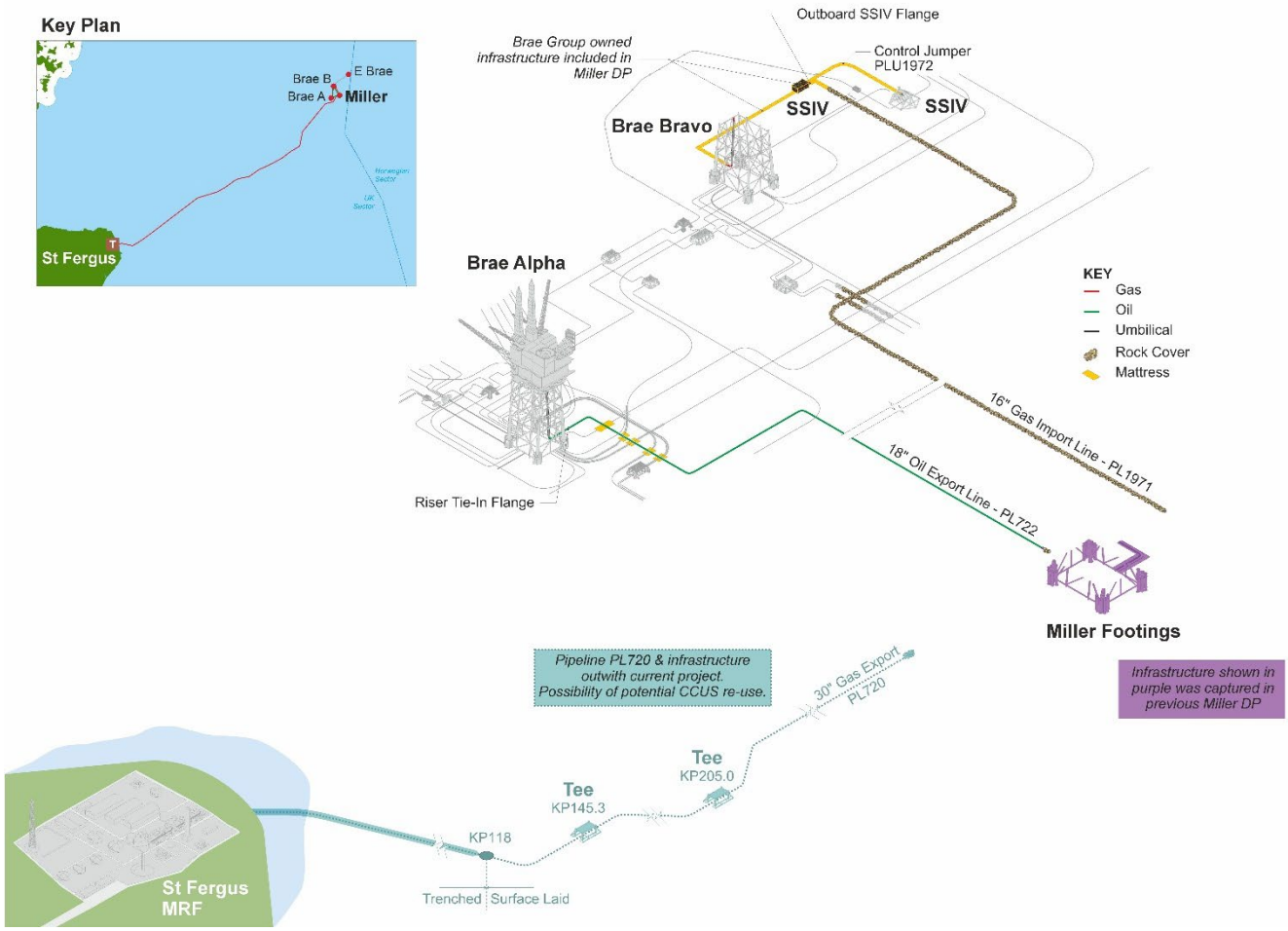

MILLER INFIELD PIPELINES DECOMMISSIONING PROGRAMME

Document Number: DC109-EN-REP-000-5009 (rev B11)

Consultation Draft

January 2026

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Document Control

Approvals

	Name	Signature	Date
Prepared by	G. Lang (Genesis)	Gemma Lang - External Digitally signed by Gemma Lang - External Date: 2026.01.06 13:43:28 Z	06-Jan-26
Reviewed by	T. Hollis (Genesis)	Tim Hollis Digitally signed by Tim Hollis Date: 2026.01.06 13:12:43 Z	06-Jan-26
Approved by	J. Leask (bp)	DocuSigned by: Joe Leask January 6, 2026 71D19906A01443F...	06-Jan-26

Revision Control

Revision No	Reference	Changes/Comments	Issue Date
A1	1st pre-draft / outline programme	Issued for Internal (Genesis) review	29-Nov-19
B1	1st pre-draft / outline programme	Issued for BPEAL review	17-Dec-19
B2	1st pre-draft / outline programme	Updated with BPEAL comments	13-Feb-20
B3	1st pre-draft / outline programme	Revised & re-issued for BPEAL review, following completion of pipeline trenching study.	11-Aug-20
B4	2nd pre-draft /outline programme	Revised & re-issued for BPEAL review, following incorporation of OPRED comments.	01-Jul-22
B5	2nd pre-draft /outline programme	Updated with BPEAL comments	03-Aug-22
B6	2nd pre-draft / outline programme	Revised & re-issued for BPEAL review, following removal of PL720 and incorporation of OPRED comments.	14-Dec-22
B7	3rd pre-draft / outline programme	Revised & re-issued for BPEAL review, following incorporation of OPRED comments.	19-Jun-23
B8	3rd pre-draft / outline programme	Revised & re-issued for BPEAL review, following incorporation of further OPRED comments.	03-Nov-23
B9	3rd pre-draft / outline programme	Revised & re-issued for BPEAL review, following incorporation of further OPRED comments.	03-May-24
B10	3rd pre-draft / outline programme	Revised & re-issued for BPEAL review, following incorporation of further OPRED comments.	04-Jun-25
B11	Consultation Draft	Revised & re-issued for Consultation following incorporation of further OPRED comments.	06-Jan-26

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TAQA Bratani LNS Limited	Electronic
GB Gas Holdings Limited	Electronic

Contents

Holds Table

HOLD	SECTION	DESCRIPTION
1	1.2 & 8	S29 Notice Holder Letters will be issued with final version of DP (post public consultation).
7	5	To be provided by BPEAL post Stakeholder engagement.

Terms and Abbreviations

Abbreviation	Explanation
BEIS	Department for Business, Energy & Industrial Strategy
BPEAL	BP Exploration (Alpha) Limited
CA	Comparative Assessment
CoP	Cessation of Production
DP	Decommissioning Programme
DPN	Disused Pipeline Notification
EA	Environmental Appraisal
EMT	Environmental Management Team
EOR	Enhanced Oil Recovery
FPAL	First Point Assessment
FPS	Forties Pipeline System
HUOO	The Holder User Operator Owner
ICES	International Council for the Exploration of the Sea
IPR	Interim Pipeline Regime
JNCC	Joint Nature Conservation Committee
Km	Kilometre
LAT	Lowest Astronomical Tide
M	Metre
m^3	Cubic Metres
MCA	Maritime and Coastguard Agency
MD	Marine Directorate
mg/l	Milligrams per litre
MPA	Marine Protected Area
MRF	Miller Reception Facilities (at St Fergus Terminal)
NMPi	National Marine Plan Interactive
NORM	Naturally Occurring Radioactive Material
N/A	Not Applicable
NSTA	North Sea Transition Authority (previously Oil and Gas Authority)
ODU	Offshore Decommissioning Unit
OEUK	Offshore Energies UK (previously Oil and Gas UK)
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning

Abbreviation	Explanation
OSPAR	from Oslo/Paris, the Convention for the Protection of the Marine Environment of the North East Atlantic
PL	Pipeline (number)
PLU	Umbilical (number)
PMS	Power Management System
S29	Section 29
SAC	Special Area of Conservation
SCAP	Supply Chain Action Plan
SEPA	Scottish Environment and Protection Agency
SFF	Scottish Fisherman's Federation
SIMOPS	Simultaneous Operations
SSIV	Subsea Isolation Valve
Te/ te	tonnes
TFSW	Trans Frontier Shipment of Waste
UKCS	United Kingdom Continental Shelf
UKHO	United Kingdom Hydrographic Office
WGS84	World Geodetic System 1984

Figures and Tables

1 EXECUTIVE SUMMARY

1.1 The Decommissioning Programme

This document contains four Decommissioning Programmes (DP's), *as per the notices served under Section 29 of the Petroleum Act 1998: four pipeline groups*.

The Decommissioning Programme for the Miller platform (topsides, jacket and subsea infrastructure within the 500m zone) was documented in the Miller DP MLR-A-D0-PM-PRO-00217 (approved in 2013) and was based on an approved derogation from the requirements of OSPAR Decision 98/3 for the jacket footings. The offshore work for the final decommissioning of the Miller topsides and jacket commenced in 2017 and was completed in 2018. The offshore work for the subsea decommissioning scope, for infrastructure inside the original Miller 500m zone, was completed in 2024.

The main export pipeline from Miller Platform to St Fergus (PL720) does not form part of this DP as it is subject to possible reuse considerations for carbon capture and storage (CCS) by third parties. PL720 is being managed under the Interim Pipeline Regime (IPR) and the condition of the pipeline will not prejudice any further decommissioning solutions, re-use possibilities or pose an increased risk to users of the sea.

A summary of the pipelines and umbilical to be decommissioned is detailed in the Tables in Section 1.4.1 below.

1.2 Requirement for the Decommissioning Programme

Pipelines

In accordance with the Petroleum Act 1998, BP Exploration (Alpha) Limited (herein after referred to as BPEAL), on behalf of the S29 notice holders of the Miller Infield Pipelines, Pipeline Structures and Umbilical (see Table 1.2) is applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for the decommissioning of the pipelines, pipeline structures and umbilical detailed in Section 2.1 of these programmes.

