



Western Isles Subsea Infrastructure Decommissioning Programmes

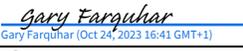
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Contents

			INST	PL
1	Executive Summary	7		
1.1	Combined Decommissioning Programmes	7	✓	✓
1.2	Requirement for Decommissioning Programmes	7	✓	✓
1.3	Introduction	8	✓	✓
1.4	Overview of Installations/Pipelines Being Decommissioned	9	✓	✓
1.5	Summary of Proposed Decommissioning Programmes	11	✓	✓
1.6	Field Location Including Field Layout and Adjacent Facilities	13	✓	✓
1.7	Industrial Implications	18	✓	✓
2	Description of Items to be Decommissioned	19		
2.1	Installations: Subsea	19	✓	✓
2.2	Pipelines including Stabilisation Features	23		✓
2.3	Wells	28	✓	
2.4	Inventory Estimates	28	✓	✓
3	Removal and Disposal Methods	31	✓	✓
3.1	Subsea Installations and Stabilisation Features	32	✓	
3.2	Pipelines	33		✓
3.3	Pipeline Protection and Stabilisation Features	34		✓
3.4	Wells	35	✓	
3.5	Waste Streams	35	✓	✓
4	Environmental Appraisal Overview	37		
4.1	Environmental Sensitivities (Summary)	37	✓	✓
4.2	Potential Environmental Impacts and their Management	41	✓	✓
5	Interested Party Consultations	45	✓	✓
6	Programme Management	47		
6.1	Project Management and Verification	47	✓	✓
6.2	Post-Decommissioning Debris Clearance and Verification	47	✓	✓
6.3	Schedule	47	✓	✓
6.4	Costs	47	✓	✓
6.5	Close Out	47	✓	✓
6.6	Post-Decommissioning Monitoring and Evaluation	48	✓	✓
7	Supporting Documents	49	✓	✓
8	Section 29 Notice Holders Letters of Support	51	✓	✓
9	Statutory Consultee Correspondence	62	✓	✓

Terms and Abbreviations

Abbreviation	Explanation
BEIS	Department for Business, Energy and Industrial Strategy
CA	Comparative Assessment
CoP	Cessation of Production
EA	Environmental Appraisal
DP	Decommissioning Programme
EA	Environmental Appraisal
EHC	Electrohydraulic Control
ENE	East North-East
ESE	East South-East
FPSO	Floating Production Storage and Offloading Vessel
HSE	Health and Safety Executive
INTOG	Innovation and Targeted Oil and Gas Schemes
JNCC	Joint Nature Conservation Council
km	kilometre
LSA	Low Specific Activity
MWA	Midwater Arch
NDC	North Drill Centre
NORM	Naturally Occurring Radioactive Material
North Bundle	Shown in this DP for reference only and outwith the scope of the programme; a separate DP will be prepared for the bundle pipelines and submitted to OPRED at a future date
NRB	North Riser Base
NSTA	North Sea Transition Authority
OBM	Oil-based Mud
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic (Oslo Paris Convention)
PWA	Pipeline Works Authorisation
ROV	Remotely Operated Vehicle
SDC	South Drill Centre
SFF	Scottish Fishermen's Federation
South Bundle	Shown in this DP for reference only and outwith the scope of the programme; a separate DP will be prepared for the bundle pipelines and submitted to OPRED at a future date
SRB	South Riser Base
SSE	South South East
SSIV	Sub-Sea Isolation Valve
TAQA	Taqa Bratani Limited
Te	Tonnes

TFSW	Trans Frontier Shipment of Waste
THC	Total Hydrocarbon Concentration
UKCS	United Kingdom Continental Shelf
WHPS	Wellhead Protection Structure

Figures and Tables

Table 1-1: Subsea Installations Being Decommissioned	9
Table 1-2 Installations Section 29 Notice Holders Details	9
Table 1-3 Pipelines Being Decommissioned	10
Table 1-4 Pipelines Section 29 Notice Holders Details	10
Table 1-5 Summary of Decommissioning Programmes	11
Table 1-6 Adjacent Facilities	15
Table 1-7 Summary of FPSO and Subsea Decommissioning Programmes	16
Table 2-1 Subsea Installations	19
Table 2-2 Pipeline/Flowline/Umbilical Information	24
Table 2-3 Subsea Pipelines/Flowlines/Bundles and Umbilicals Stabilisation Features	27
Table 2-4 Well Information	28
Table 2-5 Western Isles Field Subsea Installations Estimated Inventory	29
Table 3-1 Subsea Installations and Stabilisation Features Decommissioning Options	32
Table 3-2 Pipeline or Pipeline Groups Decommissioning Options	33
Table 3-3 Outcome of Comparative Assessment	34
Table 3-4 Pipeline Protection and Stabilisation Features	35
Table 3-5 Well Plug and Abandonment	35
Table 3-6 Waste Stream Management Methods	36
Table 3-7: Inventory Disposition	36
Table 4-1 Environmental Sensitivities	37
Table 4-2 Environmental Impact Management	41
Table 5-1 Summary of Stakeholder Comments	45
Table 7-1 Supporting Documents	49
Figure 1-1 Field Location in UKCS	13
Figure 1-2 Field Layout, Red denotes equipment within this DP	14
Figure 1-3 Adjacent Facilities	17
Figure 2-1 Pie Chart of Estimated Inventories (Installations)	29
Figure 2-2 Pie Chart of Estimated Inventory (Pipelines)	30
Figure 3-1 Waste Hierarchy	31
Figure 6-1 Gantt Chart of Project Plan	47



Appendices

Appendix	Description	Page
1	Towhead Schematics	67
2	Midwater Arches and Gravity Bases	71
3	Anchor Piles and Chain Arrangement	73
4	PL3186: Depth of Burial Profile	74
5	Copy of Public Notice (for Final DP)	75

1 EXECUTIVE SUMMARY

1.1 Combined Decommissioning Programmes

This document has been prepared by Dana Petroleum (E&P) Limited and contains three decommissioning programmes (DPs) for the Western Isles (Barra and Harris) fields:

1. Installations; and
2. Subsea pipelines s29 reference 12.04.06.05/484c including the rigid pipeline, rigid tie-in spools, control jumpers and associated structures (including bundle ballast chains and venting appurtenances) and stabilisation features, but excluding bundle sections; and
3. Subsea pipelines s29 reference 12.04.06.05-107u associated with well BP7 including pipelines, spools, jumpers and associated structures and stabilisation.

The items included in the subsea DPs are illustrated in Figure 1-2.

A separate Draft DP was submitted in March 2023 for statutory and public consultation on removal of the Western Isles floating production storage and offloading (FPSO) vessel and its associated mooring systems, risers and dynamic umbilicals.¹ A further Draft DP will be submitted for the bundle pipeline sections at a time to be agreed with OPRED, covering the North Bundle (PL3729.1, PL3729.2, PL3729.3, PL3729.4, and PLU3729.5) and South Bundle (PL3730.1, PL3730.2, PL3730.3, PL3730.4, and PLU3730.5). Until such time as they are decommissioned, the bundle pipeline sections will be monitored under OPRED's interim pipeline regime.

1.2 Requirement for Decommissioning Programmes

1.2.1 Installations

In accordance with the Petroleum Act 1998, the Section 29 Notice Holders of the Western Isles (Barra and Harris) fields (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the installations detailed in Table 2-1 of this programme. (See also Section 8 – Section 29 Notice Holders Letters of Support).

1.2.2 Pipelines

In accordance with the Petroleum Act 1998, the Section 29 Notice Holders of the Western Isles (Barra and Harris) fields pipelines (see Table 1.4) are applying to OPRED to obtain approval for decommissioning the pipelines detailed in Table 2-2 of this programme. (See also Section 8 – Section 29 Notice Holders Letters of Support).

In conjunction with public, stakeholder and regulatory consultation, the combined DPs are submitted in compliance with national and international regulations and OPRED guidelines (2018). The schedule outlined in this document is for an eight-year decommissioning project (from Define to Post-decommissioning surveys), see section 6.3 for more detail.

¹ Including the flexible risers and dynamic umbilicals and upper section of mooring lines (top chain, buoyancy and polyester line) to and including the lower H-shackle, excluding the bottom chain and anchors. These, together with the scope of the present DP, are shown in Table 1-1 of the Environmental Appraisal (2023) and repeated in this document at Table 1-7 for the purposes of clarity.



1.3 Introduction

The Western Isles comprises the Barra and Harris fields. The fields are located in the UK Continental Shelf (UKCS) Block 210/24a situated 93 km to the North East of Shetland and 12 km west of the Tern platform (as the crow flies) which is the nearest fixed facility. The water depth of the field varies from approximately 150m to 165m.

The field has been developed using a purpose built floating production, storage, and offloading (FPSO) facility which came on stream in 2017. Oil is exported by shuttle tanker and excess produced gas was initially exported through a dedicated pipeline to the Tern-North Cormorant gas pipeline. Later in field life due to a reduction of produced gas, gas has been continuously imported to balance the fuel gas deficit. The subsea facilities are tied back to the floating production facility by two subsea pipeline bundles and the pipelines they contain, and flexible risers. Water injection is required to maintain the reservoir pressure and gas lift is also required to assist production. Due to the nature of the reservoir, the production and injection wells are clustered around two drill centres: the North Drill Centre (NDC) and the South Drill Centre (SDC).

The North and South Drill Centre leading towheads have integral eight slot manifolds, allowing for up to 16 wells to be tied back. The NDC has five production and three water injection slots; the SDC has four production and four water injection slots. Refer to Figure 1-2 for schematic layout of facilities.

Following public, stakeholder and regulatory consultation, the combined DPs are submitted without derogation and in full compliance with OPRED guidelines. This document explains the principles of the removal activities and is supported by a Comparative Assessment (CA, 2023) of decommissioning options and an Environmental Appraisal (EA, 2023).

It should be noted that Dana Petroleum ('Dana') is in discussions with the North Sea Transition Authority (NSTA) around an anticipated Cessation of Production (CoP) date for the field. At this time (March 2023) the earliest anticipated CoP could be early 2024. This 'no earlier than' date is being driven by a response to the ongoing works of TAQA Bratani Limited's (TAQA) neighbouring assets and its own CoP forecast which will cut off gas supplies to Western Isles.

1.4 Overview of Installations/Pipelines Being Decommissioned

1.4.1 Installations

Table 1-1: Subsea Installations Being Decommissioned			
Fields	Western Isles (Barra and Harris)	Production Type (Oil/Gas/Condensate)	Oil
Water Depth (m)	150m to 165m	UKCS block	210/24a
Distance to median (km)	58	Distance from nearest UK coastline (km)	93
Subsea Installations			Number of Wells
Number	Type	Subsea	
25	2 x Leading Towheads (North Drill Centre (NDC) Leading Towhead and South Drill Centre (SDC) Leading Towhead) (see example in Appendix 1) 2 x Trailing Towheads (North Riser Base (NRB) Trailing Towhead and South Riser Base (SRB) Trailing Towhead) (see example in Appendix 1) 2 x Midwater Arches (MWA) and Gravity Bases (4 main components: MWA, Primary Base, Secondary Base, and Tether System) (see diagrams Appendix 2) 12 x Anchor Piles & Bottom Chains (see diagram Appendix 3) 7 x Wellhead Protection Structures (WHPS) ²	7 see footnote 2	

Table 1-2 Installations Section 29 Notice Holders Details		
Section 29 Notice Holders	Registration Number	Equity Interest (%)
Dana Petroleum (E&P) Limited	02294746	76.9188
Dana Petroleum Limited	03456891	0%
Itochu Corporation	JP7120001077358	0%
NEO Energy (UKCS) Limited	02669936	23.0812
NEO Energy Group Limited	SC470677	0%
NEO Energy Upstream UK Limited	SC279865	0%

² The quantity of wells includes Well 210/24a-B11 (BP-7) which was drilled Q2 2022.

1.4.1 Pipelines

Table 1-3 Pipelines Being Decommissioned	
Number and total length (km) of Pipelines Full details given in Table 2.2	30 uniquely numbered lines, 12 km total length ³

Table 1-4 Pipelines Section 29 Notice Holders Details			
Pipeline Number	Section 29 Notice Holders	Registration Number	Equity Interest (%)
PL3186, PL3729.1, PL3729.2, PL3729.3, PL3729.4, PL3730.1, PL3730.2, PL3730.3, PL3730.4, PL4142, PL4143, PL4145, PL4146, PL4148, PL4150, PL4151, PL4153, PL 4154, PL4512, PLU4144, PLU4147, PLU4149, PLU4152, PLU4169, PLU4511 ⁴	Dana Petroleum (E&P) Limited	02294746	76.9188
	Dana Petroleum Limited	03456891	0%
	Itochu Corporation	JP7120001077358	0%
	NEO Energy (UKCS) Limited	02669936	23.0812
	NEO Energy Group Limited	SC470677	0%
	NEO Energy Upstream UK Limited	SC279865	0%
PL6140, PL6141, PLU6142, PL6143, PLU6302 (BP-7 related infrastructure)	Dana Petroleum (E&P) Limited	02294746	76.9188
	Dana Petroleum Limited	03456891	0%
	NEO Energy (UKCS) Limited	02669936	23.0812
	NEO Energy Group Limited	SC470677	0%
	NEO Energy Upstream UK Limited	SC279865	0%

³ The length is based on North and South leading and trailing towheads and a single rigid pipeline and associated spools and jumpers.

⁴ The pipeline numbering PL3729.1 to PL3729.4 and PL3730.1 to PL3730.4 is for the associated spools and towheads, and not the actual bundle sections themselves which will be subject to a separate DP.

1.5 Summary of Proposed Decommissioning Programmes

Table 1-5 Summary of Decommissioning Programmes	
Proposed Decommissioning Solution	Reason for Selection
1. Subsea Installations	
<p>Leading and Trailing Towheads – Full Removal</p> <p>The NDC and SDC leading towheads and NRB and SRB trailing towheads (at the respective ends of their bundles) will be disconnected from the main length of the bundles, recovered and transported onshore for reuse, recycling or appropriate treatment and disposal. Following removal of the towheads, rock cover will be applied to the bundle ends.</p>	To remove seabed structures and leave a clear seabed, providing protection for the bundle ends and mitigating snagging risk for other users of the sea
<p>Midwater Arches – Full Removal</p> <p>Post-FPSO sail away, the MWAs and their associated gravity bases (primary and secondary) will be fully recovered and transported onshore for reuse, recycling or appropriate treatment and disposal. Dana intends to recover the MWAs directly from the water column to surface as part of FPSO sail away operations but wish to retain the contingency option to lay down and short-term wet store them safely ahead of recovery, rather than leaving them in mid-water suspension, in the event that direct recovery to surface is not practicable at the time of execution.</p>	To remove all seabed structures and leave a clear seabed
<p>Mooring Line Anchor Piles & Bottom Chains – Full Removal</p> <p>Recover to shore and transport for final disposal with the lower section of the anchor piles (below -3m) left in place.</p>	The anchor pile will be cut a minimum of 3m below the seabed, the upper section of the pile will be recovered along with the bottom chain section
<p>Wellhead Protection Structures – Full Removal</p> <p>The WHPS will be recovered and transported onshore for recycling or appropriate treatment and reuse or disposal. Note that the WHPS are integral and the intention is to remove them as part of the later plug and abandonment activities because of this. Should there be any delay between the main removal activities and WHPS removal that could potentially impact other users of the sea appropriate safety methods (e.g. guard vessel) will be introduced and relevant notifications made to FishSAFE and via Notices to Mariners.</p>	To remove all seabed structures and leave a clear seabed
2. Pipelines, Flowlines & Umbilicals (Including Stabilisation & Protection Features)	
<p>Rigid Pipeline – Decommission <i>in situ</i></p> <p>The surface laid ends and trench transition sections of the pipeline will be recovered. The exposed ends will then be remediated with approximately 210 Te rock cover. The most recent depth of burial is shown in a schematic at Appendix 4 and will be updated following the survey planned for Q2 2023. At the crossing of the 6” gas import/export pipeline PL3186 with the TAQA Cladhan 7” Western Isles flexible riser, the intention is to decommission this via commercial agreement with TAQA (see <i>Interdependencies</i> below).</p>	CA Recommendation: Leave <i>in situ</i>

Table 1-5 Summary of Decommissioning Programmes	
Proposed Decommissioning Solution	Reason for Selection
<p>Rigid Tie-in Spools and Control Jumpers – Full removal</p> <p>Rigid Tie-in Spools and Control Jumpers will be disconnected and recovered either as a complete item or (depending on size) recovered in smaller sections and transported onshore for reuse, recycling or appropriate treatment and disposal.</p>	To remove snagging risk and leave a clear seabed
<p>Pipeline Stabilisation and Protection Features – Full Removal</p> <p>With the exception of rock used to provide protection and stabilisation of the Rigid Gas Import/Export line PL3186 trench transitions, all other protection and stabilisation features, i.e. grout bags and concrete mattresses, will be fully recovered during pipeline decommissioning works.</p>	To remove all pipeline stabilisation and protection features and leave a clear seabed
<p>Associated Structures/Equipment - Ballast Chains and Venting Appurtenances</p> <p>If visible and physically possible, will be recovered to remove snag risk.</p>	To remove snagging risk for other users of the sea
3. Wells	
<p>Abandoned in accordance with Offshore Energies UK Guidelines for the Suspension and Abandonment of Wells.</p> <p>An Application to Abandon a Well and the associated relevant environmental permits under the relevant regulations will be submitted in support of Abandonment Operations.</p>	Meets NSTA and Health and Safety Executive (HSE) regulatory requirements
4. Interdependencies	
<p>The only crossing associated with this decommissioning proposal is the TAQA Cladhan 7" WI flexible riser which is crossed by Western Isles 6" gas import/export pipeline PL3186 adjacent to Tern Subsea Isolation Valve (SSIV). The actual crossing of the TAQA line is by the spool sections of the PL3186, with grout bag and mattress supports. The spool sections and supports will be removed as part of the decommissioning proposal with no impact to the Cladhan flexible which will be non-operational at this stage. Formal engagement at a commercial and technical level has been initiated with TAQA to seek agreement on field entry, permit to work and technical solution for the separation of WI from the TAQA SSIV pipeline system. Notification mechanisms will be agreed with TAQA to control the timing of operations to complete the CoP process.</p> <p>Subsea infrastructure and pipelines will have been flushed and cleaned prior to the commencement of subsea decommissioning operations.</p> <p>Following removal of towheads the bundle pipeline ends will be remediated to provide protection and mitigate snagging hazards for other users of the sea.</p> <p><u>Note:</u> This combined DP covers the gas import/export pipeline, spools, wells and subsea structures associated with the Western Isles fields (mooring line anchors and bottom chains, MWAs, towheads and MWA gravity bases); a separate DP has been prepared which covers the flexible risers, dynamic umbilicals, (upper part of mooring lines) and FPSO. A separate DP will be prepared for the bundle pipelines and submitted to OPRED at a future date. This approach is to enable FPSO sail away.</p>	

