to support the decommissioning activity in the first instance. Other specialist services will be competitively tendered or novated. Suppliers' offers will be assessed along many criteria, among which are capacity to execute the work safely, the commercial offer and experience of carrying out this type of operation on the UKCS.

2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Pipelines Including Stabilisation Features

Table 2.1: Pipelines / Umbilical Information										
Description	Pipeline Number (as per PWA) ³	Dia. (ins)	Length (km)	Description of Component Parts	Product Conveyed	End Points		Burial Status	Pipeline Status	Current Content
						From	To			
Production	PL989	12.75	9.5	Steel	Gas	Johnston Template/Manifold Header	Ravenspurn North CPP Riser Pipe ⁴	Trenched & Buried	In Use	Produced fluids
Methanol injection	PL990	2.37	9.5	Steel	Methanol	Ravenspurn North CPP Riser Flange (Subsea) ⁴	Johnston Template/Manifold Header	Trenched & Buried	In Use	Methanol / MEG / Water
Umbilical	PL991 (.1 and .2)	4.25	9.515	Umbilical	Corrosion inhibitor / Hydraulic fluid	Ravenspurn North CPP (not including the TUTU)	Johnston Template/Manifold UTA	Trenched & Buried	In Use	Corrosion inhibitor / Hydraulic fluid
Production	PL2105	8	6.902	Flexible	Gas	Well 43/27a-H ⁵	Johnston Template	Trenched & Buried	In Use	Produced fluids
Control / Methanol injection umbilical	PLU2106	3.82	6.88	Umbilical	Methanol / Hydraulic fluid	Johnston Template	Well 43/27a-H ⁵	Trenched & Buried	In Use	Methanol / Hydraulic fluid
Production	PL2501	8.2	0.025	Flexible	Gas	Johnston Well 43/27a-4	Johnston Well 43/27a-5	Surface laid	In Use	Produced fluids
Methanol jumper	PLU2502	2	0.035	Umbilical	Methanol	Johnston Umbilical Termination Unit	Johnston Well 43/27a-5	Surface laid	In Use	Methanol

³ Johnston Template jumpers PL3150, PL3151, PL3152 and PL3153 remain within Johnston PWA 1/W/94 but were never laid and hence do not feature in Table 2.1.

⁴ From / To, but not including the end point. The PL989 and PL990 riser and ESDV are owned by the Ravenspurn group and are subject to a separate Decommissioning Programme at a later stage.

⁵ For clarity, well 43/27a-H represents well 43/27a-4.

Table 2.1: Pipelines / Umbilical Information

Description	Pipeline Number (as per PWA) ³	Dia. (ins)	Length (km)	Description of Component Parts	Product Conveyed	End Points		Burial Status	Pipeline Status	Current Content
						From	To			
J4 Power jumper	PL3679	0.65	0.024	Umbilical	Electrical power	Johnston Template	Johnston Template Umbilical Termination Assembly	Surface laid	In Use	Electrical power
J4 Signal jumper	PL3680	0.65	0.024	Umbilical	Electrical signal	Johnston Template	Johnston Template Umbilical Termination Assembly	Surface laid	In Use	Electrical signal
J4 HP Hydraulic jumper	PL3681	1.15	0.024	Umbilical	Hydraulic fluid	Johnston Template	Johnston Template Umbilical Termination Assembly	Surface laid	In Use	Hydraulic fluid
LP Hydraulic jumper	PL3682	1.15	0.024	Umbilical	Hydraulic fluid	Johnston Template	Johnston Template Umbilical Termination Assembly	Surface laid	In Use	Hydraulic fluid
J4 Power jumper	PL3687	0.65	0.01	Umbilical	Electrical power	J4 Tree Umbilical Termination Assembly	J4 Subsea Control Module	Surface laid	In Use	Electrical power
J4 Signal jumper	PL3688	0.65	0.01	Umbilical	Electrical signal	J4 Tree Umbilical Termination Assembly	J4 Subsea Control Module	Surface laid	In Use	Electrical signal
J4 HP Hydraulic jumper	PL3689	1.15	0.01	Umbilical	Hydraulic fluid	J4 Tree Umbilical Termination Assembly	J4 Subsea Control Module	Surface laid	In Use	Hydraulic fluid
LP Hydraulic jumper	PL3690	1.15	0.024	Umbilical	Hydraulic fluid	Johnston Wellhead facility	Johnston Umbilical Termination Assembly	Surface laid	In Use	Hydraulic fluid
J5 Signal jumper	PLU3697	2.95	0.05	Umbilical	Electrical power/signal	J4 Subsea Control Module	J5 Tree	Surface laid	In Use	Electrical power / signal

Table 2.1: Pipelines / Umbilical Information										
Description	Pipeline Number (as per PWA) ³	Dia. (ins)	Length (km)	Description of Component Parts	Product Conveyed	End Points		Burial Status	Pipeline Status	Current Content
						From	To			
Hydraulic jumper	PLU3698	1.15	0.05	Umbilical	Hydraulic fluid	J4 Subsea control module	J5 Tree	Surface laid	In Use	Hydraulic fluid
J5 CIV Hydraulic jumper	PL3710	1.15	0.05	Umbilical	Hydraulic fluid	J4 Subsea control module	J5 Tree	Surface laid	In Use	Hydraulic fluid

Table 2.2: Subsea Pipelines Stabilisation Features				
Stabilisation Feature	Total Number	Weight (Te)	Location(s)	Exposed/Buried/Condition
Concrete mattresses (5m x 3m x 0.3m)	68	979	Various locations over PL989 and PL991	Partially covered in sediment, in good condition
Concrete mattresses (Tapered edge, fronded) (6m x 3m x 0.15m)	63	309	Over J4 flexible and umbilical	Partially covered in sediment, in good condition
Concrete mattresses (Tapered edge) (6m x 3m x 0.3m)	4	58	Over J5 spool	Partially covered in sediment, in good condition
Grout bags*	280	7	Various locations across field infrastructure	Exposed, often covered in sediment, condition varies
Rockdump	2	1850	Two locations over PL989 and PL990	Exposed

*Estimated using GVI footage and as-built drawings

2.2 Installations: Subsea Installations and Stabilisation Features

Table 2.3: Subsea Installations and Stabilisation Features					
Subsea installations incl. Stabilisation Features	Number	Size (m)/ Weight (Te)	Location		Comments/Status
Johnston Template	1	L24.65xW13.1xH6.5 221 Te	WGS84 Decimal	54.04570° N 1.20600° E	Piled. Including installed weights of spools, etc.
			WGS84 Decimal Minute	54° 02.742' N 1° 12.360' E	
J4 WHPS	1	L7.6xW7.6xH5.6 36 Te	WGS84 Decimal	54.01467° N 1.29583° E	Including installed weights of piping spool and valves for J4.
			WGS84 Decimal Minute	54° 00.880' N 1° 17.750' E	
J5 WHPS	1	L7.6xW7.6xH5.6 36.7 Te	WGS84 Decimal	54.01386° N 1.29486° E	Including installed weights of piping spool and valves for J5.
			WGS84 Decimal Minute	54° 00.832' N 01° 17.691' E	
Concrete Mattresses	18	L5xW4xH0.3 346 Te (total)	Supporting the Johnston template		Partially covered in sediment, in good condition
	2	L6 xW5xH0.3 58 Te (total)			