Section 29 Notice Holder letters of support are included in Section 8. **[HOLD 01]**

In conjunction with public, stakeholder and regulatory consultation, the DPs are being submitted in compliance with national and international regulations and OPRED guidelines. The schedule outlined in this document is for a 6 year decommissioning project currently in the detailed engineering phase, due to commence execution in 2027.

An overview of the proposed Decommissioning Schedule is given in Section 6.3.

1.3 Introduction

The Miller field is located in blocks 16/7b and 16/8b in the Central North Sea, as shown in Figure 1-1, and was discovered by BPEAL and Conoco in 1982. The field is located 230km north-east of St Fergus in water depths of approximately 103m.

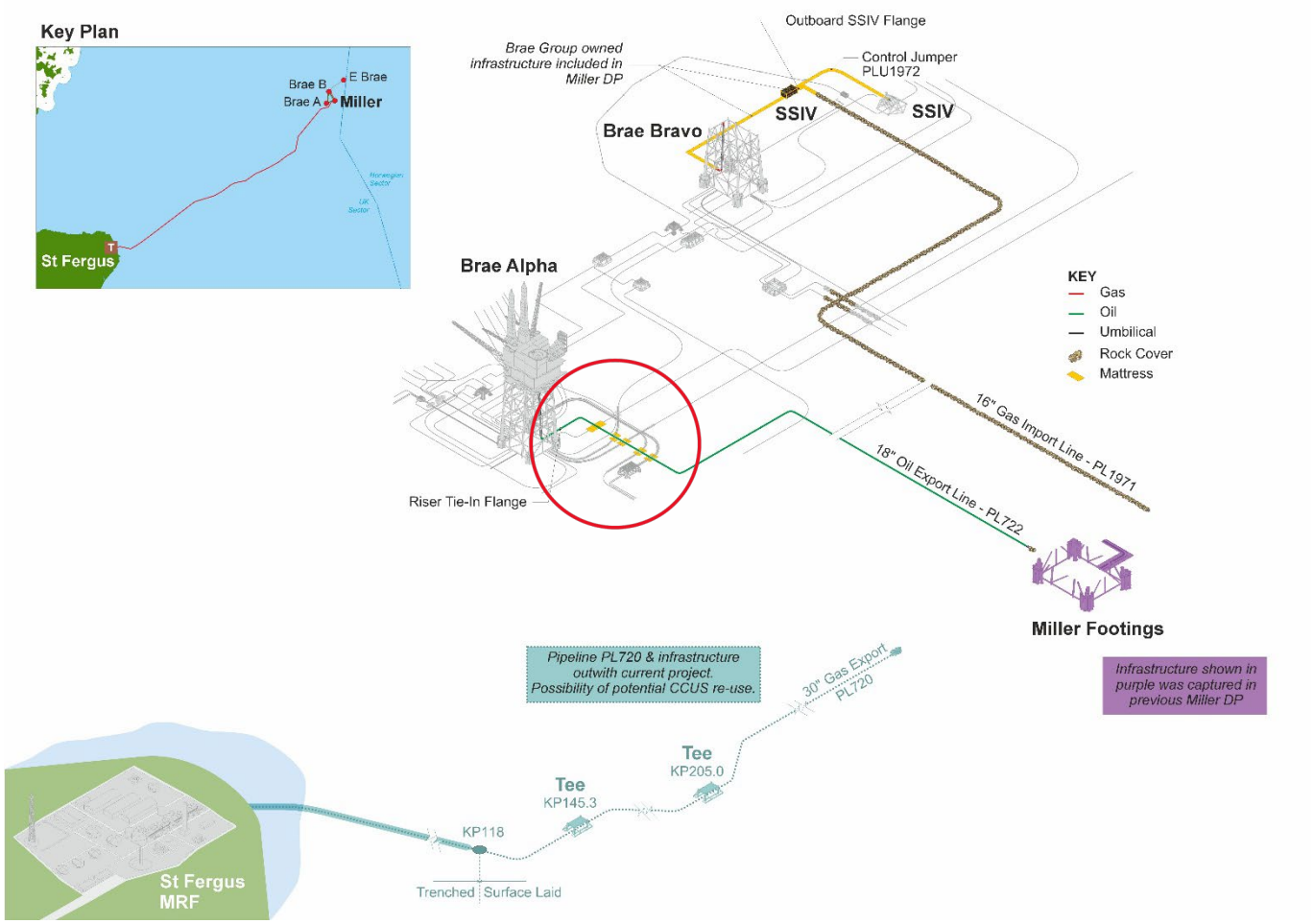

Figure 1-1: Miller Field Location and Layout

The Miller Pipeline System incorporated crude oil and natural gas transportation facilities between various offshore installations as well as gas exporting facilities to shore at St Fergus.

There are only two infield pipelines, two pipeline structures (a Subsea Isolation Valve (SSIV) and Spool Crossing Frame) and one umbilical included in this DP:

- 18'' oil export pipeline (PL722) from Miller platform to the Brae Alpha (A) platform, including a Spool Crossing Frame[1], to allow the PL722 spool pieces to cross the Heimdal spool pieces within the Brae A 500m zone;

- 16'' Brae-Miller pipeline (PL1971) which is the Linkline between the Brae Bravo (B) and Miller platform, including a SSIV[1]; and

- 61.6mm OD SSIV Umbilical (PLU1972) which is surface laid runs from the East Brae Gas Transfer SSIV to the Brae Bravo SSIV for a total length of 169m.

The depressurisation, cleaning and flushing of these pipelines was started in 2008 and completed in 2009. They were finally severed at circa EL. -80m as part of the Miller jacket removal scope in 2018. The pipeline end of PL722 at the Brae A platform has been positively isolated and the pipeline end of PL1971 at Brae B has been severed at circa EL. -61m LAT as part of the topsides and upper jacket removal scope 2021/2022.

[1] The spool crossing frame is piled to the seabed by 4 driven piles, SSIV is gravity based.

The 18in oil export pipeline (PL722) transported processed crude oil 7.5km from the Miller platform to the Brae A platform. At Brae A, the oil was comingled with Brae and Heimdal oil and transported by the 30in pipeline (PL064) to the Forties Charlie platform and onward through the Forties Pipeline System (FPS) 36in pipeline (PL721) to Cruden Bay.

In 2003, BPEAL extended the Miller Enhanced Oil Recovery (EOR) scheme with the installation of the 16in Brae-Miller pipeline (PL1971) which is the Linkline between the Brae B and the Miller platform. Predominately used to transport gas the 9.5km from Brae B to Miller to be used for gas injection into the Miller reservoir, the Linkline could be configured to flow in either direction.

Miller production ceased in July 2007 and CoP was applied for in September 2007 with approval granted in 2013 (Ref Miller DP 2011 (MLR-A-D0-PM-PRO-00217).

After public, stakeholder, and regulatory consultation, detailed in Section 5 of this document, the DP will be submitted in full compliance with OPRED guidelines. The DP explains the principles of the proposed activities, supported by a Comparative Assessment (CA), for the decommissioning options of the 3 lines, and an Environmental Appraisal (EA).

1.4 Overview of Pipelines Being Decommissioned

1.4.1 Pipelines

Table 1-1: Pipelines Being Decommissioned	
Number of Pipeline(s) Details given in Table 2-1	2
Number of Umbilical(s) Details given in Table 2-1	1

Table 1-2: Pipelines Section 29 Notice Holders Details		
Section 29 Notice Holder(s)	**Registration Number**	**Equity Interest (%)**
PL722 (18'' Oil Export Pipeline)[2]		
BP Exploration (Alpha) Limited	01021007	40%
Chrysaor Production (U.K.) Limited	00524868	30%
Shell U.K. Limited	00140141	18%
BP Exploration Operating Company Limited	00305943	12%
PL1971 [From and including Miller Riser Tie-in Flange to and not including Brae B SSIV Assembly]		
BP Exploration (Alpha) Limited	01021007	20.3%
BP Exploration Operating Company Limited	00305943	20.15%
Fujairah Oil and Gas UK LLC	FC009587	19.29%
Chrysaor Production (U.K.) Limited	00524868	15%
Shell U.K. Limited	00140141	9%
TAQA Bratani Limited	05975475	7%
Spirit Energy Resources Limited	02855151	4.06%
NEO Energy Petroleum Limited	03288689	3.2%
TAQA Bratani LNS Limited	06230540	2%
GB Gas Holdings Limited	03186121	0%
PL1971 [From and including Brae B SSIV Assembly to and including Riser Cut Location (-61m)][3]		
NEO Energy Petroleum Limited	03288689	10.5%
Spirit Energy Resources Limited	02855151	13.33%
TAQA Bratani Limited	05975475	69.5%
TAQA Bratani LNS Limited	06230540	6.67%
PLU1972 (61.6mm OD SSIV Control Umbilical)		
BP Exploration (Alpha) Limited	01021007	20.3%
BP Exploration Operating Company Limited	00305943	20.15%
Fujairah Oil and Gas UK LLC	FC009587	19.29%
Chrysaor Production (U.K.) Limited	00524868	15%
Shell U.K. Limited	00140141	9%
TAQA Bratani Limited	05975475	7%
Spirit Energy Resources Limited	02855151	4.06%
NEO Energy Petroleum Limited	03288689	3.2%
TAQA Bratani LNS Limited	06230540	2%
GB Gas Holdings Limited	03186121	0%

[2] Spool Crossing Frame is covered by the S29 for PL722

[3] SSIV is covered by the S29 for PL1971 [From and including Brae B SSIV Assembly to and including Riser Cut Location (-61m)]

