

PERENCO UK LIMITED

Amethyst Jackets, Amethyst Risers, and Helvellyn Riser Section

Decommissioning Programmes

July 2025

Final Version



Document Control

Approvals

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Terms and Abbreviations

Abbreviation	Explanation
и	Inch
%	Percentage
A1D	Amethyst A1D
A2D	Amethyst A2D
AtoN	Aids to Navigation
AIS	Automatic Identification System
B1D	Amethyst B1D
BP	BP Exploration Operating Company Limited
C1D	Amethyst C1D
CA	Comparative Assessment
СОР	Cessation of Production
DESNZ	Department for Energy Security and Net Zero
DGT	Dimlington Gas Terminal
DP	Decommissioning Programme
EA	Environmental Appraisal
EBS	Environmental Baseline Survey
EGT	Easington Gas Terminal
EUNIS	European Nature Information System
HAS	Habitat Assessment Survey
HCS	Hydrocarbon Safe
HLV	Heavy Lift Vessel
ICES	International Council for the Exploration of the Seas
JUB	Jack up Barge



Abbreviation	Explanation	
km	Kilometre	
km ²	Square Kilometre	
LSA	Low Specific Activity	
m	Metre	
m ³	Cubic Metre	
mm	Millimetre	
MCA	Maritime and Coastguard Agency	
MCZ	Marine Conservation Zone	
ММО	Marine Management Organisation	
MPA	Marine Protected Area	
N/A	Not Applicable	
NFFO	National Federation of Fishermen's Organisations	
NIFPO	Northern Ireland Fish Producers' Organisation	
NORM	Naturally Occurring Radioactive Material	
NRA	Navigational Risk Assessment	
NSTA	North Sea Transition Authority	
NUI	Normally Unattended Installation	
OEUK	Offshore Energies UK	
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning	
OSPAR	Oslo and Paris Conventions	
Perenco	Perenco UK Limited	
PL	Pipeline	
PWA	Pipeline Work Authority	
RAT	Rope Access Technician	
ROV	Remotely Operated Vehicle	
S29	Section 29 Notice holder	
SAC	Special Area of Conservation	
SCANS	Small Cetacean Abundance of the North Sea	
SFF	The Scottish Fishermen's Federation	
SLV	Single Lift Vessel	
SNS	Southern North Sea	
SPA	Special Protected Area	



Abbreviation	Explanation
Spirit	Spirit Energy Resources Limited
SZ	Safety Zone
Те	Tonnes
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
UKHO	United Kingdom Hydrographic Office
Waldorf	Waldorf Petroleum Resources Limited (Formerly Alpha Petroleum)
WHPS	Wellhead Protection Structure
WSA	West Sole Alpha
WSB	West Sole Bravo
WSC	West Sole Charlie

1. EXECUTIVE SUMMARY

1.1 Combined Decommissioning Programmes

This document contains three Decommissioning Programmes (DPs) for the Amethyst A1D (A1D), Amethyst A2D (A2D), Amethyst B1D (B1D) and Amethyst C1D (C1D) jackets and their associated risers (PL649, PL650, PL775, PL776, PL777, PL778) and cables (PL4997, PL6399, PL6400 and PL6401) and the Helvellyn pipeline riser, spool piece, and umbilical (PL1956 and PLU1957) sections that are attached to the A2D jacket.

Perenco UK Limited (Perenco) has prepared this DP on behalf of all Section 29 (S29) Notice Holders. The Section 29 notice holder's letters of support will be provided in Section 8 in the final approved revision of this document.

This DP does not include the Topsides of the A1D, A2D, B1D and C1D, nor the Rose riser and umbilical (PL3872 and PLU1988). They have already been decommissioned under the Amethyst Topside DP, which was approved by The Department for Energy Security and Net Zero (DESNZ) on 1st July 2020. The riser section for PL1987, which used to be part of the Rose pipeline system, was renamed PL3872 as per Consent Number 81/V/16 in preparation for the flushing and air gapping of the Rose pipeline and umbilical.

A separate decommissioning programme for the Easington Gas Terminal (EGT) to A1D, A2D, B1D and C1D pipelines (PL) and power cables (PL6399, PL6400, PL6401 and PL4997), except for the riser sections, will be covered under a separate pipeline DP.

1.2 Requirement for Decommissioning Programme

Installations:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Amethyst (A1D, A2D, B1D, C1D) jackets (see Table 1.5) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the jackets detailed in Section 2.1 of these programmes. (See also Section 8 - Section 29 Notice Holders Letter(s) of Support).

Pipelines:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Helvellyn Riser, spool piece and umbilical pipelines, and the Amethyst risers and cables (see Tables 1.7, 1.8 and 1.9) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the pipelines detailed in Section 2.2 of these programmes. (See also Section 8 – Section 29 Notice Holders Letter(s) of Support).

In conjunction with public, stakeholder and regulatory consultation, these decommissioning programmes are submitted without derogation and in compliance with national and international regulations and OPRED guidelines. The schedule outlined in this document is for a 5-year decommissioning project plan due to begin in Q3 2025.

1.3 Introduction

The Amethyst gas field is located in the United Kingdom Continental Shelf (UKCS) centred on Block 47/14a, extending into Blocks 47/13a, 47/8a, 47/9a and 47/15a in the Southern North Sea (SNS), approximately 40 kilometres (km) due east of the Humber Estuary and the Easington Gas Terminal



(EGT) on the Yorkshire coast. The field consists of several separate gas accumulations; Amethyst East (East) covers the 'A' / 'B' areas and Amethyst West (West) covers the 'C' area. Discovered by the Britoil PLC in 1970 (West) and 1972 (East), East and West have been producing gas since 1990.

In 2012 the field operatorship was handed over from BP Exploration Operating Company Limited (BP) to Perenco. Perenco has explored all avenues for continuing production and concluded that due to high operational costs and a reduction of gas production, continued operations were uneconomical.

The Cessation of Production (COP) documentation was submitted to the North Sea Transition Authority (NSTA) in February 2020. Approval for COP was gained in June 2020.

As shown in Figure 1.2, the C1D was connected to A1D through the infield export gas pipeline PL776. This pipeline facilitated the transportation of produced fluids from C1D to A1D, where they co-mingled with fluids produced from A1D before entering the 30-inch (") Amethyst Export pipeline PL649 to EGT. Similarly produced fluids from B1D were conveyed via PL775 to A2D. Each of the pipelines is accompanied by a piggyback 3" pipeline for supplying methanol to the platforms, or an umbilical for delivering chemicals, hydraulic power, and supply to the subsea wellheads.

Furthermore, the production from the Rose field (block 47/15), via a subsea well, and the Helvellyn field (block 47/10a), via a subsea well, were respectively transported to A2D through the PL1987 and PL1956 pipelines. At A2D, all received fluids were mixed with those produced from A2D before entering the 30" Amethyst Export pipeline PL649. Subsequently, all fluids entering the 30" Amethyst Export line were sent onshore to EGT and then to Dimlington Gas Terminal (DGT) for processing.

The Rose subsea well (47/15b-6W), owned by Spirit Energy Resources Limited (Spirit) has ceased production and both the subsea structure and pipelines were subsequently decommissioned in 2015. The riser section of PL1987 was re-assigned PL3872 as a new pipeline number. The entire riser section together with the umbilical section inside the J-tube at A2D had been fully removed. Therefore, no considerations to the Rose risers will be made in this DP.

The Helvellyn development is located in block 47/10a. Waldorf Petroleum Resources Limited (Waldorf) has owned this development since 2001. It consists of a single subsea well, the Wellhead Protection Structure (WHPS), pipeline (PL1956) from the WHPS to and not including the A2D Riser Flange, and the umbilical (PLU1957) from the WHPS to, but not including the A2D J-Tube bellmouth. Perenco owns PL1956 from and including the A2D Riser Flange to A2D jacket, and PLU1957 from and including the AD2 J-Tube bellmouth to A2D jacket.

Decommissioning of the Helvellyn subsea installation, pipeline and umbilical has already been approved in the Helvellyn DP in January 2024. However, Perenco has spoken to Waldorf about the timelines of the Helvellyn DP schedule and determined that the removal of the Amethyst jackets and Helvellyn riser section would be before the Waldorf schedule. Therefore, as part of this DP, Perenco performed cuts to airgap this pipeline and umbilical from the A2D jacket. The first cut was at the bottom of the PL1956 riser within the Perenco section of the pipeline. The second cut was after the A2D spool piece owned by Waldorf. This removed a 10m section of Waldorf owned pipeline. The PLU1957 umbilical cuts were after the J-Tube bellmouth, removing 10m of the PLU1957 umbilical owned by Waldorf.



1.4 Overview of Installations Being Decommissioned

1.4.1 Installations

A1D Jacket

Table 1-1: A1D Jacket Being Decommissioned					
Field(s)	Amethyst West	Production Type (Oil/Gas/Condensate)	Gas		
Water Depth (m)	29.2	UKCS block	47/14a		
Distance to median (km)	150	Distance from nearest UK coastline (km)	37		
	Surface II	nstallation(s)			
Number	Туре	Topsides Weight (Te)	Jacket Weight (Te)		
1	Fixed Leg Steel	N/A	2285*		
Subsea I	Subsea Installation(s) Number of Wells		Vells		
Number	Туре	Platform	Subsea		
0	N/A	5	0		
Drill Cuttings pile(s)					
Number of Piles	N/A	Total Estimated volume (m³)	N/A		

^{*}Includes the weight of the piles and marine growth.

A2D Jacket

	Table 1-2: A2D Jacket Being Decommissioned				
Field(s)	Amethyst East	Production Type (Oil/Gas/Condensate)	Gas		
Water Depth (m)	23.9	UKCS block	47/14a		
Distance to median (km)	143	Distance from nearest UK coastline (km)	42		
	Surface II	nstallation(s)			
Number	Туре	Topsides Weight (Te)	Jacket Weight (Te)		
1	Fixed Leg Steel	N/A	2098.67*		
Subsea I	Subsea Installation(s) Number of Wells				
Number	Туре	Platform	Subsea		
0	N/A	6	0		



Drill Cuttings pile(s)				
Number of Piles	N/A	Total Estimated volume (m³)	N/A	

^{*}Includes the weight of the piles, Helvellyn riser section and spool piece, Umbilical within J-Tub, and marine growth.