2.3 Wells

Table 2.4: Wells Information					
Platform Wells		Designation	License	Status	Category of Well
N/A		N/A	N/A	N/A	N/A
Subsea Wells					
WONS Name Current Bore	Premier Oil Well Name				
43/27-J1	J1	Producer	P686	Completed (Shut In)	SS 3-4-3
43/27-J2	J2	Producer	P686	Completed (Shut In)	SS 3-4-3
43/27-J3y	J3	Producer	P686	Completed (Shut In)	SS 3-4-3
43/27a-4z	J4	Producer	P686	Operating	SS 3-3-3
43/27a-5z	J5	Producer	P686	Operating	SS 3-3-3
43/27-J4	J6	Producer	P686	Completed (Shut In)	SS 3-3-3
43/27-1	-	Exploration	P686	Abandoned (Phase1)	SS 3-4-3

The well categories require to be evaluated in accordance with the OEUK Well Decommissioning Guidelines, Issue 6, June 2018. This work is ongoing at the time of submission.

2.4 Drill Cuttings

(See Section 3.4 for further information)

Table 2.5: Drill Cuttings Pile(s) Information		
Location of Pile Centre (Latitude/Longitude)	Seabed Area (m ²)	Estimated volume of cuttings (m ³)
N/A	N/A	N/A

2.5 Inventory Estimates

Table 2.6 and 2.7 provides an estimate of the total weight of materials associated with the Johnston pipelines and installations.

A further breakdown of the inventory estimates for the Johnston pipelines and installations is provided in Figure 2.1 and 2.2.

Table 2.6: Inventory of materials associated with Pipelines		
Item	Description	Weight Te
Metals	Steel (all grades)	2,377.1
	Non-Ferrous (copper, aluminium)	37.8
Concrete	Aggregates (mattresses)	1,345.5
Plastic	Rubbers, polymers	85.9
Hazardous	Residual fluids (hydrocarbons, chemicals)	Trace
	NORM scale	Trace
Other		6.0
Total (Tonnes)		3,852.3

Table 2.7: Inventory of materials associated with Installations		
Item	Description	Weight Te
Metals	Steel (all grades)	282.0
	Non-Ferrous (copper, aluminium)	8.8
Concrete	Aggregates (mattresses)	403.2
Plastic	Rubbers, polymers	2.9
Total (Tonnes)		696.9

Figure 2.1: Pie Chart of Estimated Inventories (Johnston Pipelines)

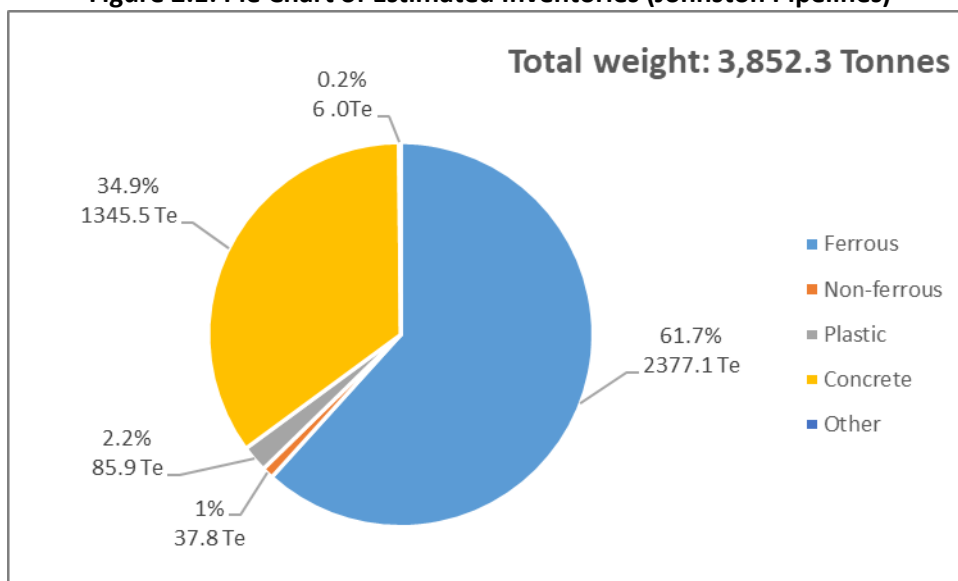
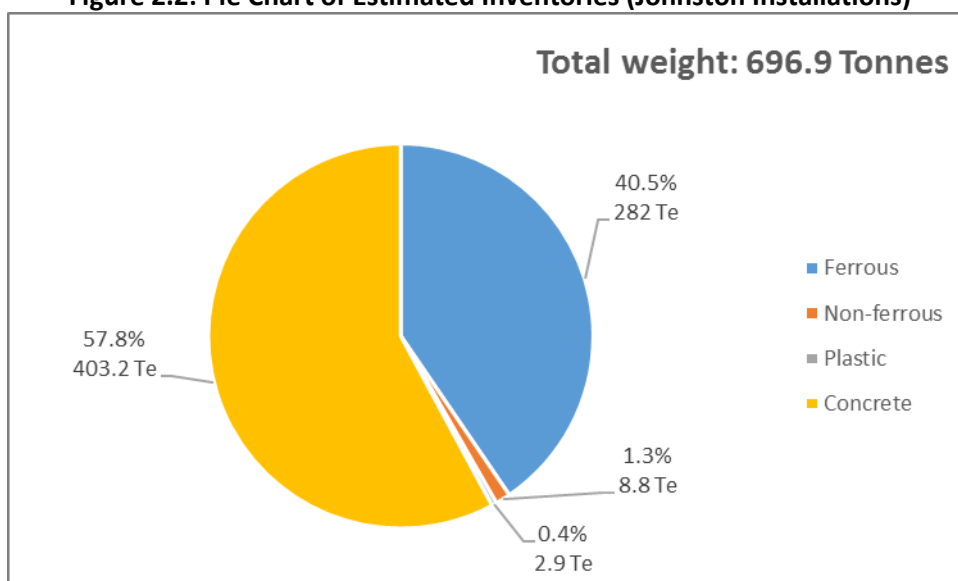


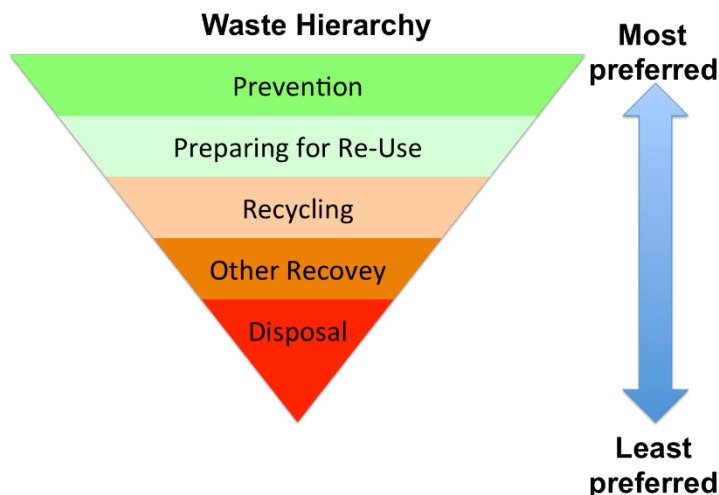
Figure 2.2: Pie Chart of Estimated Inventories (Johnston Installations)



Please refer to the Johnston Decommissioning Environmental Appraisal for further details.