1.5 Summary of The Proposed Decommissioning Programme

Table 1-3: Summary of the Decommissioning Programme		
Selected Option	**Reason for Selection**	**Proposed Decommissioning Solution**
1. Pipeline Structures		
Decommissioning of PL1971 SSIV and PL722's Spool Crossing Frame will be by removal and return onshore for recycling of materials.	To comply with OSPAR requirements and leaving unobstructed seabed, where possible. Removes additional obstruction to fishing operations and maximises recycling of materials.	The SSIV, will be completely removed, as part of the execution of the Brae B facilities decommissioning and transported to shore and recycled unless alternative options are identified to be viable and more appropriate. The spool crossing frame is anchored to the seabed by 4 driven piles. To decommission and remove, the piles will be cut internally to a target depth of -3m below mean seabed level. Once recovered from the seabed it will be returned onshore for recycling at a licenced yard.
2. Pipelines, Flowlines & Umbilical		
Different Decommissioning Options have been selected for the two pipelines and one Umbilical:		
PL722 - 18" Oil Export Pipeline will be decommissioned in-situ by trenching and burial full pipeline length.	Pipeline is concrete coated, and surface laid, is not a candidate for future use and the seabed conditions allows trenching and burial to an adequate burial depth. Trenching and burial will leave a clear seabed.	Trenching techniques will be deployed to trench and bury the pipeline to a target burial depth >0.6m
PL1971 - 16" Linkline/Gas Import Pipeline will be decommissioned in situ.	Except for exposed sections at each end the pipeline is already trenched, and rock covered full length and is over trawlable. Cut and removal of exposed end with spot rock will remove potential snagging hazard.	Cut and removal of exposed end with spot rock on cut end.
PLU1972 – 2.5" SSIV Control Umbilical will be fully removed (except for ~8m section which crosses under the rock covered PL4164 (Brae Bravo gas bypass line).	Except for the PL4164 crossing, the umbilical is surface laid and protected by mattresses. Recovery will leave a clear seabed and remove potential snagging hazard.	Removal to shore for recycling
3. Interdependencies		

Table 1-3: Summary of the Decommissioning Programme		
Selected Option	**Reason for Selection**	**Proposed Decommissioning Solution**
Pipelines are already flushed and cleaned and isolated from their original tie-ins offshore, therefore there are no interfaces or interdependencies with operating assets to consider. PL722 is to be trenched and buried, therefore the crossings (see Table 1-4) operated by others will need to be managed and trenching of PL722 at these crossing locations may need to be scheduled to suit the decommissioning schedule for these other lines, including the recovery of the spool crossing frame[4] over Heimdal's spool pieces. BPEAL are in regular discussion with these Operators and TAQA the Brae owners[4] regarding most appropriate owner to manage the execution phase of decommissioning the crossing. Ultimately BPEAL will retain responsibility to ensure a suitable decommissioning conclusion for PL722. PL1971 is to be left in-situ currently trenched and rock covered (except the exposed spool pieces which will be cut and removed), therefore the one pipeline that crosses over PL1971 is not interdependent decommissioning of this line. There are numerous pipelines that cross under PL1971 (see Table 1-4) and dependent on what decommissioning options are selected by the operators of these pipelines there may be interdependent activity when these lines are decommissioned (e.g., post survey of PL1971 rock cover to ensure continued over trawlability). PLU1972 a short umbilical, is to be fully recovered, except for ~8m where it crosses under PL4164 a high pressure gas bypass line (rock covered). Recovery of PLU1972 will be executed by TAQA (operators of PL4164) to coincide with decommissioning of PL4164. Ultimately BPEAL will retain responsibility to ensure removal of PLU1972. Note: final status of the pipelines within the Brae Alpha and Brae Bravo 500m zones will be defined in the Brae Alpha and Bravo Decommissioning Programmes.		

[4] Although operated by other owners PL301 is located within the 500m exclusion zone of Brae A, therefore TAQA are involved in discussions on all infrastructure within their exclusion zone. The current base case agreed with TAQA is that they will execute the decommissioning of all subsea infrastructure within their 500m zone.