B1D Jacket

	- 11 40 545 1						
	Table 1-3: B1D Jacket Being Decommissioned						
Field(s)	Amethyst East	Production Type (Oil/Gas/Condensate)	Gas				
Water Depth (m)	19.9	UKCS block	47/15a				
Distance to median (km)	140	Distance from nearest UK coastline (km)	48				
	Surface Installation(s)						
Number	Туре	Topsides Weight (Te)	Jacket Weight (Te)				
1	Fixed Leg Steel	N/A	1711*				
Subsea I	nstallation(s)	Number of Wells					
Number	Туре	Platform	Subsea				
0	N/A	6	0				
	Drill Cut	tings pile(s)					
Number of Piles	N/A	Total Estimated volume (m³)	N/A				

^{*}Includes the weight of the piles and marine growth.

C1D Jacket

Table 1-4: C1D Jacket Being Decommissioned					
Field(s)	Amethyst West	Gas			
Water Depth (m)	20.0	UKCS block	47/14a		
Distance to median (km)	155	Distance from nearest UK coastline (km)	31		
	Surface II	nstallation(s)			
Number	Туре	Topsides Weight (Te)	Jacket Weight (Te)		
1	Fixed Leg Steel	N/A	1938*		



Subsea Installation(s)		Number of Wells				
Number	Туре	Platform	Subsea			
0	N/A	7	0			
	Drill Cuttings pile(s)					
Number of Piles	N/A	Total Estimated volume (m³)	N/A			

^{*}Includes the weight of the piles and marine growth.

Table 1-5: Installations Section 29 Notice Holders Details					
Section 29 Notice Holders	Registration Number	Equity Interest Percentage (%)			
Perenco UK Limited	04653066	100			
Arco British Limited, LLC	BR001713	0			
BP Exploration Operating Company Limited	00305943	0			
Britoil Limited	SC077750	0			
Murphy Petroleum Limited	00811102	0			
Spirit Energy Resources Limited	02855151	0			

1.4.2 Pipelines

Table 1-6: Pipeline(s) Being Decommissioned				
Number and total length (m) of Pipeline(s) / umbilical(s)	1 X Helvellyn riser (PL1956) = 42.5m 1 X Helvellyn umbilical (PLU1957) = 42.5m			
	PL649* - 48.25m (A1D) + 51.5m (A2D) = 99.75m PL650* - 61m (A1D) + 56.3m (A2D) = 117.3m PL775* - 41.15m (B1D) + 48m (A2D) = 89.15m PL776* - 44m (C1D) + 53m (A1D) = 97m PL777* - 46m (B1D) + 48m (A2D) = 94m PL778* - 44.6m (C1D) + 52.6m (A1D) = 97.2m PL4997* - 48.25m (A1D) PL6399* - 48.25m (A1D) + 44m (C1D) = 92.25m PL6400* - 48.25m (A1D) + 56.3m (A2D) = 104.55m PL6401* - 56.3m (A2D) + 41.15m (B1D) = 97.45m			

^{*}Riser section only

Table 1-7: Riser and Umbilical Section 29 Notice Holders Details (PL1956, PLU1957)					
Section 29 Notice Holders Registration Number Equity Interest Percentage (%)					
Perenco UK Limited	04653066	100			



The S29 holders have already provided their Letters of Support to remove the Waldorf A2D riser spool piece for the approved Helvellyn DP.

Table 1-8: Riser and Umbilical Section 29 Notice Holders Details (PL649, PL650, PL775, PL776, PL777, PL777)						
Section 29 Notice Holders Registration Number Equity Percent						
Perenco UK Limited	04653066	100				
Arco British Limited, LLC	BR001713	0				
BP Exploration Operating Company Limited	00305943	0				
Britoil Limited	SC077750	0				
Murphy Petroleum Limited	00811102	0				
Spirit Energy Resources Limited	02855151	0				

Table 1-9: Riser and Umbilical Section 29 Notice Holders Details (PL4997, PL6399, PL6400, PL6401)					
Section 29 Notice Holders Registration Number Equity Interest Percentage (
Perenco UK Limited	04653066	100			

1.5 Summary of Proposed Decommissioning Programme

Table 1-10: Summary of the Decommissioning Programme				
Proposed Decommissioning Solution	Reason for Selection			
Substructures (Jackets)				
The leg piles will be cut to a target depth of at least -3m below the mean seabed level. As the seabed around the Amethyst field is expected to vary significantly over time, Perenco will investigate the opportunities to perform deeper internal cuts of the piles, subject to surveys to verify the piles are free of internal blockages. Cutting of the piles is anticipated to be executed by internal cutting equipment. However, if this proves unfeasible it would be necessary to excavate the seabed around the piles to enable external cutting. Where required, cleaning will be carried out at the dismantling site for recycling, as appropriate. Perenco will assess alternative options for removal based on structural integrity, project efficiency and vessel capability.	To comply with the Oslo and Paris Conventions (OSPAR) requirement to leave a clear seabed removes a potential obstruction to fishing operations and maximises the potential for recycling of materials			
Subsea Installation stabilisation features				



Table 1-10: Summary of the Decommissioning Programme					
Proposed Decommissioning Solution	Reason for Selection				
No stabilisation features are to be introduced or removed from the seabed as part of this DP.	N/A				
Pipelines, Flowlines, Umbilicals & Riser Sections					
All pipelines and umbilical currently attached to respective Amethyst jackets were cut on the seabed, near the base of the jackets to separate the riser section from the rest of the pipeline/ umbilical systems. This will facilitate the removal of the jackets from the seabed. A summary of the subsea cutting operations for respective pipelines and umbilical is presented below: • PL776, PL778 and PL6399: was cut on the seabed near the base of C1D (-20m LAT) and A1D (-29.2m LAT) jackets. • PL775, PL777 and PL6401: was cut on the seabed near the base of B1D (-19.9m LAT) and A2D (-23.9m LAT) jackets. • The Helvellyn riser section, spool piece and umbilical (PL1956 and PLU1957): was cut on the seabed near the base of the A2D (-23.9m LAT) jacket. • PL649, PL650 and PL6400: was cut on the seabed near the base of A1D (-29.2m LAT) and A2D (-23.9m LAT) jackets. Pipeline abandonment plugs were inserted into the cut ends of PL649 and PL650 at both jacket locations. The plugs are required on these two pipelines to preserve the chemicals within, as they are being considered for future use. PL649 and PL650 are protruding. No other pipelines will be plugged because no other pipelines are being considered for future use. • PL4997: was cut at the base of the A1D (-29.2m LAT) jacket.	To comply with the Oslo and Paris Conventions (OSPAR) requirement to leave a clear seabed, removes a potential obstruction to fishing operations and maximises the potential for recycling of materials				
The precise From and To points / cut points can be found in Table 2-2.					
Wells					
Wells 47/14a-J1 and 47/15a-L1 are AB2 and will be made AB3 during the jacket removal campaign by removing the casing on 47/14a-J1 (A1D) and the stump on 47/15a-L1 (B1D), both to -3m below the seabed level.	Wells will be abandoned in accordance with the latest version of OEUK Guidelines and in compliance with relevant HSE Regulations.				
Drill Cuttings					
No drill cuttings were identified on the seabed adjacent to the jacket.	The cuttings pile would have been widely dispersed and therefore falls below OSPAR 2006/5 thresholds.				
Interdependencies					



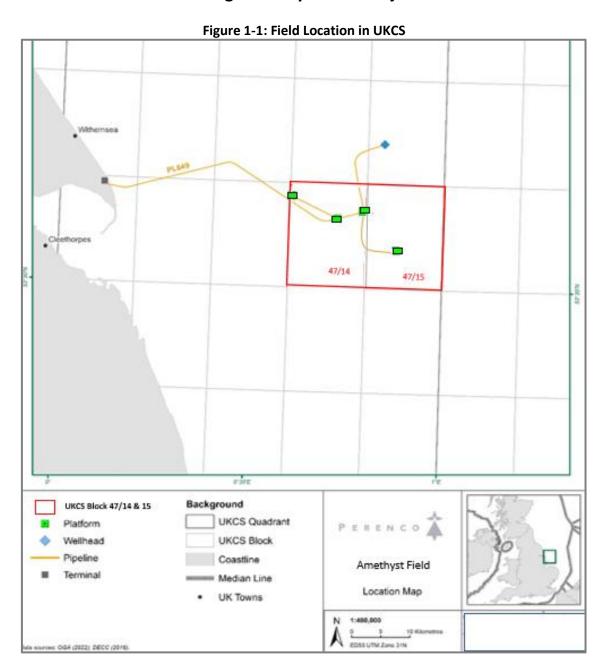
Table 1-10: Summary of the Decommissioning Programme

Proposed Decommissioning Solution

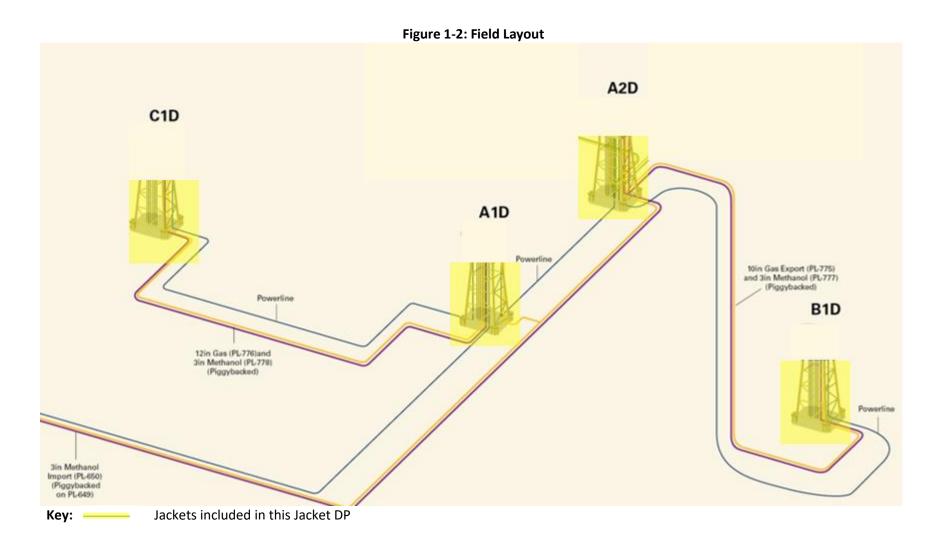
Reason for Selection

Decommissioning of the pipeline section within the Rose and Helvellyn 500m safety zone (SZ) is excluded from this DP and is covered in separate DPs by Spirit and Waldorf respectively. Removal of the Helvellyn riser and umbilical sections will not prejudice decommissioning solutions for the remaining pipelines.