3 REMOVAL AND DISPOSAL METHODS

Decommissioning of the Johnston field will generate a quantity of waste. Premier is committed to establishing and maintaining environmentally acceptable methods for managing wastes in line with the Waste Framework Directive and principles of the waste hierarchy:



Recovered infrastructure will be returned to shore and transferred to a suitably licenced waste treatment facility. It is expected that the recovered infrastructure, i.e. WHPS, template, flowlines and umbilicals will be cleaned before being largely recycled.

Concrete mattresses and grout bags that are recovered, will be cleaned of marine growth if required, and either reused, recovered as aggregate for infrastructure projects or disposed of in landfill sites.

An appropriately licensed disposal company and yard will be identified through a selection process that will ensure that the chosen facility demonstrates a proven track record of waste stream management throughout the deconstruction process, the ability to deliver innovative reuse / recycling options, and ensure the aims of the waste hierarchy are achieved.

Geographic locations of potential disposal yard options may require the consideration of Trans Frontier Shipment of Waste (TFSW), including hazardous materials. Early engagement with the regulatory authorities will ensure that any issues with TFSW are addressed.

Premier will engage with other companies and industries to identify potential reuse opportunities. However, Premier believes that such opportunities are best achieved through the tendering and selection of a waste management contractor with the expert knowledge and experience in this area.

3.1 Pipelines

Decommissioning Options:

Key to Options:

- | | | |
|-----------------------------------|-------------------------------------|--------------------------------------|
| 1) Re-Use | 2e) Lift and Cut with Deburial | 4c) Remove Exposures |
| 2a) Cut and Lift with Deburial | 3a) Retrench and Bury Entire Line | 4d) Accelerated Decomposition |
| 2b) Reverse Reel without Deburial | 3b) Rock Placement over Entire Line | 5) Remove Ends & Remediate Snag Risk |
| 2c) Reverse Reel with Deburial | 4a) Rock Placement over Exposures | 6) Leave As-is |
| 2d) Lift and Cut without Deburial | 4b) Trench & Bury Exposures | |

Table 3.1: 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
Group 2: Trenched & Buried Rigid Flowlines PL989, PL990	Trenched & Buried (See burial profile in Appendix II)	Whole	2a, 2b, 2c, 2d, 2e, 4d and 5
Group 4: Trenched & Buried Flexible Flowlines & Umbilicals PL991, PL2105, PLU2106	Trenched & Buried	Whole	2a, 2b, 2c, 2d, 2e and 5
Group 6: Spools & Jumpers PL989, PL990, PL2501, PLU2502, PL3679, PL3680, PL3681, PL3682, PL3687, PL3688, PL3689, PL3690, PLU3697, PLU3698 and PL3710	Surface Laid	Whole	Full Removal

Comparative Assessment Method:

Comparative Assessment (CA) is integral to the overall planning and approval of decommissioning options. Premier's strategy for the CA process is aligned with the OEUK Guidelines for Comparative Assessment in Decommissioning Programmes and OPRED Guidance Notes for the Decommissioning of Offshore Oil and Gas Installations and Pipelines.

Premier has scoped all of the infrastructure into logical groupings. All feasible decommissioning options for each of the infrastructure groups have been identified, assessed, ranked and screened, utilising the OPRED Guidance Notes for the Decommissioning of Offshore Oil and Gas Installations and Pipelines, to carry forward credible decommissioning options to be assessed through the CA process.

The CA process uses five assessment criteria, which are: Safety, Environment, Technical, Societal and Economic to compare the relative merits of each credible decommissioning option for each group of infrastructure. The assessment criteria are equally weighted to balance and represent the views of each of the stakeholders.

An independent consultancy utilising its bespoke Multi Criteria Decision Analysis (MCDA) process was employed to facilitate the CA workshops. The workshops were attended by specialists from the Operator, Field Partners and representatives from key stakeholders namely:

- Scottish Fishermen’s Federation (SFF)
- National Federation of Fishermen's Organisations (NFFO)
- Joint Nature Conservation Committee (JNCC)
- Health and Safety Executive (HSE)
- OPRED EMT
- OPRED ODU (observers)
- Premier Oil E&P UK EU Limited
- Neptune E&P UKCS Limited

At each workshop, each decommissioning option for each infrastructure grouping was assessed against each of the assessment criteria utilising a pairwise comparison system. The relative importance of each of the criteria was assessed in a qualitative way, supported by quantification where appropriate.

The process provides for differentiation between decommissioning options in each infrastructure group taking account of stakeholder views.

Outcome of Comparative Assessment:

Table 3.2: Outcomes of Comparative Assessment		
Pipeline or Group	Recommended Option	Justification
Group 2: Trenched & Buried Rigid Flowlines PL989, PL990	Option 5 - Remove ends and remediate snag hazards	Option 5 was clearly preferred against the Safety, Environment and Technical criteria. Once the Economics criterion was considered, this strengthens the preference for Option 5. Given that this option eliminates exposures and exposed end, this will be the recommended choice.
Group 4: Trenched & Buried Flexible Flowlines & Umbilicals PL991, PL2105, PLU2106	Option 2b – Reverse reel without Deburial	Option 2b was preferred against the Safety and Societal criteria and equally preferred against the Environmental criterion. Option 5 was preferred from a Technical perspective. Overall, without including economics, there is a small preference for Option 2b. Once the Economics criterion was considered, this strengthens the preference for Option 2b.
Group 6: Spools & Jumpers PL989, PL990, PL2501, PLU2502, PL3679, PL3680, PL3681, PL3682, PL3687, PL3688, PL3689, PL3690, PLU3697, PLU3698 and PL3710	Full Removal	Items are surface laid and recoverable.