1.6 Field Location Including Field Layout and Adjacent Facilities

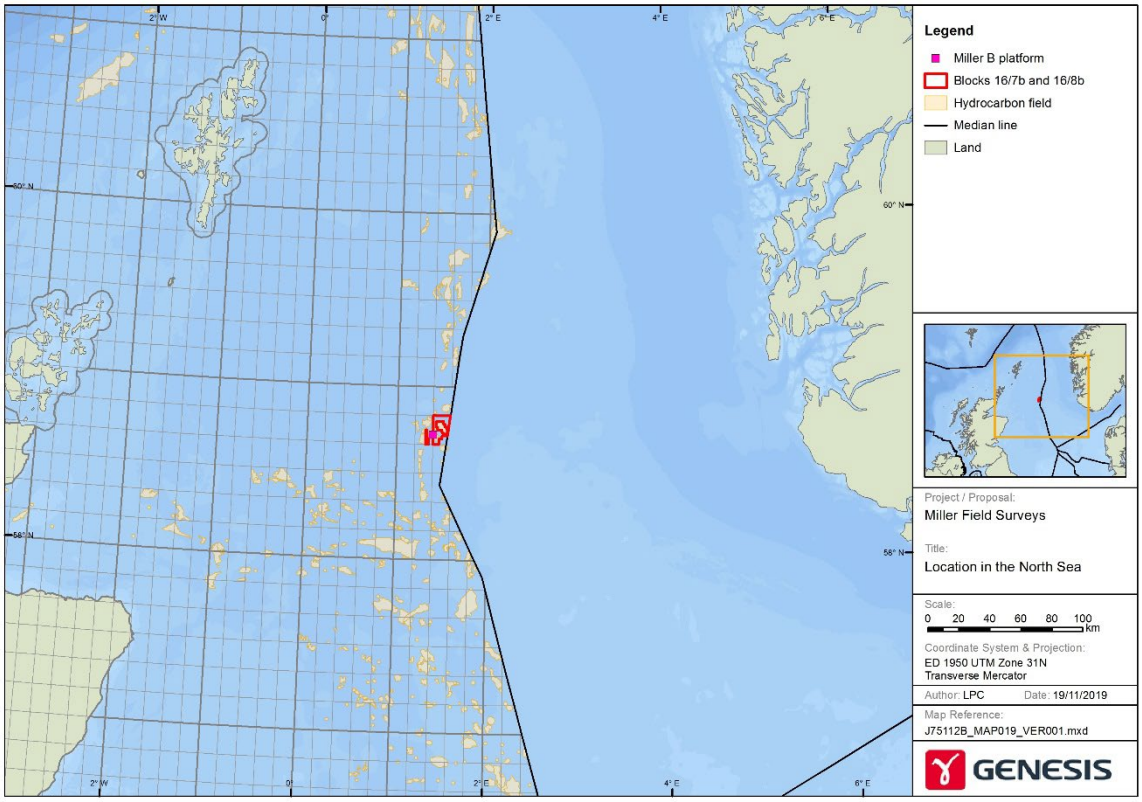

Figure 1-2: Field Location in UKCS

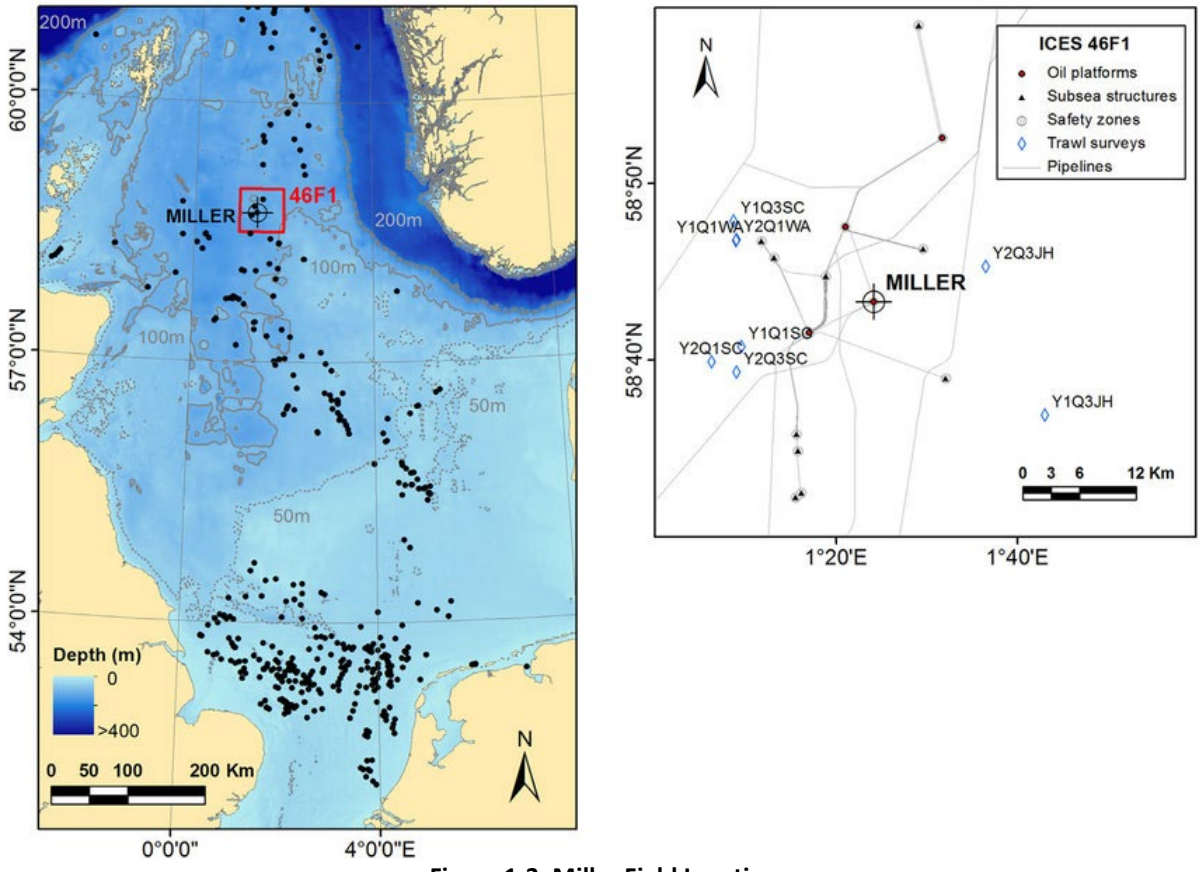

Figure 1-3: Miller Field Location

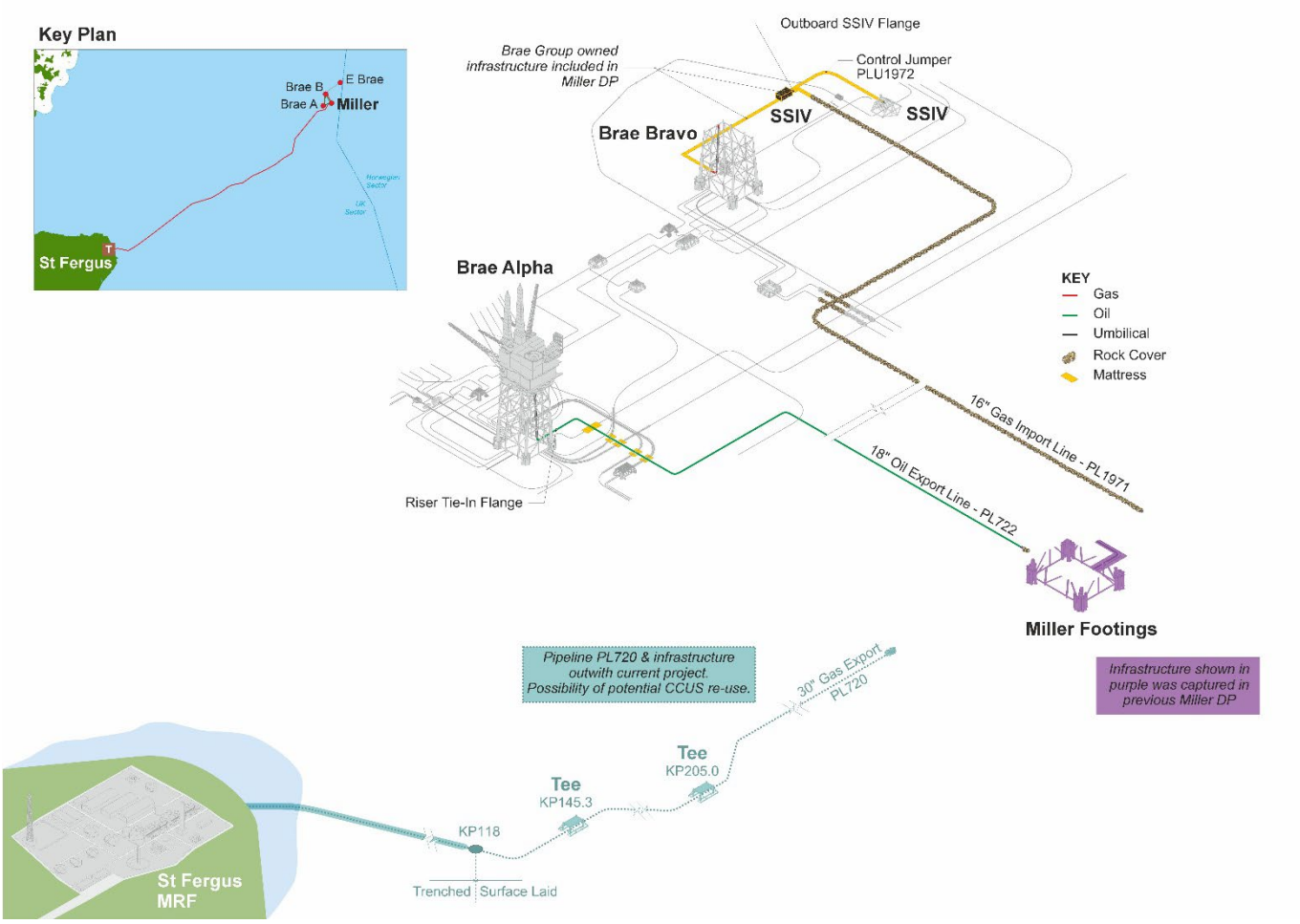

Figure 1-4: Miller Field showing infrastructure captured in the DP

Table 1-4: Adjacent Facilities					
Operator	**Name**	**Type**	**Distance/Direction**	**Information**	**Status**
TAQA Bratani Limited	Brae A	Platform	7.8 km south-west	Producing platform	Active
TAQA Bratani Limited	Brae B	Footings - Only	8.4 km north-west	Footings	Out of Use
TAQA Bratani Limited	East Brae	Platform	18.6 km north-east	Oil and Gas Development	Out of Use
CNR International (UK) Ltd	PL872	10" Gas Pipeline	PL722 - KP3.88	Crosses Over PL722	Active
Equinor Energy AS	PL301	8" Condensate Pipeline	PL722 - KP7.579	Crosses Under PL722	Out of Use
TAQA Bratani Limited	PLU6120	Power Cable	PL722	Crosses Under PL722	Out of Use
TAQA Bratani Limited	PLU6119	Power Cable	PL722	Crosses PL722	Out of Use
TAQA Bratani Limited	PLU5089	SSIV Control Umbilical	PL722	Crosses PL722	Active
TAQA Bratani Limited	PLU4031	West Brae Control Umbilical	PL722	Crosses PL722	Active

Table 1-4: Adjacent Facilities					
Operator	**Name**	**Type**	**Distance/Direction**	**Information**	**Status**
Bridge Petroleum 3 Limited	PL2336	8” Oil Production Flowline	PL722	Crosses PL722	Active
Bridge Petroleum 3 Limited	PL2337	3” Gas Lift Flowline	PL722	Crosses PL722	Active
Bridge Petroleum 3 Limited	PLU2338	Control Umbilical	PL722	Crosses PL722	Active
TAQA Bratani Limited	PL895A	18" Gas Pipeline	PL1971 - KP8.44	Crosses Under PL1971	Out of Use
TAQA Bratani Limited	PLU4188	SSIV Control Umbilical	PL1971 - KP8.425	Crosses Under PL1971	Out of Use
TAQA Bratani Limited	PLU6121	PMS Cable	PL1971 - KP8.392	Crosses Under PL1971	Out of Use
TAQA Bratani Limited	PL894	18" Condensate Pipeline	PL1971 - KP8.39	Crosses Under PL1971	Out of Use
Shell U.K. Limited	PLU1490	Control Umbilical	PL1971 - KP7.94	Crosses Under PL1971	Out of Use
Shell U.K. Limited	PL1488	10" Production Pipeline	PL1971 - KP7.885	Crosses Under PL1971	Out of Use
Shell U.K. Limited	PL1489	10" Production Pipeline	PL1971 - KP7.83	Crosses Under PL1971	Out of Use
TAQA Bratani Limited	PLU6120	Power Cable	PL1971 - KP5.64	Crosses Under PL1971	Out of Use
Equinor Energy AS	PL301	8" Condensate Pipeline	PL1971 - KP5.61	Crosses Under PL1971	Out of Use
TAQA Bratani Limited	PL4164	18” Gas by-pass Pipeline	PLU1972	Crosses over PLU1972	Active
Impacts of Decommissioning Proposals					
Decommissioning of the adjacent facilities is not part of the DP but BPEAL has been, and will continue to be, in contact with the operators, and will investigate any benefits and cost savings available through co-operation and alignment of decommissioning activities.					