1.6 Field Location Including Field Layout and Adjacent Facilities

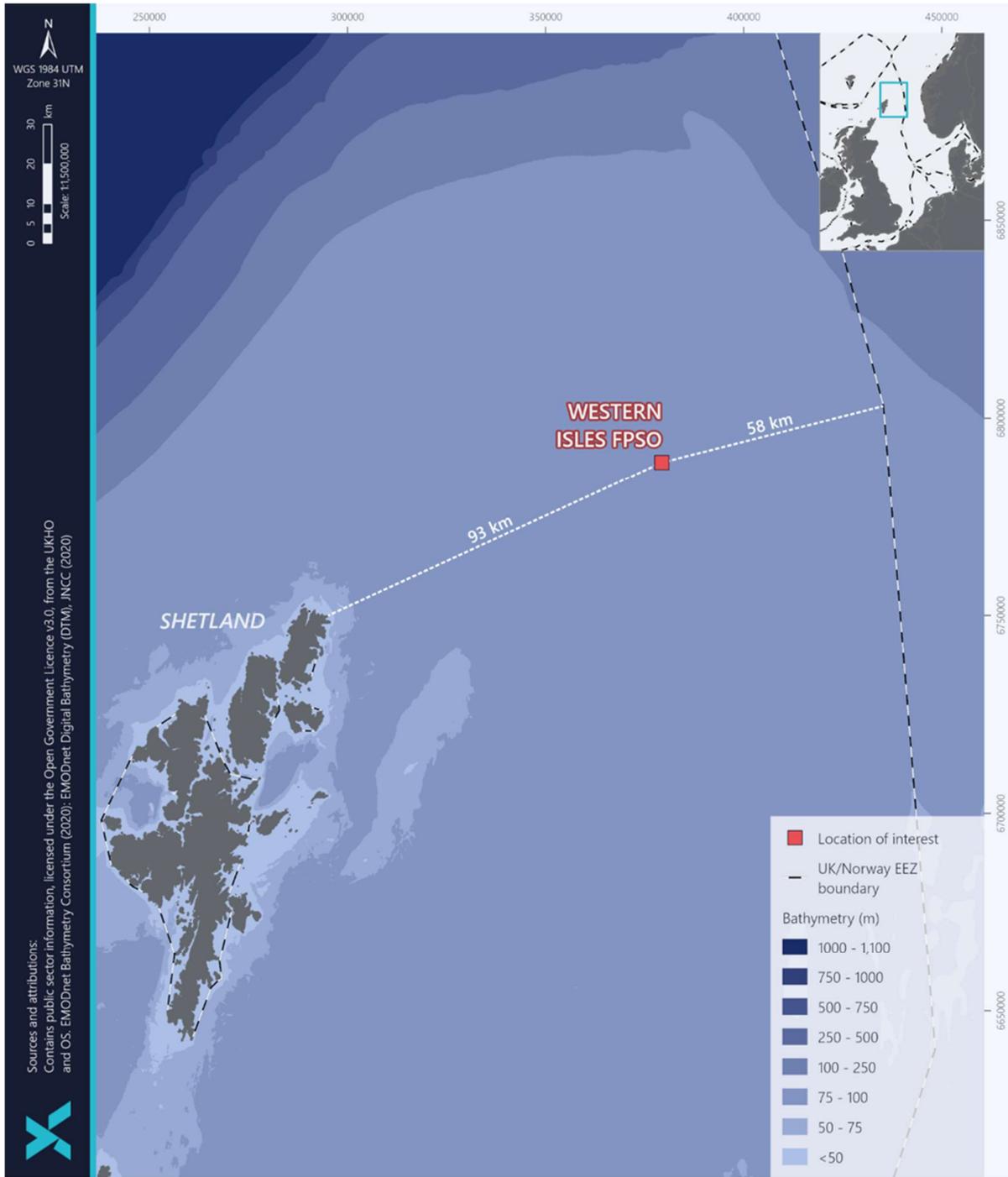


Figure 1-1 Field Location in UKCS

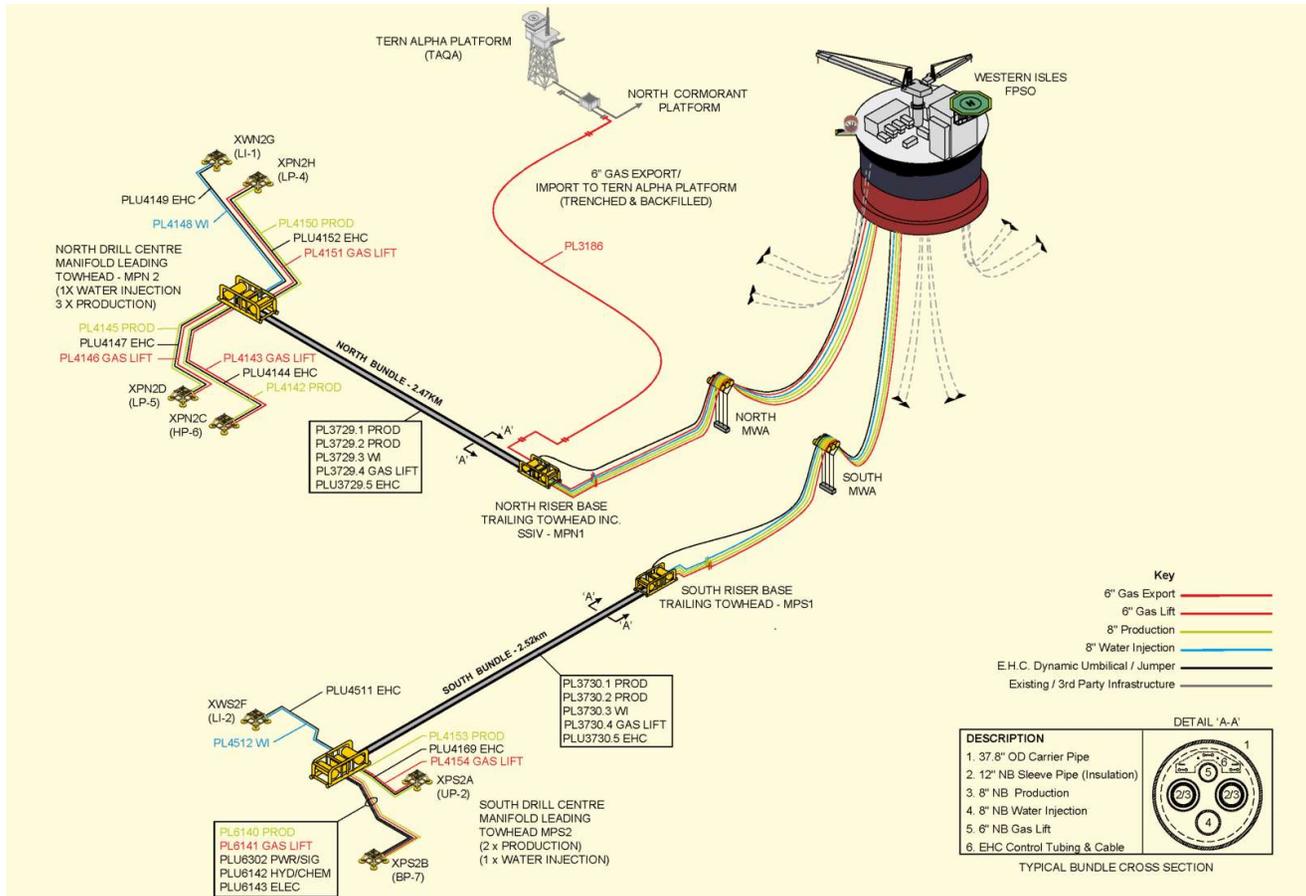


Figure 1-2 Field Layout, Red denotes equipment within this DP

Table 1-6 Adjacent Facilities

Owner	Name	Type	Distance/Direction	Information	Status
TAQA	Tern	Platform	12 km/ENE	Third party asset	Operational
TAQA	Cormorant A	Platform	21.1 km/ESE	Third party asset	Operational
TAQA	Cormorant North	Platform	21.4 km/ENE	Third party asset	Operational
TAQA	Eider A	Platform	26.9 km/ENE	Third party asset	Operational
EnQuest Heather	Heather A	Platform	30.8 km/SSE	Third party asset	Operational
Fairfield	Dunlin A	Platform	45.7 km/ENE	Third party asset	Non-operational
EnQuest Heather	Thistle A	Platform	47.2 km/ENE	Third party asset	Operational
CNR International	Ninian Northern	Platform	49.8 km/ESE	Third party asset	Non-operational

Impacts of Decommissioning Proposals

None of the adjacent facilities rely on Western Isles for production or services and only TAQA’s Tern SSIV connects to Western Isles which has independent control of the gas routing coming from North Cormorant. Tern Alpha and North Cormorant infrastructure is currently the route by which Western Isles imports gas. When Western Isles goes into CoP, Taqa decommissioning plans for Tern are expected to be well advanced, therefore there is no expected impact on TAQA. Notification mechanisms will be agreed with TAQA to control the timing of operations to complete the CoP process.

None of the other adjacent facilities listed above are affected by this combined DP.

Where appropriate/possible Dana intends to reuse elements of the subsea infrastructure held within this combined DP.

Decommissioning of the Western Isles FPSO has been applied for under a separate combined DP, with the various elements detailed below in Table 1-7 below alongside the subsea infrastructure covered within this present document. A separate DP will be prepared for the bundle pipelines and submitted to OPRED at a future date.

Table 1-7 Summary of FPSO and Subsea Decommissioning Programmes

CA Group	Title	Proposed Decommissioning Solution	Associated Decommissioning Programme	In / Out of Scope of EA Status
1	FPSO	Full removal	FPSO	Out
2	Mooring Lines (Upper Section)	Full removal	FPSO	Out
3	Mid-water Arches	Full removal	Subsea	In
4	Dynamic Flexible Risers	Full removal	FPSO	Out
5	Dynamic Umbilicals	Full removal	FPSO	Out
6	Bundles ⁵	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>
7	Rigid Pipeline (Trenched and Backfilled)	Decommission <i>in situ</i>	Subsea	In
8	Spools	Full removal	Subsea	In
9	Jumpers	Full removal	Subsea	In
10	Structures	Full removal	Subsea	In
11	Protection Materials	Full removal	Subsea	In
12	Mooring Lines (Lower Chain & Anchor Piles)	Full removal	Subsea	In

⁵ Group 6 omitted as no longer part of this DP. Note, however, that some elements of the bundles are considered within the scope of the Environmental Appraisal, such as the towheads, venting appurtenances, temporary seabed impacts, and interim impacts on other users of the sea.

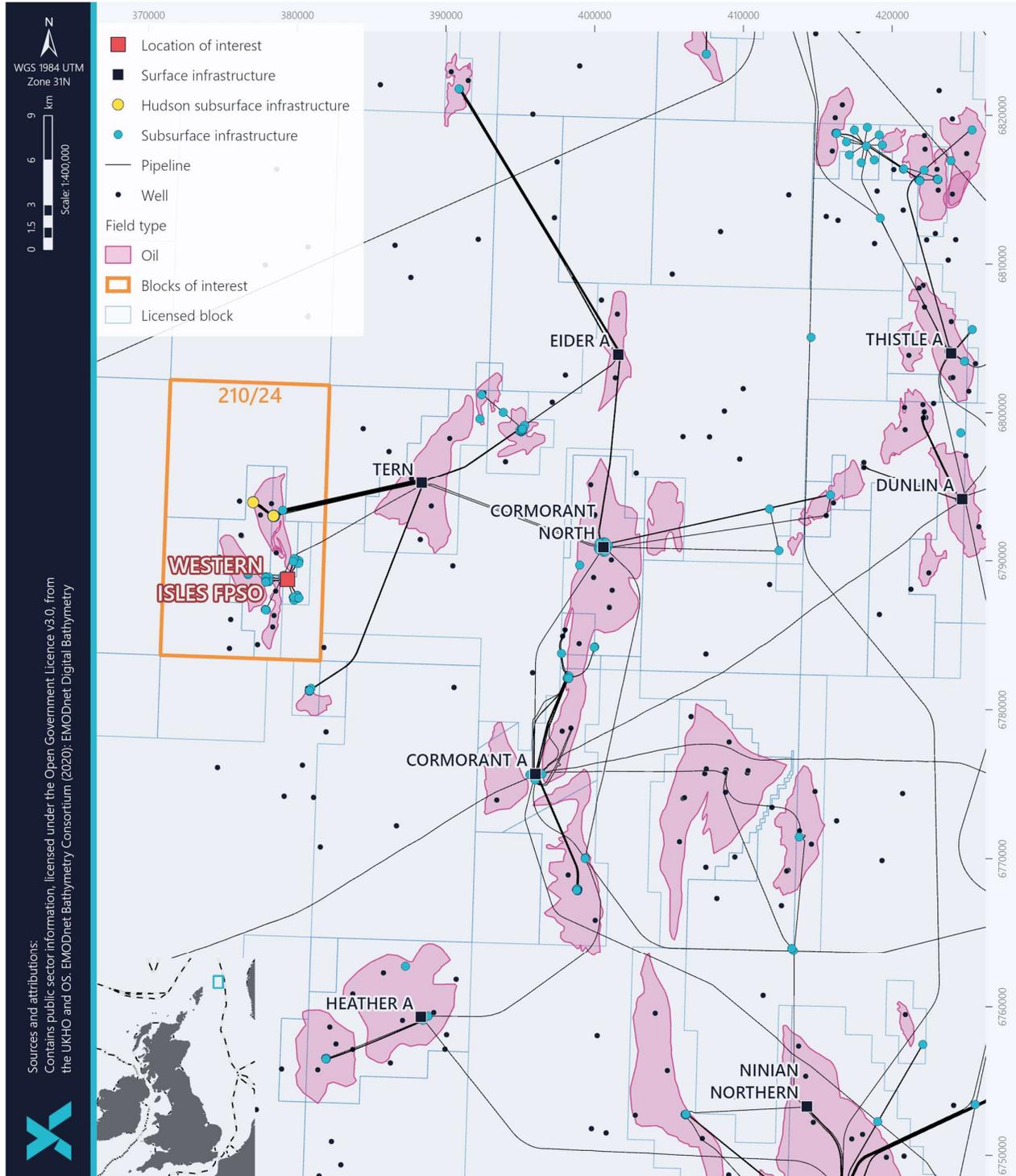


Figure 1-3 Adjacent Facilities



1.7 Industrial Implications

It is Dana's intention to develop a contract strategy that will result in an efficient and cost-effective execution of the decommissioning works. Where appropriate, existing framework agreements may be used to synergise decommissioning activities with other activities, thereby reducing vessel mobilisation costs should the opportunity arise. Dana is in discussion with the NSTA regarding Supply Chain Action Plan (SCAP) requirements.

2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Installations: Subsea

Table 2-1 Subsea Installations					
Description	No.	Size/Weight (Te)	Location		Comments/ Status
NDC Leading Towhead (MPN2)	1	29.375 x 6 x 5.956m (L x W x H) 209 Te (In-air)	WGS84	61.216895° N	Gravity Based
			Decimal	0.703995° E	
			WGS84	61° 13' 0.821" N	
			Decimal Minute	0° 42' 14.383" E	
SDC Leading Towhead (MPS2)	1	29.375 x 6 x 5.954m (L x W x H) 208 Te (In-air)	WGS84	61.195721° N	Gravity Based
			Decimal	0.727901° E	
			WGS84	61° 11' 44.595" N	
			Decimal Minute	0° 43' 40.442" E	
NRB Trailing Towhead (MPN1)	1	19.76 x 6.6 x 5.281m (L x W x H) 119.22 Te (In-air)	WGS84	61.216926° N	Gravity Based
			Decimal	0.749498° E	
			WGS84	61° 13' 0.933" N	
			Decimal Minute	0° 44' 58.192" E	
SRB Trailing Towhead (MPS1)	1	19.76 x 6.0 x 5.281m (L x W x H) 109.72 Te (In-air)	WGS84	61.216056° N	Gravity Based
			Decimal	0.747561° E	
			WGS84	61° 12' 57.801" N	
			Decimal Minute	0° 44' 51.219" E	
FPSO Mooring Line Anchor Pile #1 and Lower Chain Section	1	32 x 2.438m (L x Dia) 137 Te	WGS84	61.212436 °N	The lower chain section attached to the anchor pile is included in this DP. (The upper chain section, polyester section, buoyancy tanks and H-shackles shall be removed prior to works covered by this DP and details of this are captured in the Western Isles FPSO DPs.)
			Decimal	0.726678 °E	
			WGS84	61° 12' 44.771" N	
			Decimal Minute	0° 43' 36.042" E	
FPSO Mooring Line Anchor Pile #2 and Lower Chain Section	1	32 x 2.438m (L x Dia) 137 Te	WGS84	61.212894 °N	See comment for FPSO Mooring Line Anchor Pile #1
			Decimal	0.726510 °E	
				61° 12' 46.420" N	

			WGS84 Decimal Minute	0° 43' 35.436" E	
FPSO Mooring Line Anchor Pile #3 and Lower Chain Section	1	32 x 2.438m (L x Dia) 137 Te	WGS84 Decimal	61.215172 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.726347 °E	
			WGS84 Decimal Minute	61° 12' 54.619" N	
				0° 43' 34.848" E	
FPSO Mooring Line Anchor Pile #4 and Lower Chain Section	1	32 x 2.438m (L x Dia) 137 Te	WGS84 Decimal	61.215646 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.726457 °E	
			WGS84 Decimal Minute	61° 12' 56.326" N	
				0° 43' 35.244" E	
FPSO Mooring Line Anchor Pile #5 and Lower Chain Section	1	36 x 2.438m (L x Dia) 152 Te	WGS84 Decimal	61.227141 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.761179 °E	
			WGS84 Decimal Minute	61° 13' 37.708" N	
				0° 45' 40.244" E	
FPSO Mooring Line Anchor Pile #6 and Lower Chain Section	1	32 x 2.438m (L x Dia) 152 Te	WGS84 Decimal	61.227010 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.762100 °E	
			WGS84 Decimal Minute	61° 13' 37.238" N	
				0° 45' 43.558" E	
FPSO Mooring Line Anchor Pile #7 and Lower Chain Section	1	32 x 2.438m (L x Dia) 152 Te	WGS84 Decimal	61.226102 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.766492 °E	
			WGS84 Decimal Minute	61° 13' 33.966" N	
				0° 45' 59.370" E	
FPSO Mooring Line Anchor Pile #8 and Lower Chain Section	1	32 x 2.438m (L x Dia) 152 Te	WGS84 Decimal	61.225878 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.767333 °E	
			WGS84 Decimal Minute	61° 13' 33.160" N	
				0° 46' 2.399"	
	1	35 x 2.438m (L x Dia)	WGS84 Decimal	61.203547 °N	See comment for FPSO Mooring Line Anchor Pile #1
				0.768877 °E	