3.2 Subsea Installations and Pipeline Stabilisation Features

Table 3.3: Subsea Installations and Pipeline Stabilisation Features			
Subsea Installation(s) and Stabilisation Feature(s)	Number	Option	Disposal Route (if applicable)
Johnston Template	1	Full recovery	Recover and transport ashore for recycling or other waste treatment as appropriate.
WHPS	2	Full recovery	Recover and transport ashore for recycling or other waste treatment as appropriate.
Concrete mattresses	155	Full recovery - It is intended that the mattresses will be recovered to shore, however, in the event of practical difficulties OPRED will be consulted.	Recover and transport ashore for recycling or other waste treatment as appropriate.
Grout bags	280	Full removal is intended with an option to reuse on location.*	Recover and transport ashore for recycling or other waste treatment as appropriate.
Rock Dump	1850 (Te)	To remain in place.	N/A

*A number of grout bags may be redeployed/repurposed locally as snagging hazard mitigation.

3.3 Wells

Table 3.4: Well Plug and Abandonment
<p>The wells for the Johnston Field covered by this Decommissioning Programmes will be plugged and abandoned, as listed in Section 2.3 (Table 2.4) in accordance with OEUK Guidelines for the Suspension and Abandonment of Wells, Issue 6, June 2018.</p> <p>A WONS application update will be submitted along with an appropriate suite of permit applications, via the UK Energy Portal, in support of each well abandonment.</p>

3.4 Drill Cuttings

While there was some evidence of historic dispersed drilling mud/cuttings at the Johnston Field (Gardline, 2004), there were only very low concentrations of many of the typical indicators of anthropogenic activity within UKCS Block 43/27 (where Johnston is located), which suggests that oil and gas activities have not significantly impacted the sediments in this region (Gardline, 2008a). Surveys undertaken at the nearby Babbage Field (~10 km away) compared the physio-chemical sediment characteristics at Babbage against past surveys undertaken within Block 43/27. Metals which are most characteristic of sediments contaminated with drilling mud or cuttings are barium, chromium, lead and zinc. Concentrations of these metals were low across the Babbage Field and Block 43/27; concentrations of chromium, lead and zinc were 12 µg g⁻¹, 10.3 µg g⁻¹, and 11 µg g⁻¹ respectively, falling well below OSPAR (2005) background concentrations (Gardline 2008a). This suggests limited contamination due to cuttings in Block 43/27. Arsenic was slightly elevated at two Babbage stations, however this was not considered unusual when compared with concentrations previously recorded in the area (Gardline, 2008a).

3.5 Waste Streams

The Premier Waste Management Strategy specifies the requirements for the contractor waste management plan. The waste management plan will be developed once the contract has been awarded during the project execution phase. The plans shall adhere to the waste stream licensee conditions and controlled accordingly. Discussion with the regulator will ensure that all relevant permits and consents are in place.

Table 3.5: Waste Stream Management Methods	
Waste Stream	Removal and Disposal method
Bulk Liquid	Bulk flushing/de-oiling by either round-trip flushing from/to the Ravenspurn North CPP or utilising DSVs. Flushing fluids will be reinjected into the RN and/or Johnston reservoirs or will be processed and discharged to sea under appropriate permit, with liquid hydrocarbons offloaded for onshore treatment.
Marine Growth	Some marine growth may be removed offshore. Onshore disposal will be managed by the selected waste management contractor.
NORM/LSA Scale	NORM contaminated material may be returned to shore to be disposed of by the selected onshore waste management contractor.
Asbestos	N/A
Other Hazardous Wastes	Will be recovered to shore and will be managed by the selected waste management contractor and disposed of under the appropriate permit. The inventory of hazardous materials will identify hazardous materials present and Premier's risk management process will be used to prevent spills offshore.
Onshore Dismantling Sites	Appropriate licenced contractor and sites will be selected. Facility selected must demonstrate competence and proven disposal track record and waste stream management & traceability throughout the deconstruction process and (preferably) demonstrate their ability to deliver innovative recycling options.

Table 3.6: Inventory Disposition			
	Total Inventory Tonnage (Te)	Planned Tonnage to Shore (Te)	Planned Left <i>In Situ</i> (Te)
Pipelines	2,226	629	1,591
Umbilicals	277	277	0
Subsea Installations	294	294	0

All recovered material will be brought onshore for re-use, recycling or disposal. It is not possible to predict the market for reusable materials with any confidence so, the figures in Table 3.7 are disposal aspirations.

Table 3.7: Recovered Inventory Reuse, Recycle, Disposal Aspirations			
	Reuse	Recycle	Disposal
Pipelines	<5%	>95%	<5%
Umbilicals	<5%	>95%	<5%
Subsea Installations	<5%	>95%	<5%

Refer to the Johnston Decommissioning Environmental Appraisal Report for further details.

4 ENVIRONMENTAL APPRAISAL

4.1 Environmental Sensitivities (Summary)

Table 4.1: Environmental Sensitivities	
Environmental Receptor	Main Features
Conservation interests	<p>Johnston lies within the Southern North Sea Special Area of Conservation (SAC), which is an area of importance for Annex II species harbour porpoise (<i>Phocoena phocoena</i>) and includes key winter and summer habitat for this species. The intention of the objectives is to minimise the risk of injury and fatality to harbour porpoise and also maintain the site for its use as habitat by the species. Additionally, the condition of supporting habitats and processes, and the availability of prey species must be maintained (JNCC, 2019a).</p> <p>There is one protected Marine Conservation Zone (MCZ) within 40 km of Johnston; the Holderness Offshore MCZ. The site is designated for a number of protected features including: North Sea glacial tunnel valleys, ocean quahog, subtidal coarse sediments, subtidal mixed sediments and subtidal sand (DEFRA, 2019). There was no evidence of ocean quahog siphons observed in any survey sampling (Gardline, 2008a; 2008b; 2008c). Although this does not definitively rule out the presence of this species either on the investigated transects or at the Johnston Field.</p> <p>There was no evidence of any Annex I protected features in the area (Gardline, 2008a; 2008b; 2008c).</p>
Seabed Habitats and Fauna	<p>Survey reports from 2004 and 2008 detail the environmental conditions across the Johnston Field and the adjacent Babbage Field. The Babbage Field is located ~9km South of the Johnston Field, and both fields used to be Operated by E.ON. Older survey data from adjacent fields were also used to supplement the data in the area. The seabed depth previously recorded at the Johnston Field ranges from approximately 38 m to 40.5 m lowest astronomical tide (LAT) in the vicinity of the Johnston Field (Gardline, 2004).</p> <p>The seabed in the Johnston area is classified as ‘deep circalittoral sand’, under the EUNIS habitat code A5.27 (JNCC, 2019b), which is consistent with the silty sand habitats identified in the nearby Babbage Field and the low silt content from other nearby surveys (Gardline, 2008a; 2008b; 2008c; OEUK, 2019).</p> <p>In the Babbage Field, the polychaete species <i>Magelona mirabilis</i>, <i>Chaetozone gibber</i>, <i>Ophelia borealis</i> and <i>Scoloplos armiger</i> were the most abundant polychaetes overall but their dominance varied across samples dependent on sediment type. At some locations crustacean species were most abundant, in particular amphipods (<i>Bathyporeia</i> spp.), although in terms of number of taxa present polychaetes remained dominant. The presence of a number of rarer species across samples indicated the area is not subject to stress from pollution (Gardline, 2008a; 2008b; 2008c). In the Ravenspurn Field, echinoderms comprised three of the ten most abundant species including (in descending order of abundance) the following species: <i>Amphiura chiajei</i>, <i>Amphiura filiformis</i> and <i>Echinocardium cordatum</i> (OEUK, 2019).</p>