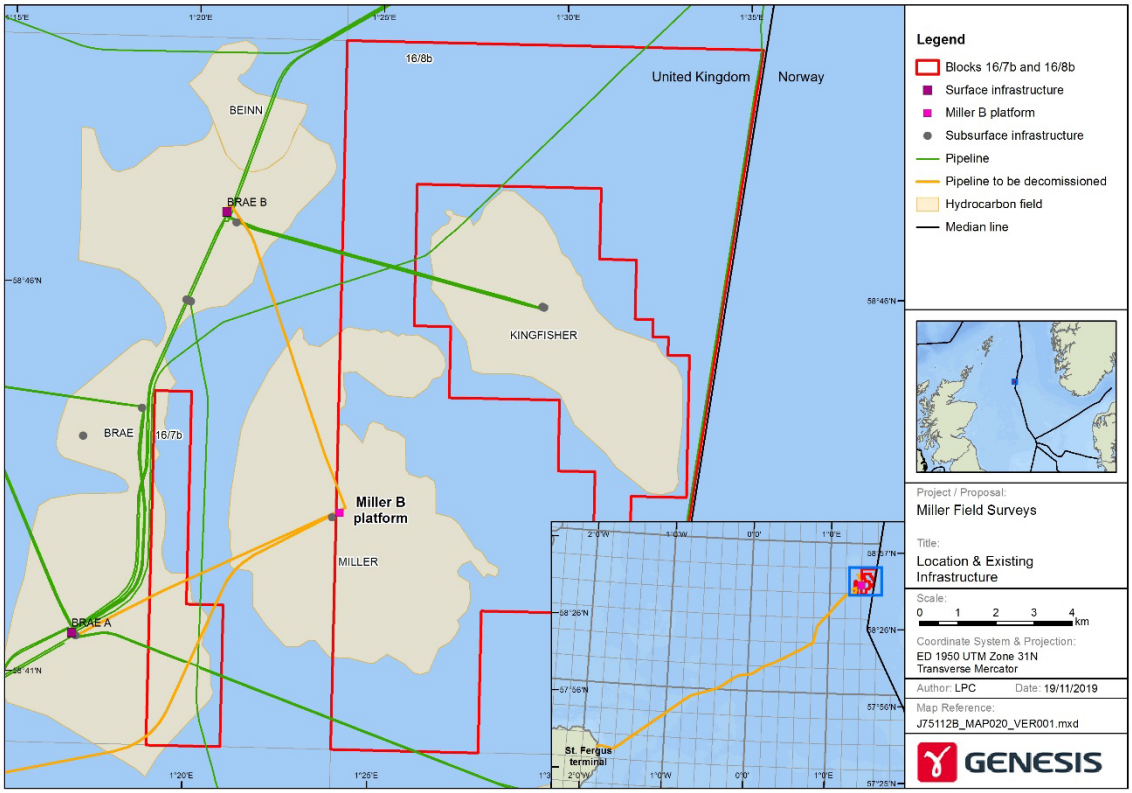

Figure 1-5: Miller Field showing Adjacent Facilities

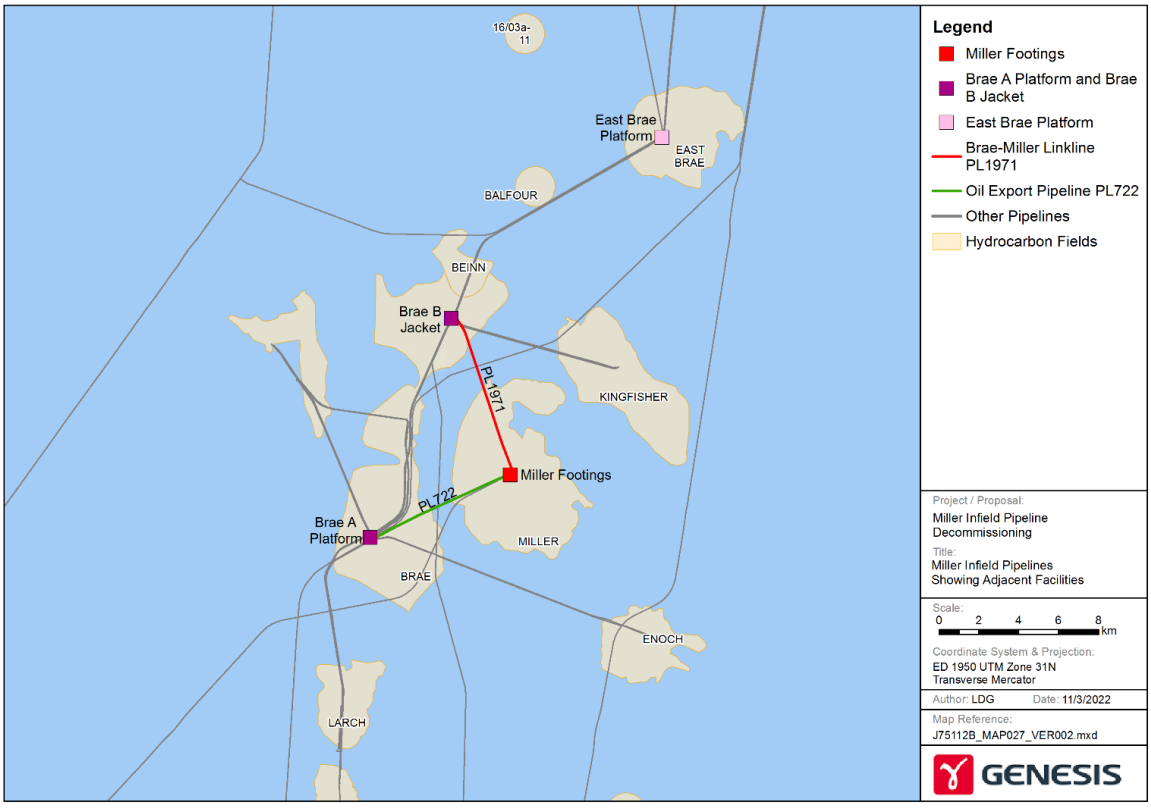

Figure 1-6: Miller Field & Pipelines showing Crossings

1.7 Industrial Implications

It is BPEAL intention to develop a contract strategy that will result in an efficient and cost-effective execution of the decommissioning works. BPEAL will also try to combine Miller decommissioning activities with other developments or decommissioning activities to reduce mobilisation and demobilisation costs should the opportunity arise. The decommissioning schedule is intended to allow flexibility for when decommissioning operations are carried out and completed.

2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Pipelines Including Pipeline Structures and Stabilisation Features

Table 2-1: Pipeline/Umbilical Information									
Description	**Pipeline Number**	**Diameter (mm)**	**Length (km)**	**Description of Component Parts**	**Product Conveyed**	**From – To End Points**	**Burial Status**	**Pipeline Status**	**Current Content**
Oil Export Pipeline	PL722	457.0	7.460	Carbon steel/ plastic/ alloy & concrete coatings	Oil	Pipeline Flange (Miller) to Pig Receiver (Brae 'A') Note 1	Surface laid	Under Approved DPN	Inhibited seawater
Gas Import Pipeline	PL1971	406.4	8.684 Note 2	Carbon steel/ plastic/ alloy & misc. coatings	Gas	Riser cut location (-61m) to Pipeline Cut Location (Miller) Note 3	Trenched and buried with rock placement over entire length Note 4	Under Approved DPN	Inhibited seawater
SSIV Umbilical	PLU1972	61.6	0.169	Plastics/ Copper & misc. coatings	Hydraulic Fluid	East Brae 18" Gas Transfer SSIV to Brae B 16" SSIV	Surface laid and protected by mattresses	Not in Use	Hydraulic Fluid

Note 1 Length does not include spools which were covered by the original Miller Platform DP and recovered during the 2023 works in the Miller 500m zone. Brae A riser upper section will be removed as part of the Brae A Upper Jacket DP. The fate of the lower section of the line will be defined within a future Brae Alpha Jacket Footings DP. The outcome of which will be shared by BPEAL with OPRED.

Note 2 Length does not include lower riser section at Miller Platform (64m) which is left in place as part of the Miller DP. Length also does not include 35m which was cut and recovered to shore in agreement with OPRED during the 2023 works in the Miller 500m zone.

Note 3 Brae B riser upper section was removed as part of the Brae B Upper Jacket DP. The fate of the lower section of the line will be defined within the future Brae Bravo Jacket Footings DP. The outcome of which will be shared by BPEAL with OPRED.

Note 4 PL1971 spools at Brae are surface laid and protected by mattresses.

Table 2-2: Pipeline Structures					
Pipeline Structure	**Number**	**Size(m)/Weight (Te)**	**Location**		**Comments/Status**
PL1971 SSIV at Brae B [Note 1]	1	13.6m (L) x 7.7m (W) x 3.5m (H) 107.9te	WGS84 Decimal	58.792296 N 1.348441 E	Gravity base structure with steel ballast, including a valve skid, protection structure and roof panel.
			WGS84 Decimal Minute	58°47'32.267" N 01°20'54.386" E	
Spool Crossing Frame	1	15.5 (L) x 6m (W) x 2.5m (H) 75Te	WGS84 Decimal	59.232382 N 1.256611 E	Frame piled to the seabed (4 driven piles) to allow PL722 spool pieces to cross the Heimdal spool pieces.
			WGS84 Decimal Minute	59° 13' 56.58" N 01° 15' 23.8" E	

[Note 1] SSIV is included within this DP, however it is understood that the SSIV will be decommissioned at the same time as the Brae B facilities

Table 2-3: Subsea Pipeline/Umbilical Stabilisation Features				
Stabilisation Feature	**Total Number**	**Weight (Te)**	**Location(s)**	**Exposed/Buried/Condition**
Mattresses	12	16.9	PL722 Brae A spool pieces crossing over Heimdal Pipeline [Note 1]	Exposed, on the seabed. Condition will be verified at the time of decommissioning works.
Mattresses	45	237.8	PL1971 Brae B Spool piece and SSIV Umbilical (PLU1972) stabilisation outboard of SSIV [Note 2] PL1971 Pipeline Stabilisation [Note 3]	Exposed, on the seabed. Condition will be verified at the time of decommissioning works. Rock covered, therefore condition is unknown.
Mattresses	20	83.5	PL1971 Brae B Spool pieces from SSIV to base of Riser at Brae B [Note 4]	12 Exposed on seabed and 8 buried under drill cuttings
Rock Placement	1	47,310	PL1971 Pipeline Stabilisation	n/a

[Note 1] 12 x Mattresses size = 2.66m x 1.5m x 0.15m (16.9 te)
[Note 2] 33 x Mattresses size = 6m x 3m x 0.15m (137.8 te)
[Note 3] 12 x Mattresses size = 6m x 3m x 0.3m (100 te)
[Note 4] 20 x Mattresses size = 6m x 3m x 0.15m (83.5 te)

2.3 Inventory Estimates

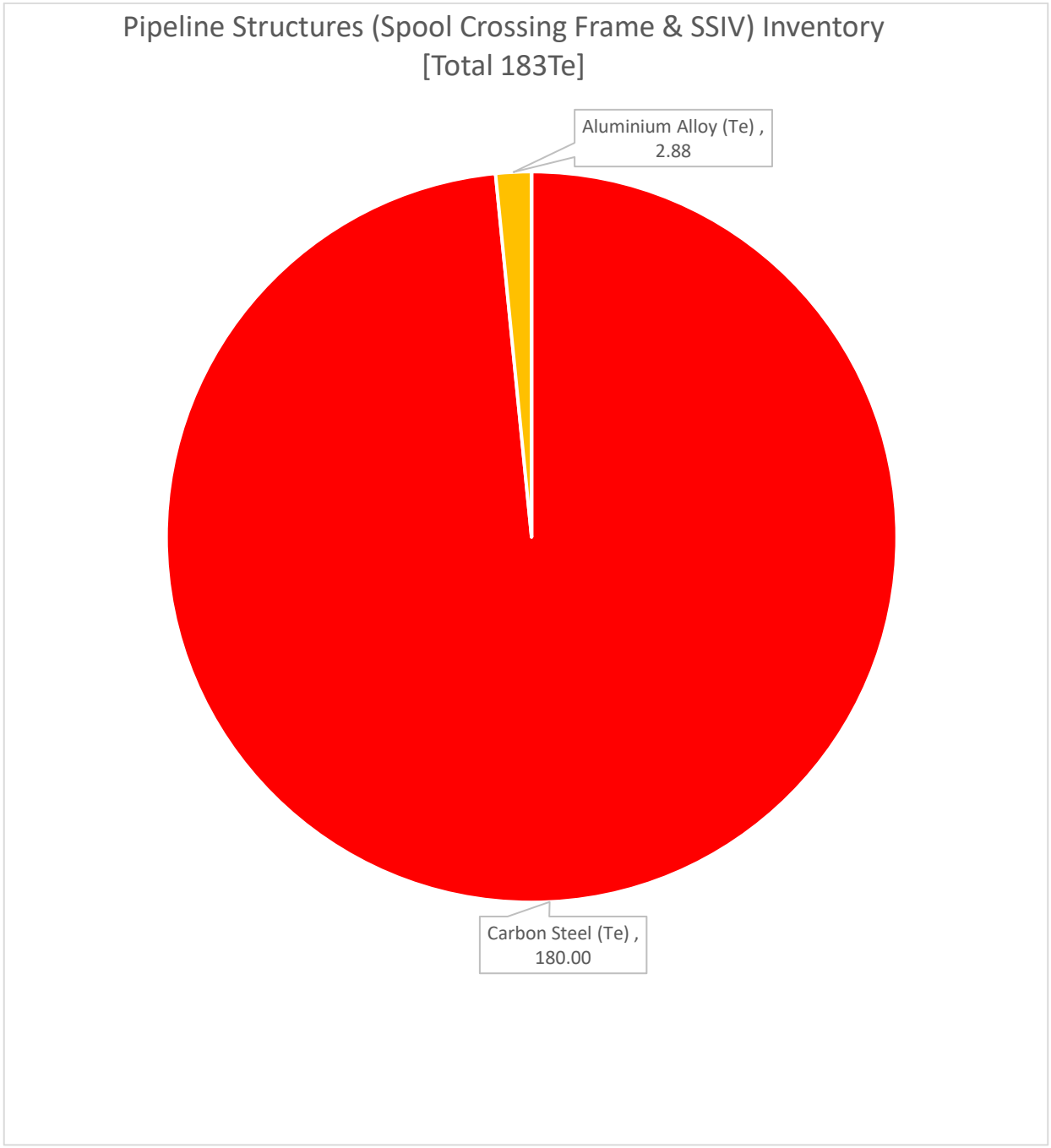

Figure 2-1: Estimated Inventory – Pipeline Structures (Spool Crossing Frame & (SSIV)[Note 1])

Note 1 The Brae B SSIV (108 te) is included here, however it is understood that the SSIV will be decommissioned at the same time as the Brae B subsea infrastructure.