FPSO Mooring Line Anchor Pile #9 and Lower Chain Section		149 Te	WGS84 Decimal Minute	61° 12' 12.771" N 0° 46' 7.956" E	
FPSO Mooring Line Anchor Pile #10 and Lower Chain Section	1	32 x 2.438m (L x Dia) 149 Te	WGS84 Decimal Minute	61.203307 °N 0.768098 °E 61° 12' 11.905" N 0° 46' 5.154" E	See comment for FPSO Mooring Line Anchor Pile #1
FPSO Mooring Line Anchor Pile #11 and Lower Chain Section	1	32 x 2.438m (L x Dia) 149 Te	WGS84 Decimal Minute	61.202267 °N 0.763853 °E 61° 12' 8.161" N 0° 45' 49.870" E	See comment for FPSO Mooring Line Anchor Pile #1
FPSO Mooring Line Anchor Pile #12 and Lower Chain Section	1	32 x 2.438m (L x Dia) 149 Te	WGS84 Decimal Minute	61.202092 °N 0.762959 °E 61° 12' 7.532" N 0° 45' 46.653" E	See comment for FPSO Mooring Line Anchor Pile #1
MWA (APN1) Inc Gravity bases (APN1-B1 & APN1-B2) & Tether System (APN1 Tethers)	1	<u>MWA Arch</u> 14.5 x 11.4 x 7m (L x W x H) 157.9 Te (In air) <u>Docking Base</u> 16 x 10 x 3.2m (L x W x H) 212.6 Te (In air) <u>Sinker Weight</u> 14 x 5 x 1.4m (L x W x H) 179.5 Te (In air) <u>Sealantic Tethers (4)</u> 8.4 x 0.7 x 43.2 (L x W x H) 2.74 Te	WGS84 Decimal Minute	61.215311°N 0.752482°E 61° 12' 55.119" N 0° 45' 8.935" E	Gravity Based

		[total inc 4 tethers]			
MWA (APS1) Inc Gravity bases (APS1-B1 & APS1-B2) & Tether System (APS1 Tethers)	1	<u>MWA Arch</u> 14.5 x 11.4 x 7m (L x W x H) 157.1 Te (In air) <u>Docking Base</u> 16 x 10 x 3.2m (L x W x H) 210.9 Te (In air) <u>Sinker Weight</u> 14 x 5 x 1.4m (L x W x H) 179.2 Te (In air) <u>Sealantic Tethers (4)</u> 8.4 x 0.7 x 43.2 (L x W x H) 2.74Te [total inc 4 tethers]	WGS84 Decimal	61.214992°N 0.751850°E	Gravity Based
			WGS84 Decimal Minute	61° 12' 53.970" N 0° 45' 6.660" E	
WHPS - 210/24a-B8Z (UP-2)	1	9.1 x 8.7 x 5.3m (L x W x H) 24.8 Te (In air)	WGS84 Decimal	61.195631 °N 0.728479°E	Attached to wellhead XPS2A
			WGS84 Decimal Minute	61° 11' 44.271" N 0° 43' 42.526" E	
WHPS - 210/24a-B10 (LI-2)	1	9.1 x 8.7 x 5.3m (L x W x H) 24.8 Te (In air)	WGS84 Decimal	61.195918 °N 0.727095 °E	Attached to wellhead XWS2F
			WGS84 Decimal Minute	61° 11' 45.306" N 0° 43' 37.543" E	
WHPS - 210/24a-B11 (BP-7)	1	9.1 x 8.7 x 5.3m (L x W x H) 24.8 Te (In air)	WGS84 Decimal	61.195398 °N 0.728203 °E	Attached to wellhead XPS2B
			WGS84 Decimal Minute	61° 11' 43.432" N 0° 43' 41.533" E	
WHPS - 210/24a-N1Z (HP-6)	1	9.1 x 8.7 x 5.3m (L x W x H)	WGS84 Decimal	61.216504 °N 0.704393 °E	Attached to wellhead XPN2C

		H) 24.8 Te (In air)	WGS84 Decimal Minute	61° 12' 15.815" N 0° 42' 6.660" E	
WHPS - 210/24a-N2 (LP-4)	1	9.1 x 8.7 x 5.3m (L x W x H) 24.8 Te (In air)	WGS84 Decimal	61.217182 °N 0.703810 °E	Attached to wellhead XPN2H
			WGS84 Decimal Minute	61° 13' 1.854" N 0° 42' 13.716" E	
WHPS - 210/24a-N3Z (LP-5)	1	9.1 x 8.7 x 5.3m (L x W x H) 24.8 Te (In air)	WGS84 Decimal	61.216606 °N 0.704176 °E	Attached to wellhead XPN2D
			WGS84 Decimal Minute	61° 12' 59.780" N 0° 42' 15.034" E	
WHPS – 210/24a-N4Z (LI-1)	1	9.1 x 8.7 x 5.3m (L x W x H) 24.8 Te (In air)	WGS84 Decimal	61.217261 °N 0.703593 °E	Attached to wellhead XWN2G
			WGS84 Decimal Minute	61° 13' 2.140" N 0° 42' 12.936" E	

2.2 Pipelines Including Stabilisation Features

Regular surveys and inspections have been carried out for the Western Isles since 2014. The most recent pipeline survey was finalised in Q2 2023 and the Depth of Burial profile and comparison with 2018 is included at Appendix 4. The 2023 survey data is incorporated in the supporting documents (Environmental Appraisal and Comparative Assessment Report).

Table 2-2 Pipeline/Flowline/Umbilical Information

#	Description	Pipeline Number (as per PWA)	Diameter (inches)	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
1	Rigid Gas Import / Export line	PL3186	6	11.274	Steel	Gas	NRB Trailing Towhead to Tern SSIV	Trenched and Buried	Operational	
2	Gas Import / Export Tie-in Spool	PL3186 Ident No. 2	6	0.0054	Steel	Gas	6" Gas Import / Export Flexible Riser Flange to NRB Trailing Towhead Toweye	Surface Laid	Operational	Lift gas
		PL3186 Ident No. 3	6	0.06494	Steel	Gas	NRB Trailing Towhead Toweye to 6" Gas Import / Export Pipeline Tie-in Flange	Surface Laid	Operational	Lift gas
		PL3186 Ident No. 5	6	0.0599	Steel	Gas	6" Gas Import / Export Pipeline Tie-in Flange to Tern SSIV Structure	Surface Laid	Operational	Lift gas
3	Production Tie-in Spool	PL3729.1	8	0.00535	Steel	Oil	NRB Trailing Towhead Toweye to 8" Production Flexible Riser Flange	Surface Laid	Operational	Production fluid
		PL3729.2	8	0.00535	Steel	Oil	NRB Trailing Towhead Toweye to 8" Production Flexible Riser Flange	Surface Laid	Operational	Production fluid
4	Water Injection Tie-in Spool	PL3729.3	8	0.00535	Steel	Water	8" Water Injection Flexible Riser Flange to NRB Trailing Towhead	Surface Laid	Operational	Injection water

5	Gas Lift Tie-in Spool	PL3729.4	6	0.0054	Steel	Gas	6" Gas Lift Flexible Riser Flange to NRB Trailing Towhead	Surface Laid	Operational	Lift gas
6	Production Tie-in Spool	PL3730.1	8	0.02472	Steel	Oil	SRB Trailing Towhead Toweys to 8" Production Flexible Riser Flange	Surface Laid	Operational	Production fluid
7	Production Tie-in Spool	PL3730.2	8	0.02662	Steel	Oil	SRB Trailing Towhead Toweys to 8" Production Flexible Riser Flange	Surface Laid	Operational	Production fluid
8	Water Injection Tie-in Spool	PL3730.3	8	0.02832	Steel	Water	9" Water Injection Flexible Riser Flange to NRB Trailing Towhead	Surface Laid	Operational	Injection water
9	Gas Lift Tie-in Spool	PL3730.4	6	0.02407	Steel	Gas	6" Gas Lift Flexible Riser Flange to SRB Trailing Towhead	Surface Laid	Operational	Lift gas
10	Production Tie-in Spool	PL4142	6	0.06425	Steel	Oil	Well XPN2C to NDC Leading Towhead	Surface Laid	Operational	Production fluid
11	Gas Lift Tie-in Spool	PL4143	2	0.06643	Steel	Gas	NDC Leading Towhead to Well XPN2C	Surface Laid	Operational	Lift gas
12	Production Tie-in Spool	PL4145	6	0.04697	Steel	Oil	Well XPN2D to NDC Leading Towhead	Surface Laid	Operational	Production fluid
13	Gas Lift Tie-in Spool	PL4146	2	0.04938	Steel	Gas	NDC Leading Towhead to Well XPN2D	Surface Laid	Operational	Lift gas
14	Water Injection Tie-in Spool	PL4148	6	0.05378	Steel	Water	NDC Leading Towhead to Well XWN2G (LI-1)	Surface Laid	Operational	Injection water
15	Production Tie-in Spool	PL4150	6	0.04179	Steel	Oil	Well XPN2H to NDC Leading Towhead	Surface Laid	Operational	Production fluid
16	Gas Lift Tie-in Spool	PL4151	2	0.04484	Steel	Gas	NDC Leading Towhead to Well XPN2H	Surface Laid	Operational	Lift gas
17	Production Tie-in Spool	PL4153	6	0.03882	Steel	Oil	Well XPS2A to SDC Leading Towhead	Surface Laid	Operational	Production fluid

18	Gas Lift Tie-in Spool	PL4154	2	0.04251	Steel	Gas	SDC Leading Towhead to Well XPS2A	Surface Laid	Operational	Lift gas
19	Water Injection Tie-in Spool	PL4512	6	0.05672	Steel	Oil	SDC Leading Towhead to Well XWS2F	Surface Laid	Operational	Injection water
20	Services Umbilical Jumper	PLU4144	-	0.092	Flexible hose	Umbilical Jumper	NDC Leading Towhead to Well XPN2C	Surface Laid	Operational	
21	Services Umbilical Jumper	PLU4147	-	0.078	Flexible hose	Umbilical Jumper	NDC Leading Towhead to Well XPN2D	Surface Laid	Operational	
22	Services Umbilical Jumper	PLU4149	-	0.092	Flexible hose	Umbilical Jumper	NDC Leading Towhead to Well XWN2G (LI-1)	Surface Laid	Operational	
23	Services Umbilical Jumper	PLU4152	-	0.078	Flexible hose	Umbilical Jumper	NDC Leading Towhead to Well XPN2H	Surface Laid	Operational	
24	Services Umbilical Jumper	PLU4169	-	0.078	Flexible hose	Umbilical Jumper	SDC Leading Towhead to Well XPS2A	Surface Laid	Operational	
25	Services Umbilical Jumper	PLU4511	-	0.092	Flexible hose	Umbilical Jumper	SDC Leading Towhead to Well XWS2F	Surface Laid	Operational	
26	Production Tie-in Spool	PL6140	6	0.06214	Steel	Oil	Well XPS2B to SDC Leading Towhead	Surface Laid	Operational	
27	Gas Lift Tie-in Spool	PL6141	1.2	0.06553	Steel	Gas	SDC Leading Towhead to Well XPS2B	Surface Laid	Operational	
28	Power/Signal Umbilical	PLU6302	1.2	0.067	Flexible cable	Power / Signal	SDC Leading Towhead to Well XPS2B	Surface laid	Operational	
29	Hydraulic and Chemical Jumper	PLU6142	-	0.078	Flexible hose	Umbilical Jumper	SDC Leading Towhead to Well XPS2B	Surface Laid	Operational	
30	Electrical Jumper	PL6143	1.2	0.068	Flexible cable	Electrical	SDC Leading Towhead to Well XPS2B	Surface Laid	Operational	

Table 2-3 Subsea Pipelines/Flowlines/Bundles and Umbilicals Stabilisation Features

Stabilisation Feature	Total Number*	Weight (Te)	Locations ⁶	Exposed/Buried/Condition
Concrete Mattresses	77	395.01 (5.13 Te each)	NRB: 14 NDC: 28 SRB: 1 SDC: 23 TERN SSIV: 11	Latest survey information indicates surface laid, exposed, as-placed condition.
Grout Bags	2,160	54 (0.025 Te each)	NRB: 800 NDC: 480 SRB: 120 SDC: 280 TERN SSIV: 480	Latest survey information indicates surface laid, exposed, as-placed condition.
Rock	N/A	2,499	Rigid Gas Import/Export line PL3186 trench transitions NRB: 1,578 Te TERN: 921 Te	Exposed
*The numbers quoted for concrete mattresses and grout bags include those used for tie-in of Well BP7 to the South Drill Centre.				

Note: All the mattresses used in the field are placed principally for dropped object and overtrawl protection. This is true for pipeline ends and also for the interconnecting spools between wells and Leading Towheads. The grout bags are placed along the tie-in spools and the exposed pipeline and the interconnecting spools between wells and Leading Towheads. The grout bags are used to create a tapered profile for the mattress to rest. In doing so the grout bags provide lateral support to the spools during operation.

Only burial of the pipeline and rock cover provide required stabilisation and none of the grout bags or mattresses are required to stabilise the pipeline system.

⁶ Due to bundle tie in configurations the stabilisation features in many cases are across multiple pipelines, therefore the quantity and approximate locations of stabilisation has been included e.g. NRB, SDC, SSIV based on as built information and with reference to associated tie-in locations.

⁷ Rock quantities are taken from the Tideway Seahorse daily progress reports from the July 2014 campaign.

2.3 Wells

Table 2-4 Well Information			
Subsea Wells	Designation	Status	Category of Well
Southern Drill Centre:			
210/24a-B8Z - XPS2A (UP-2)	Producer	In Service	SS 3-3-3
210/24a-B10 - XWS2F (LI-2)	Injector	In Service	SS 4-3-3
210/24a-B11 - XPS2B (BP-7)	Producer	In Service	SS 3-3-3
Northern Drill Centre:			
210/24a-N1Z - XPN2C (HP-6)	Producer	In Service	SS 4-3-3
210/24a-N2 - XPN2H (LP-4)	Producer	In Service	SS 4-3-3
210/24a-N3Z - XPN2D (LP-5)	Producer	In Service	SS 4-3-3
210/24a-N4Z - XWN2G (LI-1)	Injector	In Service	SS 4-3-3

Note: Well 210/24a-8 (the Melville E&A well) has been fully abandoned and is therefore excluded from the above table.⁸

2.4 Inventory Estimates

The approximate amount of key materials used in the make-up of the Western Isles (Barra and Harris) fields installations and subsea pipelines has been evaluated. Further review of the inventories of materials will be conducted during the detailed engineering phase of decommissioning. Summary plots of the material inventories are shown in Table 2-5 and Table 2-6 below. An inventory will be shared with SEPA as part of the Active Waste Management Plan for decommissioning activities. See also Section 3.7.7 of the EA (2023).

⁸ Included here for information purposes only and outwith the scope of the DP.

Table 2-5 Western Isles Field Subsea Installations Estimated Inventory	
Item	Weight (Te)
Ferrous Metal	4929.06
Non-Ferrous Metal	27.44
<i>Note: the figure includes 14.336 Te of MWA system Aluminium Anodes</i>	
Concrete	0.00
Plastic	5.10
Hazardous/NORM	3.80
Marine Growth (maximum estimation)	5.00
Other	0
Total (Te)	4970.4

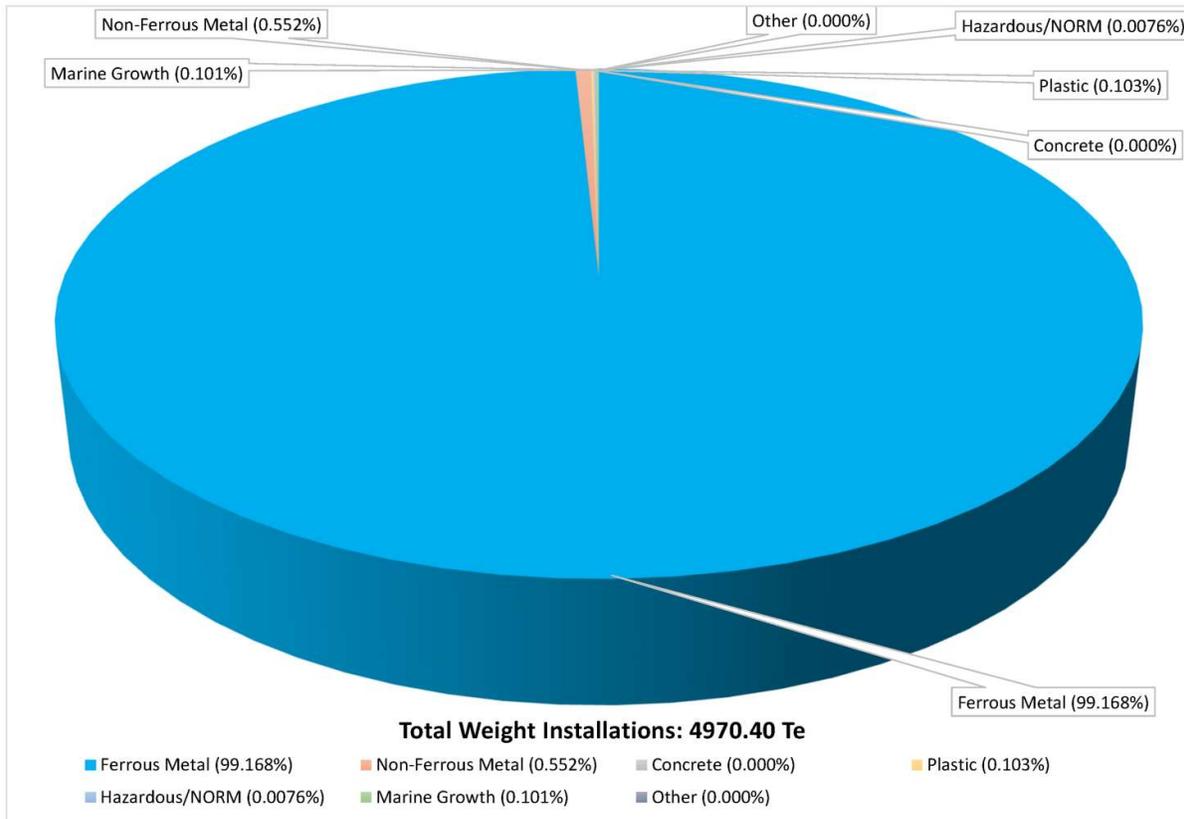


Figure 2-1 Pie Chart of Estimated Inventories (Installations)