1.6 Field Location Including Field Layout and Adjacent Facilities







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Table 1-11: Adjacent Facilities								
Owner/Operator	Name	Туре	Distance/Direction			Information	Status	
			A1D	A2D	B1D	C1D		
Perenco UK Limited	Neptune	Platform	42km Northeast	40km North	47km North	40km Northeast	Adjacent Platform	Operational
Perenco UK Limited	Mercury	Subsea Development	18km North	19km Northwest	28km Northwest	13km North	Two subsea wells	Operational
Spirit Energy North Sea Limited	Eris	Subsea Development	25km Northwest	26km Northwest	35km Northwest	20km Northwest	One subsea well	Operational
Spirit Energy North Sea Limited	Ceres	Subsea Development	19km Northeast	18km North	27km North	17km Northeast	One subsea well	Operational
Perenco UK Limited	Hyde	Platform	29km Northeast	25km Northeast	29km Northeast	33km Northeast	Adjacent Platform	Operational
Perenco UK Limited	West Sole Alpha (WSA)	Platform	30km Northeast	25km Northeast	24km Northeast	37km Northeast	Adjacent Platform	Operational
Perenco UK Limited	West Sole Bravo (WSB)	Platform	29km Northeast	24km Northeast	24km Northeast	35km Northeast	Adjacent Platform	Operational
Perenco UK Limited	West Sole Charlie (WSC)	Platform	29km Northeast	24km Northeast	25km Northeast	34km Northeast	Adjacent Platform	Operational
Perenco UK Limited	Pipeline From Easington to WSA (PL28)	Pipeline	15.5km Northwest	15km Northeast	20km Northeast	10km Northwest	Adjacent Pipeline	Operational
Perenco UK Limited	Pipeline From Easington to WSB (PL145)	Pipeline	16km Northwest	15.5km Northeast	20.5km Northeast	10.5km Northwest	Adjacent Pipeline	Operational
Waldorf Petroleum Resources Limited	Helvellyn	Subsea Development	16km Northeast	13km North	1 km Northeast	19km North	One subsea well	Non- Operational

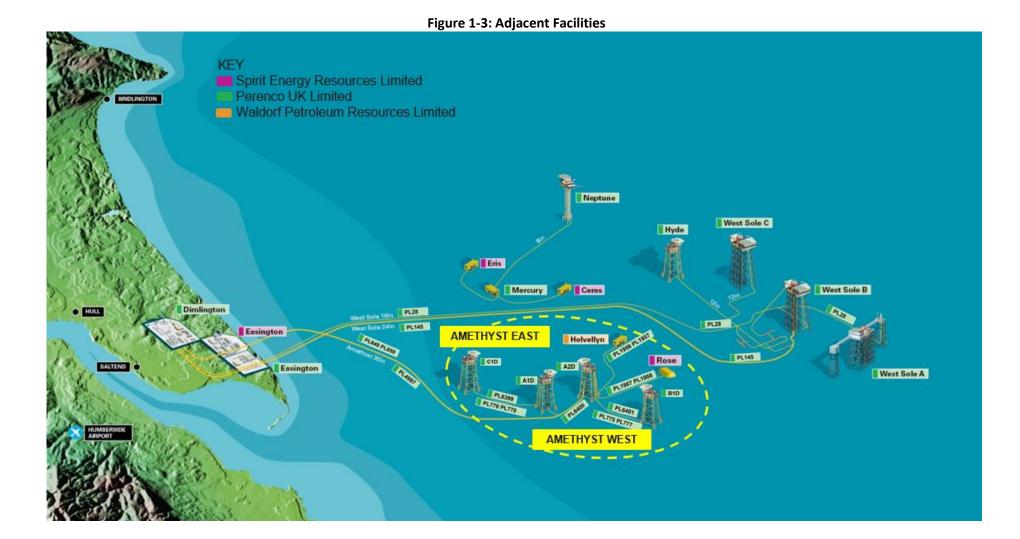


Table 1-11: Adjacent Facilities								
Owner/Operator	Name	Туре		Distance/	Direction		Information	Status
Waldorf Petroleum Resources Limited	Pipeline From A2D to Helvellyn (PL1956 & PLU1957)	Pipelines	5km East	0km North	10km Northwest	11.5km East	Adjacent Pipelines	Non- Operational
Perenco UK Limited	Power Cable from EGT Amethyst Field (PL4997)	Power Cable	0km	0km	10km Northwest	1km Southwest	Amethyst Power Cable	Non- Operational
Perenco UK Limited	Pipelines from EGT to A2D with a spur connection to A1D (PL649 & PL650)	Pipelines	0km	0km	10km Northwest	1km Southwest	Amethyst Pipelines	Non- Operational

Impacts of Decommissioning Proposals

Decommissioning of the Amethyst field Jackets and the risers will have no impact on the adjacent facilities. Similarly, the decommissioning programmes of the Rose and Helvellyn well tiebacks do not impact the Amethyst jackets and risers.





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1.7 Industrial Implications

Perenco's contract strategy and Supply Chain Action Plan including Pathfinder will result in an efficient and cost-effective execution of the decommissioning works.

The Amethyst Jacket DP is managed by Perenco to ensure safe, efficient, and legally compliant delivery of the various elements of the decommissioning scope. The intention is to make efficient use of the supply chain to generate value through the application of knowledge, innovation, and technology, explore collaboration opportunities and employ best practices in the management of the supply chain to deliver a cost-effective and reliable service. Where appropriate existing framework agreements may be used for decommissioning activities.

2. <u>DESCRIPTION OF ITEMS TO BE DECOMMISSIONED</u>

2.1 Installation(s): Surface Facilities (Topsides/Jacket(s)/FPSO etc.)

	Table 2-1: Surface Facilities Information							
	Facility	Lo	Jacket					
Name	Туре	WGS84 decimal	WGS84 decimal of a minute	Weight (Te)	No. of Legs	No. of Piles	Weight of Piles (Te)	
A1D	Fixed Leg Steel Jacket	349431.20E, 5942828.80N	53° 36' 38.4406"N 00° 43' 21.3858"E	2285*	4	4	635	
A2D	Fixed Leg Steel Jacket	353868.94E, 5944005.76N	53° 37' 21.0228"N 00° 47' 20.6881"E	2098.67*	4	4	563	
B1D	Fixed Leg Steel Jacket	359497.00E, 5936988.00N	53° 33' 39.6424"N 00° 52' 38.1894"E	1711*	4	8	169	
C1D	Fixed Leg Steel Jacket	341601.50E, 5946900.80N	53° 38' 41.7738"N 00° 36' 08.2471"E	1938*	4	4	407	

^{*} Jacket weights shown are inclusive of pile weights.



2.2 Pipelines Including Stabilisation Features

	Table 2-2: Pipeline/Flowline/Umbilical Information						
Pipeline Number	Description	Length (m)	Product Conveyed	From – To Location Points	Burial Status	Pipeline Status	Current Content
PL1956	8" Export Pipeline	42.5* (8.5 removed with topside)	Gas	From the Riser open cut-end at ex — Amethyst A2D jacket. To the upstream of the Amethyst A2D spool piece flange.	Trenched and buried**	Out of Use	Flushed clean and filled with seawater
PLU1957	5" Service and Control Umbilical	42.5* (14.5 removed with topside)	Chemicals	From the Umbilical open cut-end at ex — Amethyst A2D jacket. To the downstream of the Umbilical J-tube Bellmouth.	Trenched and buried**	Out of Use	Flushed clean and filled with seawater
PL649***	30" export pipeline	48.25 (15.75 removed with topside)	Gas	From cut point at A1D. To end of A1D subsea spool piece.	Exposed - vertical riser attached to jacket leg	Out of Use	Inhibited seawater
		51.5 (7.5 removed with topside)		From cut point at A2D. To cut spool piece end near ex – A2D jacket location (abandonment plug installed at cut end).			
PL650***	3" water re-injection pipeline	56.3 (14.75 removed with topside)	Water	From cut point at A2D. To cut spool piece end near ex – A2D jacket location (abandonment plug installed at cut end).	Exposed - vertical riser attached to jacket leg	Out of Use	Inhibited seawater



		61 (9 removed with topside)		From end of A1D subsea spool piece. To cut point at A1D.			
PL775***	10" export pipeline	41.15 (8.35 removed with topside)	Gas	From cut point at B1D. To cut point #1 spool piece end near ex – B1D jacket location.	Exposed - vertical riser attached to jacket leg	Out of Use	Flushed clean and filled with seawater
		48 (7 removed with topside)		From cut point #2 spool piece end near ex - A2D jacket. To cut point at A2D.			
PL776***	12" export pipeline	44 (8.385 removed with topside)	Gas	From cut point at C1D. To cut point #1 spool piece end near ex - C1D jacket.	Exposed - vertical riser attached to jacket leg	Out of Use	Flushed clean and filled with seawater
		53 (8.385 removed with topside)		From cut point #2 spool piece end near ex - A1D jacket. To cut point at A1D.			
PL777***	3" methanol pipeline	48 (7 removed with topside)	Methanol	From cut point at A2D. To cut point #2 spool piece end near ex - A2D jacket.	Exposed - vertical riser attached to jacket leg	Out of Use	Flushed clean and filled with seawater
		46 (7 removed with topside)		From cut point #1 spool piece end near ex - B1D jacket. To cut point at B1D.			