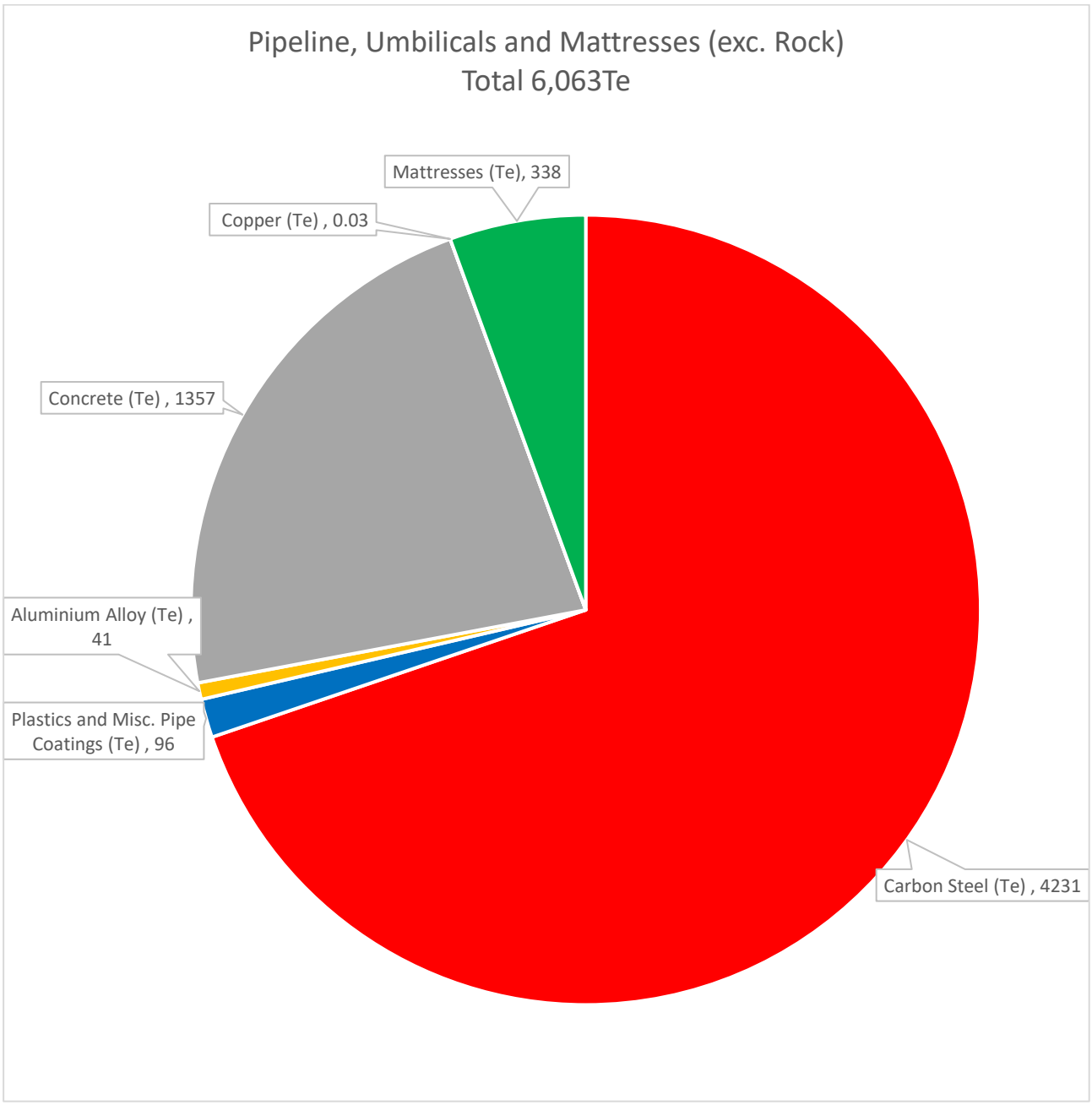

Figure 2-2: Estimated Inventory - Pipelines, Umbilical, Riser, Spools and Mattresses[4]

Note 4 Umbilical PLU1972 and the Brae Risers for pipelines PL1971 / PL722 and associated exposed protection mats are included here, (estimated mass 300 te, excluding the SSIV). However, based on an agreement between BPEAL and the Brae Group owners, the execution of the decommissioning of the Miller pipelines and associated apparatus within Brae A and Brae B 500m zones will be completed at the same time and as part the decommissioning of the Brae A and Brae B facilities.

3 REMOVAL AND DISPOSAL METHODS

In line with the waste management hierarchy, the re-use of infrastructure (or parts thereof) is first in the order of decommissioning options. BPEAL considered other potential reuse options, however, none yielded a viable commercial opportunity.

On removal and where practicable, BPEAL will ensure the principles of the waste hierarchy will be met in the handling of materials from the Miller Infield Pipelines decommissioning to maximise the amount of material which can be reused or recovered/ recycled. Recovered material will be returned to shore and transferred to a suitably licensed waste treatment facility.

BPEAL and the selected contractor(s) will monitor and review the disposal route of all materials and waste to the point of final reuse, recycling or disposal. As the decommissioning is not scheduled to be completed imminently, BPEAL propose to take advantage of any future advances in technology to aid waste management, including the further reuse, recycle or scrapping of parts of the pipelines and umbilical as appropriate.

3.1 Pipeline Structures

Table 3-1: Pipeline Structures and Decommissioning Options			
Pipeline Structure	**Number**	**Option**	**Disposal Route (if applicable)**
PL1971 SSIV at Brae B [Note1]	1	Recovered	Returned onshore for treatment and recycle/ disposal by Brae B Group owners
Spool Crossing Frame	1	Recovered	Returned onshore for treatment and recycle/ disposal.

[Note 1] SSIV is included here, however it is understood that the SSIV will be decommissioned at the same time as the Brae B facilities by the Brae B Group Owners.

3.2 Pipelines

Decommissioning Options:

Table 3-2: Key to Options						
1. Total Removal by:			**2. Remediate In-Situ with exposed sections:**			**3. Leave In-Situ and Monitor**
a) Reverse Reeling	**b)** Reverse S-Lay	**c)** Cut and Lift	**a)** Rock Covered	**b)** Trenched and Buried	**c)** Cut and Lift	

Table 3-3: 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**
PL722 - 18" Oil Export Pipeline (concrete coated)	Surface laid on the seabed entire route	Whole	1c, 2a, 2b and 3.
PL1971 - 16" Gas Import Pipeline	Trenched and buried with rock placement over entire length	Whole	1a, 2a, 2b and 2c.

PLU1972 was not subjected to Comparative Assessment (CA) as it is a short umbilical only (169m long) and will be removed (except for ~8m section under the Brae Bravo rock covered gas bypass line (PL4164)) by the Brae owners on behalf of BPEAL.
Both the PL1971 SSIV gravity-based structure and PL722's Spool Crossing Frame (which is piled to the seabed) were not included in the CA as they are pipeline structures and will be recovered and returned onshore.

Comparative Assessment Method:

A Comparative Assessment (CA) has been carried out for both pipelines in line with the recommendations of the OPRED Guidance Notes. The CA considered Technical, Safety and Environmental Risks and Societal and Economic Impacts. The assessment closely followed the Guidelines on CA's in DPs published by Offshore Energies UK (OEUK).

A workshop was held by BPEAL (representatives from the safety, environmental and subsea teams present) using established terms of reference, detailed data on field facilities, results were recorded and approved by participants.

Table 3-4: Outcome of Comparative Assessment		
Pipeline or Group (as per PWA)	**Recommended Option**	**Justification**
PL722 - 18" Oil Export Pipeline (concrete coated)	Decommission by Remediate In- situ and trenching and burial	The total removal Option 1c was considered to have a marginally weaker rating than the other options from a Technical Complexity and Track Record perspective, and increased safety concerns related to the high level of SIMOPs over a longer period and significantly more materials handling activities than the other options. The trenching study carried out in support of the CA confirmed that there is no uncertainty on the ability to achieve a trench depth to achieve required depth of cover of the pipeline. The Trenching Option 2b was therefore the preferred option recognising: - Relatively short campaign duration, single vessel. Minimal vessel deck crew interaction hence lowest safety risk. - Localised and short-term disturbance to the seabed only with this option leaving a clear seabed and the ecosystem recovery commences as soon as operations are completed. - Low impact of waste processing as nothing returned onshore.