Table 2-6 Western Isles Field Subsea Pipelines and Stabilisation Estimated Inventory	
Item	Weight (Te)
Ferrous Metal	383.3
Non-Ferrous Metal	0.1
Concrete	449.01
Plastic	33.8
Hazardous/NORM	1.1
Other (comprises anything which is not ferrous, non-ferrous metal, concrete or plastic, e.g. tape, protective fabrics, rubber, rope etc.)	0.2
Total (Te)	867.51

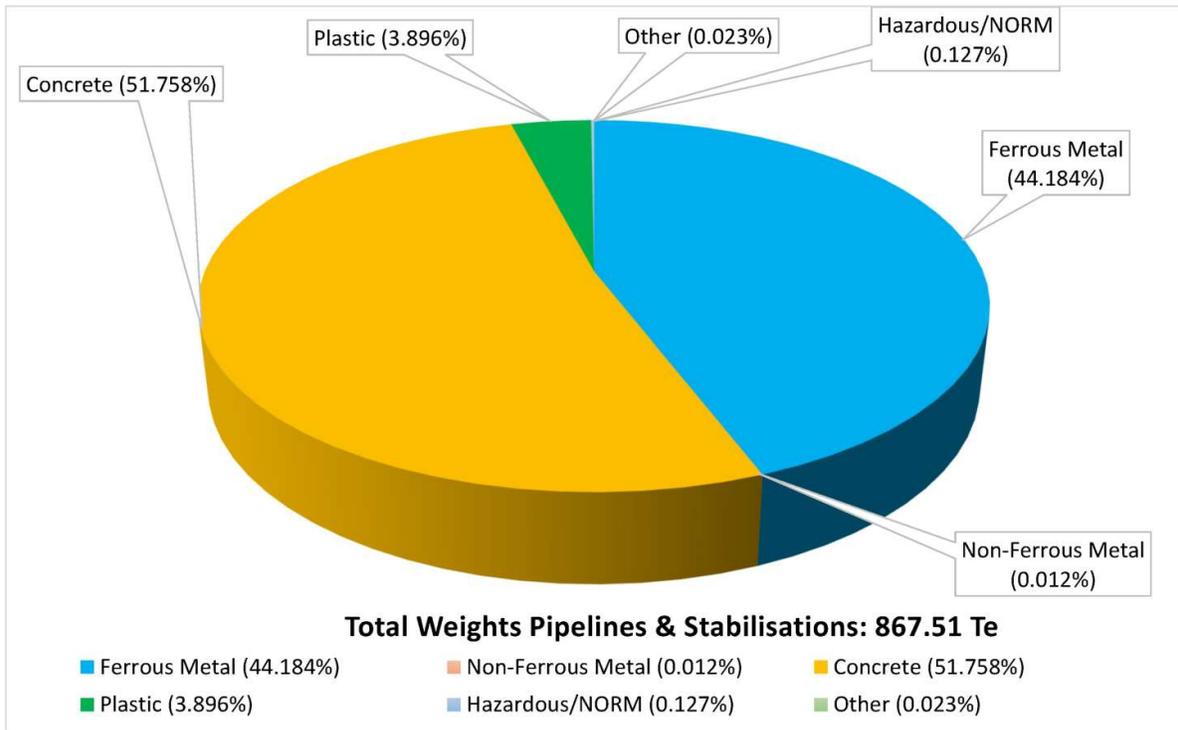


Figure 2-2 Pie Chart of Estimated Inventory (Pipelines)

3 REMOVAL AND DISPOSAL METHODS

Decommissioning of the Western Isles (Barra and Harris) fields will generate a quantity of waste. Dana is committed to establishing and maintaining environmentally acceptable methods for managing wastes in line with the Waste Framework Directive and principles of the waste hierarchy:

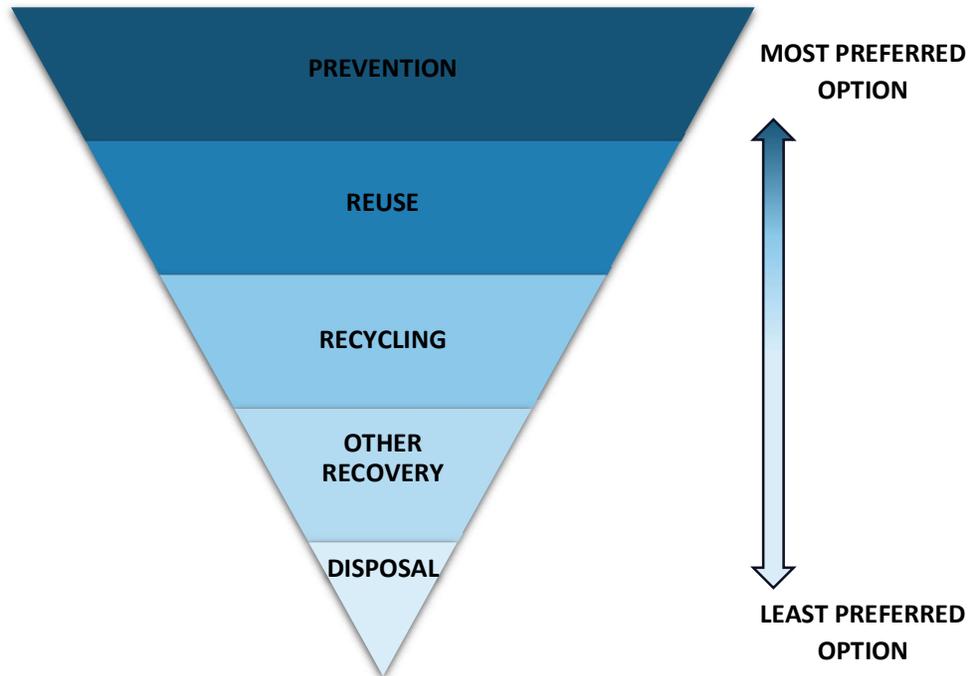


Figure 3-1 Waste Hierarchy

In line with the waste hierarchy, Dana have considered other potential reuse options for the Western Isles (Barra and Harris) fields infrastructure. Where no reuse options exist, recovered infrastructure will be returned to shore and transferred to a suitably licensed waste treatment facility. OPRED will be advised once a removal method is defined and once a disposal yard is selected.

It is expected that the recovered infrastructure, i.e. sections of pipeline, spools, towheads, will be cleaned before being largely recycled. The methodology for recovery of the grout bags will be discussed with OPRED EMT in advance but it is expected that concrete mattresses and grout bags that are recovered will be cleaned of marine growth, if required, and either reused, recovered as aggregate for infrastructure projects or, as a worst case, if no other option is found to be suitable, disposed of in landfill sites.

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

Geographic locations of potential disposal yard options may require the consideration of Trans Frontier Shipment of Waste (TFSW), including hazardous materials. Early engagement with the regulatory authorities will ensure that any issues with TFSW are addressed. Once an appropriately licensed waste contractor has been selected OPRED will be advised.

3.1 Subsea Installations and Stabilisation Features

Table 3-1 Subsea Installations and Stabilisation Features Decommissioning Options			
Subsea installations and stabilisation features	Number	Option	Disposal Route
NDC and SDC Leading and Trailing Towheads	4	Full Removal	Recover to shore and transport for reuse, recycling or disposal
MWA Systems with 4 main components: MWA Primary Base Secondary Base Tether System	2	Full Removal	Recover to shore and transport for reuse, recycling or disposal
FPSO Mooring Line Anchor Piles	12	Full Removal ⁹	Recover to shore and transport for recycling of the steel with the lower section (below -3m) of the anchor pile left in place
WHPS	7	Full removal	Recover to shore and transport for reuse, recycling or disposal

Note: The mooring system consists of 12 mooring lines (3 groups of 4 lines). The mooring lines and anchors have been split across two DPs as follows:

- the lower chains and anchor piles are captured within the scope of this combined DP;
- the upper section of mooring lines (upper chain, buoyancy and polyester line) up to and including the lower H-shackle chains are considered as part of the FPSO sail away hence are out with the scope of this combined DP.

⁹ Removal of anchor piles to -3m is considered full removal in line with 7.24 & 7.25, BEIS Guidance Notes: Decommissioning of Offshore Oil and Gas Installations and Pipelines, Nov 2018.

3.2 Pipelines

3.2.1 Decommissioning Options:

The key options considered are listed below:

Group 7 – Trenched & Backfilled Pipeline

- 1 - Reuse
- 2A - Cut and Lift with Deburial
- 2B - Reverse Reel with Deburial
- 2C - Reverse Reel without Deburial
- 3A - Rock Placement Over Entire Line
- 3B – Re-trench & Bury Entire Line
- 4A - Rock Placement Over Areas of Spans/Exposure/Shallow Burial
- 4B - Trench & Bury Areas of Spans/Exposure/Shallow Burial
- 4C - Remove Areas of Spans/Exposure/Shallow Burial
- 4D - Accelerated Corrosion
- 5 - Remove ends and Remediate Snag Risk
- 6 - Leave as is

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

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

Note: Consideration was given to potential spanning; however, Dana understanding is that while there is natural seabed undulation, there are no reportable spans. Should this be found to have changed after the 2023 survey, this will be discussed with OPRED and addressed in the final DP.

Table 3-2 Pipeline or Pipeline Groups Decommissioning Options			
Pipeline or Group (as per PWA)	Condition of line/group (Surface laid/trenched/buried/spanning)	Whole or part of pipeline/group	Decommissioning options considered
Group 7 – Trenched & Backfilled Pipeline: PL3186	Trenched and backfilled	Whole line From Tern SSIV to NRB	2B & 5
Tie in spools ¹⁰	Surface laid	Whole line	Full Removal

Note: In summary, trenching and backfilling is an intervention method deployed to bury a subsea pipeline following its installation. It is used as a means of enhancing stability and partially shielding against external hydrodynamic

¹⁰ The tie in spools between the wells and NDC and SDC have individual pipeline numbers as such they were identified for full removal prior to the evaluation stage of the CA [Ref CA Recommendation Report A-303550-S00-K-REPT-003].

loads. It is a method which is also suitable for providing protection from (for example) fishing gear damage and scour. The method comprises two main operations following pipeline installation on the seabed: i) trenching, which involves the use of either a high pressure water jetting head or a plough to break-up the soil underneath the pipeline, at the end of which a trench is created to accommodate the pipeline; and ii), backfilling, which follows completion of trenching, using the same equipment (i.e. a high pressure water jetting head or a plough for putting the soil back into the trench) in order to bury the subsea pipeline.

3.2.2 Comparative Assessment Method

Comparative Assessment is integral to the overall planning and approval of decommissioning options. Dana’s strategy for the CA process is aligned with the Oil & Gas UK Guidelines for Comparative Assessment in Decommissioning Programmes (OGUK, 2015) and the BEIS Guidance Notes for the Decommissioning of Offshore Oil and Gas Installations and Pipelines (OPRED, 2018).

One pipeline is considered in the CA. All feasible decommissioning options for the infrastructure have been identified, assessed, ranked, and screened, utilising the Guidance Notes (OPRED, 2018) to carry forward credible decommissioning options, assessed through the CA process (see full report at CA, 2022).

The CA process used the five assessment criteria of Safety, Environment, Technical, Societal and Economic to compare the relative merits of each credible decommissioning option for the infrastructure. The assessment criteria were equally weighted to present a balanced assessment and represent the views of each of the stakeholders.

An independent consultancy using its bespoke Multi Criteria Decision Analysis process was employed to facilitate the CA workshops. These were attended by specialists from key stakeholders and regulators, namely:

- Offshore Petroleum Regulator for Environment and Decommissioning (OPRED)
- Health and Safety Executive (HSE)
- Joint Nature Conservation Council (JNCC)
- Scottish Fishermen’s Federation (SFF)
- Dana Petroleum
- NEO Energy

3.2.3 Outcome of Comparative Assessment

Table 3-3 Outcome of Comparative Assessment		
Pipeline or Group (as per PWA)	Recommended Option	Justification
Buried Import Line (PL3186)	CA Recommendation: Leave <i>in situ</i> after removal of ends and remediation of snag risk	PL3186 is trenched and backfilled along its length - cutting and recovering the end sections removes the snag risk associated with these sections

3.3 Pipeline Protection and Stabilisation Features

The stabilisation features present in the field are only associated with pipeline tie-ins/ends and the single crossing. All mattresses and grout bags are to be fully removed.

Table 3-4 Pipeline Protection and Stabilisation Features			
Stabilisation features	Number	Option	Disposal Route (if applicable)
Concrete Mattresses	77	Full Removal	Recover to shore and transport for reuse, recycling or disposal
Grout Bags	2,160	Full Removal	Recover to shore and transport for reuse, recycling or disposal
Rock Cover	2,499 Te	Leave <i>in situ</i>	N/A

3.4 Wells

Table 3-5 Well Plug and Abandonment
<p>The wells which remain to be abandoned, as listed in Section 2.4 (Table 2-4) will be plugged and abandoned in accordance with Oil and Gas UK Guidelines for the suspension and abandonment of wells.</p> <p>A PON5/Portal Environmental Tracking System (PETS)/Marine Licence application will be submitted in support of any such work that is to be carried out.</p>

3.5 Waste Streams

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

Table 3-6 Waste Stream Management Methods	
Waste Stream	Removal and Disposal method
Bulk liquids	All pipelines will be flushed, cleaned prior to decommissioning activities taking place. Further cleaning and decontamination will take place onshore prior to recycling/disposal.
Marine growth	Where marine growth is encountered some may be removed offshore to aid recovery operations. Remaining marine growth will be managed by a selected onshore waste management contractor and disposed of in accordance with the regulations.
NORM/LSA Scale	Historical data from the Western Isles NORM monitoring logs indicates very small amounts of NORM – ‘out of scope’ (detected in the FPSO cargo oil tanks). However, provisions are being made for a worst-case scenario in the event that this changes to ‘in scope/exempt’, e.g. from NORM scale and contaminated washings from the waste cleaning activities. As such, tender requirements specify the need for any receiving site to be permitted for NORM and have suitably trained personnel to undertake the required sampling and testing prior to any cleaning/decontamination activities. Any material found to contain NORM post-testing will be removed, re-packaged and disposed to a suitably permitted onshore facility with the appropriate consignment.
Asbestos	No asbestos anticipated to be on location due to age.
Other hazardous wastes	Any such materials shall be recovered onshore and will be managed by the selected waste management contractor and disposed of under an appropriate permit. Note that no polychlorinated biphenyls (PCBs) are present, nor are there any hazardous coatings.
Onshore dismantling sites	Appropriate licensed contractor and sites will be selected. The facility selected must demonstrate competence and a proven disposal track record and waste stream management and traceability throughout the deconstruction process and (preferably) demonstrate their ability to deliver innovative recycling options. OPRED will be advised when an appropriate site is selected.

Table 3-7: Inventory Disposition			
	Total Inventory Tonnage	Planned tonnage to shore	Planned left <i>in situ</i>
Installations	4970.40	3,249.7	1,720.6 ¹¹
Pipelines	867.51	500.91	366.6
Total:	≈5837.91	≈3750.61	≈2087.2

Note: All mooring piles will be cut at 3m below mean seabed. The top section of the mooring piles (3.5m in length) will be recovered and the remaining sections left *in situ*. The lower segments of the 12 mooring chains (210m in length) will be cut at the touch down points. The remaining sections of the mooring chains (approximately 18m) are connected to the pad eyes on the mooring piles located at 8m below mean seabed and will be left *in situ*. The calculated weight of remaining mooring piles and chains totals 1,720.6 Te. The total weight of the ballast chains and venting appurtenances is already included in disposal weights shown. Remedial rock cover totalling approximately 11,410 Te will be applied to the cut ends of both the 6" Gas Export/Import pipeline and the North and South Bundles. Note that rock deployed on the bundle ends after towhead cutting is considered to be an interim solution to mitigate the snagging risks until a permanent bundle decommissioning solution is finalised and agreed with OPRED.

¹¹ The planned mass of installations decommissioned *in situ* is comprised entirely of the lower sections of the anchor piles and an 18m length of chain attached to each pile which is buried below the seabed surface.

4 ENVIRONMENTAL APPRAISAL OVERVIEW

The environmental sensitivities in the Western Isles (Barra and Harris) project area and the impacts of decommissioning operations on these sensitivities are summarised in Table 4-2. Further details can be found in the supporting Western Isles Decommissioning Environmental Appraisal (EA, 2023).