PL778***	3" infield pipeline	52.6 (8.4 removed with topside) 44.6 (8.4 removed with topside)	Water	From cut point at A1D. cut point #1 spool piece end near ex - A1D Jacket. From cut point #2 spool piece end near ex - C1D jacket. To cut point at	Exposed - vertical riser attached to jacket leg	Out of Use	Flushed clean and filled with seawater
PL4997***	70mm power cable	48.25 (8.5 removed with topside)	Electricity	From cut point near ex-Amethyst A1D trunk jacket. To cut point at A1D.	Exposed - vertical riser attached to jacket leg	Out of Use	N/A
PL6399***	70mm power cable	48.25 (8.5 removed with topside)	Electricity	From cut point at Amethyst A1D Trunk Jacket. To subsea cut point at A1D.	Exposed - vertical riser attached to jacket leg	Out of Use	N/A
		44 (8.5 removed with topside)		From cut point B near ex - Amethyst C1D satellite jacket. To cut point at C1D.			
PL6400***	70mm power cable	48.25 (8.5 removed with topside)	Electricity	From cut point at A1D. To cut point A near ex - Amethyst A1D trunk jacket.	Exposed - vertical riser attached to jacket leg	Out of Use	N/A
		56.3 (8.5 removed with topside)		From cut point C near ex - Amethyst A2D trunk jacket. To cut point at A2D.			
PL6401***	70mm power cable	56.3 (8.5 removed with topside)	Electricity	From cut point at A2D. To cut point C near ex - Amethyst A2D trunk jacket.	Exposed - vertical riser attached to jacket leg	Out of Use	N/A



4	11.15 (8.5	From cut point D		
r	removed	near ex - Amethyst		
	with	B1D satellite jacket.		
	topside)	To cut point at		
		B1D.		

^{*}The length shown is the maximum length to be removed as part of this DP; $PL1956\ 42.5m = 32.5m$ of riser section + 10m of A2D spool piece and $PLU1957\ 42.5m = 32.5m$ of umbilical riser section + 10m of umbilical

2.3 Wells

Table 2-3: Well Information					
Platform Wells	Designation	Status	Category of Well		
47/14a-J1	Development	AB2	PL-0-0-1		
47/14a-J2	Development	AB3	PL-0-0-0		
47/14a-J3	Development	AB3	PL-0-0-0		
47/14a-J4	Development	AB3	PL-0-0-0		
47/14a-J5Z	Development	AB3	PL-0-0-0		
47/14a-K1	Development	AB3	PL-0-0-0		
47/14a-K2	Development	AB3	PL-0-0-0		
47/14a-K3	Development	AB3	PL-0-0-0		
47/14a-K4 Development		AB3	PL-0-0-0		
47/14a-K5	47/14a-K5 Development		PL-0-0-0		
47/14a-K6	Development	AB3	PL-0-0-0		
47/14a-M1Z	Development	AB3	PL-0-0-0		
47/14a-M2	Development	AB3	PL-0-0-0		
47/14a-M3	Development	AB3	PL-0-0-0		
47/14a-M4	Development	AB3	PL-0-0-0		
47/14a-M5Z	Development	AB3	PL-0-0-0		
47/14a-M6	Development	AB3	PL-0-0-0		
47/14a-M7Y Development		AB3	PL-0-0-0		
47/15a-L1	47/15a-L1 Development		PL-0-0-1		
47/15a-L2	Development	AB3	PL-0-0-0		
47/15a-L3	Development	AB3	PL-0-0-0		

^{**} No stabilisation material will be introduced or removed from the seabed as part of this DP.

^{***} Riser section (including spool piece if specified).



47/15a-L4	Development	AB3	PL-0-0-0
47/15a-L5Y	Development	AB3	PL-0-0-0
47/15a-L6	Development	AB3	PL-0-0-0
Subsea Wells	Development		
N/A			
E & A Wells			
47/09a- 7	Exploration	AB3	
47/09a- 8Z	Appraisal	AB3	
47/09a- 8Z	Exploration	AB3	
47/13a- 3	Appraisal	AB3	
47/14a- 2	Appraisal	AB3	
47/14a- 3	Appraisal	AB3	
47/14a- 4	Appraisal	AB3	
47/14a- 5	Appraisal	AB3	
47/14a- 6	Appraisal	AB3	
47/14a- 8	Appraisal	AB3	
47/14a- 9	Appraisal	AB3	
47/15- 2	Exploration	AB3	
47/15a- 3Z	Appraisal	AB3	
47/15a- 7	Exploration	AB3	
47/14a-1	Exploration	AB3	
	I .		

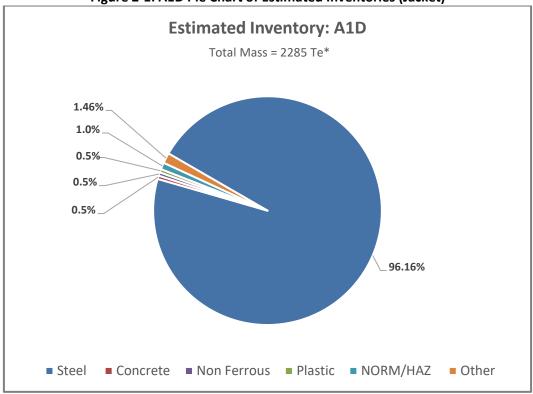
2.4 Drill Cuttings

Table 2-4: Drill Cuttings Pile(s) Information					
Location of Pile Centre (Latitude/Longitude)	Seabed Area (m²)	Estimated volume of cuttings (m³)			
N/A	N/A	N/A			



2.5 Inventory Estimates

Figure 2-1: A1D Pie Chart of Estimated Inventories (Jacket)



^{*}Includes mass of 35.44 Te of riser sections for PL649, PL650, PL776, PL778, PL4997, PL6399 and PL6400

Estimated Inventory: A2D

Total Mass = 2098.67 Te*

1.46%
1.0%
0.5%
0.5%
0.5%

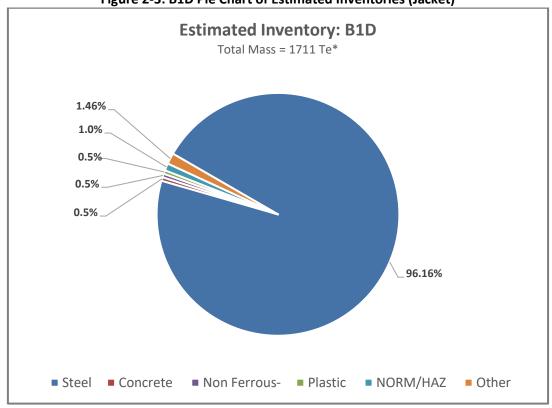
96.16%

Steel Concrete Non Ferrous Plastic NORM/HAZ Other

^{*}Includes mass of 39.22 Te of riser sections for PL1956, PLU1957, PL649, PL650, PL775, PL777, PL6400 and PL6401

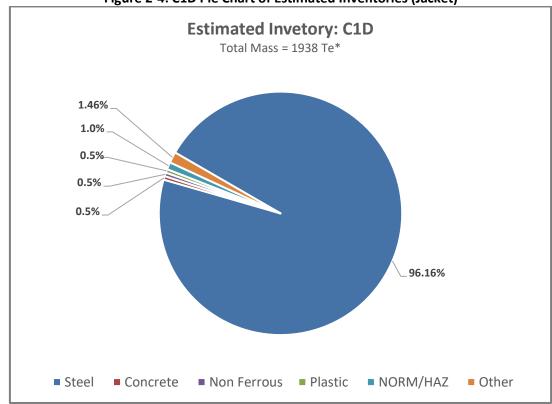


Figure 2-3: B1D Pie Chart of Estimated Inventories (Jacket)



^{*}Includes mass of 6.93 Te of riser sections for PL775, PL777 and PL6401

Figure 2-4: C1D Pie Chart of Estimated Inventories (Jacket)



^{*}Includes mass of 8.46 Te of riser sections for PL776, PL778 and PL6399



3. REMOVAL AND DISPOSAL METHODS

Disposal option selection will be in accordance with the Environmental Agency Waste Management Hierarchy. Perenco will consider the disposal options available, taking into account the business needs within Perenco to reuse equipment and materials where appropriate.

At the current time, a suitable relocation or reuse as a whole for the jackets has not been identified; therefore, at present dismantling of the Jackets at an onshore disposal facility is considered the most likely disposal option. Those materials deemed suitable for recycling are to be recovered at an appropriate recycling facility.

3.1 Jackets

3.1.1 Jacket Decommissioning Overview

A single lift removal option using a suitable Heavy Lift Vessel (HLV) and transportation ashore for cleaning, break up, and recycling is considered the most likely removal methodology currently. A high-level description of this removal option is presented below, along with Figure 3.1 illustrating the preferred removal options, although the exact cutting points and removal method are subject to detailed engineering and commercial tendering.

All risers (including spool pieces) attached to the Amethyst jackets will be removed together with the respective jackets. This comprises of the following risers: PL776, PL778 and PL6399 (on C1D and A1D), PL775, PL777 and PL6401 (on B1D and A2D), PL649, PL650 and PL6400 (on A1D and A2D) and PL4997 (on A1D). In preparation for the Amethyst risers' removal the pipelines have all been cut and airgapped on the seabed.

The Helvellyn riser (including the 10m spool piece) and umbilical sections will be removed with the A2D Jacket. In preparation for the Helvellyn riser and umbilical sections' removal the pipeline and umbilical have been cut on the seabed near the base of the A2D jacket (-23.9m LAT).

The pile cuts for the Amethyst jackets will be made -3m below the seabed level to ensure that any remains are unlikely to become uncovered. The means of cutting will be an industry standard technique such as diamond wire, oxyacetylene, or high-pressure abrasive water jet cutting.

The steps below provide a high-level chronological summary of the key stages of the Amethyst Jackets dismantling using a single lift/ heavy lift vessel. This process will be for all the Jackets (A1D, A2D, C1D and B1D).

- Mobilisation of equipment and personnel to HLV.
- Transit of vessel to Amethyst Field.
- Arrive at 500m SZ and complete pre-entry checks.
- Move into position next to the jacket.
- Launch a Remotely Operated Vehicle (ROV) to inspect the jacket.
- Connect rigging to grillage on which the solar Aids to Navigation (AtoNs) are placed on with Rope Access Technician (RAT) (if required) and hang off rigging to the vessel deck.
- Connect rigging to the main crane.
- Lift grillage and solar AtoNs from the jacket.