		- Lowest Execution Cost Remediation Option. - Residual risk and societal impact to other users of the sea risk is low as pipeline is buried (to at least 0.6m) leaving no snagging hazard.
PL1971 - 16" Gas Import Pipeline	Decommission by leaving the trenched and rock covered section in-situ and remediation of the non-trenched end-section by cut and removal [Note 1] with spot rock on cut end [Note 2].	The total removal Option 1a considered was discounted for the trenched and rock covered section of this pipeline as full removal of the line would be technically challenging compared to the remediate in-situ options, whilst the increased safety risk exposure time to project personnel both offshore and onshore in having to handle greater pipeline lengths was a concern. In addition, recovery of the pipeline would result in more seabed disturbance and change to habitat compared to the remediate in-situ options. There will be minimum legacy risk, to other users of the sea in leaving the pipeline in-situ as historical inspection surveys have demonstrated that the trenched and rock covered sections of the pipeline will remain so whilst the area is actively fished with no incidents having been reported.
Note 1: Although Option 2c Remediate In situ with exposed ends cut and removed was the most preferred option for PL1971 it was only rated marginally better than the other Remediate In-situ options during the CA. BPEAL will therefore carry forward all 3 remediate in-situ options to the contract and procurement phase of the project. OPRED will be informed should the preferred option change. Note 2: Approximately 10 te of spot rock cover placed to remediate the exposed end.		

3.3 Pipeline/Umbilical Stabilisation Feature(s)

It is not proposed, at this stage, to carry out a CA on any pipeline/umbilical stabilisation features, as in accordance with the recommendations of the OPRED Guidance Notes, all exposed mattresses will be recovered on shore for treatment, recycle and/or disposal, and any pipeline stabilisation features that are rock covered will remain in place. If it is found that the exposed stabilisation features cannot be safely and/or efficiently recovered BPEAL will revert to OPRED and discuss further potential remediation options.

Table 3-5: Pipeline/Umbilical Stabilisation Feature(s)

Stabilisation feature(s)	Number	Option	Disposal Route (if applicable)
Mattresses	77	20 Rock/drill cutting covered mattresses will remain in place (133.4Te). 57 Exposed mattresses will be recovered. [Note1]	Where mattresses are recovered, they will be returned onshore for treatment and recycle/ disposal
Rock cover (Te)	47,310	To remain in place.	n/a
Note 1: It is intended that the exposed mattresses will be recovered to shore, however in the event of practical difficulties during the removal execution, OPRED will be consulted, and an alternative method of decommissioning will be examined through a comparative assessment.			

3.4 Waste Streams

Table 3-6: Waste Stream Management Methods	
Waste Stream	**Removal and Disposal method**
Bulk liquids	All pipelines have been flushed with seawater, with returns to a sampling point confirmed as <30mg/l oil in water.
Marine growth	Based on the minimal quantity of material to be returned onshore where necessary and practicable to allow access and inspection, marine growth will be removed offshore, with the remainder brought to shore for disposal should a recycling route (e.g. potential for use as a fertiliser) not be identified.
NORM	Tests for NORM will be undertaken offshore, and work will be carried out in full compliance with all relevant regulations.
Asbestos	Should asbestos be identified, the disposal yard will be informed of the hazard and appropriate controls and licensed disposal methods will be in place.
Other hazardous wastes	Will be recovered to shore and disposed of in full compliance with all relevant regulations.
Onshore Dismantling sites	Appropriate licensed sites will be selected for disposal and OPRED will be informed when a disposal yard has been selected.

BPEAL will ensure only the appropriately licensed and competent waste Contractor(s) are utilised.

The waste management provider's/disposal yards shall follow the waste management hierarchy in the handling of materials from the Miller Infield Pipelines decommissioning project to maximise the amount of material from the project which is reused or recovered/recycled. BPEAL and the selected removal contractor(s) will, monitor disposal and reserves the right to audit to fulfil any Duty of Care responsibilities. 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 relevant waste regulatory authorities will ensure that any issues with TFSW are addressed.

Table 3-7: Inventory Disposition			
	Total Inventory Tonnage	**Planned tonnage to shore**	**Planned left *in situ***
Pipelines, Umbilical, SSIV & Spool Crossing Frame	5,908	325	5,583
Mattresses and Rock cover	47,648	205	47,443

4 ENVIRONMENTAL APPRAISAL OVERVIEW

4.1 Environmental Sensitivities (Summary)

Table 4-1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
Conservation interests	There are areas of submarine structures made by leaking gases (known as 'pockmarks') within this area of the North Sea. The Miller field is located outside the main pockmark area. The following protected areas are located within 70 km of the Miller Field: • Scanner Pockmarks Special Area of Conservation (SAC) 44.4 km distant; • Braemar Pockmarks SAC is 15.7 km distant; • Norwegian Boundary Sediment Plain Marine Protected Area (MPA) is 55.6 km distant; and Central Fladden MPA is 68.9 km distant.
Seabed	Within the immediate area of the Miller Development, the sediment can be classed as sand and muddy sand. The overlying sand content is thin, moderately sorted, with a mean grain size varying from coarse to fine overlaying the silty clays of the Witch Ground Formation. Quaternary sediments in the area vary in thickness from a few metres close to shore, to in excess of 250 m thick in the Witch Ground Basin. The Witch Ground Basin is characterised by numerous pockmarks on the seabed, although they do not intersect with the Project area.
Fish	The Miller pipelines and umbilical are situated within International Council for the Exploration of the Sea (ICES) rectangle 46F1. Which is: a spawning ground for saithe; a spawning and nursery area for spotted ray, Norway pout, *Nephrops*, mackerel, cod; and a nursery ground for anglerfish, blue whiting, European hake, ling, sandeel, spurdog, haddock, and whiting. Data indicates that low levels of juveniles are present throughout the area of the Miller field for the majority of commercial fish species. There are a limited number of exceptions to this, including: a medium probability of haddock juveniles in UKCS Blocks 16/7 and 16/8, and a medium probability of Norway pout juveniles in Block 16/8.
Fisheries	The Miller platform occurs within ICES rectangle 46F1. Data published by Marine Directorate (MD) demonstrates that trawls and seine nets were used throughout this rectangle in the years 2019 to 2023 (Marine Directorate, 2022). Species targeted in the area include cod, monk fish, *Nephrops* and haddock. The data suggests that this ICES rectangle encompasses an area that is relatively low importance to the UK fishing industry such that fishing activity in the area can be considered low to moderate. Bottom trawl gear is used therefore, the importance of ensuring a safe seabed as part of the proposed decommissioning project is emphasised.

Table 4-1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
Marine Mammals	Data suggests that moderate to low densities of harbour porpoise and Atlantic white-sided dolphin, and low to high densities of white-beaked dolphin and minke whale have been sighted in the immediate vicinity of the Miller field (Reid *et al.,* 2003). Additionally beaked whales are known to be present in the area, but densities estimates are unavailable (Reid *et al.*, 2003).
Birds	Distribution and abundance of bird species vary seasonally and annually. Seabird densities such as Atlantic puffin are generally higher in the breeding season (April – July), whereas other species such as the Northern fulmar have higher densities in the winter season (August - February). Of the species expected to occur in the area, guillemot (*Uria aalge*) and the European storm petrel (*Hydrobates pelagicus*) are afforded protection by the European Commission (EC) Birds Directive (Annex I).
Onshore Communities	At this stage of the project, the onshore dismantling and disposal yards are not yet chosen and therefore it is not possible to describe the specific locations where activities will take place. BPEAL intends to engage competent dismantling contractors to handle the recovered materials. In addition, competent waste management contractors will be selected to handle, store and dispose of any materials that cannot be recycled or reused.
Other Users of the Sea	The vessel density in the area ranges from 0 to > 50 hours per km^2 per month. The Miller infield pipelines are situated within a well-developed area of the North Sea, featuring a lot of oil and gas infrastructure and activity. There are no military exercise areas within the vicinity of the Miller infrastructure (Scottish Government NMPi). The Miller field is located within Innovation and Targeted Oil and Gas (INTOG) NE-d.
Atmosphere	Offshore, emissions to the atmosphere will arise from the vessels used to decommission the Miller infield pipelines, umbilical and SSIV however, they are not considered to be significant and control measures shall be applied to reduce emissions to As Low As Reasonably Practicable.

4.2 Potential Environmental Impacts and their Management

Environmental Impact Assessment Summary:

Table 4-2: Environmental Impact Management		
Activity	**Main Impacts**	**Management**
Decommissioning Pipelines/Umbilical	Recovery of: Umbilical and Spool Pieces. ~71m of PL1971 Spool Pieces will be decommissioned *in situ* under drill cuttings at Brae Bravo. Both pipelines are to be decommissioned *in situ*. The surface laid PL722 will be trenched and buried. The trenched and rock covered PL1971 will have its exposed end remediated. The aspects considered as part of the EA process included: - The physical presence of vessels; - Energy use and atmospheric emissions; - Underwater noise from vessels; - Discharges to sea from vessels; - Temporary disturbance to the seabed from activities, including, trenching cutting and recovery; - Permanent disturbance to the seabed from activities including possible placement of additional rock cover; - Discharges to sea from the pipeline sections/umbilical during recovery operations; - Production of waste materials; - Legacy impacts.	During decommissioning, a number of mitigation measures will be adhered to, in order to minimise the marine environmental and socio-economic impacts. These are identified in the EA Report and are summarised here: - A detailed assurance process on all vessels prior to contract award will be followed, and all contractors will originate from countries signed up to the International Maritime Organisation and will adhere to their guidelines; - Vessel use will be optimised as far as practicable; - Flushing and cleaning have been completed in line with BAT/BEP (Best Available Technique/Best Environmental Practice) requirements; - Work procedures will be in place to minimise duration of activities and minimise likelihood of dropped objects; - Any potential SIMOPS (simultaneous operations) will be managed through bridging documents and communications; - Lifting/cutting/jetting work plans will be in place; - Preference will be given to the use of side scan sonar surveys to determine a clear seabed, to be discussed and agreed with OPRED prior to undertaking the surveys; - Dredging/jetting will be minimised to the required levels to execute scope; - If rock cover is used, volumes will be minimised, and a targeted rock deployment method will be used to lay it on the seabed; - If used, rock cover profiles will align with industry standards with respect to the size of rock;

Table 4-2: Environmental Impact Management		
Activity	**Main Impacts**	**Management**
		- Post decommissioning survey strategy.
Decommissioning Pipeline Structures and Stabilisation Features	The base case is to decommission the existing rock cover in situ and recover the spool crossing frame (which is piled to the seabed), SSIV (gravity based) and exposed mattresses. Aspects considered for the decommissioning of the pipeline structures and stabilisation materials include those considered for 'Decommissioning Pipelines'.	During decommissioning of the pipeline structures (SSIV & spool crossing frame) the relevant mitigation measures identified for 'Decommissioning Pipelines' (see above) will be applied. In addition: - Piles will be internally cut to minimise seabed disturbance.[5] - Cuts will target to be below -3 m below seabed to minimise legacy impacts. During decommissioning of the 'Stabilisation Features' the relevant mitigation measures identified for 'Decommissioning Pipelines' (see above) will be applied. In addition: - OPRED will be consulted in the event that any exposed mattresses cannot be recovered to discuss alternative approaches. - A survey strategy will be agreed with OPRED for monitoring any stabilisation features that will be decommissioned in situ.