	<p>Potential for herring spawning is considered very low along the majority of the route and low towards the West Sole end of the route. There was no evidence of species or habitats of conservation concern at either the Babbage drilling site or along the pipeline (Gardline, 2008a; 2008b; 2008c).</p>
Fish	<p>The Johnston Field is located in the Southern North Sea SAC, an area of importance for Annex II species harbour porpoise. The habitat within the SAC is also highly suitable for the key prey species of harbour porpoise, among which the demersal species sandeels and whiting (JNCC, 2019c). Sandeels are particularly sensitive to habitat disturbance as they depend on a certain sediment type for spawning.</p> <p>The project area is located within the spawning grounds of cod (<i>Gadus morhua</i>), herring (<i>Clupea harengus</i>), lemon sole (<i>Microstomus kitt</i>), mackerel (<i>Scomber scombrus</i>), Norway lobster (<i>Nephrops norvegicus</i>), plaice (<i>Pleuronectes platessa</i>), sandeel (<i>Ammodytidae</i> spp), sprat (<i>Sprattus sprattus</i>) and whiting (<i>Merlangius merlangus</i>) (Coull et al., 1998; Ellis et al., 2012). The following species have nursery grounds in the vicinity of the Johnston Field: anglerfish (<i>Lophius piscatorius</i>), cod, herring (<i>Clupea harengus</i>), lemon sole, mackerel, Norway lobster, sandeel, sprat, spurdog (<i>Squalus acanthias</i>), and whiting (Coull et al., 1998; Ellis et al., 2012).</p> <p>Aires et al. (2014) provided modelled spatial representations of the predicted distribution of 0 age group fish (i.e. less than one year old). The modelling indicates the probability of 0 group fish species occurring in the Johnston Field area is low and limited to the following species: sprat and horse mackerel (<i>Trachurus trachurus</i>).</p> <p>The area encompassing the Johnston Field supports moderate whiting densities in both the summer and winter months, however it does not appear to support important densities of sandeels (Ransijn et al., 2019).</p>
Marine Mammals	<p>The following cetacean species are known to be sighted frequently or seasonally in the vicinity of the Johnston Field: harbour porpoise (<i>Phocoena phocoena</i>); minke whale (<i>Balaenoptera acutorostrata</i>); bottlenose dolphin (<i>Tursiops truncatus</i>); Atlantic white-sided dolphin (<i>Lagenorhynchus acutus</i>) and white-beaked dolphin (<i>Lagenorhynchus albirostris</i>) (Reid et al., 2003). Of these, harbour porpoise, white-beaked dolphins and minke whales regularly occur within the vicinity of Johnston (Hammond et al., 2017).</p> <p>Despite the coastline to the west of Johnston being important habitat for grey and harbour seals, seal densities are relatively low across the project area due to its distance from shore (SMRU and Marine Scotland, 2017).</p>
Seabirds	<p>The following species are expected to occur within Johnston Field area in moderate densities: northern fulmar (<i>Fulmarus glacialis</i>), great black-backed gull (<i>Larus marinus</i>), black-legged kittiwake (<i>Rissa tridactyla</i>), common guillemot (<i>Uria aalge</i>), herring gull (<i>Larus argentatus</i>), razorbill (<i>Alca torda</i>) and Atlantic puffin (<i>Fratercula arctica</i>) in winter, and black-legged kittiwake, Arctic skua (<i>Stercorarius parasiticus</i>), and common tern (<i>Sterna hirundo</i>) during their breeding seasons (Kober et al., 2010).</p> <p>Seabird Oil Sensitivity Index (SOSI) identifies areas at sea where seabirds are likely to be most sensitive to surface pollution (Webb et al., 2016). Seabird vulnerability in Block 43/27 and its surrounds is extremely high between September and January, based on indirect assessments (Webb et al., 2016). The remainder of the year, seabird vulnerability to oiling is highly variable. The risk of an oil spill from</p>

	<p>the proposed decommissioning activities at Johnston is negligible, however, as activities are due to take place after flushing and there are multiple preventative environmental management and vessel management systems in place.</p>
Commercial Fisheries	<p>The Johnston Field is located within the International Council for the Exploration of the Seas (ICES) Rectangle 37F1 (Scottish Government, 2020).</p> <p>Demersal species and shellfish are predominantly target by fisheries in the area. In total, 573 Te of fish were caught in 2019, with an equivalent value of £736,277. The total annual landings for Rectangle 37F1 were <0.12% of the total landings within the UKCS for each of the five most recent fishing years (2015-2019 inclusive).</p> <p>In 2019, fishing effort in the ICES rectangle 37F1 was highest in May, together accounting for 17% of the total number of days fished (145 days), but the majority of months experienced disclosive levels of fishing (Scottish Government, 2020).</p> <p>Trawls were the most utilised gear in rectangle 37F1; in total, trawls contributed 65.6% of total fishing effort in ICES rectangle 37F1, with the remainder made up by traps in 2019 (Scottish Government, 2020).</p>
Other Users of the Sea	<p>The Johnston Field is located in an area that experiences high shipping intensity. Sea users other than commercial fisheries mainly relate to offshore oil and gas and offshore renewables. The closest oil and gas installation is the Ravenspurn North CPP, located 7 km west south west, operated by Perenco.</p> <p>The Johnston Field overlaps with the Hornsea Project 4 Lease Area. The wind farm development in the lease area is at the pre-application stage at the time of writing. Additionally, Hornsea 2 and 1 offshore wind farm developments are located 15.81 km and 33.21 km south east. Construction of Hornsea 1 was completed in 2020 and offshore construction of Hornsea 2 is ongoing.</p>
Atmosphere	<p>The majority of atmospheric emissions for the Johnston decommissioning activities relate to vessel time or are associated with the recycling of material returned to shore. As the decommissioning activities proposed are of short duration, this aspect is not anticipated to result in significant impacts. The estimated CO₂ emissions to be generated by the vessel operations associated with the selected decommissioning options are 7,648 Te, this equates to 0.1% of the total UKCS vessel emissions (excluding fishing vessels) in 2017 (7,800,000 Te; BEIS, 2019). A further 2,277 Te CO₂ will be generated through the life cycle of the project materials; those recovered and not reused or left <i>in situ</i>. This equates to a total CO₂ production of 9,926 Te associated with the proposed decommissioning activities.</p>
Onshore Communities	<p>Waste generated during decommissioning will be transported to shore in an auditable manner through licensed waste contractors, as managed under Johnston's waste management plan (WMP). Wastes will be treated using the principles of the waste hierarchy, as defined in the WMP, focusing on the reuse and recycling of wastes where possible. Raw materials will be returned to shore with the expectation to recycle the majority of the returned material. There may be instances where infrastructure returned to shore is contaminated (e.g. by NORM, hazardous, and/or special wastes) and cannot be recycled. In these instances, the materials will require disposal. However, the weight and/or volume of such material is not expected to result in substantial landfill use.</p>