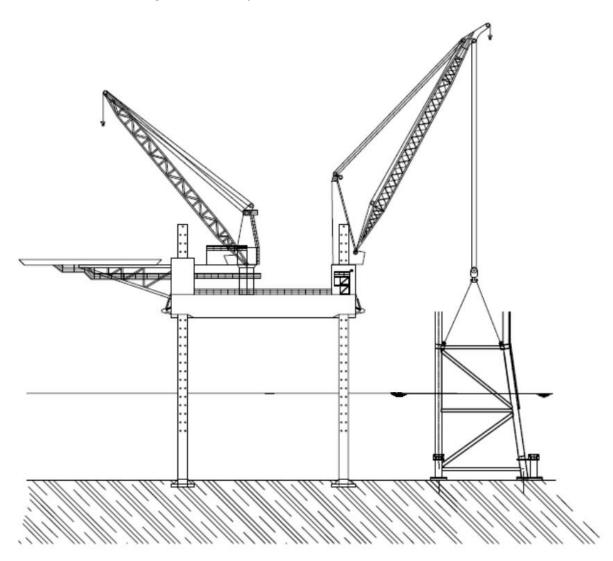


- Connect rigging to Jacket pad-eyes with RAT and hang off rigging to the vessel deck.
- Remove soil plug from pile annulus and complete pile cuts.
- Cut subsea risers and high-voltage power cable at the base of the jacket.
- Connect rigging to the main crane.
- Lift the jacket to the deck of the vessel and seafasten it in place.
- Execute as-left survey/debris removal with ROV.
- Complete safety checks in preparation for leaving the field and moving out of 500m SZ.
- Transport Jacket to disposal yard for onshore disposal and recycling.

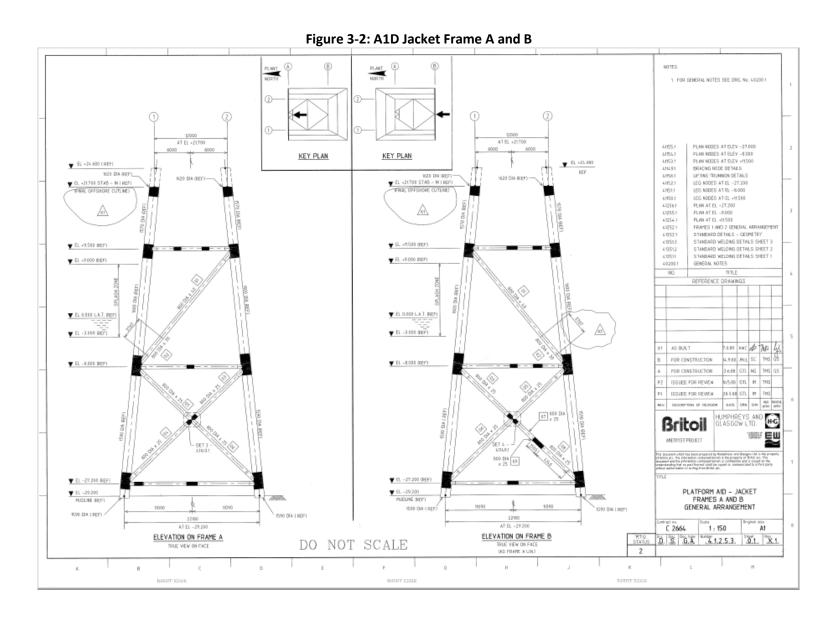
Trinity House will be informed when the AtoNs on all four jackets are extinguished. AIS base station will be switched off once the jackets are removed.



Figure 3-1: Anticipated Jacket Removal Method

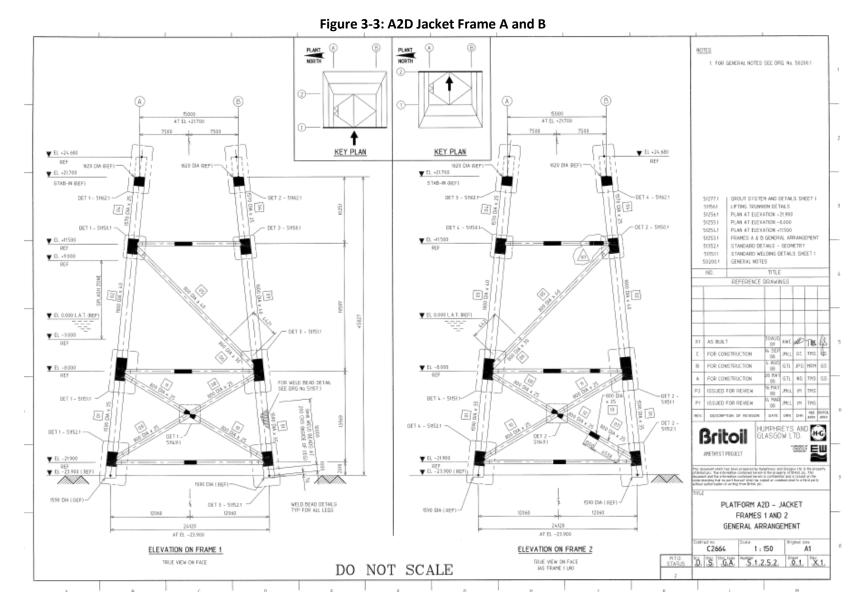






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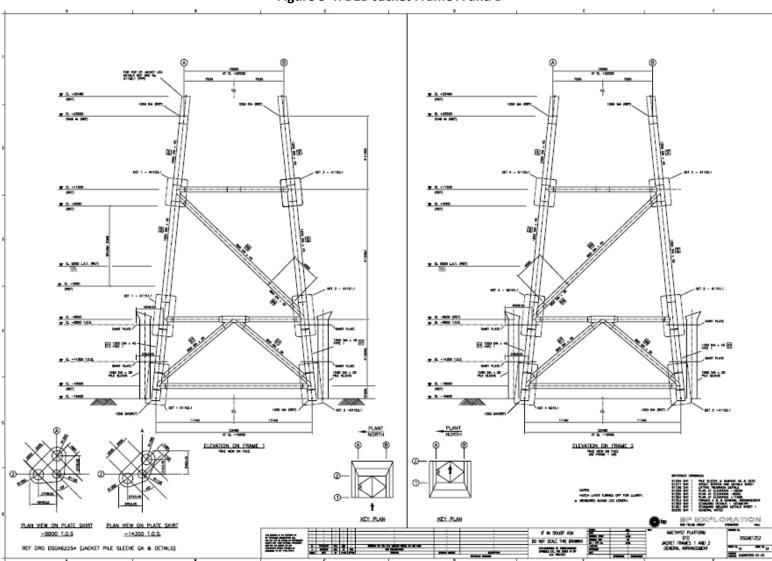
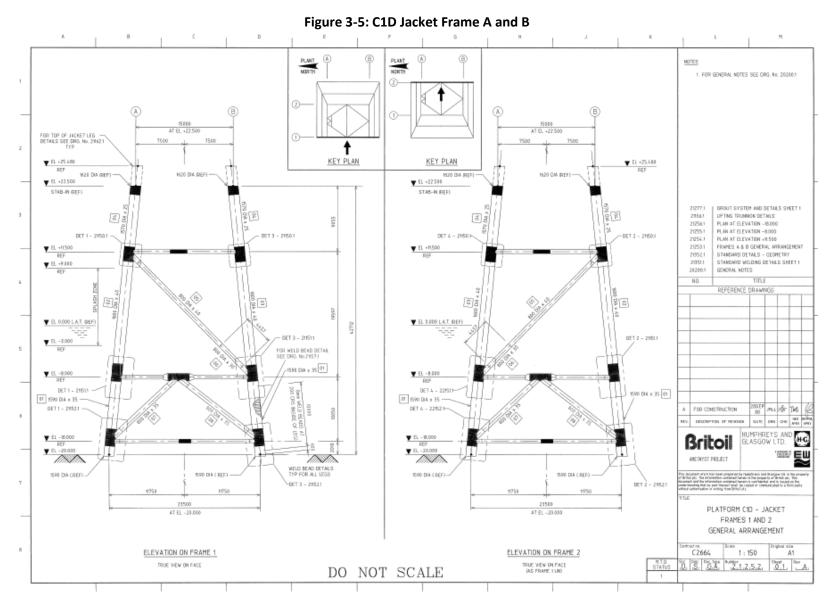


Figure 3-4: B1D Jacket Frame A and B







3.1.2 Jacket Removal Methods

The Jackets will be removed to shore for cleaning and disposal. The pile cuts will be made to -3m below the seabed level to ensure that any remains are unlikely to become uncovered. The means of cutting could be diamond wire, oxyacetylene, or high-pressure abrasive water jet cutting.

The A1D, A2D, B1D and C1D Jackets will be removed by the methods outlined in the table below.

Table 3-1: Jacket Removal Methods					
1) HLV (semi-submersible crane vessel) 고 2) Single lift Vessel (SLV) 고 3) Piece small 그 4) Other 그 (describe briefly)					
Method	Description				
Single lift removal by SLV/HLV	A1D, B1D and C1D, with their piles, will be removed as complete units and transported to shore for re-use of selected equipment, recycling, break up and disposal. A2D, with its piles, Helvellyn riser, spool piece, and umbilical sections, will also be removed as complete units and transported to shore for re-use of selected equipment, recycling, break up and disposal. The riser sections of pipelines PL649, PL650, PL775, PL776, PL777, PL778 and cables PL4997, PL6399, PL6400 and PL6401 will be removed along with the jackets to which the risers and cables are attached. If the decommissioning method changes, OPRED will be notified.				

3.2 Pipelines

Т	Table 3-2: Pipeline or Pipeline Groups Decommissioning Options						
Pipeline or Group (as per PWA)	Condition of line/group	Whole or part of pipeline/group	Decommissioning options considered*				
PL1956	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser section	Full removal				
PLU1957	Exposed - vertical riser attached to jacket leg	Part of pipeline – umbilical within J-Tube	Full removal				
PL649	Exposed - vertical riser attached to jacket leg	Part of pipeline — riser sections (48.25m at A1D and 51.5m at A2D).	Full removal				
PL650	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (56.3m at A2D and 61m at A1D).	Full removal				



PL775	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (41.15m at B1D and 48m at A2D).	Full removal
PL776	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (44m at C1D and 53m at A1D).	Full removal
PL777	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (48m at A2D and 46m at B1D).	Full removal
PL778	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (52.6m at A1D and 44.6m at C1D).	Full removal
PL4997	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser section (48.25m at A1D).	Full removal
PL6399	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (48.25m at A1D and 44m at C1D).	Full removal
PL6400	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (48.25m at A1D and 56.3m at A2D).	Full removal
PL6401	Exposed - vertical riser attached to jacket leg	Part of pipeline – riser sections (56.3m at A2D and 41.15m at B1D).	Full removal

^{*}Full removal is the only option considered, as the risers are attached to the jackets.

Comparative Assessment Method:

There was no comparative assessment as the risers are to be removed as part of the jacket removal campaign.