[5] If internal cuts to piles are not possible due to blockage, this will be communicated to OPRED to get agreement to progress to excavation and external cutting.

5 INTERESTED PARTY CONSULTATIONS

Consultations Summary:

As part of the informal stakeholder engagement process BPEAL issued a Scoping Report to a number of stakeholders. Additionally, BPEAL have engaged with OPRED's Offshore Decommissioning Unit (ODU) and Environmental Management Team (EMT) during the preparation of this DP.

The Scoping Report provided an overview of the Miller field, the proposed decommissioning activities and an overview of the impacts to be assessed in the EA. Recipients of the scoping report are invited to comment on the Scoping Report with respect to any concerns they may have.

In addition to issuing the Scoping Report, BPEAL held an informal Stakeholder Engagement Workshop to share the proposed decommissioning activities. Table 5-1 summarises the main concerns that the stakeholders have identified to date.

Table 5-1: Summary of Stakeholder Comments

Who	Comment	Response
Informal Stakeholder Consultations		
MD	MD will comment once the DP is submitted formally.	N/A
UKHO	In response to the Scoping Report, the UKHO advised on required notifications in advance of offshore activities.	N/A
MCA	No response was received from the MCA on the Scoping Report.	N/A
JNCC	In Response to the Scoping Report: JNCC recommends that the BPEAL follows the mitigation hierarchy when operating within the vicinity of conservation features. Request a full justification for why decommissioning outcomes were chosen (incorporating evidence from burial feasibility study) and why full removal not selected. Expect clear maps be included within that shows where nature conservation features are located in relation to the operations. Present the realistic worst-case scenario to enable a meaningful assessment of the environmental impacts of the planned activities. At the Stakeholder Engagement Workshop, JNCC re-iterated the above points and asked for clarification on the recovery of mattresses and grout bags.	See Chapter 5.5 of the EA Report. See Sections 5.2 and 6.1 of the CA. See Chapter 5.4 of the EA Report. See Chapter 6.0 of the EA Report. See Chapter 3.3 of the DP.

Table 5-1: Summary of Stakeholder Comments		
Who	**Comment**	**Response**
SFF	In Response to the Scoping Report: PL722 – it would be good to know the reasoning behind why removal was scoped out. PL1971 - No comments. SFF have concerns about surveys being used to verify an area is safe for fishing – which have been shared with OPRED. SFF attended the Stakeholder Engagement Workshop, and for the Infield Pipelines, no significant concerns were raised.	Full Removal was not screened out, Total Removal by Cut and Lift was evaluated by CA, see Section 5.2 of the CA. Noted N/A
HSE	No response was received from the HSE on the Scoping Report. HSE attended the Stakeholder Engagement Workshop, and for the Infield Pipelines, no significant concerns were raised.	N/A N/A
NSTA	No response was received from the NSTA on the Scoping Report. NSTA attended the Stakeholder Engagement Workshop and for the Infield Pipelines, no significant concerns were raised. Infrastructure Repurposing Summary was provided to the NSTA 22/03/2024.	N/A N/A Accepted by NSTA (IF) 06/08/2024
SEPA	No response was received from SEPA on the Scoping Report. SEPA attended the Stakeholder Engagement Workshop and raised no concerns.	N/A
Global Marine	No response was received from Global Marine Systems Ltd on the Scoping Report.	N/A
Statutory Consultations [HOLD 7]		
North Sea Transition Authority (NSTA)[6]		
National Federation of Fishermen's Organisations		
Scottish Fishermen's Federation		
Northern Irish Fish Producers Organisation		
Global Marine Systems Limited		

[6] BPEAL has consulted with the NSTA under S29(2A) of the Petroleum Act.

Table 5-1: Summary of Stakeholder Comments		
Who	**Comment**	**Response**
Public Consultation		

6 PROGRAMME MANAGEMENT

6.1 Project Management and Verification

BPEAL has established a multi-disciplinary team lead by a Project Manager responsible for the implementation of activities and co-ordination of all services. An execution plan will be put in place which will align with established BPEAL Health, Safety and Environment policies and meet all relevant legislative requirements.

The contracting strategy will be based on BPEAL procurement and contracts policies. Where practicable, activities will be coordinated with other decommissioning operations and take account of any initiatives promoted by the NSTA.

BPEAL will report regularly on the execution of the DP to OPRED and discuss any changes in plans as they advance.

6.2 Post-Decommissioning Surveys, Debris Clearance and Verification

A post-decommissioning survey will be completed to identify debris within the 100m pipeline corridors. Any debris related to offshore oil and gas activities will be recovered for onshore recycling or disposal in line with existing waste management policies. Debris removal will form part of the subsea decommissioning execution scope of work.

All Miller pipeline/umbilical routes will be subject to oilfield debris clearance and as-left verification surveys when decommissioning activity has concluded. 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 (to at least 0.6m), 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 Section 29 holders recognise their commitment to undertake post-decommissioning monitoring of infrastructure left *in situ*. After the post-decommissioning survey reports have been sent to OPRED and reviewed, a post-decommissioning monitoring survey regime, scope and frequency, will be agreed with OPRED.

The clear seabed will either be validated by an independent verification trawl over the installation sites and pipeline corridors or by the post decommissioning survey. The post decommissioning survey will provide further verification. This will be followed by a statement of clearance to all relevant Governmental departments and Non-Governmental Organisations (NGO).

6.3 Schedule

The current schedule for the decommissioning activities associated with the Miller Infield Pipelines DP as outlined in Figure 6-1 may change to exploit opportunities to minimise impacts of the decommissioning process or by combining with other decommissioning activities within the BPEAL portfolio into campaigns, or by combining the Miller Infield Pipelines decommissioning operations with third party decommissioning. Any significant changes to the schedule will be discussed and agreed in advance by OPRED.

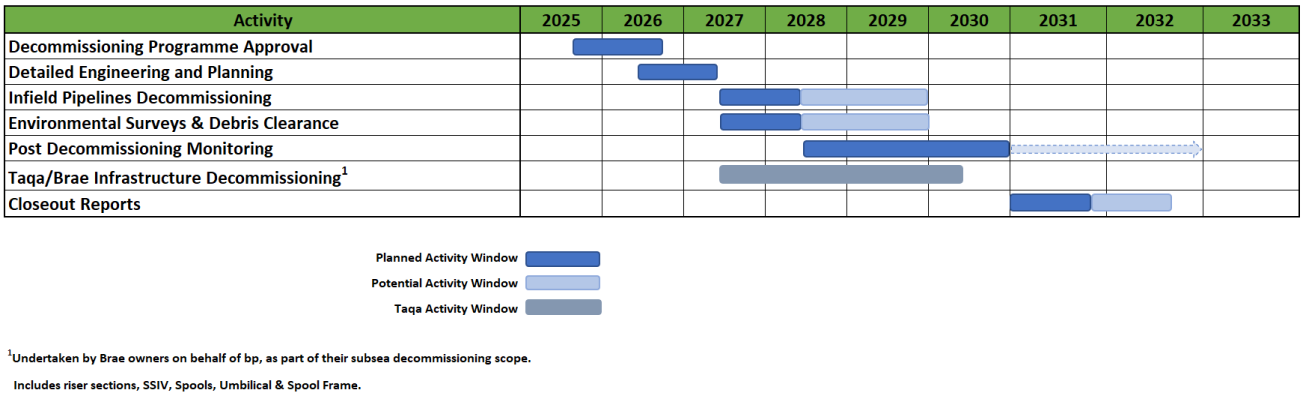

Figure 6-1: Gantt Chart of Project Plan

6.4 Costs

Table 6-1: Provisional Decommissioning Programme(s) Costs	
Item	**Estimated Cost (£m)**
Pipelines, Pipeline Structures and Umbilical Decommissioning	Will be provided to OPRED[1]
Stabilisation Feature(s)	Will be provided to OPRED[1]
Continuing Liability – Future Pipeline and Environmental Survey Requirements	Will be provided to OPRED[1]
TOTAL	Will be provided to OPRED[1]

[1] Estimated Costs are confidential and will be provided separately to OPRED

6.5 Close Out

A close out report will be submitted to OPRED within 12 months of the completion of decommissioning, including debris clearance and initial post-decommissioning surveys. Any material changes to this DP will be discussed and agreed in advance by OPRED.

6.6 Post-Decommissioning Monitoring and Evaluation

A post decommissioning environmental seabed survey, covering Miller pipeline routes will be carried out when all decommissioning activity has been concluded. The survey will focus on chemical and physical disturbances due to the decommissioning and be compared with the pre-decommissioning survey. Results of the survey will be forwarded to OPRED to enable a post monitoring survey regime to be agreed by both parties which will form part of an integrated post monitoring regime for the full Miller field.

7 SUPPORTING DOCUMENTS

Table 7-1: Supporting Documents	
Document Number	**Title**
J75112B-A-RT-00007	Miller Comparative Assessment Report. BPEAL Document No. DC109-EN-REP-000-5018
J75112B-Y-RT-24004	Miller Environmental Appraisal. BPEAL Document No. DC109-EN-REP-000-5008
MLR-A-D0-PM-PRO-00217	Miller Decommissioning Programme

Web link for all stakeholder / interested parties – https://www.bp.com/miller

8 SECTION 29 NOTICE HOLDER LETTER(S) OF SUPPORT

[HOLD 01]