4.2 Potential Environmental Impacts and their Management

Environmental Appraisal Summary:

The EA addresses potential environmental and societal impacts by characterising the likelihood and significance of interactions between the proposed decommissioning activities and the local environment, whilst considering stakeholder response. The EA also details mitigation measures designed to abate potential impacts in accordance with Premier’s Environmental Management System (EMS) and Health, Safety, Environment and Security (HSES) Policy.

Key potential environmental and societal impacts which were considered to be ‘potentially significant’, and thus requiring further assessment, were identified through an environmental issues identification (ENVID) workshop; they include: seabed impacts and impacts to commercial fisheries. These potential impacts have undergone detailed assessment within the EA. The following environmental and societal impacts were screened out from further assessment due to existing controls limiting the likelihood of potential significant impacts: impacts to water quality; emissions to air; vessel presence; underwater noise emissions; resource use; onshore activities; waste; and unplanned events. The justifications for screening out these impact pathways are detailed in the accompanying EA.

The EA concludes that the recommended options to decommission the Johnston Field subsea pipelines and installations can be completed without causing significant impact to environmental or societal receptors.

Overview:

Table 4.2 describes the potential impact pathways identified from the relevant infrastructure to be decommissioned, alongside the proposed management measures in place to mitigate against them.

Table 4.2: Environmental Impact Management		
Activity	Main Impacts	Management
Subsea Installations Removal (incl. Stabilisation Features)	Seabed impacts from: <ul style="list-style-type: none"> • Deburial and recovery of infrastructure; • excavation of protection and stabilisation materials; and • removal of grout bags and stabilisation materials. 	Vessel use will be optimised/minimised for the decommissioning activities and managed per Premier’s existing vessel management procedures, including a vessel work programme. The 500 m safety exclusion zone will remain in operation during the decommissioning activities reducing risk of non-project related vessels entering into the area where decommissioning activities are taking place. This safety exclusion zone will be removed following the completion of the relevant decommissioning activities enabling fisheries to regain access to grounds. Fishing activities have the potential to increase in the area once the 500 m safety zones surrounding the existing substructures are re-assessed.

	<p>Impacts to commercial fisheries from project activities limiting access to fishing grounds.</p>	<p>Use of established contractors with appropriate capability, licences and maintenance procedures will be selected and audited. Other sea users will be notified in advance of activities occurring and Premier keeps manned bridges.</p> <p>The infrastructure is currently shown on Admiralty Charts and the FishSafe system. When decommissioning activity has been completed, updated information will be made available to update Admiralty Charts and FishSafe system.</p> <p>All pipeline routes and installation sites will be the subject of oilfield debris clearance and as-left verification surveys when decommissioning activity has concluded.</p>
<p>Decommissioning Rigid Flowlines (incl. Stabilisation Features)</p>	<p>Seabed impacts from decommissioning of rigid flowlines <i>in situ</i>:</p> <ul style="list-style-type: none"> • cutting ends and recovery of lengths of flowlines; and • deposition of new rock armour to protect ends and previously cut exposures (where required). <p>Snagging risk to commercial fisheries associated with pipelines decommissioned <i>in situ</i>.</p>	<p>Operations will be conducted as carefully as possible to minimise sediment disturbance, avoiding dragging of items on the seabed where possible. No sediment will be removed from the seabed as a result of the proposed activities.</p> <p>Rock dumping will be carefully managed (e.g. through use of an ROV to limit the areas covered) thereby reducing unnecessary spreading and depth of coverage to that required to ensure no snagging hazards remain. Where possible, rock bags will be reused as stabilisation materials during decommissioning.</p> <p>The infrastructure is currently shown on Admiralty Charts and the FishSafe system. When decommissioning activity has been completed, updated information will be made available to update Admiralty Charts and FishSafe system.</p> <p>Any snagging risk to other sea users will be minimised by continual monitoring of degrading structures or free spans (type and frequency to be determined through a risk-based approach but will be agreed with OPRED).</p> <p>All pipeline routes and installation sites will be the subject of oilfield debris clearance and as-left verification surveys when decommissioning activity has concluded.</p>
<p>Decommissioning Buried Flexible Flowlines (incl. Stabilisation Features)</p>	<p>Seabed impacts from:</p> <ul style="list-style-type: none"> • reverse-reeling of surface-laid and buried flexible flowlines; and • removal of stabilisation features. <p>Impacts to commercial fisheries from project activities limiting access to fishing grounds.</p>	<p>Operations will be conducted as carefully as possible to minimise sediment disturbance, avoiding dragging of items on the seabed where possible. No sediment will be removed from the seabed as a result of the proposed activities.</p> <p>Rock dumping will be carefully managed (e.g. through use of an ROV to limit the areas covered) thereby reducing unnecessary spreading and depth of coverage to that required to ensure no snagging hazards remain. Where possible, rock bags will be reused as stabilisation materials during decommissioning.</p>

		<p>Excavated areas remediated and any berms created profiled to mitigate snagging risks to other sea users.</p> <p>Vessel use will be optimised/minimised for the decommissioning activities and managed per Premier's existing vessel management procedures, including a vessel work programme.</p> <p>The 500 m safety exclusion zone will remain in operation during the decommissioning activities reducing risk of non-project related vessels entering into the area where decommissioning activities are taking place. This safety exclusion zone will be removed following the completion of the relevant decommissioning activities enabling fisheries to regain access to grounds.</p> <p>Use of established contractors with appropriate capability, licences and maintenance procedures will be selected and audited. Other sea users will be notified in advance of activities occurring and Premier keeps manned bridges.</p> <p>The infrastructure is currently shown on Admiralty Charts and the FishSafe system. When decommissioning activity has been completed, updated information will be made available to update Admiralty Charts and FishSafe system.</p> <p>All pipeline routes and installation sites will be the subject of oilfield debris clearance and as-left verification surveys when decommissioning activity has concluded.</p>
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5 INTERESTED PARTY CONSULTATIONS

Consultations Summary:

Table 5.1: Summary of Stakeholder Comments		
Who	Comment	Response
Informal Consultations		
SFF NFFO JNCC HSE OPRED EMT OPRED ODU (observers) Premier Oil E&P UK EU Limited Neptune E&P UKCS Limited	<p>Premier has engaged with interested parties and stakeholders who participated in Comparative Assessment workshops, as detailed in the column on the left.</p> <p>Furthermore, CA workshop invites were issued to Dana Petroleum (E&P) Limited, the Environment Agency, the Scottish Environment Protection Agency, Marine Scotland and the Oil and Gas Authority (now NSTA), but these organisations were unable to attend.</p>	N/A
Statutory Consultations		
Various Statutory Consultees	Following statutory consultation (14 th April 2022 – 27 th May 2022), Premier received a number of guidance notes, questions and actions relating to the Johnston Decommissioning Programmes from the consultees.	All consultee comments have been satisfactorily addressed throughout OPRED's process, and minor updates to the Decommissioning Programmes have been implemented where appropriate.
Public	No comments received	N/A

6 PROGRAMME MANAGEMENT

6.1 Project Management and Verification

A Project Management team will be appointed to manage suitable contractors for the decommissioning of the Johnston infrastructure. Standard procedures for operational control and hazard identification and management will be used. The Project Management team will monitor and track the process of consents and the consultations required as part of this process. Any changes in detail to the offshore removal programme will be controlled by the Premier Management of Change processes and discussed and agreed with OPRED.

6.2 Post-Decommissioning Debris Clearance and Verification

During site clearance activities, reasonable endeavours will be made to recover any dropped objects and items subject to any outstanding Petroleum Operations Notices. All recovered seabed debris related to offshore oil and gas activities will be returned for onshore disposal or recycling in line with existing disposal arrangements. A post decommissioning site survey, to verify decommissioning activities have been completed, will be carried out across the designated 500m safety zones of installation sites and a 100m corridor (50m either side) along each pipeline over its length.

Verification of seabed state will be obtained taking into account the sensitivities of the area. The most appropriate validation method(s) will be discussed and agreed with OPRED, nearer the time this activity is due to take place. A statement of clearance will be provided to all governmental departments and statutory consultees.

6.3 Schedule

Project Plan:

The high level Gantt chart Figure 6.1 provides the overall schedule for the Johnston field programme of decommissioning activities.

Activity	2024				2025				2026				2027				2028				2029				2030			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Decommissioning Planning	█																											
Detailed Engineering					█																							
Cessation of Production																												
Pipelines Flushing / Disconnection																												
Wells Plug & Abandonment																												
Subsea Decommissioning																												
Environmental Surveys & Debris Clearance																												
DP Closeout Reporting																												

Figure 6.1: Gantt Chart of Project Plan

6.4 Costs

An overall cost estimate following OEUK Guidelines on Decommissioning Cost Estimation (Issue 3, October 2013) will be provided to OPRED.

6.5 Close Out

In accordance with the OPRED Guideline Notes, a close out report will be submitted to OPRED and posted on the Premier website reconciling any variations from the Decommissioning Programmes within one year of the completion of the offshore decommissioning scope. This includes debris removal and, where applicable independent verification of seabed clearance, and the first post-decommissioning environmental survey.

6.6 Post-Decommissioning Monitoring and Evaluation

A post-decommissioning environmental seabed survey, centred around the well locations, will be carried out. The survey will focus on chemical, physical and biological changes, disturbances and will be compared with the pre decommissioning survey. Results of this survey will be available once the work is complete, with a copy forwarded to OPRED.

All pipeline routes and installation sites will be the subject of oilfield debris clearance and as-left verification surveys when decommissioning activity has concluded. All snag hazards created by drilling and/or production related activities will be removed or mitigated as part of the execution of the Decommissioning Programmes.

The main risk from infrastructure remaining in situ is the potential for interaction with other users of the sea, specifically from fishing related activities. Where the infrastructure is trenched below seabed level or trenched & buried below, the effect of interaction with other users of the sea is considered to be negligible.

The infrastructure is currently shown on Admiralty Charts and the FishSafe system. When decommissioning activity has been completed, updated information will be made available to update Admiralty Charts and FishSafe system.

When decommissioning activities have been completed, and where applicable, the safety zones around offshore infrastructure will be removed.

The licence holders recognise their commitment to undertake post-decommissioning monitoring of infrastructure left *in situ*. After the post-decommissioning survey reports have been submitted to OPRED and reviewed, a post-decommissioning monitoring survey regime, scope and frequency, will be agreed with OPRED.

7 SUPPORTING DOCUMENTS

Document Number	Title
AB-JO-XGL-LL-SU-RP-0003	Johnston Field Decommissioning Environmental Appraisal
AB-JO-XGL-LL-SU-RP-0001	Johnston Field Comparative Assessment Report

8 PARTNER LETTER(S) OF SUPPORT

Dana Petroleum (E&P) Limited



Dana Petroleum (E&P) Limited
King's Close t: +44 (0) 1224 616 000
62 Huntly Street f: +44 (0) 1224 616 001
Aberdeen www.dana-petroleum.com
AB10 1RS
United Kingdom

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
Crimon Place
Aberdeen
AB10 1BJ

FAO: Mrs. Debbie Taylor

10th November 2022

Dear Mrs Taylor,

Letter of Support: Johnston Decommissioning Programmes

Dana Petroleum (E&P) Limited hereby confirm that Premier Oil E&P UK EU Limited is authorised to submit, on our behalf, the abandonment programmes relating to the Johnston Field subsea installations and pipelines, as detailed in document no. AB-JO-PMO-LL-PM-PG-0001 revision B03, dated 4 November 2022 and titled "Johnston Decommissioning Programmes", as directed by the Secretary of State in your letter of 31 October 2022.

We confirm our agreement to the proposals detailed in the Johnston Decommissioning Programmes dated 4 November 2022, which is to be submitted by Premier Oil E&P UK EU Limited, in so far as they relate to those facilities in respect of which we are instructed to submit a programme under Section 29 of the Petroleum Act 1998.

Yours faithfully,


Ewan Wildgoose (Nov 10, 2022 14:58 GMT)

For and on behalf of Dana Petroleum (E&P) Limited

Ewan Wildgoose
Director

Perenco UK Limited

————— P E R E N C O —————



Perenco UK Limited
3 Central Avenue
St Andrews Business Park
Norwich
Norfolk
NR7 0HR

Switchboard: 01603 771 000

09 November 2022

OPRED - BEIS
AB1 Building
Crimon Place
Aberdeen, AB10 1BJ

FAO: Mrs. Debbie Taylor

Dear Mrs. Taylor

Perenco UK Limited hereby confirm that Premier Oil E&P UK EU Limited is authorised to submit, on our behalf, the abandonment programmes relating to the Johnston Field subsea installations and pipelines, as detailed in document no. AB-JO-PMO-LL-PM-PG-0001 revision B03, dated 4 November 2022 and titled "Johnston Decommissioning Programmes", as directed by the Secretary of State in your letter of 31 October 2022.