Outcome of Comparative Assessment:

Table 3-3: Outcome of Comparative Assessment			
Pipeline or Group (as per PWA)	Recommended Option	Justification	
PL1956	Full removal	Risers to be removed as part of the jacket removal campaign	
PLU1957	Full removal	Risers to be removed as part of the jacket removal campaign	
PL649	Full removal	Risers to be removed as part of the jacket removal campaign	
PL650	Full removal	Risers to be removed as part of the jacket removal campaign	



PL775	Full removal	Risers to be removed as part of the jacket removal campaign
PL776	Full removal	Risers to be removed as part of the jacket removal campaign
PL777	Full removal	Risers to be removed as part of the jacket removal campaign
PL778	Full removal	Risers to be removed as part of the jacket removal campaign
PL4997	Full removal	Risers to be removed as part of the jacket removal campaign
PL6399	Full removal	Risers to be removed as part of the jacket removal campaign
PL6400	Full removal	Risers to be removed as part of the jacket removal campaign
PL6401	Full removal	Risers to be removed as part of the jacket removal campaign

3.3 Waste Streams

Table 3-4: Waste Stream Management Methods		
Waste Stream	Removal and Disposal Method	
Marine Growth	Removed offshore/onshore. Disposed according to guidelines.	
Naturally Occurring Radioactive Material (NORM)/ Low Specific Activity (LSA Scale)	The pipelines were made HCS (flushed, cut, and filled with seawater). No NORM was detected when the risers were previously cut. Therefore, we are not expecting NORM/LSA waste.	
Other Hazardous Wastes	The pipelines were made HCS (flushed, cut, and filled with seawater). Due to this, a survey for hazardous waste will not be required for this decommissioning activity.	
Onshore Dismantling Sites	Appropriate licensed sites will be selected. The dismantling site must 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. If an onshore site is required, DESNZ will be contacted.	

Table 3-5: Inventory Disposition			
	Total Inventory (Te)	Planned (Te) to Shore	Planned (Te) Left in-situ***
Jacket A1D	2285*	1650	635
Jacket A2D	2098.67**	1532	566.67
Jacket B1D	1711*	1542	169
Jacket C1D	1938*	1531	407

^{*} The total inventory includes the weight of the piles, jackets, risers and cables.

^{**}Includes the weight of the piles, Helvellyn Riser and Umbilical within J-Tube, and riser sections of PL649, PL650, PL775, PL777, PL6400 and PL6401.

^{***} Tonnage left in situ are the piles left cut -3m below the seabed.



4. <u>ENVIRONMENTAL APPRAISAL OVERVIEW</u>

4.1 Environmental Sensitivities (Summary)

Table 4-1: Environmental Sensitivities			
Environmental Receptor	Main Features		
Conservation Interests	 There are six Marine Protected Areas (MPA) within 40km of the Amethyst field: Greater Wash Special Protected Area (SPA) – 13.1km southwest of A1D. Inner Dowsing, Race Bank and North Ridge Special Area of Conservation (SAC) -18km south of B1D Southern North Sea SAC - 8.4km north of C1D and 18.7km E of A2D. Holderness Offshore Marine Conservation Zone (MCZ) - 3km north of C1D. Humber Estuary SAC - 38km West of C1D. Holderness Inshore MCZ – 25km west of C1D. Full details are presented within the Amethyst Jackets EA.		
Seabed	 The following European Nature Information System (EUNIS) seabed classifications have been identified in the vicinity of the Amethyst Jackets: A5.14: Circalittoral coarse sediment. A5:15: Infralittoral coarse sediment. A5:25/A5:26: Circalittoral sand. A5:44: Circalittoral mixed sediments. A5:45: Offshore circalittoral mixed sediment. A4:27: Faunal communities on deep moderate energy circalittoral rock. 		
Fish	There are potential fish spawning areas in International Council for the Exploration of the Seas (ICES) rectangle 36F0 for Herring (Clupea harengus), Lemon Sole (Microstomus kitt), Sandeels (Ammodytes spp.) Plaice (Pleuronectes platessa) and, Sole (Solea solea). In addition to the spawning grounds described above, the waters of ICES rectangles 36F0 also act as nursery areas (or aggregation area for 0 group fish) for Herring (Clupea harengus), Plaice (Pleuronectes platessa), Lemon Sole (Microstomus kitt), Sole (Solea solea), sandeel (Ammodytes spp.), Sprat (Sprattus		
Fisheries	sprattus), Whiting (Merlangius merlangus) and, Cod (Gadus morhua). Fishing activity in the area primarily takes place over summer months between July and October and is dominated by traps with 94% of the total efforts, followed by dredges with 6% and lastly trawls, seine nets and harvesting machines with negligible fishing activity recorded within the area (<1%). This is reflected in the landings data which indicates that shellfish species are the most significant component of the fishery in terms of landed tonnage (98.6%) and value, although some demersal fish are also caught. Of the species caught between the years 2017 and 2021, Crabs (Cancer Pagarus) landings are the greatest tonnages in ICES Rectangle 36F0, followed by Lobsters, scallops, and whelks.		



	Table 4-1: Environmental Sensitivities
Environmental Receptor	Main Features
	Data presented within the Navigational Risk Assessment (NRA) indicates fishing vessel activity on Automatic Identification System (AIS) (15 m length and above) to be moderate in the area. The vast majority of vessels were UK registered (94%) followed by French (4%) and Dutch (2%). Cetaceans (whales, dolphins, and porpoises) are protected under Annex IV of the
	Council Directive 92/43/EEC (also known as the Habitats Directive). Cetacean abundance in the SNS is relatively low compared to the northern and central North Sea, with the exception of the harbour porpoise (<i>Phocoena phocoena</i>).
	The relative abundance and density of cetaceans in the vicinity of the Amethyst field can be derived from data obtained during the Small Cetacean Abundance of the North Sea (SCANS) SCANS-IV aerial and ship-based surveys. This project identified the abundance and density of cetacean species within predefined sectors of the North Sea and Northeast Atlantic. The Amethyst field is situated within the SCANS-IV Block 'NS-C' and was surveyed by air. The density of the harbour porpoise within the SCANS-IV Block 'NS-C' is higher than the total surveyed area, suggesting that the area may be important for these species. Densities for white-beaked dolphin were observed to be lower.
Marine Mammals	In addition to the aforementioned cetaceans, other species have been observed or have been modelled to have presence in the North Sea. These include the Atlantic white-sided dolphin (<i>Lagenorhynchus acutus</i>), Risso's dolphin (<i>Grampus griseus</i>), short-beaked common dolphin (<i>Delphinus delphis</i>), and killer whale (<i>Orcinus orca</i>).
	Two species of seals are found in the North Sea around the English east coast: grey seal (<i>Halichoerus grypus</i>) and the harbour (or common) seal (<i>Phoca vitulina</i>).
	Harbour seals tend to be found closer to the coast. As with grey seals, the UK harbour seal population is predominantly found around the Scottish coast with smaller colonies around The Wash and along the east coast of England. Harbour seals are restricted to their haul-out sites and the surrounding waters during pupping (June and July) and during their annual moult (August). This species can be found offshore from late August through to the following June and tends to forage within 40 – 50km of its haul-out sites. The harbour seal at sea utilisation of waters surrounding the Amethyst field may be moderate (5-10 individuals per 5km²).
	Seal populations within areas where the power cables make landfall are likely to be greater, this is particularly the case for the grey seal.
Birds	The most common species of seabird found in this area of the SNS include Northern fulmar (Fulmarus glacialis), Great Skua (Stercorarius skua), Black legged kittiwake (Rissa tridactyla), Great black backed gull (Larus marinus), Common gull (Larus canus), Lesser black backed gull (Larus fuscus), Herring gull (Larus argentatus), Common guillemot (Uria aalge), Razorbill (Alca torda), Little auk (Alle alle) and Atlantic puffin (Fratercula arctica).



	Table 4-1: Environmental Sensitivities
Environmental Receptor	Main Features
	Fulmars are present in the highest numbers during the early and late breeding seasons, leading to peak densities in September. Kittiwakes are widely distributed throughout the year. Lesser black-backed gulls are mainly summer visitors, while in contrast, guillemot numbers are greatest during winter months. In addition, substantial numbers of terns migrate northwards through the offshore North Sea area in April and May, with return passage from July to September.
Onshore Communities	No impact on onshore communities was identified.
Other Users of the Sea	Oil and gas activity within the SNS is generally high and targets a number of existing gas fields. There is significant surface and subsurface infrastructure in UKCS Blocks 47/13, 47/14 and 47/15. There are several licenced marine aggregate areas within close proximity to the Amethyst infrastructure. One licensed marine aggregate area within UKCS block 47/14 (Humber 4) is located approximately 1.5 km and 0.6 km west of PL776 and PL778 respectively. The remaining Humber 1, 2, and 3 aggregation areas lie adjacent towards the west. Within a range of 20 km towards the south of B1D pipelines, there are six additional aggregation areas, including the Humber Estuary, Off Saltfleet, Humber Overfalls, Outer Dowsing, and Inner Dowsing. The closest offshore windfarm to the Amethyst field is the Triton Knoll offshore wind farm developed by Innogy Renewables UK Ltd which is located approximately 15 km south east of the C1D platform falling within the boundaries of block 47/14. Turbine commissioning was completed in January 2022. The waters surrounding the Amethyst field are described as having 'High' to 'Very High' shipping activity. An NRA commissioned by Perenco in 2020 identified the area as having high shipping density, with an estimated 74 vessels per day passing within 10 nautical miles (nm) of Amethyst based on the AIS data. The majority of
Atmosphere	Although the project will produce atmospheric emissions and consume energy, these activities are required to be undertaken to meet decommissioning obligations for the infrastructure. The preferred option has been considered with a focus on minimising vessel time and therefore minimising any associated emissions. An assessment of air emissions associated with the Jacket removal is presented in Appendix 1 of the EA report. These contributions are far below any thresholds for emissions in the UKCS or on a global scale and are not significantly larger than general vessel operations in the region. The resulting emissions are determined to be negligible as they will be extremely small in the context of UKCS and global emissions. Although there will be a short term and localised increase in emissions from the proposed operations, the total emissions will contribute a small percentage to the offshore and UK total CO ₂ e emissions <0.0160% and <0.0005%, respectively).



4.2 Potential Environmental Impacts and Their Management

Environmental Impact Assessment Summary:

The aspects for which Perenco consider there to be minimal or non-significant impact and therefore have been screened out from further detailed assessment within the EA report are described below:

- Energy and emissions.
- Waste generation.
- Physical presence of vessels in relation to other sea users.
- Operational discharges to sea.
- Noise emissions.