4.1 Environmental Sensitivities (Summary)

Table 4-1 Environmental Sensitivities	
Environmental Receptor	Main Features
Conservation interests	<p>The Western Isles (Barra & Harris) Fields are located approximately 62 km from the nearest conservation site – the Pobie Bank Reef Special Area of Conservation which is designated for the presence of Annex I habitat Reefs. Pobie Bank’s stony and bedrock reef provides a habitat to an extensive community of encrusting and robust sponges and bryozoans, which are found throughout the site. In the shallowest areas the bedrock and boulders also support encrusting coralline algae.</p> <p>All other conservation sites are located over 90 km from the project area. The closest coastal designated site is the Hermaness, Saxa Vord and Valla Field Special Protection Area (approximately 93 km from the Western Isles (Barra & Harris) Fields).</p> <p>Seabed survey imagery did not identify any evidence of Annex I habitats. Only a single ocean quahog (<i>Arctica islandica</i>) was found in the 2012 survey (Gardline, 2012) and none were identified since, including in the 2022 pre-decommissioning Environmental Baseline Survey. There was no other evidence of OSPAR threatened and/or declining species or any UK Biodiversity Action Plan (UKBAP) species in the project area.</p>
Seabed	<p>Four habitats were identified within the 2022 survey area and described as the EUNIS level 3 habitat types ‘Atlantic offshore circalittoral coarse sediment’ (MD32), ‘Atlantic offshore circalittoral mixed sediment’ (MD42), ‘Atlantic offshore circalittoral sand’ (MD52) and ‘Atlantic offshore circalittoral mud’ (MD62).</p> <p>Burrows were observed in sufficient density to comprise the OSPAR listed Threatened and/or Declining Species and Habitat ‘Sea pens and burrowing megafaunal communities’ on two transects.</p> <p>There are occasional patches of sediment classed as habitat Features of Conservation Interest (FOCI), including ‘subtidal sands and gravels’.</p> <p>The habitat Feature of Conservation Interest (FOCI) and priority habitat ‘Subtidal sands and gravels’ is also likely to be present.</p> <p>There was no indication from the 2010, 2012 or 2022 surveys of the presence of any Annex I habitats along either of the survey corridors within the in-field area, along the two in-field routes, or along the pipeline route between the FPSO and Tern.</p> <p>The 2022 survey identified that polychaetes were the dominant infaunal species group in the surveyed area, making up 69% of all individuals and 53% of all recorded taxa. Overall, the high number of taxa present at low abundances suggests that the survey area was undisturbed and with limited evidence of localised and low-level contamination from drilling.</p>

Table 4-1 Environmental Sensitivities

Environmental Receptor	Main Features
Fish	<p>The fields are located in an area of high nursery intensity for blue whiting <i>Micromesistius poutassou</i>. Anglerfish (Monkfish) <i>Lophius piscatorius</i>, European hake <i>Merluccius merluccius</i>, haddock <i>Melanogrammus aeglefinus</i>, herring <i>Clupea harengus</i>, ling <i>Molva molva</i>, mackerel <i>Scomber scombrus</i>, Norway pout <i>Trisopterus esmarkii</i>, spurdog <i>Squalus acanthias</i> and whiting <i>Merlangius merlangus</i> all use the area as nursery grounds (Coull <i>et al.</i>, 1998; Ellis <i>et al.</i>, 2012).</p> <p>Haddock, Norway pout, saithe <i>Pollachius virens</i> and whiting use the area as grounds for spawning, with spawning efforts for these species being concentrated in the first half of the year (between January and June).</p> <p>Of the species which are known to occur in the area in some capacity, a number are species of conservation concern. Anglerfish (Monkfish), blue whiting, herring, ling, mackerel, Norway pout, saithe and whiting are all Scottish Priority Marine Features. Additionally, spurdog is an OSPAR-listed Threatened and/or Declining Species.</p>
Fisheries	<p>The project area is located in ICES Rectangle 51F0 which is targeted primarily for demersal species. In 2021 (most recent data), the demersal catch live weight was 911 Te with a corresponding value of approximately £1.7 million. This accounts for approximately 67% of landings and approximately 84% of value for the year. 2021 saw a return of pelagic landings from ICES Rectangle 51F0, albeit with a relatively modest catch live weight of 454 Te and a corresponding value of approximately £0.3 million. This accounts for approximately 33% of landings and approximately 16% of value for the year. Rectangle 51F0 contributed approximately 0.25% of landings and 0.3% of value when compared to overall UKCS in 2021. It should be noted that this is significantly lower than ICES rectangles that are regularly targeted by pelagic fisheries.</p> <p>Overall, fishing effort in this ICES area is relatively low, although there is a recent trend showing increased effort; in 2021 there were 218 fishing days compared to 131 days in 2017. Historically, effort was mostly concentrated in the summer months and in November and December. However, as of 2021, fishing occurred in all months except for December. Fishing intensity along the PL3186 pipeline is also low, reaching a maximum of 150 hours (total), attributed to fishing vessels passing over the pipeline during transiting periods.</p>

Table 4-1 Environmental Sensitivities

Environmental Receptor	Main Features
Marine Mammals	<p>Harbour porpoise (<i>Phocoena phocoena</i>) are frequently found throughout UK waters. They typically occur in groups of one to three individuals in shallow waters, although they have been sighted in larger groups and in deep waters. They are present in UK waters throughout the year and are most likely to be observed in the Western Isles fields in the summer months (Reid <i>et al.</i>, 2003). The density of harbour porpoise in the project area is estimated to be 0.402 animals/km² (Hammond <i>et al.</i>, 2021). Harbour porpoise is an Annex II listed species and European Protected Species.</p> <p>Minke whales (<i>Balaenoptera acutorostrata</i>) occur in water depths of 200 m or less throughout the NNS and Central North Sea. They are usually sighted in pairs or in solitude; however, groups of up to 15 individuals can be sighted feeding. It appears that animals return to the same seasonal feeding grounds (Reid <i>et al.</i>, 2003). Minke whales are most likely to be observed in the project area in the summer months and in low numbers. Their density is predicted to be 0.0316 animals/km² which is the highest across all areas surveyed (Hammond <i>et al.</i>, 2021). Minke whale are also listed as a UK Biodiversity Action Plan (BAP) species.</p> <p>While Atlantic white-sided dolphin are likely to be seen in the project area, this is only likely during July, although in high numbers at this time. The density of Atlantic white-sided dolphins in the project area is estimated to be 0.003 animals/km².</p> <p>No other cetacean species are likely to be present in the project area.</p> <p>Two species of seal are resident in UK waters: the grey seal (<i>Halichoerus grypus</i>) and the harbour or common seal (<i>Phoca vitulina</i>), both occurring regularly over large parts of the North Sea. The estimated grey seal-at-sea density within the Western Isles area is thought to be 0.009 individuals per 25 km² (Russell <i>et al.</i>, 2017). The percentage of the grey seal population in the Western Isles area at any given time is ≤0.001% (Carter and Russell, 2020). The estimated harbour seal-at-sea density in the area is thought to be 0.005 individuals per km² (Russell <i>et al.</i>, 2017). The percentage of the harbour seal population in the Western Isles area at any given time is ≤0.001% (Carter and Russell, 2020).</p>
Birds	<p>The area surrounding the Western Isles (Barra & Harris) Fields are utilised by the following species at various times of the year: European storm petrel <i>Hydrobates pelagicus</i>, long tailed skua <i>Stercorarius longicaudus</i>, northern gannet <i>Morus bassanus</i>, great skua <i>Stercorarius skua</i>, black-legged kittiwake <i>Rissa tridactyla</i>, glaucous gull <i>Larus hyperboreus</i>, great black-backed gull <i>Larus marinus</i>, herring gull <i>Larus argentatus</i>, common guillemot <i>Uria aalge</i>, little auk <i>Alle alle</i>, razorbill <i>Alca torda</i> and Atlantic puffin <i>Fratercula arctica</i> (Kober <i>et al.</i>, 2010).</p>

Table 4-1 Environmental Sensitivities

Environmental Receptor	Main Features
Other Users of the Sea	<p>Shipping activity within Blocks 210/24 and 210/25 is considered to be very low and low respectively (Oil and Gas Authority, 2016).</p> <p>There are no operational offshore wind farms (OWFs) in the vicinity of the Western Isles (Barra & Harris) Fields. However, the project area is close to areas identified under the Innovation and Targeted Oil and Gas (INTOG) scheme. The INTOG areas represent areas within which projects targeting oil and gas decarbonisation or which will generate >100 MW of energy will be considered for approval (Marine Scotland, 2021). The Western Isles FPSO lies approximately 27 km southwest of the NE-a and NE-b INTOG areas.</p> <p>There are no other renewables developments, proposed or active, near the project area.</p> <p>There are no active or disused cables within 100 km of the Western Isles field. The CANTAT-3 active telecom cable is located approximately 107 km northeast of the Western Isles FPSO.</p> <p>Blocks 210/24 and 210/25 are not considered blocks of concern to the Ministry of Defence (Oil and Gas Authority, 2019).</p> <p>There are few wrecks recorded in the vicinity of the Western Isles (Barra & Harris) Fields. The closest wreck is 20 km due east of the Western Isles FPSO and is considered non-dangerous. Closer to the project area lies an area of foul ground and an unknown obstacle; both are 10 km from the FPSO and are located <1 km from the associated pipeline (NMPi, 2022).</p>

4.2 Potential Environmental Impacts and their Management

4.2.1 Environmental Impact Assessment Summary

The Western Isles Decommissioning EA (2023) process has considered Scotland’s National Marine Plan, adopted by the Scottish Government to help ensure sustainable development of the marine area. Dana considers that the proposed decommissioning activities are in alignment with its objectives and policies.

Having reviewed the project activities within the wider regional context and taking into consideration the mitigation measures to limit any potential impacts, the findings of this EA conclude that the activities do not pose any significant threat to environmental or societal receptors and that there is not expected to be a significant impact on any European or nationally designated protected sites in proximity to the activities.

Table 4-2 details the decommissioning activities and their potential environmental impacts and the management and mitigation measures that will be put in place to further reduce the potential for environmental or societal effects.

4.2.2 Overview

Table 4-2 Environmental Impact Management		
Activity	Main Impacts	Management
Subsea Installations Removal	Atmospheric emissions impacts from excavation and removal of subsea installations	<ul style="list-style-type: none"> Minimal number of vessels deployed and streamlining of activities through planning to reduce the time required for vessels will be required for these activities and will support the drive to reduce emissions. Each vessel will have a Shipboard Energy Efficiency Management Plan (SEEMP) which contains information of minimising fuel consumptions, e.g. economical speeds when operationally appropriate. Vessel equipment maintained according to manufacturer's recommendations. Use of low sulphur diesel. Green dynamic positioning or economical speeds when operationally appropriate. Dana Vessel Assurance process / procedure. Third Party Contractor Assurance process / procedure. Dana have also commissioned an Energy and Emissions Report to provide insight into the full lifecycle of emissions associated with the project and to highlight where emissions savings could be made.
	Seabed disturbance impacts from excavation and removal of subsea installations	<ul style="list-style-type: none"> All activities which may lead to seabed disturbance will be planned, managed and implemented in such a way that disturbance is minimised. In practical terms this means that dynamically positioned vessels will be used to undertake the decommissioning operations, any excavation will only be

Table 4-2 Environmental Impact Management

Activity	Main Impacts	Management
		<p>undertaken where necessary to facilitate cutting / recovery of items and that recovery basket deployment will be minimised.</p> <ul style="list-style-type: none"> • A debris survey will be undertaken at the completion of the decommissioning activities. Any debris identified as resulting from oil and gas activities will be recovered from the seabed where possible.
Decommissioning Pipelines	Atmospheric emissions impacts from excavation and removal associated with decommissioning pipelines	<ul style="list-style-type: none"> • Minimal number of vessels deployed and streamlining of activities through planning to reduce the time required for vessels will be required for these activities and will support the drive to reduce emissions. • Each vessel will have a Shipboard Energy Efficiency Management Plan (SEEMP) which contains information of minimising fuel consumptions e.g., economical speeds when operationally appropriate. • Vessel equipment maintained according to manufacturer's recommendations. • Use of low sulphur diesel. • Green dynamic positioning or economical speeds when operationally appropriate. • Dana Vessel Assurance process / procedure. • Third Party Contractor Assurance process / procedure. • Dana have also commissioned an Energy and Emissions Report to provide insight into the full lifecycle of emissions associated with the project and to highlight where emissions savings could be made.
	Seabed disturbance impacts from excavation, removal (and subsequent remediation) of pipelines	<ul style="list-style-type: none"> • All activities which may lead to seabed disturbance will be planned, managed and implemented in such a way that disturbance is minimised. In practical terms this means that dynamically positioned vessels will be used to undertake the decommissioning operations, any excavation will only be undertaken where necessary to facilitate cutting / recovery of items and that recovery basket deployment will be minimised. • A debris survey will be undertaken at the completion of the decommissioning activities. Any debris identified as resulting from oil and gas activities will be recovered from the seabed where possible. • Rock cover will be applied by a fall pipe vessel equipped with an underwater camera to ensure accurate placement and reduce unnecessary spreading of the footprint while ensuring the minimum safe quantity is used.
	Snagging risk to commercial fisheries	<ul style="list-style-type: none"> • The Western Isles pipelines are currently shown on Admiralty Charts, the FishSAFE system and the OGA Infrastructure data

Table 4-2 Environmental Impact Management

Activity	Main Impacts	Management
	<p>associated with pipelines decommissioned <i>in situ</i></p>	<p>systems (OGA Open Data). Once decommissioning activities are complete, updated information (i.e., which infrastructure remains <i>in situ</i> and which has been removed) will be made available to allow Admiralty charts and the FishSAFE system to be updated.</p> <ul style="list-style-type: none"> • Any exposures or cut pipeline ends will be rock covered to ensure they are overtrawlable by fishing vessels. • Any objects dropped during decommissioning activities will be removed from the seabed where appropriate. • Dana will monitor the seabed to assess any seabed depressions or clay berms which may present a snag risk. The survey results will be used in discussion with OPRED prior to the commencement of any intervention. • Clear seabed verification will ensure there is no residual risk to other sea users. The proposed method for clear seabed validation is through non-intrusive methodologies such as Sidescan Sonar and Multi-Beam Echosounder. If non-intrusive methods are deemed inconclusive during verification, alternative methods will be discussed and agreed with OPRED. • Ongoing consultation with fisheries representatives. • Dana recognises its obligation to monitor any infrastructure decommissioned <i>in situ</i> and therefore intends to set up arrangements to undertake post-decommissioning monitoring. The frequency of the monitoring that will be required will be agreed with OPRED and future monitoring will be determined through a risk-based approach established from the findings of each survey in turn. During the period over which monitoring is required, the burial status of the infrastructure decommissioned <i>in situ</i> would be reviewed and any necessary remedial action undertaken to ensure it does not pose a risk to other sea users.
<p>Decommissioning Stabilisation Features</p>	<p>Atmospheric emissions impacts from excavation and removal of stabilisation materials</p>	<ul style="list-style-type: none"> • Minimal number of vessels deployed and streamlining of activities through planning to reduce the time required for vessels will be required for these activities and will support the drive to reduce emissions. • Each vessel will have a Shipboard Energy Efficiency Management Plan (SEEMP) which contains information of minimising fuel consumptions e.g., economical speeds when operationally appropriate. • Vessel equipment maintained according to manufacturer's recommendations. • Use of low sulphur diesel.

Table 4-2 Environmental Impact Management		
Activity	Main Impacts	Management
		<ul style="list-style-type: none"> • Green dynamic positioning or economical speeds when operationally appropriate. • Dana Vessel Assurance process / procedure. • Third Party Contractor Assurance process / procedure. • Dana have also commissioned an Energy and Emissions Report to provide insight into the full lifecycle of emissions associated with the project and to highlight where emissions savings could be made.
	Seabed disturbance impacts from excavation and removal of stabilisation materials	<ul style="list-style-type: none"> • All activities which may lead to seabed disturbance will be planned, managed and implemented in such a way that disturbance is minimised. In practical terms this means that dynamically positioned vessels will be used to undertake the decommissioning operations, any excavation will only be undertaken where necessary to facilitate cutting / recovery of items and that recovery basket deployment will be minimised. • A debris survey will be undertaken at the completion of the decommissioning activities. Any debris identified as resulting from oil and gas activities will be recovered from the seabed where possible.

5 INTERESTED PARTY CONSULTATIONS

5.1 Consultations Summary

Table 5-1 Summary of Stakeholder Comments		
Who	Comment	Response
Statutory Stakeholder Consultations		
National Federation of Fishermen’s Organisations	No comments	n/a
Northern Ireland Fish Producers Organisation	No comments	n/a
Global Marine Systems Limited	No comments other than to advise that should the DP change and seabed invasive operations are to occur near existing telecom infrastructure, it will be important to notify any nearby cable owners in advance of planned operations.	Noted
Scottish Fishermen’s Federation	<p>1. Safety measures are recommend post-safety zone removal.</p> <ol style="list-style-type: none"> 1. Where bundles are to be left in place, rather than SFF preference for removal or, second, trench and burial, rock cover should be applied and monitoring undertaken for potential snag hazards. 2. Assurance sought that valves and cages will be removed from bundles during decommissioning. 3. A Joint Industry Project (JIP) is recommended to seek ways of removing bundles in general. 4. Spot rock cover should be applied to any partially covered mattresses which are to be left in situ. 5. Any rock cover applied should be of appropriate size. 	<ol style="list-style-type: none"> 1. Safety measures will be addressed as appropriate with relevant stakeholders. 2. Rock cover is proposed only for bundle ends; a regime for post-decommissioning monitoring will be discussed as appropriate with relevant stakeholders. 3. Venting appurtenances will be removed from bundles during decommissioning. 4. The JIP idea is outwith Dana’s control but the point is noted. 5. The intention is to remove all mattresses. Should any require an alternative approach, this will be discussed with OPRED. 6. Rock cover sizes will be appropriately selected.

Note: An example of the public notice announcing the consultation on the draft DP appears at Appendix 5.

Informal Consultations Before Submission of Draft DP	
HSE	Introductory engagement on the Western Isles FPSO and subsea decommissioning programmes on 28 th July 2022 (virtual meeting). Attendance at the Comparative Assessment workshop on 17 August 2022.
SFF	Introductory engagement on the Western Isles FPSO and subsea decommissioning programmes on 28 th July 2022 (virtual meeting). Attendance at the Comparative Assessment workshop on 17 August 2022.
JNCC	Introductory engagement on the Western Isles FPSO and subsea decommissioning programmes on 11 th August 2022 (virtual meeting). Attendance at the Comparative Assessment workshop on 17 August 2022.
SEPA	Opening engagement and general information sharing on the Western Isles FPSO and subsea decommissioning on 23 January 2023 (virtual meeting).

6 PROGRAMME MANAGEMENT

6.1 Project Management and Verification

A Project Management team will be appointed to manage suitable sub-contractors for the removal of the Western Isles infrastructure. 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 Northern North Sea. The Project Management team will monitor and track the process of consents and the consultations required as part of this process. Any changes in detail to the offshore removal programme will be discussed and agreed with OPRED.

6.2 Post-Decommissioning Debris Clearance and Verification

Following completion of all decommissioning works in the Western Isles (Barra and Harris) Fields a post-decommissioning site survey will be carried out around a 500m radius of installation sites and a 100m corridor (50m either side) along each existing pipeline route to identify any debris. Any seabed debris related to offshore oil and gas activities will be recovered for onshore disposal or recycling in line with existing disposal methods. The proposed method for clear seabed validation is through non-intrusive methodologies such as Side Scan Sonar/ROV. If non-intrusive methods are deemed inconclusive during verification alternative methods will be discussed and agreed with OPRED. Upon verification of a clear seabed a statement of clearance to all relevant governmental departments and non-governmental organisations will be issued. It is proposed the verification work for the scope of this combined DP be completed in conjunction with the Western Isles FPSO DPs.