We confirm our agreement to the proposals detailed in the Johnston Decommissioning Programmes dated 4 November 2022, which is to be submitted by Premier Oil E&P UK EU Limited, in so far as they relate to those facilities in respect of which we are instructed to submit a programme under Section 29 of the Petroleum Act 1998.

Yours sincerely
For and on behalf of Perenco UK Limited (Company Number 04653066)



Julie Summerell
Decommissioning Manager

Harbour Energy plc

Harbour Energy
Rubislaw House
Anderson Drive
Aberdeen, AB15 6FZ
+44 (0) 1224 205000
harbourenergy.com



11th November 2022

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
Crimon Place
Aberdeen
AB10 1BJ

Dear Mrs Taylor,

Letter of Support: Johnston Decommissioning Programmes

Harbour Energy plc hereby confirm that Premier Oil E&P UK EU Limited is authorised to submit, on our behalf, the abandonment programmes relating to the Johnston Field subsea installations and pipelines, as detailed in document no. AB-JO-PMO-LL-PM-PG-0001 revision B03, dated 4 November 2022 and titled "Johnston Decommissioning Programmes", as directed by the Secretary of State in your various letters of 31 October 2022 (referenced in the undernote).

We confirm our agreement to the proposals detailed in the Johnston Decommissioning Programmes dated 4 November 2022, which is to be submitted by Premier Oil E&P UK EU Limited, in so far as they relate to those facilities in respect of which we are instructed to submit a programme under Section 29 of the Petroleum Act 1998.

Yours sincerely



Richard Tocher
SVP Decommissioning and Major Projects
For and on behalf of Harbour Energy plc

Undernote

Letters dated 31st October 2022 ref 12.04.06.06/187C, ref 12.04.06.05/41C and 12.04.06.05/353C

Dana Petroleum Limited



Dana Petroleum Limited

King's Close
62 Huntly Street
Aberdeen
AB10 1RS
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Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
Crimon Place
Aberdeen
AB10 1BJ

FAO: Mrs. Debbie Taylor

10th November 2022


Dear Mrs Taylor,

Letter of Support: Johnston Decommissioning Programmes

Dana Petroleum Limited hereby confirm that Premier Oil E&P UK EU Limited is authorised to submit, on our behalf, the abandonment programmes relating to the Johnston Field subsea installations and pipelines, as directed by the Secretary of State in your letter of 31 October 2022.

We confirm our agreement to the proposals detailed in the Johnston Decommissioning Programmes dated 4 November 2022, which is to be submitted by Premier Oil E&P UK EU Limited, in so far as they relate to those facilities in respect of which we are instructed to submit an abandonment programme under Section 29 of the Petroleum Act 1998.

Yours faithfully,


Ewan Wildgoose (Nov 10, 2022 14:58 GMT)

For and on behalf of Dana Petroleum Limited

Ewan Wildgoose
Director

Neptune E&P UKCS Limited

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Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
Crimon Place
Aberdeen
AB10 1BJ

FAO: Mrs. Debbie Taylor

9th November 2022

Dear Mrs Taylor,

Letter of Support: Johnston Decommissioning Programmes

Neptune E&P UKCS Limited hereby confirm that Premier Oil E&P UK EU Limited is authorised to submit, on our behalf, the abandonment programmes relating to the Johnston Field subsea installations and pipelines, as directed by the Secretary of State in your letter of 31 October 2022.

We confirm our agreement to the proposals detailed in the Johnston Decommissioning Programmes dated 4 November 2022, which is to be submitted by Premier Oil E&P UK EU Limited, in so far as they relate to those facilities in respect of which we are instructed to submit an abandonment programme under Section 29 of the Petroleum Act 1998.

Yours faithfully,

DocuSigned by:
Name: 
D08CF1D9F81047D...

Job Title: Director of Sales and Marketing & UK Commercial

For and on behalf of Neptune E&P UKCS Limited (Company Number 03386464)

Neptune E&P UKCS Limited
16 North Esplanade West
Aberdeen AB11 5RJ
United Kingdom
T: +44 (0)1224 281000
F: +44 (0)1224 281025
www.neptuneenergy.com

Company No: 03386464
Registered in England and Wales at:
Nova North, 11 Bressenden Place
London SW1E 5BY
United Kingdom

APPENDIX I - COPIES OF THE PUBLIC NOTICES

The London Gazette:

THE PETROLEUM ACT 1998 DECOMMISSIONING PROGRAMMES FOR THE JOHNSTON SUBSEA PIPELINES AND INSTALLATIONS.

In accordance with the provisions of the Petroleum Act 1998, Premier Oil E&P UK EU Limited (a Harbour Energy company) has submitted, for the consideration of the Secretary of State for Business, Energy & Industrial Strategy, the draft Decommissioning Programmes for the Johnston subsea pipelines and installations. It is a requirement of the Act that interested parties be consulted on such decommissioning proposals.

The Johnston Field is located in blocks 43/26a and 43/27a of the Southern North Sea, approximately 85 kilometres northeast of Dimlington (Easington). The Johnston Field was developed as a subsea tieback to the Ravenspurn North Central Processing Platform. The facilities covered by the Johnston Decommissioning Programmes are:

- All subsea installations, and
- All subsea pipelines associated with the Johnston Field.

Harbour Energy hereby gives notice that the Johnston Decommissioning Programmes are available on its website at www.harbourenergy.com, or alternatively a hard copy of the document may be requested by contacting Harbour Energy during office hours on 01224 205000.

Representations regarding the Johnston Decommissioning Programmes should be submitted in writing to the person named at the address below, or via email to abzdecommissioning@premier-oil.com, by the consultation closing date of **13 May 2022**. Submissions should state the grounds upon which any representations are being made.

Dated: **14 April 2022**

Harbour Energy, Rubislaw House, Anderson Drive, Aberdeen, AB15 6FZ	Pieter voor de Poorte Decommissioning Strategy & Integration Lead
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Hull Daily Mail:

The Petroleum Act 1998

Decommissioning Programmes for the Johnston subsea pipelines and installations.

In accordance with the provisions of the Petroleum Act 1998, Premier Oil E&P UK EU Limited (a Harbour Energy company) has submitted, for the consideration of the Secretary of State for Business, Energy & Industrial Strategy, the draft Decommissioning Programmes for the Johnston subsea pipelines and installations. It is a requirement of the Act that interested parties be consulted on such decommissioning proposals.

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Dated: **14 April 2022**

Harbour Energy Rubislaw House, Anderson Drive, Aberdeen, AB15 6FZ	Pieter voor de Poorte Decommissioning Strategy & Integration Lead
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The Daily Telegraph:

The Petroleum Act 1998

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Dated: **14 April 2022**

Harbour Energy, Rubislaw House, Anderson Drive, Aberdeen, AB15 6FZ	Pieter voor de Poorte Decommissioning Strategy & Integration Lead
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APPENDIX II – DEPTH OF BURIAL PROFILES