Potentially significant impacts which are assessed in detail within the EA include:

Impacts associated with seabed disturbance.

Overview:

Following a detailed review of the proposed decommissioning option, the environmental sensitivities present in the area, and potential impacts on other sea users and the environment, it has been determined that the decommissioning of the Amethyst Jackets (by removal) will not present any significant impacts.

Most impacts associated with the decommissioning option are well understood and managed through the implementation of established mitigation measures. The impacts with the potential to be significant were those associated with seabed disturbance associated with the cutting of pipelines, power cables and jacket piles and the positioning of the removal vessel. However, following further assessment, these have been determined not to be significant following the implementation of the stated mitigation measures. Overall, the decommissioning option presented within this report is determined as not having a significant impact. In addition, the EA is considered by Perenco to be in alignment with the objectives and marine planning policies of the East marine plan area.

Based on the assessment findings of the EA, including the identification and subsequent application of appropriate mitigation measures it is considered that the proposed decommissioning activities do not pose any significant impact to environmental or societal receptors within the UKCS or internationally.

Table 4-2: Environmental Impact Management			
Activity	Main Impacts	Management	
Jacket, risers, and cables removal	Seabed disturbance	 HLV positioning assessment will determine the optimal position for the JUB to minimise the requirement for rock placement for footings. Preloading of HLV will minimise requirements for rock placement of footings. Operational planning to ensure the minimal number of HLV positions at Amethyst infrastructure. Proposed internal pile cuts will be carefully planned to avoid excessive seabed disturbance and prevent deposition of garnet. 	



5. <u>INTERESTED PARTY CONSULTATIONS</u>

Table 5-1: Summary of Stakeholder Comments			
Who	Comment	Response	
1. Informal Stake	holder Consultations		
OPRED Offshore Decommissioning Unit and Offshore Environmental Inspectorate	Reference is made to numerous pipelines. PL1956 and 1957 are confirmed as flushed and filled with seawater. However, no reference is made to the contents of PL649, 650, 775, 776, 777 and 778. Please provide details as to what is contained within each of those pipelines.	PL649 and PL650 have been flushed and filled with inhibited seawater to preserve it for potential future re-use. PL775, PL776, PL777 and PL778 have been flushed and flooded with seawater.	
Health and Safety Executive	Consulted via OPRED, No comments.	N/A	
Environment Agency	Consulted via OPRED, No comments.	N/A	
Trinity House	Consulted via OPRED. Trinity House must be informed when the Aids to Navigation on all four jackets are extinguished. AIS base station is to be switched off once the jackets are removed (TH have confirmed they would like the DP amended to show this along with any future DPs with similar cases).	The DP has been amended as follows: Trinity House will be informed when the AtoNs on all four jackets are extinguished. AIS base station will be switched off once the jackets are removed.	
MCA	Consulted via OPRED. The MCA responded purely with information/guidance.	Perenco notes the information and guidance provided.	
ММО	Consulted via OPRED. The MMO responded purely with information/guidance.	Perenco notes the information and guidance provided.	
ИКНО	Consulted via OPRED. The UKHO responded purely with information/guidance.	Perenco notes the information and guidance provided.	
2. Public			
	During the Consultation Phase for the Draft DP a press notice was placed in	N/A	



3. Statutory Consu National Federation of Fishermen's Organisations	During the Consultation Phase for the DP the views of NFFO were solicited. Response given: The National Federation of Fisherman's Organisations have no adverse comments to make regarding the planned methodology and timings of these assets removal but would	Perenco will maintain good dialogue on planned work vessel movements during the decommissioning/removal phase.
	advise as these assets are situated in an area heavily fished by static gear fishermen a good dialogue on planned work vessels movements during the decommissioning/removal phase will be advantageous to enable the commercial fishing vessels working static gear in close proximity of the remaining assets time to relocate their gear clear of the area to avoid any conflict/damage and possible loss of their fishing gear by vessels engaged in the decommissioning of these assets.	
Scottish Fishermen's Federation	During the Consultation Phase for the DP, the views of SFF were solicited. No response received.	N/A
Northern Ireland Fish Producers Organisation	During the Consultation Phase for the DP, the views of NIFPO were solicited. No response received.	N/A
Global Marine Group	During the Consultation Phase for the DP, the views of Global Marine Group were solicited.	Perenco will notify cable owners of upcoming operations if decom information changes.
	Response given: I have reviewed the content provided and there are no active telecoms	



	cables in the vicinity (the closest is > 65km away). I have no further comments. In the event that the decom information changes, and seabed invasive operations are to occur near existing telecom infrastructure, it will be important to notify any nearby cable owners of any	
	upcoming operations.	
North Sea Transition Authority	Perenco has consulted with NSTA under S29(2A) of the Petroleum Act. No Comments were received	N/A

6. **PROGRAMME MANAGEMENT**

6.1 Project Management and Verification

A Perenco Project Management team will manage the operations of competent contractors selected for all decommissioning activities. The team will ensure the decommissioning is executed safely, in accordance with legislation and Perenco Policies and Principles.

Perenco standard procedures for operational control and hazard identification and management will be used. Where possible the work will be coordinated with other decommissioning operations in the SNS. Perenco will monitor and track the process of consent and the consultations required as part of this process.

6.2 Post-Decommissioning Debris Clearance and Verification

Before the commencement of all physical decommissioning activities as proposed in the DPs, a predecommissioning survey was completed along the Amethyst Pipelines and inside the Amethyst (A1D, A2D, B1D and C1D) 500m safety zones. This survey included: a bathymetry survey, to identify any free spans, exposures, or large objects (which may present a snagging hazard), and an Environmental Baseline Survey (EBS) and Habitat Assessment Survey (HAS).

Following the completion of these activities detailed in the DPs, a post-decommissioning (as-left) survey will be completed, and a summary comparison of pre-and post-environmental survey results will be provided as part of the Close Out report.

A clear seabed certificate will not be obtained, as required under the Decommissioning Debris Surveys and Recovery and Seabed Clearance Verification guidance by OPRED and NFFO, because the isolation plugs installed on the cut ends of the Amethyst pipelines (PL649 and PL650) protrude above the seabed. This design choice was intentional to facilitate visibility during routine integrity inspections of the plugs and the cut ends of the pipelines. However, this configuration poses a snagging hazard. A new 500m safety zone order (ON54) was obtained in November 2020 for the Amethyst A1D, A2D, B1D and C1D Installations. This 500m safety zone order will remain in place until the pipelines are fully decommissioned which will be detailed in the Amethyst Pipeline DP.



Any requirement for future legacy monitoring based on the results of the pre- and post-decommissioning surveys will be agreed upon with OPRED as part of the closeout process.

Any objects dropped during the removal preparations will be notified to OPRED via the PON2 process. Their subsequent recovery will be reported via the PON2 and DP Progress Reporting processes.

6.3 Schedule

Several decommissioning activities have been carried out before the submission of the Jackets and Riser Sections DPs, as detailed in Sections 1.2 and 1.3. This work has been carried out under the appropriate permitting regime for the activity, i.e., OPRED, NSTA and HSEx.

Figure 6.1 below provides the timeline of all decommissioning activities concerning the DPs.



Figure 6-1: Gantt Chart of Project Plan

Year	2024			2025				2026				2027				2028			2029					
Quarter	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 Programme																								
Submission of DP																								
Consultation																								
Approval of DP																								
Campaign																								
A1D Jacket and Riser Removal																								
A2D Jacket and Riser Removal																								
B1D Jacket and Riser Removal																								
C1D Jacket and Riser Removal																								
Post Decommissioning Activities and Surveys																								
Post Decommissioning Surveys																								
Close Out Report																								

LEGEND
Earlist date task could be completed
Period in which the task expected to be completed



6.4 Costs

The decommissioning costs detailed within the Jackets and Riser Sections DPs has been provided to OPRED.

6.5 Close Out

In accordance with the OPRED Guidance Notes, a Close Out document will be submitted to OPRED within 12 months of the completion of the offshore decommissioning scope including debris clearance and the first post-decommissioning environmental survey. The report will detail the outcomes of surveys as well as explain any major variances from the programme.

6.6 Post-Decommissioning Monitoring and Evaluation

A post-decommissioning survey centred around sites of the wellheads and former jackets will be carried out. The survey will focus on chemical and physical disturbances of the decommissioning area and be compared with the pre-decommissioning survey. The results of this survey will be forwarded to OPRED. Perenco will commit to the pre-decommissioning surveys for the Pipeline DP at the appropriate time.



7. **SUPPORTING DOCUMENTS**

Table 7-1: Supporting Documents									
Document Number	Title	Document Reference							
1	Amethyst Jackets Decommissioning Environmental Appraisal report	200605-S-REP-0047							
2	Amethyst Pre-Decommissioning Geophysical Survey	 NSW-PJ00045-RR-DC-SUR-01A_2.0 Amethyst A1D Results Report NSW-PJ00045-RR-DC-SUR- 01B_2.0_Amethyst_A2D_Results_Report NSW-PJ00045-RR-DC-SUR- 01C_2.0_Amethyst_B1D_Results_Report NSW-PJ00045-RR-DC-SUR- 01D_2.0_Amethyst_C1D_Results_Report 							
3	Amethyst Pre-Decommissioning Environmental Survey	2010_Perenco_AMS-INT_EBS_002010_Perenco_AMS_INT_HAS_00							
4	Seabird Survey 2023	Biocensus (2023). Perenco Assets Ornithological Assessment 2023. RSK Biocensus, UK.							
5	Seabird Survey 2024	Xodus (2024). Perenco: Ornithological Support Perenco Asset Survey 2024. Xodus, Aberdeen, UK.							



8. LETTERS OF SUPPORT

Mathew Duncan Senior Finance Advisor P&O North Sea



BP Exploration Operating Co Ltd 1-4 Wellheads Avenue Dyce Aberdeen AB21 7PB

Mobile: +44 7766475212 duncanme@bp.com

5 August 2025

Offshore Petroleum Regulator for Environment and Decommissioning AB1 Building Crimon Place Aberdeen AB10 1BJ

To Whom It May Concern

SECTION 29 NOTICE HOLDER LETTER OR SUPPORT AMETHYST DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 30th July 2025.