6.3 Schedule

The high-level Gantt chart below (Figure 6-1) provides the proposed schedule for the programme of decommissioning activities. The commencement of any execution activities is subject to commercial agreements and contracts. At this time this schedule is based on earliest anticipated CoP of late March 2024, subject to further discussions.

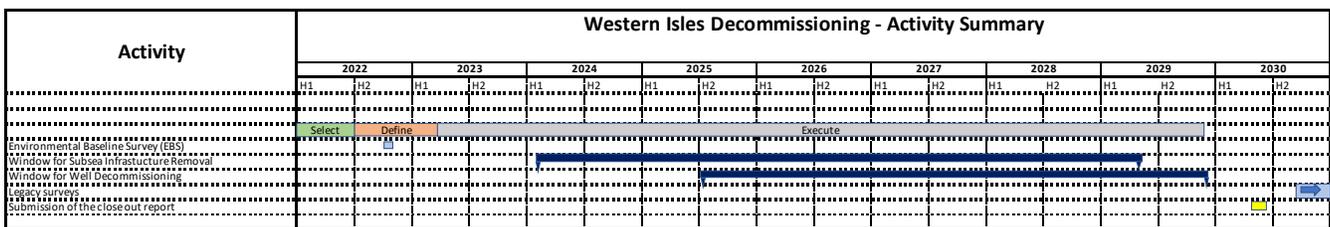


Figure 6-1 Gantt Chart of Project Plan

6.4 Costs

The decommissioning programme costs will be provided directly to OPRED.

6.5 Close Out

In accordance with the OPRED Guidelines, a close out report will be submitted to OPRED within one year of the completion of the offshore decommissioning scope including debris clearance, verification of seabed 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 environmental seabed survey will revisit sample locations from the pre-decommissioning baseline survey in 2022. The pipeline routes and installation sites will be the subject of oilfield debris clearance and a non-invasive 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. Appropriate methods to verify that no snag hazards remain following completion of the subsea decommissioning activities shall be agreed with OPRED and employed.

The infrastructure is currently shown on Admiralty Charts and the FishSAFE system. When decommissioning activity has been completed, information will be made available to update these. The Section 29 Notice Holders recognise their commitment to undertake post-decommissioning monitoring of infrastructure left *in situ*. After the post-decommissioning survey reports have been submitted to OPRED and reviewed, a post-decommissioning monitoring survey regime, scope and frequency, will be agreed with OPRED.

A separate DP will be prepared for the bundle pipelines and submitted to OPRED at a future date. Until such time as they are decommissioned, the pipeline bundle sections will be monitored under OPRED's interim pipeline regime.

7 SUPPORTING DOCUMENTS

Table 7-1 Supporting Documents	
Reference	Title
CA, 2023	Western Isles Comparative Assessment Recommendation Report, Xodus Group for Dana Petroleum A-303550-S00-K-REPT-003, 2022
EA, 2023	Western Isles Subsea Environmental Appraisal, Xodus Group, A-303550-S00-A-ESIA-001, 2023
Cost Schedule	Provided in confidence to OPRED
References	
Reference	Title
Carter and Russell, 2020	Carter, M. and Russell, D. J. F. (2020). At-Sea Density Maps for Grey and Harbour Seals in the British Isles (2020) (dataset). Available online at: https://risweb.st-andrews.ac.uk/portal/en/datasets/atsea-density-maps-for-grey-and-harbour-seals-in-the-british-isles-2020-dataset(dcebb865-3177-4498-ac9d-13a0f10b74e1).html
Coull et al., 1998	Coull, K., Johnstone, R. & Rogers, S., 1998. Fisheries Sensitivity Maps in British Waters, Published and distributed by UKOOA Ltd. Available online at: http://marine.gov.scot/data/fisheries-sensitivity-maps-british-waters-coull-et-al-1998
Ellis et al., 2012	Ellis, J.R., Milligan, S., Readdy, L., South, A., Taylor, N. & Brown, M., 2012. Mapping the spawning and nursery grounds of selected fish for spatial planning. Report to the Department of Environment, Food and Rural Affairs from Cefas. Defra Contract No. MB5301. Available online at: https://www.cefas.co.uk/publications/techrep/TechRep147.pdf
Gardline (2010a)	UKCS Block 210/24 Western Isles Development Site Survey: Environmental Baseline Report (October 2010)
Gardline (2010b)	UKCS Block 210/24 Western Isles Development Pipeline Route Survey: Environmental Baseline Report (October 2010)
Gardline (2012)	UKCS Block 210/24a Western Isles Development Infield Routes Survey: Pipeline Route Survey (December 2012)
Hammond et al., 2021	Hammond, P. S., Lacey, C., Gilles, A., Viquerat, S., Börjesson, P., Herr, H., MacLeod, K., Ridoux, V., Santos, M. B., Scheidat, M., Teilmann, J. and Øien, N., 2021. Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys (Revised 2021)
Kober et al., 2010	Kober, K., Webb, A., Win, I., Lewis, M., O'Brien, S., Wilson, J. L., Reid, B. J., 2010. An analysis of the numbers and distribution of seabirds within the British Fishery Limit aimed at identifying areas that qualify as possible marine SPAs. ISSN; 0963-8091. JNCC report No. 431
NMPi, 2022	NMPi, 2021. National Marine Plan Interactive. Available online at: http://www.gov.scot/Topics/marine/seamanagement/nmpihome
OGUK, 2015	Oil and Gas UK (now OEUK). Guidelines for Comparative Assessment in Decommissioning Programmes, October 2015, ISBN: 1 903 004 55 1, Issue: 1

Oil and Gas Authority, 2016	Oil and Gas Authority, 2016. Information of levels of shipping activity. 29th Offshore Licensing Round information and resources
Oil and Gas Authority, 2019	Oil and Gas Authority, 2019. Other Regulatory Issues 32nd Licensing Round information and Resources. Available online at: https://www.ogauthority.co.uk/media/5883/other-regulatory-issues-july-2019.pdf
OPRED (2018)	Offshore Petroleum Regulator for Environment and Decommissioning, 2018. Offshore Oil and Gas Decommissioning Guidance Notes. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/760560/Decom_Guidance_Notes_November_2018.pdf
Reid et al., 2003	Reid, J., Evans, P. & Northridge, S., 2003. An atlas of cetacean distribution on the northwest European Continental Shelf, Joint Nature Conservation Committee: Peterborough.
Russell et al., 2017	Russell, D. F., Jones, E. L., Morris, C. D. (2017). Updated Seal Usage Maps: The Estimated at-sea Distribution of Grey and Harbour Seals, Scottish Marine and Freshwater Science Report Vol 8 No 25. Available online at: https://data.marine.gov.scot/dataset/updated-seal-usage-maps-estimated-sea-distribution-grey-and-harbour-seals
Scottish Government, 2021	Scottish Government, 2021. Scottish Sea Fisheries Statistics, 2020. Scottish Government. Available online at: https://data.marine.gov.scot/dataset/2020-provisional-scottish-sea-fisheries-statistics-fishing-effort-and-quantity-and-value
Tideway Seahorse Progress Report 2014	Tideway DFPV Seahorse Daily Progress Report 15 July 2014, Table 8D, document number: TW-D395-5111-DPR-005



8 SECTION 29 NOTICE HOLDERS LETTERS OF SUPPORT

Dana Petroleum Limited
Itochu Corporation
NEO Energy Group Limited
NEO Energy (UKCS) Limited
NEO Energy Upstream UK Limited



Dana Petroleum Limited
King's Close
62 Huntly Street
Aberdeen
AB10 1RS
United Kingdom

t: +44 (0) 1224 616000
f: +44 (0) 1224 616 001
www.dana-petroleum.com

Offshore Petroleum Regulator for Environment and Decommissioning

Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

12 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Installations

We acknowledge receipt of your letter dated 6 October 2023.

We, Dana Petroleum Limited confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf an abandonment programme relating to the Western Isles Fields Subsea Installations as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Installations Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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,


Jaegu Nam (Oct 12, 2023 13:13 GMT+1)

Jaegu Nam

Chief Executive Officer

For and on behalf of Dana Petroleum Limited



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Offshore Petroleum Regulator for Environment and Decommissioning

Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

12 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Pipelines

We acknowledge receipt of your letter dated 6 October 2023.

We, Dana Petroleum Limited confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf abandonment programmes relating to the Western Isles Fields Subsea Pipelines as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Pipelines Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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.

We acknowledge that the Western Isles Fields Subsea Pipelines Decommissioning Programmes exclude bundle sections of PL3729.1-4 and PL3730.1-4 inclusive, and the sections of PLU3729.5 & PLU3730.5 not covered by the approved Western Isles FPSO Decommissioning Programmes. These pipeline sections will be included in a future Decommissioning Programme.

Yours faithfully,


Jaegu Nam (Oct 12, 2023 13:13 GMT+1)

Jaegu Nam

Chief Executive Officer

For and on behalf of Dana Petroleum Limited



ITOCHU Corporation
5-1, Kita-Aoyama 2-chome
Minato-ku, Tokyo 107-8077, Japan
Telephone: +81 - 3 - 3497 - 6642
Facsimile: +81 - 3 - 3497 - 8108

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
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AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

17 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Installations

We acknowledge receipt of your letter dated 6 October 2023.

We, ITOCHU Corporation, confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf an abandonment programme relating to the Western Isles Fields Subsea Installations as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Installations Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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,



Hiroshi Aoki
General Manager
Oil & Gas Upstream Business Development Department
Energy Division
Energy & Chemicals Company
ITOCHU Corporation

For and on behalf of **ITOCHU Corporation**

Registered Company No. 7120 001077358



ITOCHU Corporation
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Minato-ku, Tokyo 107-8077, Japan
Telephone: +81 - 3 - 3497 - 6642
Facsimile: +81 - 3 - 3497 - 8108

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Yours faithfully,


Hiroshi Aoki
General Manager
Oil & Gas Upstream Business Development Department
Energy Division
Energy & Chemicals Company
ITOCHU Corporation

For and on behalf of **ITOCHU Corporation**

Registered Company No. 7120 001077358



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

23 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Installations

We acknowledge receipt of your letter dated 6 October 2023.

We, NEO Energy Group Limited confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf an abandonment programme relating to the Western Isles Fields Subsea Installations as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Installations Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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,

DocuSigned by:

063513F9B82E46E...

Andrew McIntosh
General Counsel and Head of Business Services
Company Secretary
For and on behalf of **NEO Energy Group Limited**



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

17 October 2023

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Yours faithfully,

Andrew McIntosh
General Counsel and Head of Business Services
Company Secretary
For and on behalf of **NEO Energy Group Limited**

Level 32, The Gherkin
30 St Mary Axe
London EC3A 8BF

9th Floor, The Silver Fin Building
455 Union Street
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Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

23 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Installations

We acknowledge receipt of your letter dated 6 October 2023.

We, NEO Energy (UKCS) Limited confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf an abandonment programme relating to the Western Isles Fields Subsea Installations as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Installations Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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,

DocuSigned by:

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Andrew McIntosh
General Counsel and Head of Business Services
Company Secretary
For and on behalf of **NEO Energy (UKCS) Limited**

Level 32, The Gherkin
30 St Mary Axe
London EC3A 8BF

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NEO Energy (UKCS) Limited is a company registered in England under company number 2669936
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Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
2nd Floor, Wing C
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Crimon Place
Aberdeen
AB10 1BJ

17 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Pipelines

We acknowledge receipt of your letter dated 6 October 2023.

We, NEO Energy (UKCS) Limited confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf abandonment programmes relating to the Western Isles Fields Subsea Pipelines as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Pipelines Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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.

We acknowledge that the Western Isles Fields Subsea Pipelines Decommissioning Programmes exclude bundle sections of PL3729.1-4 and PL3730.1-4 inclusive, and the sections of PLU3729.5 & PLU3730.5 not covered by the approved Western Isles FPSO Decommissioning Programmes. These pipeline sections will be included in a future Decommissioning Programme.

Yours faithfully,


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Andrew McIntosh
General Counsel and Head of Business Services
Company Secretary
For and on behalf of **NEO Energy (UKCS) Limited**

Level 32, The Gherkin
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Department for Energy Security & Net Zero
2nd Floor, Wing C
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Aberdeen
AB10 1BJ

23 October 2023

Dear Madam,

Western Isles Subsea Decommissioning Programmes Petroleum Act 1998

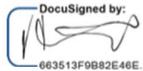
Decommissioning of the Western Isles (Barra & Harris) Fields Subsea Installations

We acknowledge receipt of your letter dated 6 October 2023.

We, NEO Energy Upstream UK Limited confirm that we authorise Dana Petroleum (E&P) Limited to submit on our behalf an abandonment programme relating to the Western Isles Fields Subsea Installations as directed by the Secretary of State on 6 October 2023.

We confirm that we support the proposals detailed in the Western Isles Fields Subsea Installations Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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,

DocuSigned by:

063513F9B82E46E...

Andrew McIntosh
General Counsel and Head of Business Services
Company Secretary
For and on behalf of **NEO Energy Upstream UK Limited**

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Department for Energy Security & Net Zero
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Aberdeen
AB10 1BJ

17 October 2023

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We confirm that we support the proposals detailed in the Western Isles Fields Subsea Pipelines Decommissioning Programmes dated 9 October 2023, which is to be submitted by Dana Petroleum (E&P) 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.

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Yours faithfully,


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Andrew McIntosh
General Counsel and Head of Business Services
Company Secretary
For and on behalf of **NEO Energy Upstream UK Limited**

Level 32, The Gherkin
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9 STATUTORY CONSULTEE CORRESPONDENCE

Carol Barbone

From: [redacted]
Sent: May 30, 2023 8:19 AM
To: Carol Barbone
Cc: Stuart Wordsworth; [redacted]
Subject: FW: DECOMMISSIONING PROGRAMMES FOR THE WESTERN ISLES SUBSEA INFRASTRUCTURE
Attachments: Dana Petroleum Western Isles DP 2 Subsea Draft for Consultation 180523 signed.pdf
Follow Up Flag: Follow up
Flag Status: Flagged

External email: Use caution with links/attachments

Good morning Carol,

Many thanks for sending through the decommissioning programme. As there are no active cables within 100km of the Western Isles Field, I have no comments.

In the event that the decom program 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.

Contact details of the cable owners can be sourced from <https://kis-orca.org/map/>

Kind regards,

[redacted]

From: Carol Barbone <carol.barbone@dana-petroleum.com>
Sent: 26 May 2023 09:16
To: [redacted]
Subject: DECOMMISSIONING PROGRAMMES FOR THE WESTERN ISLES SUBSEA INFRASTRUCTURE

Dear [redacted]

I am writing to let you know that Dana Petroleum (E&P) Limited has submitted, for the consideration of the Secretary of State for Energy Security and Net Zero, Draft Decommissioning Programmes for the subsea infrastructure in the Barra and Harris Fields associated with the Western Isles floating production storage and offloading vessel in accordance with the provisions of the Petroleum Act 1998 (The Act). It is a requirement of the Act that interested parties be consulted on such proposals.

The facilities covered by the Western Isles Subsea Infrastructure Draft Decommissioning Programmes are located within UK block 210/24a in the Northern North Sea (NNS). The infrastructure lies approximately 93 km to the north-east of Shetland and 58 km from the UK / Norway median line. The proposals set out three programmes as follows:



1. Installations including leading and trailing towheads, midwater arches and gravity bases, anchor chains and bottom piles, and wellhead protection structures.
2. Subsea pipelines including the pipelines, bundles (including the pipelines carried within them), rigid tie-in spools, control jumpers and associated structures and stabilisation
3. Subsea pipelines associated with well BP7 including pipelines, spools, jumpers and associated structures and stabilisation

I am attaching a copy of the Draft DP but because of file size would ask that you access the Environmental Appraisal and Comparative Assessment reports which accompany the proposals via the following links:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1159384/Western_Isles_EA.pdf (Environmental Appraisal)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1159383/Western_Isles_CA.pdf (Comparative Assessment)

Comments on the programmes should be submitted in writing to Stuart Wordsworth at stuart.wordsworth@dana-petroleum.com by the consultation closing date, 26 June 2023.

As always, do come back to me in the meantime if you have any queries.

Kind regards

Carol



Carol Barbone
Decommissioning Advisor

Dana Petroleum Limited
King's Close - 62 Huntley Street
Aberdeen
AB10 1RS
United Kingdom

Mob: +44 777 552 3091

Email: carol.barbone@dana-petroleum.com

Web: www.dana-petroleum.com

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Dana Petroleum Netherlands B.V. is registered with the Trade Register under number 27120679, having its statutory seat in The Hague and its office address at Binckhorstlaan 410, 2516 BL The Hague, The Netherlands.

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Our Ref: FH/02/0023

Your Ref: Email dated 26/05/2023

22 June 2023

Scottish Fishermen's Federation
24 Rubislaw Terrace
Aberdeen, AB10 1XE
Scotland UK
T: +44 (0) 1224 646944
F: +44 (0) 1224 647058
E: sff@sff.co.uk

www.sff.co.uk

Mr Stuart Wordsworth
Dana Petroleum Limited
King's Close
62 Huntly Street
Aberdeen
AB10 1RS

Dear Stuart,

Draft Decommissioning Programmes for the Western Isles Subsea Infrastructure

I refer to the Consultation on Draft Decommissioning Programmes provided in your email of 26 May 2023.

The Scottish Fishermen's Federation (SFF) appreciates the clearly laid out and detailed explanation of Dana Petroleum Limited decommissioning proposals for the Western Isles Subsea Infrastructure Decommissioning programmes and place on record our appreciation of the information provided.

For your information, I can advise that the SFF's Oil and Gas Decommissioning Policy and accompanying Key Principles document can be viewed via the SFF's website using the following link: <https://www.sff.co.uk/sff-offshore-oil-gas-decommissioning-policy/>

As highlighted in the SFF's Oil and Gas Decommissioning Policy documentation, the concerns of fishermen are primarily that of safety and the physical impact on the fishing grounds of the long-term presence of oil industry infrastructure on the seabed. With this in mind, the SFF's preferred position with regard to the decommissioning of oil and gas infrastructure is one of total removal.

The SFF appreciate Dana's efforts on complete removal of most of the remaining subsea infrastructure (MWAs, mooring piles and other pipeline related equipment) and abandoned wells based on the BEIS Guidelines. In addition, it is acknowledged that navigational aids and/or a guard vessel will be required to

Members:

Anglo Scottish Fishermen's Association · Fife Fishermen's Association · Fishing Vessel Agents & Owners Association (Scotland) Ltd · Mallaig & North-West Fishermen's Association Ltd · Orkney Fisheries Association · Scottish Pelagic Fishermen's Association Ltd · The Scottish White Fish Producers' Association Ltd · Shetland Fishermen's Association

VAT Reg No: 605 096 748

mitigate collision hazards for other users of the sea in instances where the 500m safety zone is no longer in place and/or potential navigational hazards remain.

In relation to rigid pipeline that are trenched and buried along their length, we accept the reasoning behind the recommendation of leaving these in situ with minimum intervention to minimise seabed disturbance.

We appreciate Dana Petroleum's view for decommissioning of the North and South Bundles in situ due to no viable technical solution for their full recovery. However, given the snagging hazard that these bundles pose to the fishing industry in the long run, SFF's preferred positions are as follows. Our first preferred option is for total removal of bundles to shore noting the fact that the bundles were installed in 2017 hence they have stronger integrity for removal. In case there are no viable technical solutions for their full recovery, SFF's second preferred option for the bundles are to be trenched and buried to minimize snagging hazard for fishing vessels. Our least preferred option would be decommissioning the bundles in situ but to rock dump and monitor them in perpetuity to timely detect and address any snagging hazards that would arise from the bundles in future.

Should these bundles be left in situ can Dana confirm that all valves and cages atop the bundle will be removed as these, if left, could cause serious risk to fishermen.

SFF reiterate the fact that the pipelines currently do not fall within the remit of the OSPAR Decision 98/3, the Guideline Notes state that the principle and processes associate with OSPAR 98/3 have been adopted in consideration of the decommissioning of pipelines. This policy applies to pipeline bundles which are already on the seabed. OPRED would, however, expect that any pipeline bundles installed after June 1999 should be designed for future removals. Therefore, since the bundles were installed post-1999, in theory they should have been designed for future removal.

It is disappointing that SFF having been involved in discussions regarding removing bundles on several occasions over the past 20 years it appeared the industry has no further forward so far. Therefore, we recommend a joint industry project (JIP) to be initiated to find a viable solution for removal of bundles to shore rather than sufficing with statement 'no viable technical solution for their full recovery. We believe that SFF is not the lonely voice on this subject matter since we recall a comment from Bruce Appleton (BA) of HSE during the Dana's Western Isle Subsea Infrastructure decommissioning CA workshop on 17 of August CA meeting that BA raised concerns that if there are too many problems with taking "a new one out" where does that leave us when dealing with "older ones"? He went on to further emphasise that he felt an industry-wide conversation about bundles was required, not individual project-by-project review". BA also "raised the question whether options would change if the lines were 1km long and suggested industry-wide thinking was needed".

Regarding concrete mattress, we appreciate Dana Petroleum plan for total removal of the concrete mattresses. We would take this opportunity to make the point that if any section of concrete mattress is found to be uncovered, then our recommendation would be for such localities to be spot rock dumped.

As you will be aware, any pipelines and associated materials left on the seabed represent a legacy issue and will require on going monitoring. Where rock cover is deployed, we would look for the size and profile of the rock to follow normal industry standards and would recommend that such rock dump berms are incorporated into the post decommissioning debris clearance trawl sweeps to verify that, at the time of deposit, they did not pose a risk to fishing.

Given past experiences of both abandoned wellhead and oil and gas fields in the process of being decommissioned, the SFF would take the opportunity to reaffirm that it has serious reservations regarding the use of survey data (section 6.2 of the Decommissioning Programmes refers) to verify that an area is safe for fishing activity to resume following decommissioning activity. It is our view that the undertaking of trawl verification sweeps under controlled conditions, which replicated the fishing operations that will be

permitted in the area following the decommissioning work, is the best method of establishing that it is safe for fishing to resume in said area.

SFF notes from the Western Isles Subsea Infrastructure EA that the project site sits in a valuable ground for some species of fish spawning and nursery grounds. Therefore, we would recommend the decommissioning activities to be undertaken out with the mentioned fish spawning and nursery periods to avoid any damage to the juvenile fish.

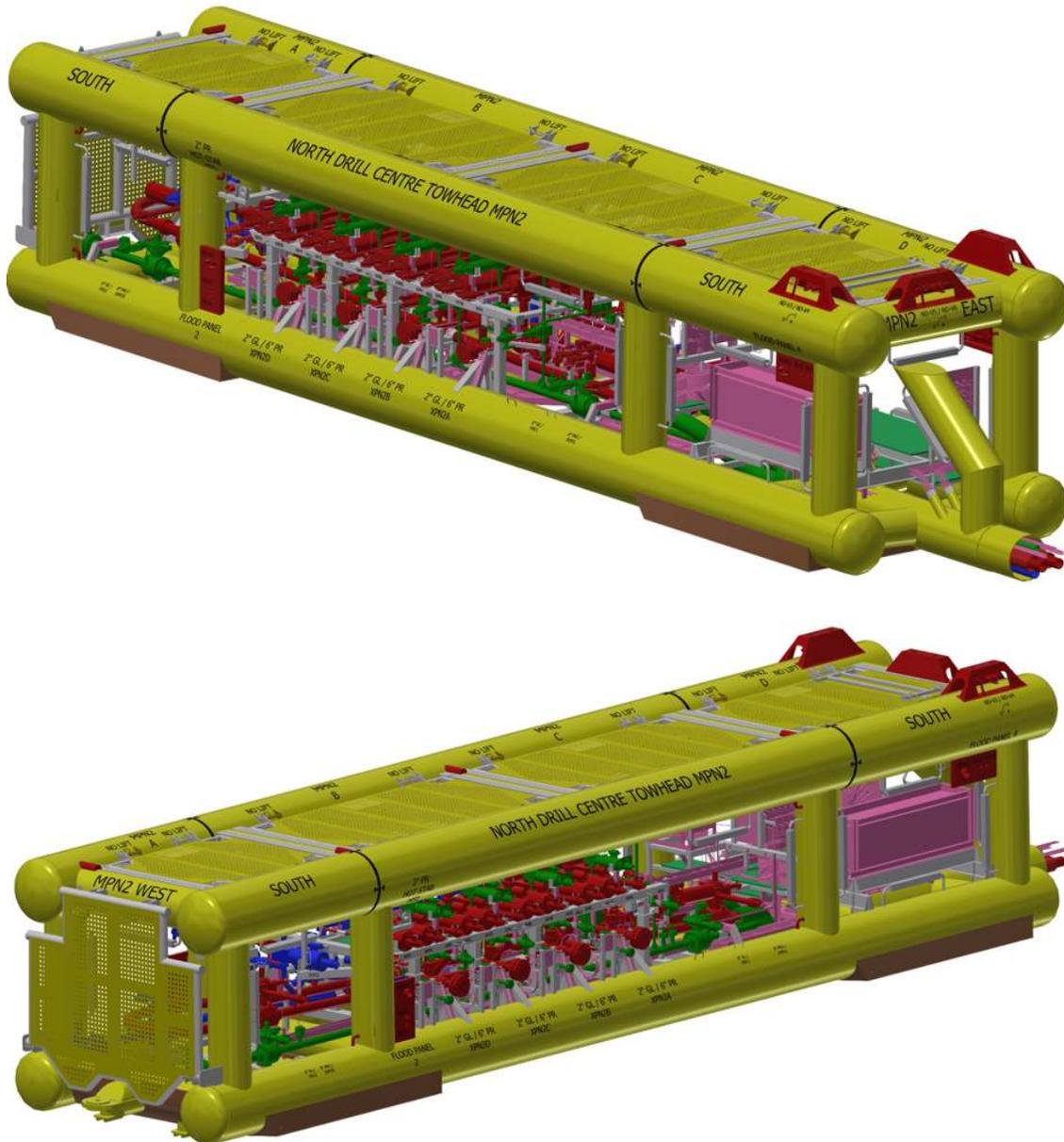
The Federation having stated the above position, would reaffirm its appreciation of the decommissioning plans provided and its wish to work closely and positively with the Western Isles Field Decommissioning Team, as you work through the challenges before you.

Yours sincerely,

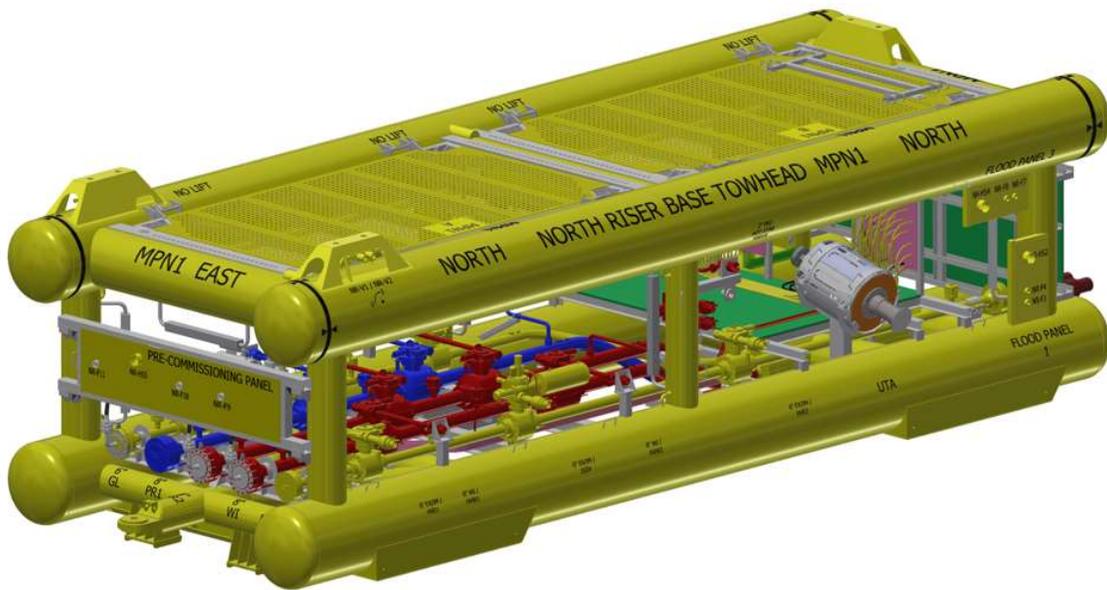
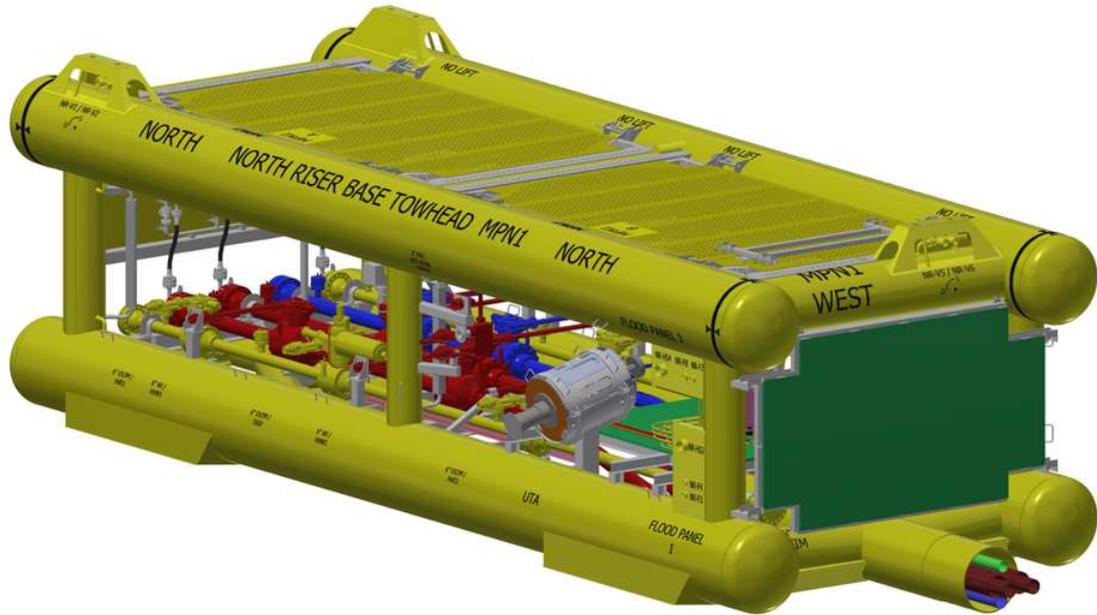


Offshore Energy Policy Officer

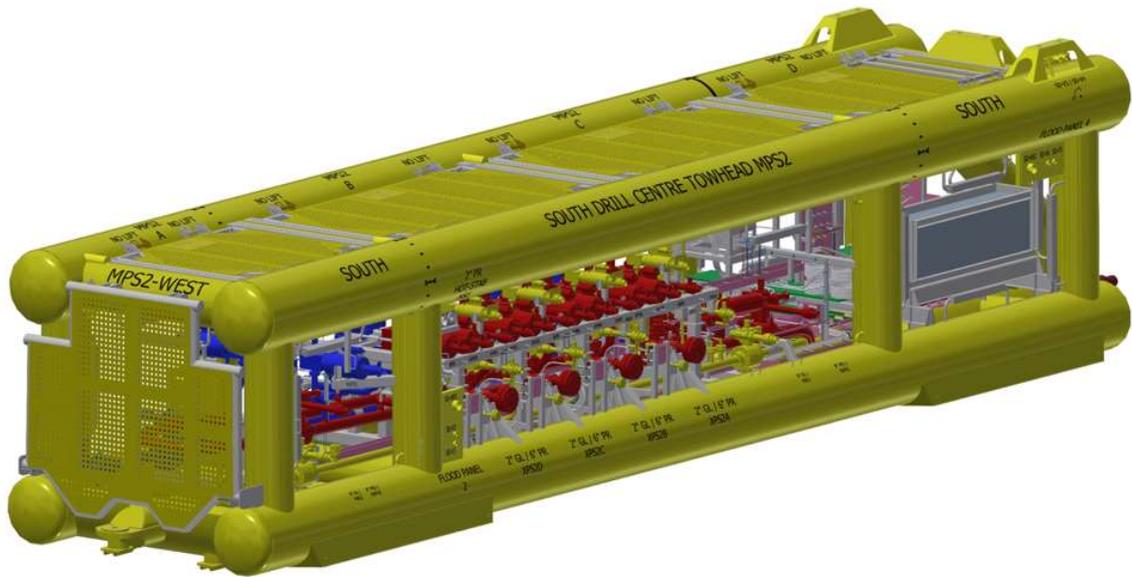
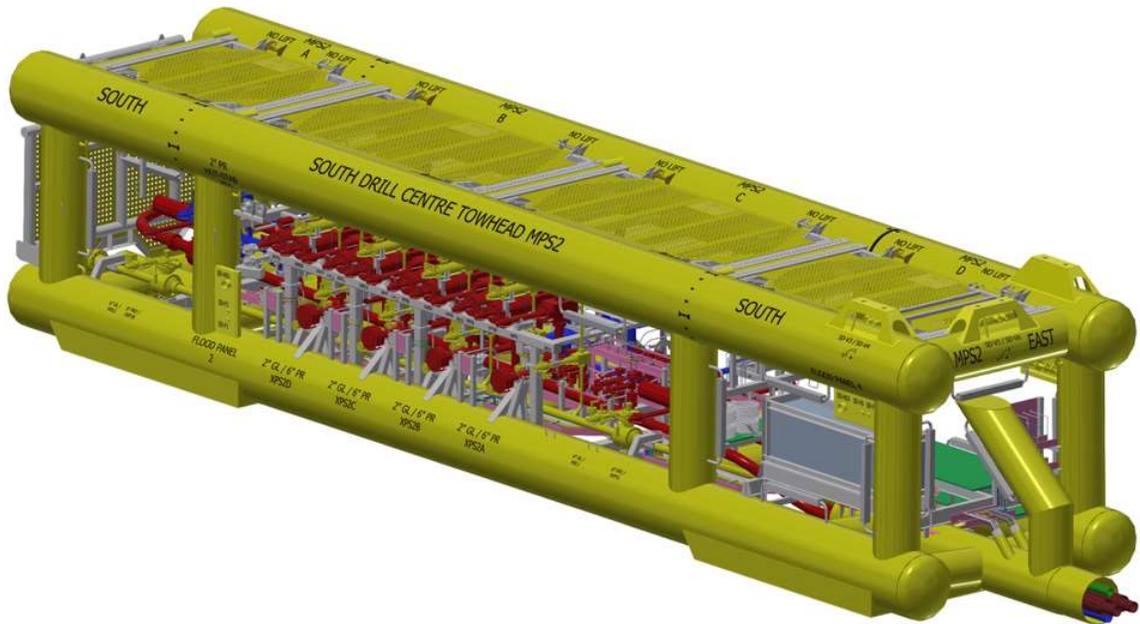
APPENDIX 1 TOWHEAD SCHEMATICS



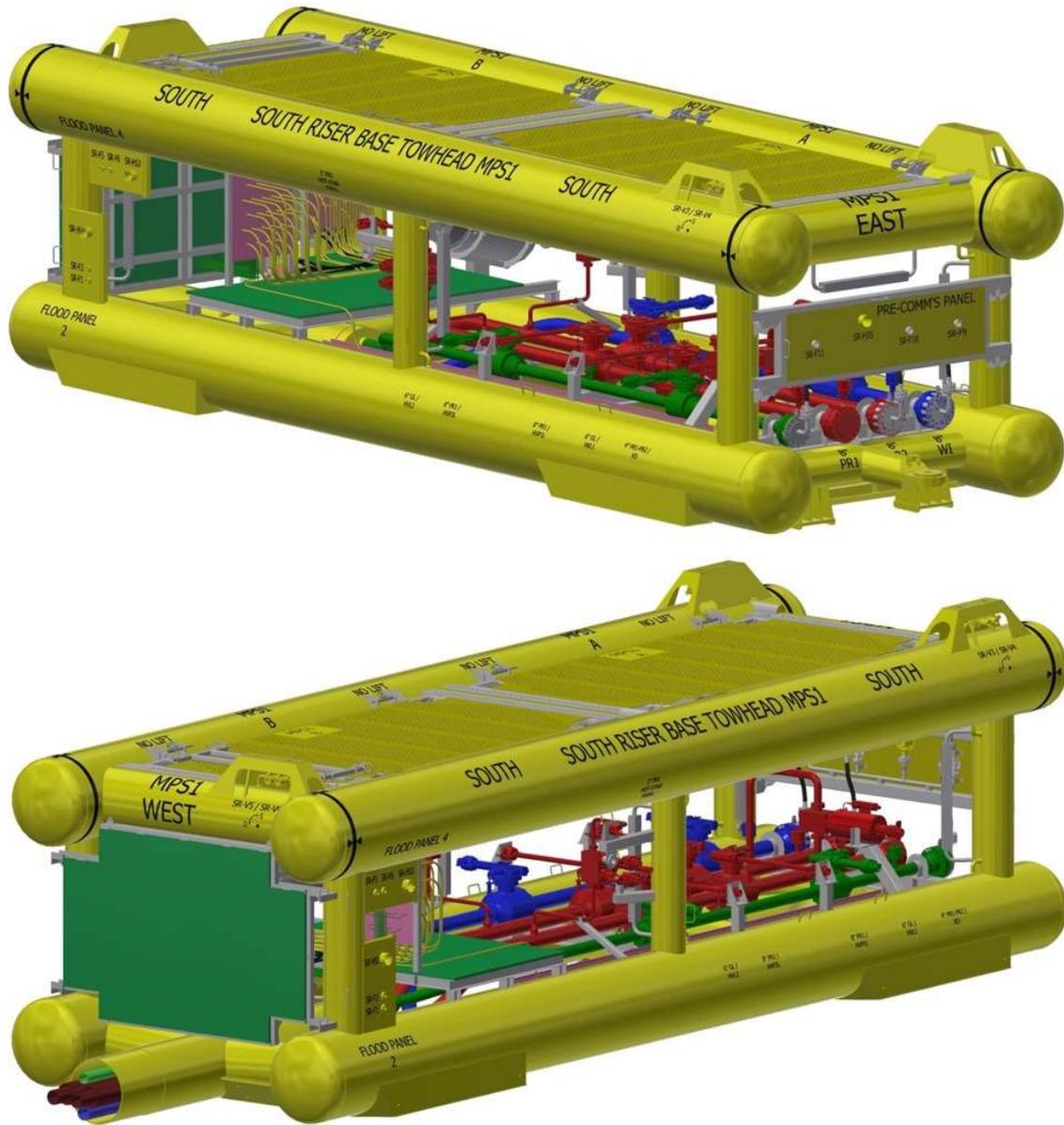
North Drill Centre Leading Towhead



North Riser Base Trailing Towhead

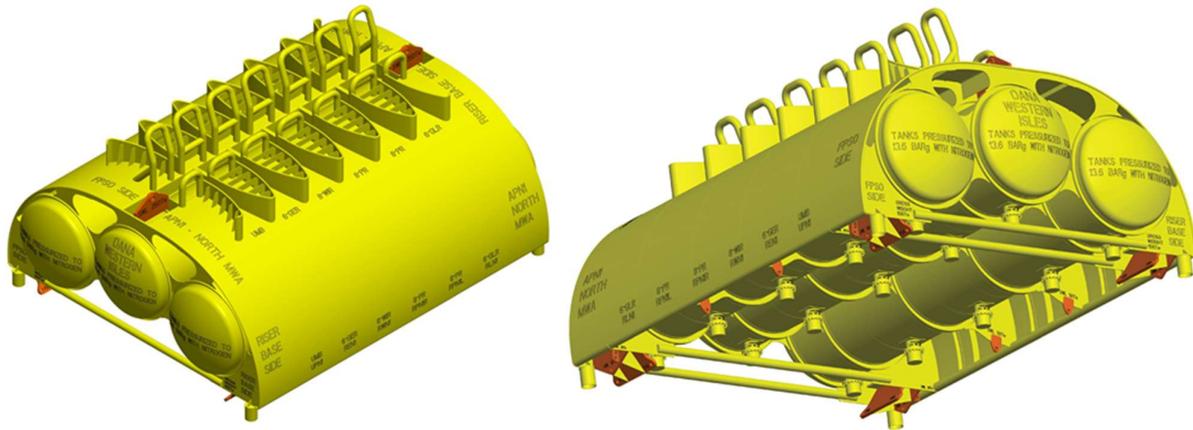


South Drill Centre Leading Towhead

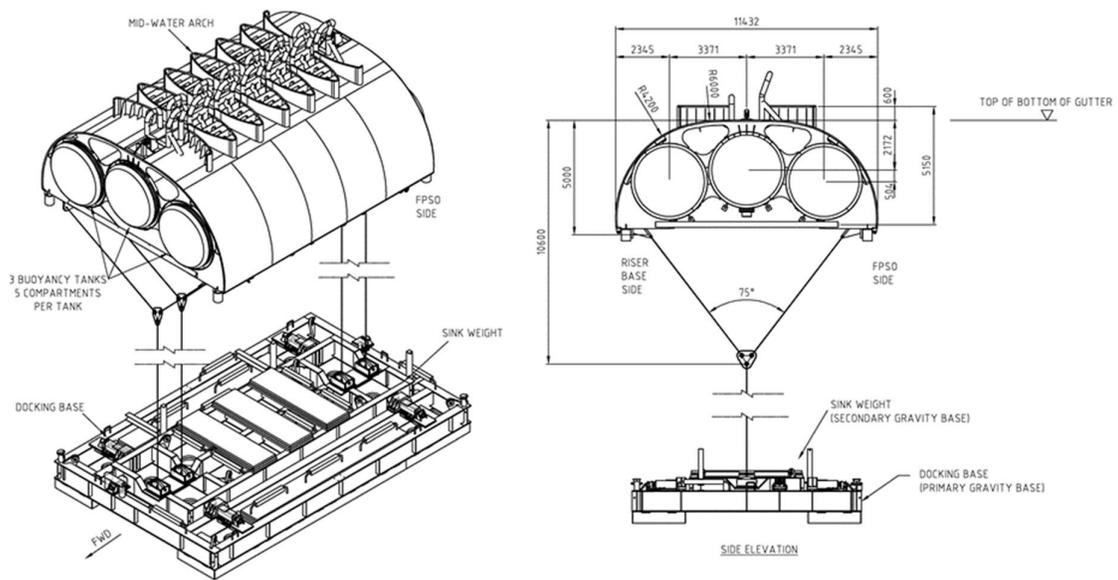


South Riser Base Trailing Towhead

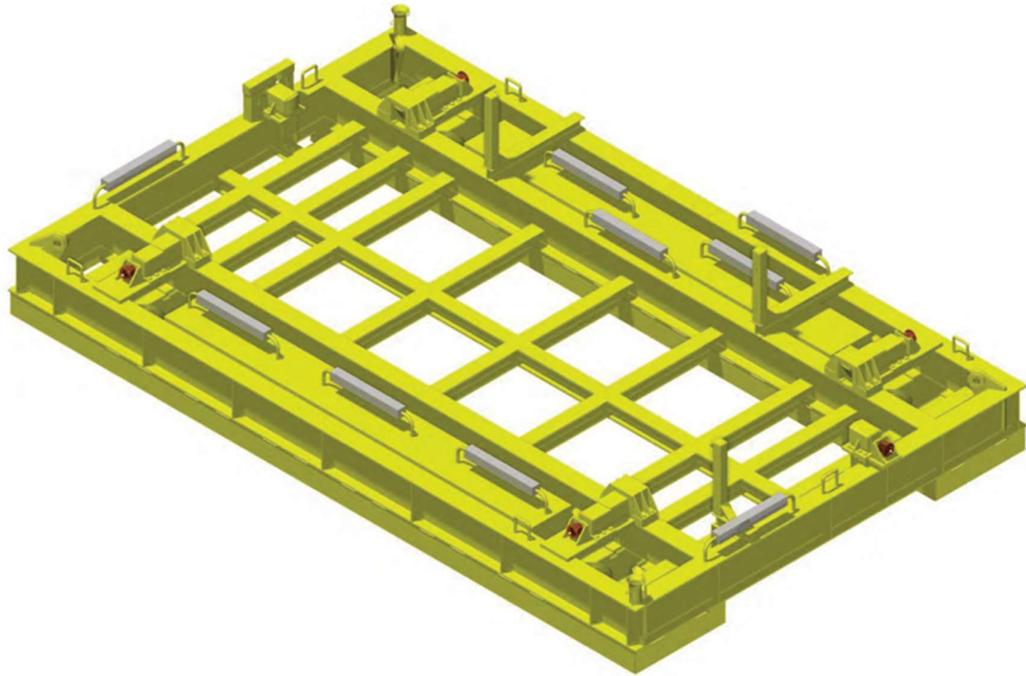
APPENDIX 2 MIDWATER ARCHES AND GRAVITY BASES



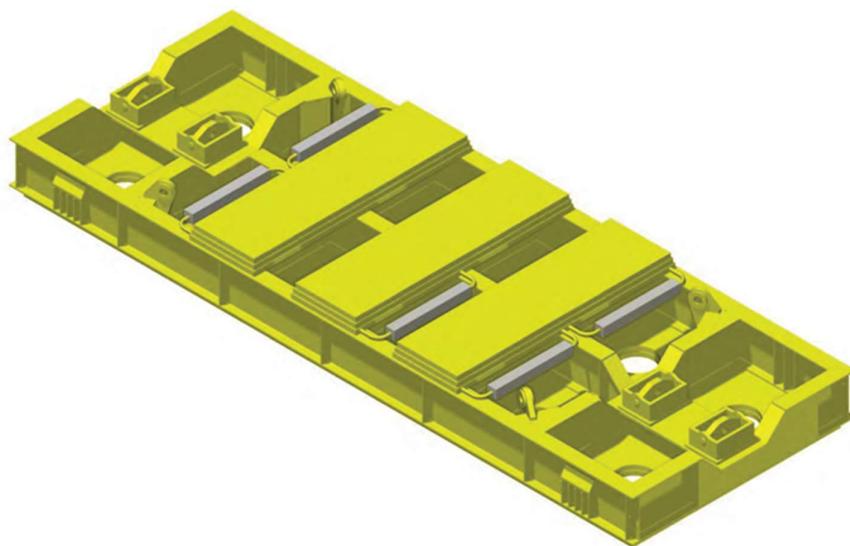
North MWA ISO View



Western Isles MWA System Installed Assembly

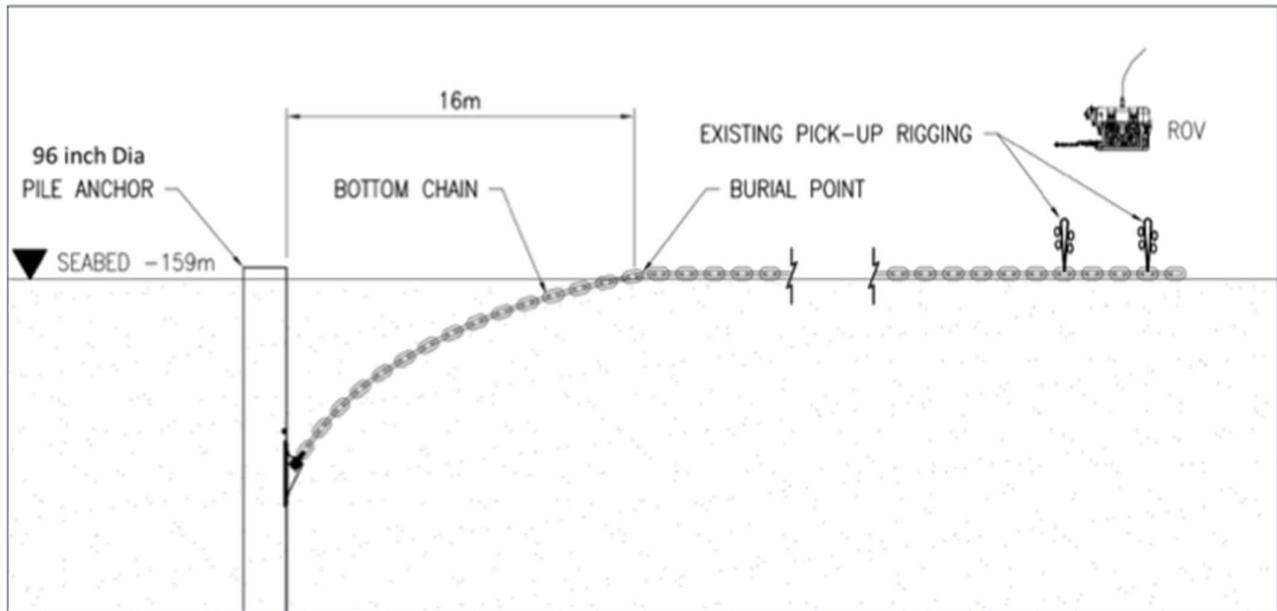


Western Isles MWA Primary Gravity Base



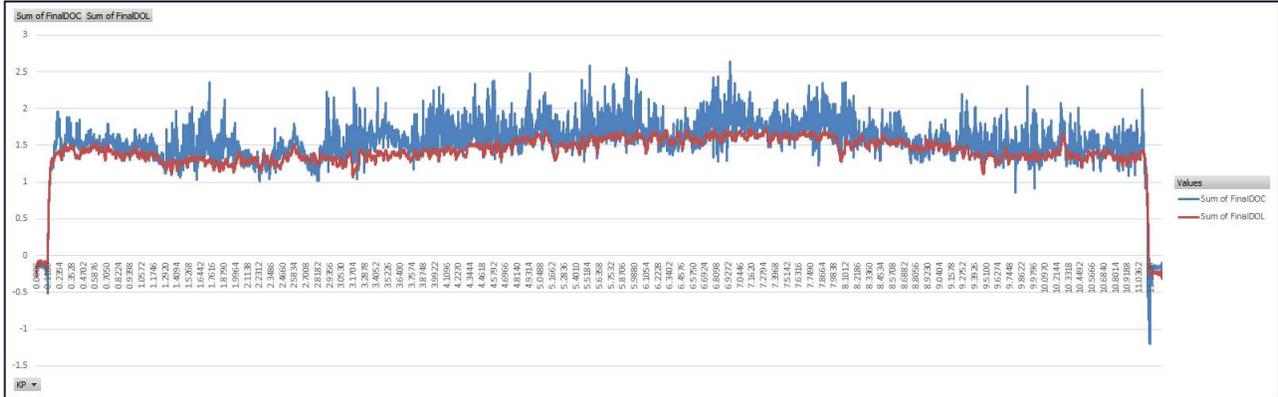
Western Isles MWA Sinker Base

APPENDIX 3 ANCHOR PILES AND CHAIN ARRANGEMENT

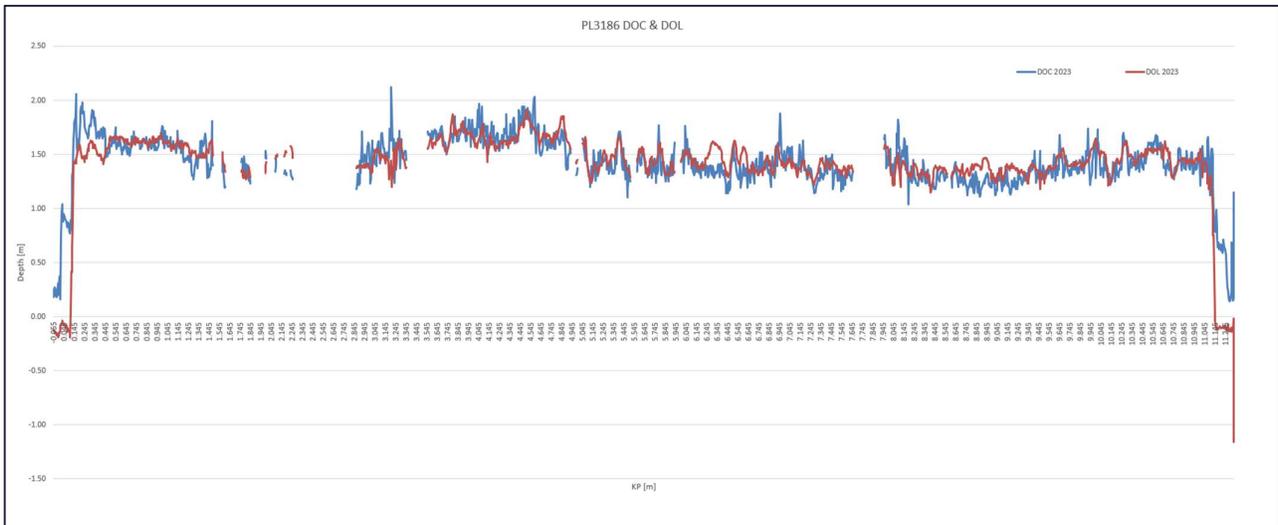


Mooring Piles and Chain Arrangement

APPENDIX 4 PL3186: DEPTH OF BURIAL PROFILE



2018 Survey Results



2023 Survey Results

Note: In areas where no Depth of Cover (DOC) or Depth of Lay (DOL) is reported for 2023, Fugro can confidently state that due to a combination of the ROV flying altitude at the time and the detection capabilities of the 440 Pipetracker system for a 6" pipeline, the pipeline is out of range and therefore must have a depth of burial of over 1 m.

APPENDIX 5 PUBLIC NOTICE

Edinburgh Gazette, 26 May 2023:

ENVIRONMENT & INFRASTRUCTURE

ENVIRONMENT & INFRASTRUCTURE

ENERGY

PUBLIC NOTICE

THE PETROLEUM ACT 1998

DECOMMISSIONING PROGRAMMES FOR THE WESTERN ISLES SUBSEA INFRASTRUCTURE

Dana Petroleum (E&P) Limited has submitted, for the consideration of the Secretary of State for Energy Security and Net Zero, Draft Decommissioning Programmes for the subsea infrastructure in the Barra and Harris Fields associated with the Western Isles floating production storage and offloading vessel in accordance with the provisions of the Petroleum Act 1998 (The Act). It is a requirement of the Act that interested parties be consulted on such proposals.

The facilities covered by the Western Isles Subsea Infrastructure Draft Decommissioning Programmes are located within UK block 210/24a in the Northern North Sea (NNS). The infrastructure lies approximately 93 km to the north-east of Shetland and 58 km from the UK / Norway median line. The proposals set out three programmes as follows:

1. Installations including leading and trailing towheads, midwater arches and gravity bases, anchor chains and bottom piles, and wellhead protection structures.
2. Subsea pipelines including the pipelines, bundles (including the pipelines carried within them), rigid tie-in spools, control jumpers and associated structures and stabilisation
3. Subsea pipelines associated with well BP7 including pipelines, spools, jumpers and associated structures and stabilisation

Dana Petroleum (E&P) Limited hereby gives notice that the Western Isles Subsea Infrastructure Draft Decommissioning Programmes are readily available on request from www.dana-petroleum.com/. To receive a paper copy, please visit Dana's offices at 62 Huntly Street, Aberdeen AB10 1RS or email stuart.wordsworth@dana-petroleum.com.

Representations regarding the draft Western Isles Subsea Infrastructure Decommissioning Programmes should be submitted in writing to Stuart Wordsworth via the email address above by the consultation closing date, 26 June 2023. Submissions should include the rationale upon which any representations are made. (4360064)