We, BP Exploration Operating Company Limited confirm that we authorise Perenco UK Limited to submit on our behalf abandonment programmes relating to the Amethyst facilities as directed by the Secretary of State on 30th July 2025.

We confirm that we support the proposals detailed in the Amethyst Decommissioning Programmes dated 30th July 2025, which is to be submitted by Perenco UK 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 sincerely

Signed by:

Mathew Durcan
B85081215AB44EB...

MATHEW DUNCAN

Senior Finance Advisor, North Sea



Mathew Duncan Senior Finance Advisor P&O North Sea



BP Exploration Operating Co Ltd 1-4 Wellheads Avenue Dyce Aberdeen AB21 7PB

Mobile: +44 7766475212 duncanme@bp.com

5 August 2025

Offshore Petroleum Regulator for Environment and Decommissioning AB1 Building Crimon Place Aberdeen AB10 1BJ

To Whom It May Concern

SECTION 29 NOTICE HOLDER LETTER OR SUPPORT AMETHYST DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 30th July 2025.

We, Britoil Limited confirm that we authorise Perenco UK Limited to submit on our behalf abandonment programmes relating to the Amethyst facilities as directed by the Secretary of State on 30th July 2025.

We confirm that we support the proposals detailed in the Amethyst Decommissioning Programmes dated 30th July 2025, which is to be submitted by Perenco UK 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 sincerely

—signed by: Mathew Duncain

MATHEW DUNCAN

Senior Finance Advisor, North Sea



Mathew Duncan Senior Finance Advisor P&O North Sea



BP Exploration Operating Co Ltd 1-4 Wellheads Avenue Dyce Aberdeen AB21 7PB

Mobile: +44 7766475212 duncanme@bp.com

5 August 2025

Offshore Petroleum Regulator for Environment and Decommissioning AB1 Building Crimon Place Aberdeen AB10 1BJ

To Whom It May Concern

SECTION 29 NOTICE HOLDER LETTER OR SUPPORT AMETHYST DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 30th July 2025.

We, Arco British Limited, LLC confirm that we authorise Perenco UK Limited to submit on our behalf abandonment programmes relating to the Amethyst facilities as directed by the Secretary of State on 30th July 2025.

We confirm that we support the proposals detailed in the Amethyst Decommissioning Programmes dated 30th July 2025, which is to be submitted by Perenco UK 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 sincerely

Mathew Duncan

Signed by:

MATHEW DUNCAN

Senior Finance Advisor, North Sea





Offshore Petroleum Regulator for Environment and Decommissioning

AB1 Building Crimon Place Aberdeen AB10 1BJ Spirit Energy Resources Limited 5th Floor iQ Building 15 Justice Mill Lane Aberdeen

Telephone: 01224 415000 www.spirit-energy.com

AB11 6EQ

12 August 2025

Dear Sir or Madam,

AMETHYST DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 30th July 2025.

We, Spirit Energy Resources Limited, confirm that we authorise Perenco UK Limited to submit on our behalf abandonment programmes relating to the Amethyst facilities as directed by the Secretary of State on 30th July 2025.

We confirm that we support the proposals detailed in the Amethyst Decommissioning Programmes dated 30th July 2025, which is to be submitted by Perenco UK 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,

Signed by:

Nick Harrison

Nick Harrison

Director

For and on behalf of Spirit Energy Resources Limited



Murphy Petroleum Limited Suite 1, 7th Floor Broadway London, United Kingdom SW1H 0BL

Section 29 Notice Holder Letter of Support

Offshore Petroleum Regulator for Environment and Decommissioning AB1 Building Crimon Place Aberdeen AB10 1BJ

14 August 2025

Dear Sir or Madam,

AMETHYST DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 30th July 2025.

We, Murphy Petroleum Limited, confirm that we authorise Perenco UK Limited to submit on our behalf abandonment programmes relating to the Amethyst facilities as directed by the Secretary of State on 30th July 2025.

We confirm that we support the proposals detailed in the Amethyst Decommissioning Programmes dated 30th July 2025, which is to be submitted by Perenco UK 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,

Earl Teddy Botner

Director

For and on behalf of Murphy Petroleum Limited



9. APPENDICES

Appendix 1: Consultation Notices

Press Notice - London Gazette

Pipe-Lines

THE PETROLEUM ACT 1998

AMETHYST JACKETS AND HELVELLYN RISER SECTION DECOMMISSIONING PROGRAMMES

Perenco UK Limited has submitted, for the consideration of the Secretary of State for Energy Security and Net Zero, draft Decommissioning Programmes for Amethyst jackets and Helvellyn riser section, in accordance with the provisions of the Petroleum Act 1998. It is a requirement of the Act that interested parties be consulted on such decommissioning proposals.

The items/facilities covered by the Decommissioning Programmes are the Amethyst jackets (A1D, A2D, B1D and C1D) and the Helvellyn riser section (attached to A2D jacket).

The Amethyst gas field is located in the United Kingdom Continental Shelf centred on Block 47/14a, extending into Blocks 47/13a, 47/8a, 47/9a and 47/15a in the Southern North Sea, approximately 40 kilometres due east of the Humber Estuary and the Easington Gas Terminal on the Yorkshire coast. The field consists of several separate gas accumulations: Amethyst East covers the 'A' / 'B' areas and Amethyst West covers the 'C' area.

The C1D platform was connected to A1D through the infield export gas pipeline (PL776). This pipeline facilitated the transportation of produced fluids from C1D to A1D, where they co-mingled with fluids produced from A1D before entering the 30" Amethyst Export pipeline PL649 to Easington Gas Terminal. Similarly produced fluids from B1D were conveyed via PL775 to A2D.

The Helvellyn development is located in Block 47/10a. Waldorf Petroleum Resources Limited has owned this development since 2001. It consists of a single subsea well, the Wellhead Protection Structure (WHPS), pipeline (PL1956) from the WHPS to but not including the A2D riser flange, and the umbilical (PLU1957) from the WHPS to but not including the A2D J-Tube bellmouth. Perenco UK Limited owns PL1956 from and including the A2D riser flange to A2D jacket, and PLU1957 from and including the AD2 J-Tube bellmouth to A2D jacket.

The Amethyst jackets are not situated within an environmentally sensitive area. The nearest Marine Protected Area is the Holderness Offshore Marine Conservation Zone, 3km north of Amethyst C1D.

The WGS84 co-ordinates of the surface facilities to be decommissioned are as follows:

- A1D: 53° 36' 38.4406" N, 00° 43' 21.3858" E.
- A2D, PL1956 riser and PLU1957 umbilical within J-Tube: 53° 37'
 21.0228" N, 00° 47' 20.6881" E.
- B1D: 53° 33' 39.6424" N, 00° 52' 38.1894" E.
- C1D: 53° 38' 41.7738" N, 00° 36' 08.2471" E.

Perenco UK Limited hereby gives notice that a digital copy of the draft Amethyst Jackets and Helvellyn Riser section Decommissioning Programmes can be viewed and downloaded online at

https://www.perenco.com/documentation. Alternatively, a hard copy of the Decommissioning Programmes can be inspected at the location given below during office hours.

Representations regarding the Amethyst Jackets and Helvellyn Riser section Decommissioning Programmes should be submitted in writing or electronically to the following address, where they should be received by the closing date of 21st March 2025 and state the grounds upon which any representations are being made.

Decommissioning Team, Perenco UK Ltd, 3 Central Avenue, St Andrews Business Park, Norwich, Norfolk NR7 0HR.

Email: Decom-Consultation@perenco.com



Press Notice – Eastern Daily Press

PUBLIC NOTICE The Petroleum Act 1998 AMETHYST JACKETS AND HELVELLYN RISER SECTION DECOMMISSIONING PROGRAMMES

Perenco UK Limited has submitted, for the consideration of the Secretary of State for Energy Security and Net Zero, draft Decommissioning Programmes for Amethyst jackets and Helvellyn riser section, in accordance with the provisions of the Petroleum Act 1998. It is a requirement of the Act that interested parties be consulted on such decommissioning proposals.

The items/facilities covered by the Decommissioning Programmes are the Amethyst jackets (A1D, A2D, B1D and C1D) and the Helvellyn riser section (attached to A2D jacket).

The Amethyst gas field is located in the United Kingdom Continental Shelf centred on Block 47/14a, extending into Blocks 47/13a, 47/8a, 47/9a and 47/15a in the Southern North Sea, approximately 40 kilometres due east of the Humber Estuary and the Easington Gas Terminal on the Yorkshire coast. The field consists of several separate gas accumulations: Amethyst East covers the 'A' / 'B' areas and Amethyst West covers the 'C' area

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The Helvellyn development is located in block 47/10a, Waldorf Petroleum Resources Limited has owned this development since 2001. It consists of a single subsea well, the Wellhead Protection Structure (WHPS), pipeline (PL1956) from the WHPS to but not including the A2D riser flange, and the umbilical (PLU1957) from the WHPS to but not including the A2D J-Tube bellmouth. Perenco UK Limited owns PL1956 from and including the A2D riser flange to A2D jacket, and PLU1957 from and including the AD2 J-Tube bellmouth to A2D jacket. The Amethyst jackets are not situated within an environmentally sensitive area. The nearest Marine Protected Area is the Holderness Offshore Marine Conservation Zone, 3km north of Amethyst C1D. The WGS84 co-ordinates of the surface facilities to

be decommissioned are as follows:

- A1D: 53° 36' 38.4406" N. 00° 43' 21.3858" E. A2D, PL1956 riser and PLU1957 umbilical within J-Tube: 53° 37' 21.0228" N, 00° 47' 20.6881" E.
- B1D: 53° 33' 39.6424" N, 00° 52' 38.1894" E.
- C1D: 53° 38' 41.7738" N, 00° 36' 08.2471" E.

Perenco UK Limited hereby gives notice that a digital copy of the draft Amethyst Jackets and Helvellyn Riser section Decommissioning Programmes can be viewed and downloaded online at https://www.perenco.com/documentation. Alternatively, a hard copy of the Decommissioning Programmes can be inspected at the location given below during office hours.

Representations regarding the Amethyst Jackets and Helvellyn Riser section Decommissioning Programmes should be submitted in writing or electronically to the following address, where they should be received by the closing date of 21st March 2025 and state the grounds upon which any representations are being made.

Decommissioning Team

Perenco UK Ltd

3 Central Avenue

St Andrews Business Park

Norwich

Norfolk, NR7 OHR

Decom-Consultation@perenco.com Email: