SCHIEHALLION AND LOYAL DECOMMISSIONING PROGRAMMES Phase 1

Approvals

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Revision Control

Revision No	Reference	Changes/Comments	Issue Date
Pre-Draft	Develop outline programme		17 Dec 2012
Draft 1	For consultation	Incorporate comments	28 Jan 2013
Draft 2	Post Consultation	Incorporate comments	15 Apr 2013

Distribution List

Name	Company	No of Copies

Contents

A. Table of Terms and Abbreviations

Abbreviation	Explanation
BP	BP Exploration Operating Company Limited or Britoil Limited, as the case may be and as the context requires (see paragraph 1.2)
bpd	Barrels per day
CDA	Controls Distribution Assembly
COCOT	Choke Open/Closed Operating Tool (control mechanism)
DECC	Department of Energy and Climate Change
DUTA	Dynamic Umbilical Termination Assembly
ESIA	Environmental and Societal Impact Assessment
EU	European Union
FPSO	Floating Production Storage and Offloading vessel
FTA	Flowline Termination Assembly
FTP	Fly-to-Place connector (a short pipeline placed and connected by an ROV)
JNCC	Joint Nature Conservation Committee
LOA	Length Overall
LSA	Low Specific Activity scale (scale containing radioactive material)
MCAA	Marine and Coastal Access Act 2009 (applies to the Scottish offshore region from 12-200 nautical miles; 0-12 nm is covered by the Marine (Scotland) Act 2010)
NORM	Naturally Occurring Radioactive Material
NWAD	North West Area Development
OPEP	Oil Pollution Emergency Plan
OSPAR	Oslo Paris Convention for the Protection of the Marine Environment of the North East Atlantic
PON	Petroleum Operations Notice
PWA	Pipeline Works Authorisation
RET	Riser End Termination
ROV	Remotely Operated Vehicle
SSIV	Subsea Isolation Valve
SVT	Sullom Voe Terminal
UKCS	United Kingdom Continental Shelf
UET	Umbilical End Termination
UTA	Umbilical Termination Assembly
WI	Water Injection

B. Table of Figures and Tables

C. Table of Appendices

Document Sections Comprising Joint Programme

For ease of reference the following table identifies the sections in this document covering the three decommissioning programmes that make up the joint document.

	Document Heading	Schiehallion Installations	Schiehallion Pipelines	Loyal Pipelines
Assets	Description	Floating Production, Storage and Offloading Vessel including subsea clusters and all associated subsea equipment	Flowlines, Umbilicals, Risers, Manifolds and Jumpers	Flowlines, Umbilicals, Risers, Manifolds and Jumpers
Assets	Block Numbers/Reference Numbers	204/20, 204/25a, 204/25b, 205/16, 205/21b	PWA 13/W/97	PWA 14/W/97
Applicable Sections of this Document	Executive Summary	1	1	1
Applicable Sections of this Document	Items to be Decommissioned	2.1/2.2/2.4/2.5/2.6	2.3/2.6	2.3/2.6
Applicable Sections of this Document	Removal and disposal Options	3.1/3.2/3.3/3.5/3.6/3.7	3.3/3.4/3.7	3.3/3.4/3.7
Applicable Sections of this Document	Environmental Impact Assessment	4	4	4
Applicable Sections of this Document	Interested Party consultation	5	5	5
Applicable Sections of this Document	Programme Management	6	6	6
Applicable Sections of this Document	Supporting Documents	7	7	7
Applicable Sections of this Document	Partners Letters of Support	8	8	8

1 EXECUTIVE SUMMARY

1.1 Combined Decommissioning Programmes

This document contains 3 decommissioning programmes for 1 installation (the FPSO named "Schiehallion") and 93 pipelines (being pipelines associated with either the Schiehallion or Loyal fields). There is a separate decommissioning programme for each set of associated notices served under Section 29 of the Petroleum Act 1998.

1.2 Requirement for Decommissioning Programmes

Installation:
In accordance with the Petroleum Act 1998, BP Exploration Operating Company Limited as operator of the Schiehallion FPSO, for itself and on behalf of those other Section 29 notice holders who have an ownership interest in the FPSO (see Table 1.2 and related note), is applying to the Department of Energy and Climate Change to obtain approval for decommissioning the installation detailed in Section 2 of this programme. (See also Section 8 - Partners Letters of Support).

Pipelines:
In accordance with the Petroleum Act 1998, Britoil Limited as operator of each of the Schiehallion and Loyal fields, for itself and on behalf those other Section 29 notice holders who have a licence interest in the Schiehallion and/or Loyal fields (see Table 1.4a and related note and Table 1.4b), is applying to the Department of Energy and Climate Change to obtain approval for decommissioning the pipelines associated with those fields detailed in Section 2 of this programme. (See also Section 8 – Partners Letters of Support).

BP Exploration Operating Company Limited and Britoil Limited are both companies within the BP group. References in this document to "BP" are references, as the case may be and as the context requires, to either BP Exploration Operating Company Limited or Britoil Limited.

In conjunction with public, stakeholder and regulatory consultation, the decommissioning programmes are submitted in compliance with national and international regulations and DECC guidelines. The schedule outlined in this document is for a three year decommissioning project plan due to begin in 2013.

1.3 Introduction

The Schiehallion and Loyal Fields are located in Quadrants 204/205 of the UKCS 130 km west of Shetland and 35 km east of the Faroe-UK boundary, in water depths of 300 - 550 m. The fields were developed using a Floating Production Storage and Offloading (FPSO) vessel and have produced approximately 61 million cubic metres (ca. 384 million barrels) of oil and 4.6 billion standard cubic metres (ca. 163 billion standard cubic feet) of gas from 1998 to 2009.

The Schiehallion and Loyal fields development comprises five drill centres with 54 wells, an extensive subsea infrastructure, the FPSO and a gas export pipeline to Sullom Voe Oil Terminal in the Shetland Islands. Oil is exported from the FPSO via shuttle tanker. Significant potential remains in the Schiehallion and Loyal reservoirs, but the FPSO would need to remain on station until 2045 to produce the reserves. Operating efficiency of the existing FPSO has deteriorated over the years and it would be unable to fulfil future requirements. The fields are being redeveloped as "Project Quad 204", with a new-build FPSO vessel, additional wells and expansion of the subsea infrastructure. Facilities will be re-used wherever possible, but some will need to be disconnected, isolated and remain in-situ suspended for potential future operational consideration. All facilities being reused as part of the Quad 204 redevelopment project are outwith the workscope of the three programmes.

Following public, stakeholder and regulatory consultation, the decommissioning programmes are submitted without derogation and in full compliance with DECC guidelines. The decommissioning programmes explain the principles of the removal activities and are supported by an environmental impact assessment.

1.4 Overview of Installation/Pipelines Being Decommissioned

1.4.1 Installation

Table 1.1: Installation Being Decommissioned						
Field Name	Schiehallion Loyal	**Quad/Block**	204/20a 204/25a 204/25b 205/16a 205/21b	**Number of Surface Installations**	**Currently in Place**	**Decommissioned as part of Phase 1 workscope**
					1	1
Distance from nearest UK coastline (km)	130km	**Distance to median (km)**	35km	**Number of Subsea Installations**	**Currently in Place**	**Decommissioned as part of Phase 1 workscope**
					7	0
Water depth	300-550m	**Peak Production**	200,000 bpd	**Number of wells**	**Currently in Place**	**P&A as part of Phase 1 workscope**
					54	0
Number of cuttings piles	4			**Coordinates of FPSO**	**WGS84**	
					Latitude 060°21.38'N Longitude 04°04.07'W	

Table 1.2 Installation Section 29 Notice Holders Details		
Section 29 Notice Holders	**Registration Number**	**Equity Interest (%)**
BP Exploration Operating Company Limited	305943	3.543
Britoil Limited	SC077750	32.738
Murphy Schiehallion Limited	7944011	4.843
OMV (U.K.) Limited	1504603	4.843
Shell U.K. Limited	140141	36.281
Statoil (U.K.) Limited	1285743	4.843
Schiehallion Oil & Gas Limited	FC030727	12.909
Murphy Petroleum Limited	00811102	0
Hess Limited	00807346	0

Note to Table 1.2: Murphy Petroleum Limited and Hess Limited no longer have an ownership interest in the Schiehallion FPSO.

1.4.2 Pipelines

Table 1.3: Pipelines Being Decommissioned		
Number of Pipelines/ Umbilicals Schiehallion	79	(See Table 2.3)
Number of Pipelines/ Umbilicals Loyal	14	(See Table 2.3)

Table 1.4a: Schiehallion Pipelines Section 29 Notice Holders Details		
Section 29 Notice Holders	**Registration Number**	**Equity Interest (%)**
BP Exploration Operating Company Limited	305943	4.30
Britoil Limited	SC077750	29.05
Murphy Schiehallion Limited	7944011	5.877
OMV (U.K.) Limited	1504603	5.877
Shell U.K. Limited	140141	33.35
Statoil (U.K.) Limited	1285743	5.877
Schiehallion Oil & Gas Limited	FC030727	15.669
Murphy Petroleum Limited	00811102	0
Hess Limited	00807346	0

Note to Table 1.4a: Murphy Petroleum Limited and Hess Limited no longer have a licence interest in the Schiehallion field and no longer have a corresponding ownership interest in the associated Schiehallion Pipelines.

Table 1.4b: Loyal Pipelines Section 29 Notice Holders Details		
Section 29 Notice Holders	**Registration Number**	**Equity Interest (%)**
BP Exploration Operating Company Limited	305943	0
Britoil Limited	SC077750	50
Enterprise Oil Middle East Limited	02650009	25
Shell U.K. North Atlantic Limited	04801731	25
Shell U.K. Limited	140141	0

1.5 Summary of Proposed Decommissioning Programmes

Table 1.5: Summary of Decommissioning Programmes		
Selected Option	**Reason for Selection**	**Proposed Decommissioning Solution**
1. Topsides		
Not applicable	Not applicable	Not applicable
2. Floating Facility (FPSO)		
Removal for re-use or recycling	The existing FPSO is not suitable for the long term production of the fields and is to be replaced by a new vessel.	The FPSO will be towed from the field to be prepared for intended sale for reuse.
3. Subsea Installations		
No subsea facilities are being decommissioned as part of the programmes workscope.	Not applicable	Not applicable
4. Pipelines, Flowlines & Umbilicals		
All the existing pipelines and associated facilities have been considered for reuse in the Quad 204 Project and have been selected for one of 2 options: - Reuse in situ or repositioned. - Decommissioned	The BP approach when considering the decommissioning of pipelines is: 1 Decisions will be taken in the light of individual circumstances of each pipeline. 2 The potential for use of the pipeline in connection with further hydrocarbon developments should be considered before decommissioning together with other existing projects (such as hydrocarbon storage and carbon capture and storage). If reuse is considered viable, suitable and sufficient maintenance of the pipeline shall be detailed. 3 All feasible decommissioning options should be considered and a comparative assessment made. 4 Any removal or partial removal of a pipeline should be performed in such a way as to cause no significant effects upon the environment. 5 Any decision that a pipeline may be left in place should have regard to the likely deterioration of the material involved and its present and possible future effect on the marine environment. Pipelines decommissioned in place would where possible be flushed and cleaned of hydrocarbons & chemicals. Pipelines decommissioned in place shall be subject to a suitable monitoring programme agreed with DECC in consultation with other Government Departments. 6 Account should be taken of other users of the sea.	The following decommissioning options are proposed; - Recovery. - Decommissioned in situ. Items to be recovered will be brought ashore by methods to be determined by the appointed contractors and approved by the owners. The vast majority of material brought ashore for decommissioning will be recycled; the percentage of material to be disposed of to landfill will be minimised.
5. Well Abandonment Operations		
No wells are to be plugged & abandoned as part of the decommissioning programmes workscope.	Not applicable	Not applicable
6. Drill Cuttings		
Leave in place to degrade naturally	The four cuttings piles are small, thin and widely dispersed and fall below both of the OSPAR 2006/5 thresholds	Left undisturbed on seabed
7. Interdependencies		
No interaction expected between drill cuttings and decommissioning operations		

1.6 Field Location/Layout and Adjacent Facilities

Figure 1.1: Field Location in UKCS

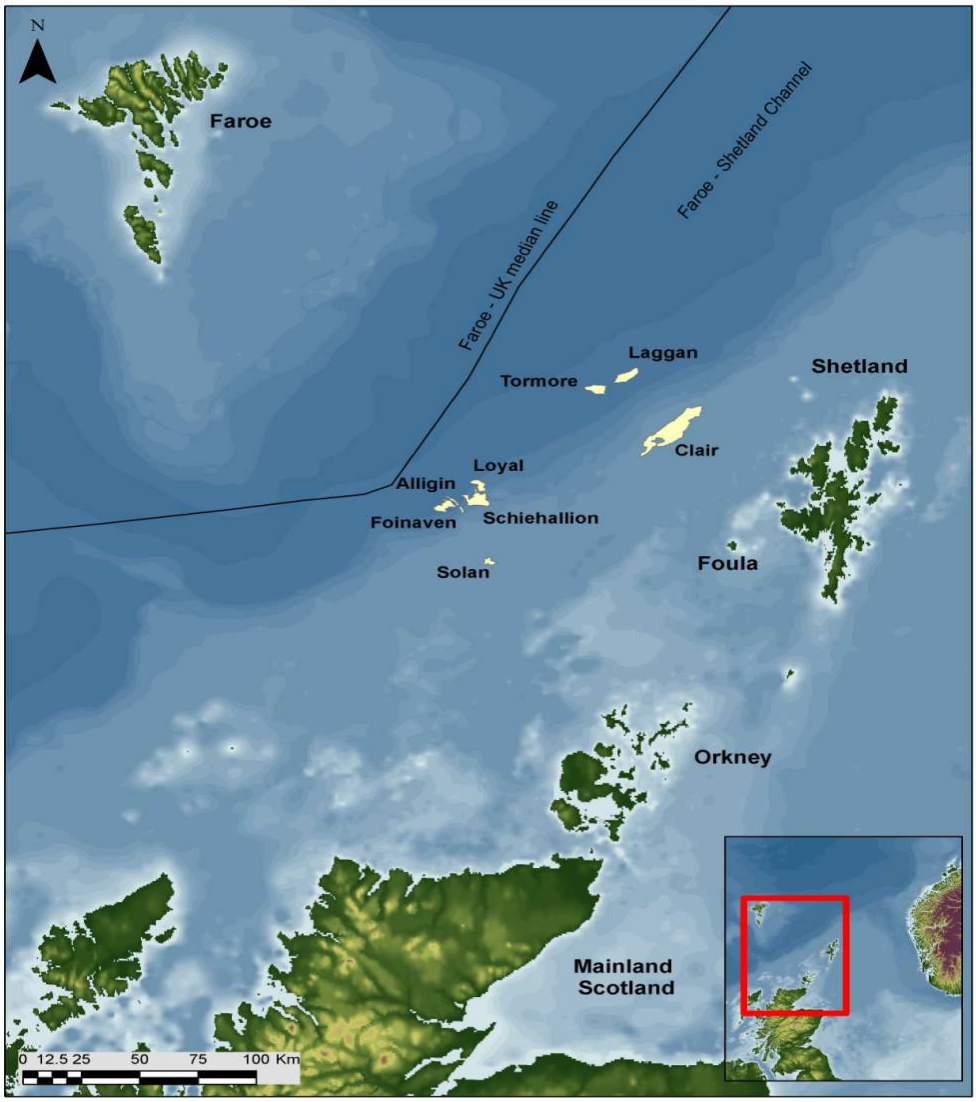


Figure 1.2: Field Layout

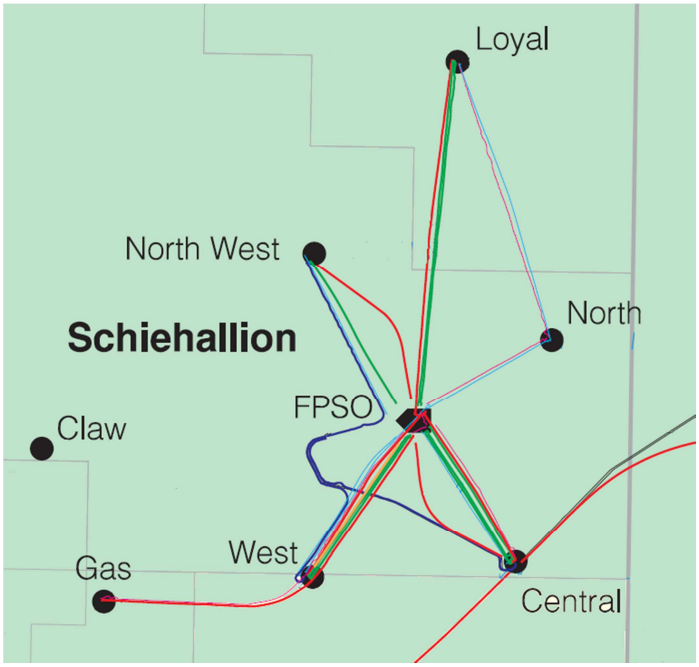
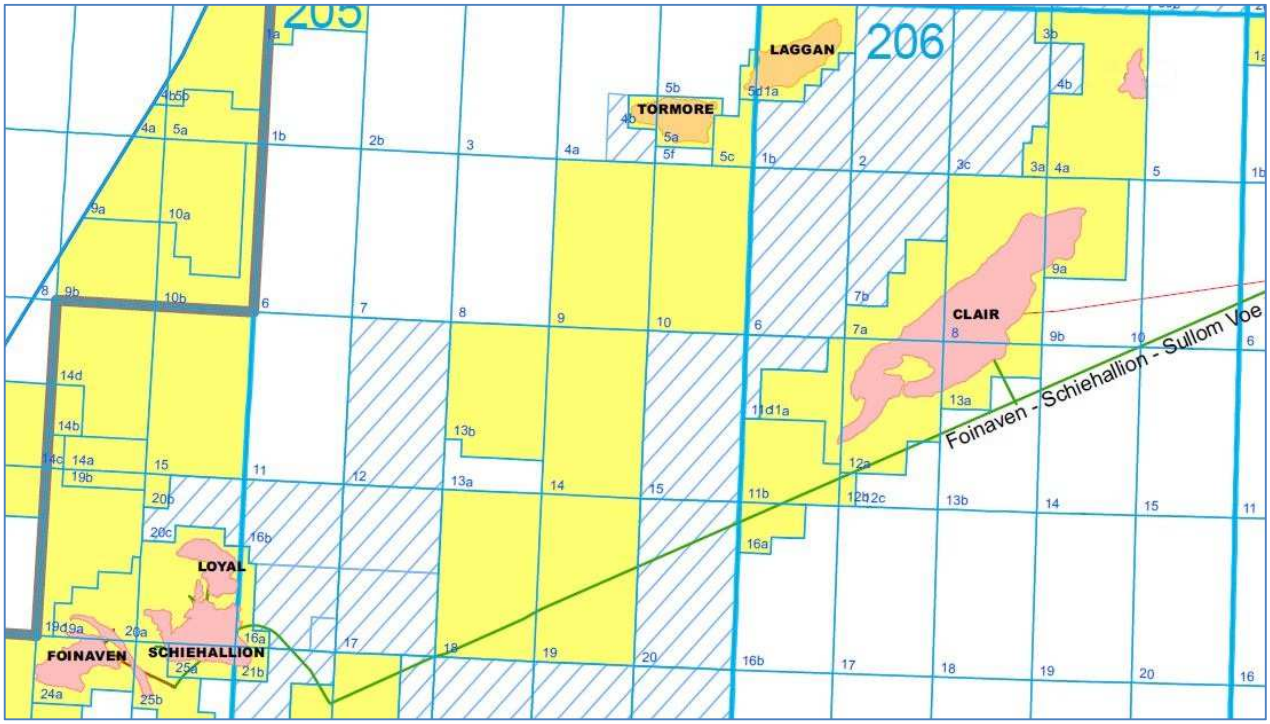


Table 1.6 List of Adjacent Facilities					
Owner	**Name**	**Type**	**Distance/Direction**	**Information**	**Status**
BP, ConocoPhillips, Chevron, Hess and Shell	Clair	Platform	50 miles North East	Oil and Gas development in blocks 206/7,8,9,12 and 15	Operational
BP, Marathon	Foinaven	FPSO	7 miles West	Oil and Gas development in blocks 204/19 and 204/24a	Operational
Total, DONG, ENI and Chevron	Laggan	Field	66 miles North East	Gas and Condensate development in block 206/1a.	Under development
Total, DONG, ENI and Chevron	Tormore	Field	56 miles North East	Gas and Condensate development in block 205/5a.	Under development

Figure 1.3: Adjacent Facilities



2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Surface Facilities

Table 2.1 FPSO/Moorings							
Name	FPSO				Moorings		
	LOA (m)	Beam (m)	Depth (m)	Deadweight (tonnes)	Anchor Legs	Anchor Type	Total Weight (tonnes)
Schiehallion FPSO	246	45	27	154,000	14	Suction	6,000

2.2 Subsea Installations and Stabilisation Features

Table 2.2: Subsea Installations and Stabilisation Features				
Subsea installations and Stabilisation Features	Number	Size/Weight (Te)	Locations	Comments/Status
Wellheads, Manifolds, Templates, Protection Frames	0	Not Applicable	Not Applicable	Not Applicable
Concrete mattresses, Grout bags, Formwork, Frond Mats, Rock Dump	0	Not Applicable	Not Applicable	Not Applicable

2.3 Pipelines/Flowlines/Umbilicals

Table 2.3: Subsea Pipelines

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
Schiehallion Pipelines									
Dynamic umbilical	PL1375/1-7	8	725	Composite Flexible	Depressurised HW540	FPSO - DUTA D1	No	Out of use	
FTP	PL1376/1-6	6	40	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO DUTA D1 - UET U11	No	Out of use	
FTP	PL1377/1-6	6	170	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO DUTA D1-CDA U61R	No	Out of use	
FTP	PL1378/1-6	6	145	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO UTA U70-CDA U61R	No	Out of use	
Static umbilical	PL1379/1-7	10	250	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO UTA U70-UET U71	No	Out of use	HW540, CI/ SI, Methanol, Aqua Glycol. All lines depressurised.
Dynamic umbilical	PL1380/1-7	8	740	Composite Flexible	HW540	FPSO-DUTA D2	No	In Service	
FTP	PL1381/1-6	4	145	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO DUTA D2-UET U71	No	Out of use	
FTP	PL1382/1-5	6	54	Composite Flexible	HW540, CI/ SI, methanol	FPSO DUTA D2-UET U51	No	In Service	
Static umbilical	PL1383/1-5	10	2382	Composite Flexible	HW540, CI/ SI, methanol	FPSO UET U51-UTA U50	No	In Service	HW540, Methanol. All lines depressurised.
Production Flowline	PL1384	10	3375	Composite Flexible	Oil	Central M1- FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
Production Flowline	PL1385	10	3305	Composite Flexible	Oil	Central M1- FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
Production Flowline	PL1386	10	3372	Composite Flexible	Oil	Central M1- FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
Production Flowline	PL1387	8	3407	Composite Flexible	Oil	Central M1- FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
Production jumper	PL1388/1-3	6/6/2	116	Composite Flexible	Oil	Central Prod Tree CP21-Manifold M1	No	In Service	
Production jumper	PL1388JCP01/1-3	6/6/2	35	Composite Flexible	Oil	Prod Tree CP01-CP21 (Production)	No	In Service	
Production jumper	PL1390JCP03/1-3	6/6/2	35	Composite Flexible	Oil	Central Manifold M1D- Tree CP03	No	In Service	
Production jumper	PL1390JCP20/1-3	6/6/2	24	Composite Flexible	Oil	Central Manifold M1D-Tree CP20	No	In Service	
Gas Lift Riser only	PL1396	8	749	Composite Flexible	Gas	FPSO Riser (Hang Off)-Central Manifold M1J	No	In Service	
WI Riser only	PL1397	10	697	Composite Flexible	Injection Water	FPSO Riser (Hang Off)-Central Manifold M2A	No	In Service	
Static umbilical	PL1402/1-5	10	2800	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO UET U11-Central UET U10	No	Out of use	HW540, CI/ SI, Methanol, Aqua Glycol. All lines depressurised.
FTP	PL1403/1-5	4	239	Composite Flexible	HW540, CI/ SI, methanol	Central UET U12-CDT C1P	No	Out of use	
FTP	PL1404/1-3	0.5/0.5/1	90	Composite Flexible	HW540, CI/ SI, methanol	Central CDT C1P (Via Basket)-Tree CP01	No	In Service	
FTP	PL1405/1-3	0.5/0.5/1	66	Composite Flexible	HW540, CI/ SI, methanol,	Central CDT C1P-CSA C1A	No	In Service	
FTP	PL1406/1-3	0.5/0.5/1	66	Composite Flexible	HW540, CI/ SI, methanol	Central CDT C1P-CSA C1D	No	In Service	.
FTP	PL1408/1-3	0.5/0.5/1	60	Composite Flexible	HW540, CI/ SI, methanol	Central CDT C1P-Tree CP05	No	Out of use	
FTP	PL1409/1-3	0.5/0.5/1	110	Composite Flexible	HW540, CI/ SI, methanol	Central CDT C1P-CSA C1B	No	In Service	
FTP	PL1410/1-3	4	82	Composite Flexible	HW540, CI/ SI, methanol	Central Tree CP08-Tree CP22	No	In Service	

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
WI Riser only	PL1412	12	777	Composite Flexible	Water	FPSO Riser (Hang Off)- North Manifold M61	No	In Service	
Production Flowline	PL1415	8	3663	Composite Flexible	Oil	West Manifold M21-FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
Production Flowline	PL1416	10	3652	Composite Flexible	Oil	West Manifold M21-FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
Static umbilical	PL1425/1-7	10	200	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO UET U61-UET U60	No	Out of use	HW540, CI/ SI, Methanol, Aqua Glycol. All lines depressurised.
Static umbilical	PL1426/1-6	10	190	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO UET U60R-UET U31	No	Out of use	HW540, CI/ SI, Methanol, Aqua Glycol. All lines depressurised.
Static umbilical	PL1427/1-6	10	2986	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO UET U31-West UTA U30	No	Out of use	HW540, CI/ SI, Methanol, Aqua Glycol. All lines depressurised.
Gas Disposal Riser only	PL1431	8	721	Composite Flexible	Gas	FPSO Riser (Hang Off)- Gas Disposal FTA F21	No	In Service	
Static umbilical	PL1434/1-2	10	3679	Composite Flexible	HW540, CI/ SI, methanol	West UTA U21-Gas Disposal UET U20	No	In Service	HW540, Methanol. All lines depressurised.
FTP	PL1435/1-2	4	82	Composite Flexible	HW540, CI/ SI, methanol	Gas Disposal UET U20-Well AG01	No	In Service	HW540, Methanol. All lines depressurised.
FTP	PL1776/1-3	4	40	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1B-Tree CP06	No	In Service	
FTP	PL1777/1-3	4	42	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1B-Tree CP07	No	In Service	
FTP	PL1780/1-3	4	60	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1A-Tree CP02	No	Out of use	
FTP	PL1781/1-3	4	70	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1A-Tree CP14	No	In Service	
FTP	PL1850.1-10	4	98	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1A-Manifold M1C	No	In Service	
Production Riser	PL1904	10	728	Flexible	Oil	FPSO RET RT81-Riser (Hang Off)	No	In Service	

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
WI Riser only	PL1982	12	725	Flexible	Water	FPSO Riser (Hang Off)- West Man M22A	No	In Service	
FTP	PL2025JWW 11/1-13	4	166	Composite Flexible	HW540	West CDA C21-Well WW16	No	In Service	
Production Flowline	PL2141	10	2990	Flexible	Oil	West M24-FPSO Riser RET RT81	No	In Service	Inhibited Injection quality Dyed Seawater
Production jumper	PL2173	6/6/2	34	Flexible	Oil	West Prod Tree WP14-Manifold M24	No	In Service	
Production Flowline	PL2245	10	3755	Flexible	Oil	NW M121-FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
FTP	PLU1406JCP 03/1-3	4	61	Composite Flexible	HW540, CI/ SI, methanol.	Central CSA C1D-Tree CP03	No	In Service	
FTP	PLU1406JCP 20/1-3	4	31	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1D-Tree CP20	No	In Service	
FTP	PLU1406JCP 21/1-3	4	60	Composite Flexible	HW540, CI/ SI, methanol	Central CSA C1D-Tree CP21	No	In Service	
FTP	PLU1889	10	255	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol. All lines depressurised.	FPSO CDA U61R-CDA U60R	No	Out of use	HW540, CI/ SI, Methanol, Aqua Glycol. All lines depressurised.
FTP	PLU2176	4	54	Composite Flexible	HW540, CI/ SI, methanol	West CDA C23-CDA C21	No	In Service	
FTP	PLU2182	2	50	Composite Flexible	HW540	West COCOT CDA C22-WW09 MARS	No	In Service	
FTP	PLU2183	2	78	Composite Flexible	HW540	West CDA C21-COCOT CDA C22	No	In Service	
Dynamic umbilical	PLU2241	12	1924	Composite Flexible	HW540	FPSO-SECU DUTA D3	No	In Service	
Static umbilical	PLU2242	10	4750	Composite Flexible	HW540, CI/ SI, methanol	SECU DUTA D3-Central UET U12	No	In Service	HW540, Methanol. All lines depressurised.
Central UTA U15	PLU2249	NA	NA	Steel	HW540, CI/ SI, methanol	Central UTA U15 (Installed)	No	Part installed	HW540, Methanol. All lines depressurised.

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
FTP	PLU2254	4	TBD	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	NW CDA C123-CDA C122	No	In Service	
FTP	PLU2258	4	152	Composite Flexible	Depressurised HW540	NW Well FW11-Manifold M121	No	Out of use	Depressurised HW540
FTP	PLU2260	4	104	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	Central UET U12-CDT C1P	No	In Service	
FTP	PLU2261	4	30	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	Central UET U12-CDT C1P	No	In Service	
FTP	PLU2270	3	145	Composite Flexible	HW540	Central CDT C1P-Well CW11	No	In Service	
FTP	PLU2278	3	90	Composite Flexible	HW540	West CDA C23-Well WW06	No	In Service	
FTP	PLU2279	3	147	Composite Flexible	HW540	West CDA C23-Well WW08	No	In Service	
FTP	PLU2280	3	200	Composite Flexible	HW540	Central CDT C1P-Well CW10	No	In Service	
FTP	PLU2282	4	164	Composite Flexible	HW540	Central CDT C1P-Well CW17	No	In Service	
FTP	PLU2420	4	60	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	Central CSA C1A-Well CP23	No	In Service	
FTP	PLU2503	4	30	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	West UTA U23-UET U21	No	In Service	
FTP	PLU2734	4	135	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	Central UET U12-CDT C1P	No	In Service	
FTP	PLU2844	4	146	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	Central C1D-Manifold M1J	No	In Service	
FTP	PLU3059	3	130	Composite Flexible	HW540	West Tree WW06-Tree WW05	No	In Service	
FTP	PLU3061	4	89	Composite Flexible	HW540	West Tree WW08-Tree WW10	No	In Service	

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
FTP	PLU3062	3	79	Composite Flexible	HW540	North UTA U50-Tree NW01	No	In Service	
FTP	PLU3065	4	68	Composite Flexible	HW540	Central Tree CW17-Tree CW18	No	In Service	
FTP	PLU3068	4	280	Composite Flexible	HW540	CSA C1A-Tree CW15	No	In Service	
FTP	PLU3070	3	145	Composite Flexible	Depressurised HW540	Central CDT C1-Tree CW11	No	Out of use	Depressurised HW540
FTP	PLU3072	2	170	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	DUTA D1-DUTA D1	No	In Service	
FTP	FEPA Exempt 1		170	Composite Flexible		D1-U61R		Out of use	
FTP	FEPA Exempt 2		145	Composite Flexible		C1-Laydown location		Out of use	
Loyal Field Pipelines									
Production flowline and riser	PL1360	10	6586	Composite Flexible	Oil	Production Manifold M41-FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
Production flowline and riser	PL1361	8	6555	Composite Flexible	Oil	Production Manifold M41-FPSO Riser (Hang Off)	No	In Service	Inhibited Injection quality Dyed Seawater
FTP	PL1370/1-5	6	89	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	North UTA U50-UET U41	No	In Service	
Static umbilical	PL1371/1-5	10	4812	Composite Flexible	HW540, CI/ SI, methanol	North UET U41-Loyal UUTA UNIV	No	In Service	HW540, CI/SI, Methanol. All lines depressurised.
FTP	PL1372/1-3	4	130	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	UUTA UNIV-Tree LP01	No	In Service	
FTP	PL1373/1-3	4	90	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	UUTA UNIV-Tree LP02	No	In Service	

Description	Pipeline No.	Dia (ins)	Length (m)	Composition	Contents (initial)	From – To	Trench	Status	Contents (final)
FTP	PL1374/1-3	4	88	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	UUTA UNIV-Tree LP03	No	In Service	
FTP	PL2018.1-9 (JLP07)	4	138	Composite Flexible	HW540, CI/ SI, methanol, Spare lines filled with Aqua Glycol.	UUTA UNIV-Tree LP07	No	In Service	
FTP	PL2019.1-6 (JLW10)	4	120	Composite Flexible	HW540	UUTA UNIV-Tree LW10	No	In Service	
WI jumper	PL2020(JLW 10)	6	82	Composite Flexible	HW540	Loyal manifold M42-Tree LW10	No	In Service	
FTP	PLU2059	2	125	Composite Flexible	HW540	Loyal Tree LP07-Tree LW04	No	In Service	
FTP	PLU2934	2	73	Composite Flexible	HW540, CI/ SI, methanol	Loyal Tree LP03-Manifold M41	No	Out of use	HW540, Methanol. All lines depressurised.
FTP	PLU3053	3	94	Composite Flexible	HW540	UUTA UNIV-Tree LW04	No	In Service	
FTP	PLU3055	3	68	Composite Flexible	HW540	Loyal Tree LW04-Tree LW06	No	In Service	

Table 2.4: Subsea Pipeline Stabilisation Features					
Stabilisation Feature	**Number**	**Weight (Te)**	**Location**	**Size**	**Comments/Status**
Concrete mattresses / flexiweights	115	4 Tonne each estimate	FPSO, FPSO-West, West, NWAD & Central	6m x3m x0.15m est.	It is not proposed to remove any of the existing stabilisation features. Mattresses are remaining in place to maintain integrity of lines associated with them. The mattresses provide protection by separating the lines and preventing possible damage due to relative movement between the lines. At the location where PL2141 crosses PL1982 there are 3 associated separation mattresses. Both pipeline jumpers are to be recovered and it is necessary to reposition the mattresses on the seabed. It is not planned to recover these items during phase 1 decommissioning as this would pose a potential risk to other infrastructure.
Grout bags	570 estimated		At all 5 drill centres	0.6m x 0.3m dia.	The grout bags are associated with the FTP locations were they are protecting, supporting or maintaining the stability of these items in close proximity to the manifolds and trees. It is not planned to recover these items during phase 1 decommissioning as this would pose a potential risk to other infrastructure.
Formwork	None	None	None		
Frond Mats	None	None	None		
Rock Dump	None	None	None		

2.4 Wells

No wells are being plugged & abandoned as part of the decommissioning phase 1 workscope.

Table 2.5 Well Information			
Platform Wells	**Designation**	**Status**	**Category of Well (as per OGUK guidelines: Group 1-5)**
Not Applicable			
Subsea Wells			
None to be P&A			

2.5 Drill Cuttings

(See Section 3.6 for further information)

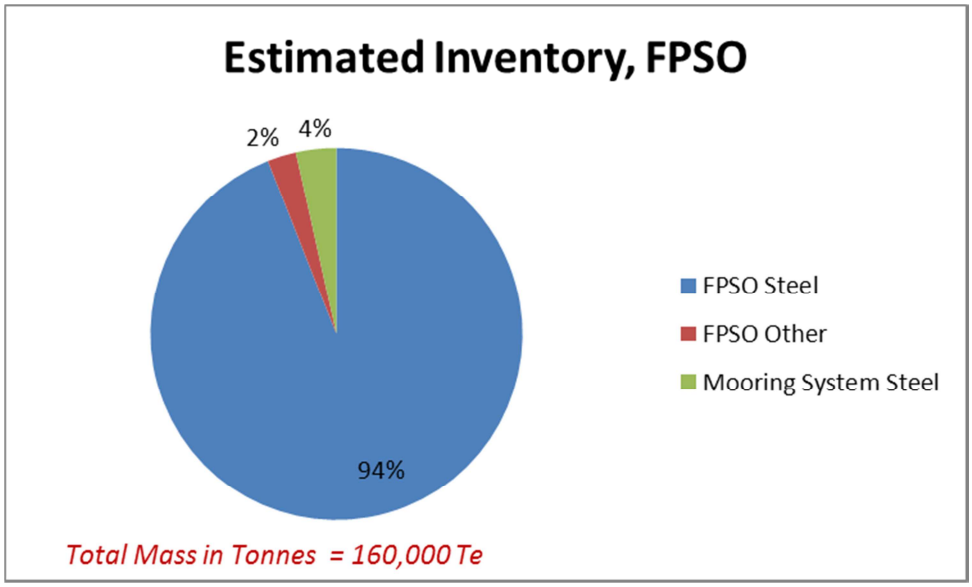
Removal of the FPSO will not impact on the drill cuttings piles.

Table 2.6 below shows the calculated Schiehallion cuttings piles based on historic seabed surveys and drilling activities.

Table 2.6: Drill Cuttings Piles Information		
Location of Pile Centre (Latitude/Longitude)	**Seabed Area (m^2)**	**Estimated volume of cuttings (m^3)**
Schiehallion Central	8371	11352
Schiehallion West	6731	7224
Schiehallion North	4476	1548
Loyal	5501	4128

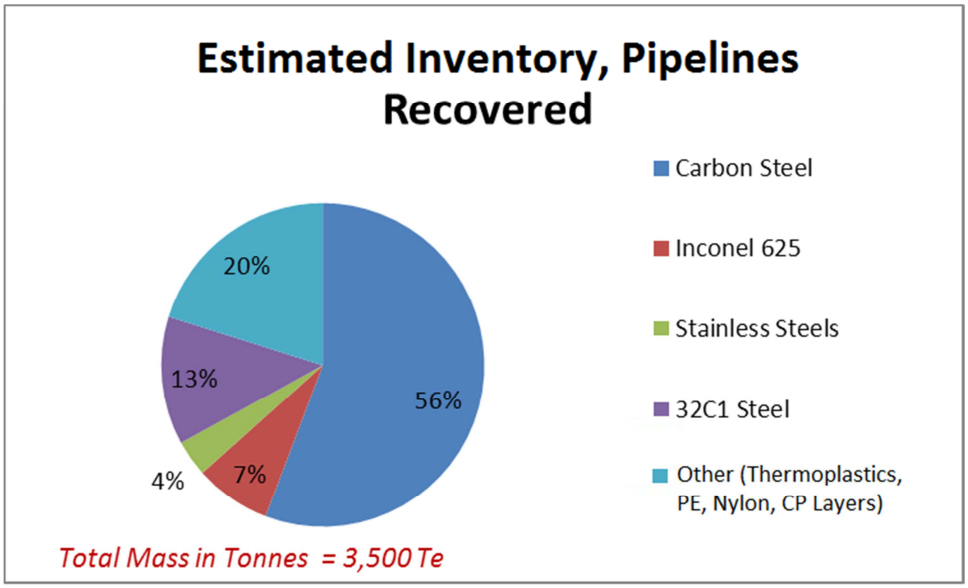
2.6 Inventory Estimates

Figure 2.1: Pie Chart of Estimated Inventories FPSO



No NORM/Hazardous Waste is anticipated – refer to ESIA.

Figure 2.2: Pie Chart of Estimated Inventory Pipelines



No NORM/Hazardous Waste is anticipated – refer to ESIA.

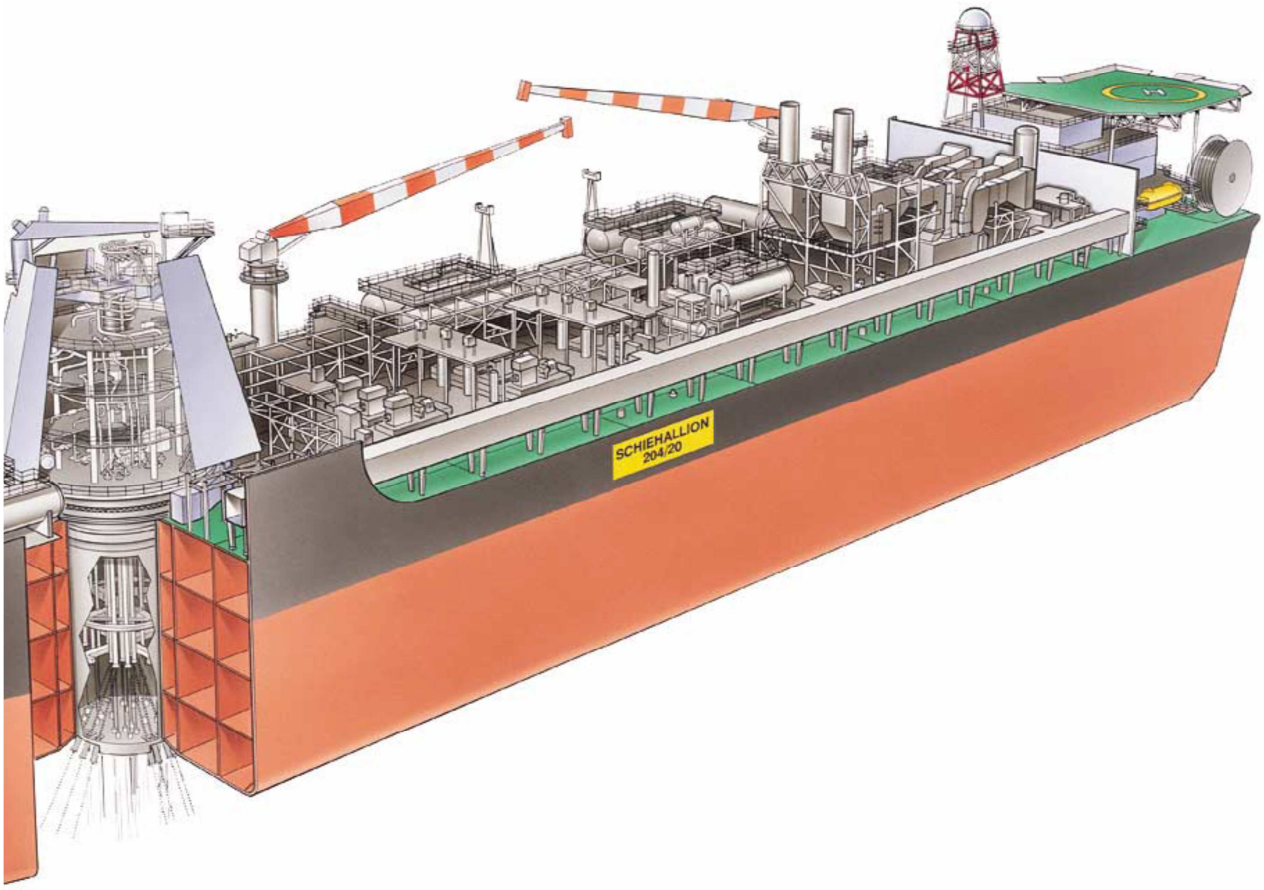
3. REMOVAL AND DISPOSAL METHODS

BP will implement a Waste Management Plan developed to identify, quantify (where possible) and discuss available disposal options for waste resulting from the decommissioning activities. The plan will be used to determine the fate of recovered structures and their contents.
Where possible, materials will be sold and reused, or recycled. Waste management options will take account of the waste hierarchy, with reduction in volume of waste being the preferred option. Existing waste disposal routes and contractors will be used where possible. Refer to the ESIA which supports the decommissioning programmes.

3.1 FPSO

FPSO Description: The Schiehallion vessel was purpose-built in 1998 for the harsh environment west of Shetland in 425 meters of water and combines oil and gas processing facilities with oil storage capability. The vessel has a top mounted internal turret, 15 risers, 3 dynamic umbilicals and 14 mooring lines to 14 suction anchors. The vessel weathervanes around the turret under the influence of wind, waves and currents with thruster assistance to aid station keeping. The flexible risers carrying the oil and gas, the anchor lines and control umbilicals all reach the surface inside the turret.

Figure 3.1: Diagram of FPSO



Preparation/Cleaning:

Table 3.1: Cleaning and Preparation of FPSO for Removal		
Waste Type	**Comprising**	**Disposal Route**
Onboard hydrocarbons	Process fluids	The topsides will be depressurised, flushed, drained and filled with water and nitrogen to make them safe. The crude oil tanks will be emptied over 4 – 5 weeks. The fluids will be offloaded to the shuttle tanker for disposal at SVT.
Other hazardous materials	Radioactive material, instruments containing heavy metals, batteries	During decommissioning, the topsides will be monitored for the presence of LSA/NORM, however containment will not be broken. NORM has not previously been present. In the unlikely event that LSA/NORM is detected, the FPSO has authorisation under the Radioactive Substances Act 1993 to allow it to dispose of the contamination offshore. Material which is part of the ship's equipment and stores will remain onboard and will be recorded under the Inventory of Hazardous Materials.
Original paint coating	Paint	Will remain as is for vessel tow away.
Asbestos	The vessel is asbestos free and this will be further confirmed as part of preparatory works	Will remain as is for vessel tow away.
Mooring lines	Chain and wire	Cut and laid on the seabed before being recovered and brought ashore.
Suction anchors moorings	Steel	To be left in place as removal could impact on the integrity of the new mooring system.
Riser piles	Steel	To be cut or piled one metre below seabed.
Riser suction anchors	Steel	To be removed by reverse installation.

Removal Methods:

Table 3.2: FPSO Removal Methods	
Method	**Description**
Disconnect & Tow	The vessel will be disconnected from risers, umbilicals and moorings and the topsides made safe for tow away and preparation for intended sale for re-use.

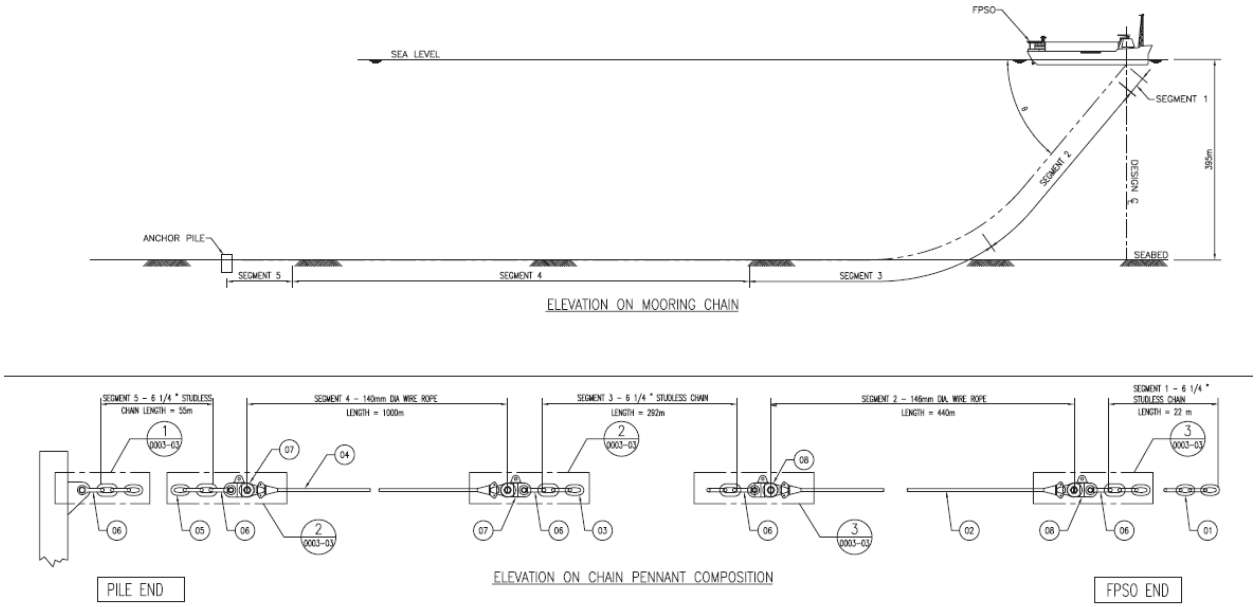
3.2 Mooring System

3.2.1 Mooring System Decommissioning Overview

There are 14 mooring lines arranged in four bundles securing the Schiehallion in position: two bundles contain three lines each and two bundles contain four lines each. The lines are approximately 1.8 km in length and are anchored to the seabed using suction anchors.

The suction anchors are approximately 3 m in diameter and 10 m in height with 1.5 m protruding above the seabed. The mooring lines are secured to the anchors by a chain that is fastened to a point near the base of the anchor beneath the seabed, and the chain then emerges from the seabed around 8 m from the anchor and continues on the seabed towards the FPSO.

Figure 3.2: Mooring Leg Elevation



3.2.2 Mooring System Removal Methods

Table 3.3: Mooring System Decommissioning Methods	
Method	**Description**
Recover all chains and wires for re-use or disposal. Anchor suction piles to remain	All mooring system chains, wires and ancillary gear will be recovered for re-use or recycling. The mooring suction anchors will be left in place as removal could impact on the integrity of the new mooring system in the near vicinity. The seabed soils may become unstable and impact the effectiveness of the new mooring piles located slightly further out from the existing piles. The length of chain connecting the existing mooring piles to the ground wire will be cut as close as is practical to the pile. The mooring suction piles will remain in situ as part of Phase 1 decommissioning workscope and removal will be addressed at end of field life.

3.3 Subsea Installations and Stabilisation Features

Table 3.4: Subsea Installation and Stabilisation Features Decommissioning		
Subsea installations and stabilisation features	**Option**	**Disposal Route (if applicable)**
Wellheads, Manifolds, Templates, Protection Frames	None	Not Applicable
Concrete mattresses, Grout bags, Formwork, Frond Mats, Rock Dump	None	Not Applicable

3.4 Pipelines/Flowlines/Umbilicals

Decommissioning Options:

1) Leave in place in Phase 1 2) Recover in Phase 1 3) Partial recovery in Phase 1

Table 3.5: Pipeline or Pipeline Groups/Decommissioning Options		
Pipeline or Group (as per PWA)	**Characteristics of the pipeline group**	**Decommissioning Options considered**
PL1384, PL1385, PL1386, PL1387, PL1388/1-3, PL1388JCP01/1-3, PL1390JCP03/1-3, PL1390JCP20/1-3, PL1415, PL1416, PL1904, PL2141, PL2173, PL2245, PL1360, PL1361,	Production	1, 2 and 3
PL1397, PL1412, PL1982, PL2020(JLW10)	Water Injection	1, 2 and 3
PL1396, PL1431	Gas	1, 2 and 3
PL1375/1-7, PL1376/1-6, PL1377/1-6, PL1378/1-6, PL1379/1-7, PL1380/1-7, PL1381/1-6, PL1382/1-5, PL1383/1-5, PL1402/1-5, PL1403/1-5, PL1404/1-3, PL1405/1-3, PL1406/1-3, PL1408/1-3, PL1409/1-3, PL1410/1-3, PL1425/1-7, PL1426/1-6, PL1427/1-6, PL1434/1-2, PL1435/1-2, PL1776/1-3, PL1777/1-3, PL1780/1-3, PL1781/1-3, PL1850.1-10, PL2025JWW11/1-13, PLU1406JCP03/1-3, PLU1406JCP20/1-3, PLU1406JCP21/1-3, PLU1889, PLU2176, PLU2182, PLU2183, PLU2241, PLU2242, PLU2254, PLU2258, PLU2260, PLU2261, PLU2270, PLU2278, PLU2279, PLU2280, PLU2282, PLU2420, PLU2503, PLU2734, PLU2844, PLU3059, PLU3061, PLU3062, PLU3065, PLU3068, PLU3070, PLU2249, PLU3072, PL1370/1-5, PL1371/1-5, PL1372/1-3, PL1373/1-3, PL1374/1-3, PL2018.1-9 (JLP07), PL2019.1-6 (JLW10), PLU2059, PLU2934, PLU3053, PLU3055, FEPA Exempt 1, FEPA Exempt 2	Controls	1, 2 and 3

Comparative Assessment Method: A Comparative Assessment Workshop was held on the 11th December 2012 at which the options for treatment of the pipelines and their associated equipment were assessed against safety, environmental, technical, societal, legislative and commercial criteria. Options were grouped by subsea system and assessed by a qualitative approach, recognising that the overall project objective is redevelopment of the fields.

Outcome of Comparative Assessment: The report of the workshop is a supporting document referenced in Table 7.1 and the outcome is summarised within Table 3.6 below.

1) Leave in place in Phase 1 2) Recover in Phase 1 3) Partial recovery in Phase 1

Table 3.6: Outcomes of Comparative Assessment

Pipeline or Group (as per PWA)	Recommended Option*	Justification
Production		
PL1388/1-3, PL1388JCP01/1-3, PL1390JCP03/1-3, PL1390JCP20/1-3, PL1904, PL2173,	2	Best Option
PL1384, PL1385, PL1386, PL1387, PL1415, PL1416, PL2245, PL1360, PL1361, PL2141 Jumpers recovered PL1384, PL1385, PL1386, PL1387, PL1415, PL1416, PL2245, PL1360, PL1361, PL2141. Risers recovered PL1384, PL1385, PL1386, PL1387, PL1415, PL1416, PL2245, PL1360, PL1361. Flowlines left in place in Phase 1 PL1384, PL1385, PL1386, PL1387, PL1415, PL1416, PL2245, PL1360, PL1361, PL2141.	3	Best Option
Water Injection		
PL1397, PL1412, PL1982, PL2020(JLW10)	2	Best Option
Gas		
PL1396, PL1431	2	Best Option
Controls		
PL1375/1-7, PL1376/1-6, PL1377/1-6, PL1378/1-6, PL1380/1-7, PL1381/1-6, PL1382/1-5, PL1403/1-5, PL1404/1-3, PL1405/1-3, PL1406/1-3, PL1408/1-3, PL1409/1-3, PL1410/1-3, PL1776/1-3, PL1777/1-3, PL1780/1-3, PL1781/1-3, PL1850.1-10, PL2025JWW11/1-13, PLU1406JCP03/1-3, PLU1406JCP20/1-3, PLU1406JCP21/1-3, PLU2176, PLU2182, PLU2183, PLU2241, PLU2254, PLU2260, PLU2261, PLU2270, PLU2278, PLU2279, PLU2280, PLU2282, PLU2420, PLU2503, PLU2734, PLU2844, PLU3059, PLU3061, PLU3062, PLU3065, PLU3068, PLU3072, PL1370/1-5, PL1372/1-3, PL1373/1-3, PL1374/1-3, PL2018.1-9 (JLP07), PL2019.1-6 (JLW10), PLU2059, PLU3053, PLU3055, FEPA Exempt 1, FEPA Exempt 2	2	Best Option
PL1379/1-7, PL1383/1-5, PL1402/1-5, PL1425/1-7, PL1426/1-6, PL1427/1-6, PL1434/1-2, PL1435/1-2, PLU1889, PLU2242, PLU2258, PLU3070, PLU2249, PL1371/1-5, PLU2934,	1	Best Option

3.5 Wells

Table 3.7: Well Plug and Abandonment
The wells on both fields will be re-used in the Q204 project. They will be shut-in during the field suspension by closure of the all valves. No wells will be plugged and abandoned as part of the current decommissioning activity. Well isolation will be controlled from the FPSO and will involve closing the appropriate valves within the trees and subsurface. Following the shut off of the gas lift at each well, the production rate will decline. The valves at each production well will then be closed. The integrity of the valves will be tested by maintaining pressure and checking that the valves restrict the passage of hydrocarbons. Blind seal plates will be installed at the ends of the production jumpers attached to the wells to isolate the hydrocarbons from the flow lines. This will be carried out by a remotely operated vehicle (ROV) operated from a vessel. A PON5/PON15/MCAA Application will be submitted as appropriate in support of any work that is to be carried out.

3.6 Drill Cuttings

Drill Cuttings Decommissioning Options: The presence of cuttings piles could not be detected at any of the drill centres using bathymetry, but side scan sonar surveys have indicated dispersed cuttings on the surface of the seabed. These indications were used by Aquatera on behalf of BP, to calculate values for comparison with the thresholds in OSPAR Recommendation 2006/5.

Table 3.8 Drill Cuttings Decommissioning Options
How many drill cuttings piles are present? 4 Review of Pile characteristics: **Pile 1** Schiehallion Central How has the cuttings pile been screened? desktop exercise Dates of sampling (if applicable) Not Applicable Sampling to be included in pre-decommissioning survey? No Does it fall below both OSPAR thresholds? Yes Will the drill cuttings pile have to be displaced in order to remove the installation? No What quantity would have to be displaced / removed? None m^3 Have you carried out a Comparative Assessment of options for the Cuttings Pile? No Tick options examined for this pile: 1) Remove and re-inject ☐ 2) Remove and treat onshore ☐ 3) Remove and treat offshore ☐ 4) Relocate on seabed ☐ 5) Cover ☐ 6) Leave in place ☑ 7) Other ☐

Pile 2 Schiehallion West

How has the cuttings pile been screened? desktop exercise

Dates of sampling (if applicable) Not Applicable

Sampling to be included in pre-decommissioning survey? No

Does it fall below both OSPAR thresholds? Yes

Will the drill cuttings pile have to be displaced in order to remove the installation? No

What quantity would have to be displaced / removed? None m^3

Have you carried out a Comparative Assessment of options for the Cuttings Pile? No

Tick options examined for this pile:

1) Remove and re-inject ☐ 2) Remove and treat onshore ☐ 3) Remove and treat offshore ☐

4) Relocate on seabed ☐ 5) Cover ☐ 6) Leave in place ☑ 7) Other ☐

Pile 3 Schiehallion North

How has the cuttings pile been screened? desktop exercise

Dates of sampling (if applicable) Not Applicable

Sampling to be included in pre-decommissioning survey? No

Does it fall below both OSPAR thresholds? Yes

Will the drill cuttings pile have to be displaced in order to remove the installation? No

What quantity would have to be displaced / removed? None m^3

Have you carried out a Comparative Assessment of options for the Cuttings Pile? No

Tick options examined for this pile:

1) Remove and re-inject ☐ 2) Remove and treat onshore ☐ 3) Remove and treat offshore ☐

4) Relocate on seabed ☐ 5) Cover ☐ 6) Leave in place ☑ 7) Other ☐

Pile 4 Loyal

How has the cuttings pile been screened? desktop exercise

Dates of sampling (if applicable) Not Applicable

Sampling to be included in pre-decommissioning survey? No

Does it fall below both OSPAR thresholds? Yes

Will the drill cuttings pile have to be displaced in order to remove the installation? No

What quantity would have to be displaced / removed? None m^3

Have you carried out a Comparative Assessment of options for the Cuttings Pile? No

Tick options examined for this pile:

1) Remove and re-inject ☐ 2) Remove and treat onshore ☐ 3) Remove and treat offshore ☐

4) Relocate on seabed ☐ 5) Cover ☐ 6) Leave in place ☑ 7) Other ☐

3.7 Waste Streams

Table 3.9: Waste Stream Management Methods	
Waste Stream	**Removal and Disposal method**
Bulk liquids	The subsea infrastructure will be de-oiled and flushed with injection water and then chemicals to inhibit deterioration. The FPSO topsides will be flushed to make them safe Cargo tanks will be washed to remove as much cargo residue as possible. The cargo and slop tanks will subsequently be emptied and made gas free. Around 6000 tonnes of fluid waste will be offloaded to the Loch Rannoch shuttle tanker and transferred to Sullom Voe for disposal. Some 15,000 to 20,000 tonnes of seawater will be loaded into the cargo tanks to manage the differential pressure on transverse bulkheads. This water will need to be offloaded in port and disposed in accordance with local requirements. Vessel stores such as paint may be offloaded and brought ashore before tow away, but treatment of stores and other vessel inventory will depend on the FPSO disposal arrangements.
Marine growth	Growth on the risers will be removed offshore as far as possible; any remaining growth will be removed when the risers are taken on shore for recycling or disposal.
NORM/LSA Scale	Increased monitoring and sampling is being carried out to verify the absence of NORM. If found in the FPSO or pipelines, it will be treated in accordance with relevant regulations and circumstances.
Asbestos	The vessel is asbestos free and this will be confirmed as part of preparatory works with action taken if necessary (as for other hazardous wastes).
Other hazardous wastes	BP has commissioned an independent survey of the FPSO to provide an Inventory of Hazardous Materials in line with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. The Inventory will be supplied to future owners and/or relevant port authorities as required and to support any applications for approval of transfrontier shipment of waste.
Onshore Dismantling sites	The FPSO may be sold and the delivery point may be at the field, in transit or at an interim port, depending upon disposal arrangements. If taken to an interim port for further preparation for intended sale, BP will ensure that appropriate facilities are available and will comply with relevant waste management legislation in the period up to completion of the intended sale. If applicable BP will apply for Transfrontier Shipment of Waste permits in respect of any periods during which the FPSO continues to be owned by BP and the other Schiehallion and Loyal field owners. The vast majority of recovered subsea facilities and pipelines will be recycled and any waste will be handled under a waste management strategy which is being developed by BP

Table 3.10 Inventory Disposition			
	Total Inventory Tonnage	Planned tonnage to shore	Planned left *in situ*
Installations	160,000 Te	157,500 Te	2,500 Te
Pipelines	12,500 Te	3,500 Te	9,000 Te

It is BP's aspiration to re-use or re-cycle more than 95% of recovered inventory.

4 ENVIRONMENTAL IMPACT ASSESSMENT

4.1 Environmental Sensitivities

The Environmental & Societal Impact Assessment is a supporting document.

Table 4.1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
Conservation interests	The area west of Shetland has a complex and productive ecosystem which supports important fish, seabird and marine mammal populations. No designated offshore conservation sites under Annex 1 of the European Union Habitats & Species Directive are present in the area of the Schiehallion and Loyal fields.
Seabed	Benthic communities vary in species richness and abundance across the development area, with this variation likely to be driven by the variation in sediment type, seabed features, depth and temperature associated with the area.
Fish	From fish landings data it is evident a number of commercially important fish species occur in the area of the development including saithe, hake, megrim, monkfish and cod. Pelagic shark species expected to occur in the area include the porbeagle and the basking shark. The International Union for Conservation of Nature status of both these shark species in the northwest Atlantic is given as vulnerable.
Fisheries	The Schiehallion and Loyal fields are in an area of relatively low fishing effort, in terms of days at sea representing less than 0.2% of the total reported UK fishing effort by UK vessels over 10m. The area is predominantly targeted for demersal species such as saithe, cod and monkfish.
Marine Mammals	The most abundant cetacean in the deeper water beyond the continental shelf area to the west of Shetland is the Atlantic white-sided dolphin. The Faroe-Shetland Channel contains a number of species that are rare or endangered including the blue whale and right whale. Low densities of grey seals have been observed in the area of the development with higher densities possibly associated with periods of migration between their breeding sites in Faroe and Shetland. Hooded seals have been recorded in deep waters over the Faroe-Shetland Channel and may therefore occur in the area of the Schiehallion and Loyal fields. Both these species are protected under the EC Habitats and Species Directive.
Birds	Seabird vulnerability to surface pollution in the area of the Schiehallion and Loyal fields varies throughout the year and is considered low overall. Based on foraging distances, bird species expected to be found in the area of the Schiehallion and Loyal fields include Leach's petrel, great skua, lesser black-backed gull, kittiwake, guillemot, razorbill, manx shearwater, puffin, gannet and fulmar.
Onshore Communities	The impact to onshore communities is considered low. Any recovered material returned onshore will utilise existing waste disposal routes, contractors and licensed sites, which will have had to minimise and mitigate any potential impacts to the local onshore communities as part of the permitry under Pollution Prevention and Control and Waste legislation.

	The only other potential impact to onshore communities, would be as a result of an accidental event (hydrocarbon release) potentially reaching the shoreline, however the risks from these activities are not changed from those already present and managed during routine operations, and the implementation of emergency responses as detailed in the Schiehallion OPEP (Oil Pollution Emergency Plan) reduces the risk to insignificant. When the Schiehallion FPSO leaves the field, OPEP duties will transfer to the guard vessel. The hydrocarbon inventory on the FPSO will be minimised for disconnection and tow.
Other Users of the Sea	Shipping in the area is also considered low (DECC, 2012) and tends to be primarily associated with vessels going between the Schiehallion FPSO and the Sullom Voe Oil Terminal. Other oil and gas activities in the area include the Foinaven and Clair fields while offshore operations have begun at the Laggan and Tormore fields. There is no military activity, renewable or aggregate industries or tourism associated with the area.
Atmosphere	Overall the Atmospheric Emissions from flaring, power generation and other vessels over the period of the decommissioning and preparatory activities can be considered to be relatively low. Emissions from venting are relatively higher, however, given that this is primarily associated with purging of the topsides over a short period and therefore a one off activity required for safe movement of the vessel, the impacts are not considered to be significant.

4.2 Potential Environmental Impacts and their Management

Environmental Impact Assessment Summary:

Overview: None of the planned activities associated with the Decommissioning Programmes were found to have a significant impact on the physical, biological or socio-economic environment in the area. Accidental events resulting in the loss of well control, leaks from flowlines or loss of diesel inventory whilst the FPSO is under tow were found to have a significant impact prior to the identification and implementation of mitigation measures to control such events, but these risks are no different to those faced and managed in routine operation of the fields.
Cumulative and transboundary impacts of planned events were also found to be insignificant and any transboundary impacts are no different to routine operation of the fields.
There will be no planned use of explosives during these activities, but it is recognised that appropriate permits will be required and JNCC guidelines will need to be taken into account if circumstances cause this plan to change.

Table 4.2: Environmental Impact Management

Activity	Main Impacts	Management
Topsides Removal	Not Applicable	Not Applicable
Floating Facility Removal	Planned Activities – no significant impacts Accidental Impacts i.e. - loss of diesel inventory during tow could be significant Cumulative and transboundary impacts of planned events were not considered significant	In addition to routine environmental management activities, for example, contractor vessel audits and legal requirements to report discharges and emissions; BP will put in place the following mitigation measures to minimise the impact of the decommissioning activities: The installation of a new temporary generator to supply power when the main generators are shut down will reduce emissions. The FPSO will be towed gross hydrocarbon free and minimum volumes of stabilising fluids are to be used in the cargo tanks whilst towing. In addition, the FPSO will be towed with only half its diesel capacity on board. BP has applied to HSE for 500m safety zones to cover the subsea installations whilst there is no FPSO on station and the presence of the standby vessel shared with the Foinaven field and the contractor vessels working on redevelopment and decommissioning will discourage non-project shipping.

Subsea Installations Removal	Not Applicable	Not Applicable
Decommissioning Pipelines	Planned Activities – no significant impacts Accidental Impacts i.e. – loss of well control - leaks from flowlines could be significant Cumulative and transboundary impacts of planned events were not considered significant	In addition to routine environmental management activities, for example, contractor vessel audits and legal requirements to report discharges and emissions; BP will put in place the following mitigation measures to minimise the impact of the decommissioning activities: Increased routine well monitoring. In addition, increased ROV activity will facilitate detection of leaks, lower master valve shut-in of wells will be available and OPEPs will be in place. JNCC guidelines will be adhered to with respect to any pile driving (an option for the riser piles is to drive them deeper into the seabed).
Decommissioning Stabilisation Features	Not Applicable	
Decommissioning Drill Cuttings	Not Applicable	

5 INTERESTED PARTY CONSULTATIONS

Consultations Summary: Informal consultations began in November 2012. An initial stakeholder consultation meeting with DECC, JNCC & Marine Scotland was held on the 28th November 2012 and the draft decommissioning programmes were made available on BP's website on the 1st of February 2013.

A 30 day statutory public consultation period was held from 1st February to 2nd March 2013, inviting comments from interested parties on the detailed proposals for the Schiehallion & Loyal Phase 1 Decommissioning in a draft Decommissioning Programme dated Jan 2013.

To initiate this consultation, the following actions were taken (refer also to Appendix 1):

A e-mail letter inviting comments was sent to the four organisations listed as statutory consultees.

Public notices were placed in the Shetland Times, Press and Journal, Scotsman and Edinburgh Gazette.

Copies of the draft decommissioning programmes were made available at the BP offices in Dyce and copies were also available on both the BP website and the DECC website.

During the statutory consultation period no copies of the Decommissioning Programmes were requested by the public and no comments were received.

Table 5.1 Summary of Consultee Comments

Who	Comment	Response
Informal consultations		
The Royal Society for the Protection of Birds Scotland	Comments were invited on the 1st February 2013. Follow up contact was made to ensure receipt and to remind them of the deadline. No formal comments have been received.	None
Statutory Consultations		
National Federation of Fishermen's Organisations	Comments were invited on the 1st February 2013. Follow up contact was made to ensure receipt and to remind them of the deadline. No formal comments have been received.	None
Scottish Fishermen's Federation	An initial meeting was held with the SFF on the 14th November 2012. Comments were invited on the 1st February 2013 and a follow up meeting was held at their request on the 25th of February 2013. No formal comments have been received.	None
Northern Ireland Fish Producers Organisation	Comments were invited on the 1st February. Follow up contact was made to ensure receipt and to remind them of the deadline. No formal comments have been received.	None
Global Marine Systems	Comments were invited on the 1st February. Follow up contact was made to ensure receipt and to remind them of the deadline. No formal comments have been received.	None

6 PROGRAMME MANAGEMENT

6.1 Project Management and Verification

BP will engage and manage suitable contractors for the removal, refurbishment and reuse activities and standard procedures for operational control and hazard identification and management will be used. BP will appoint an independent authority to verify that decommissioning works have been carried out in accordance with the programme. BP will discuss any changes to proposed activities or the schedule in advance with DECC and other appropriate authorities.

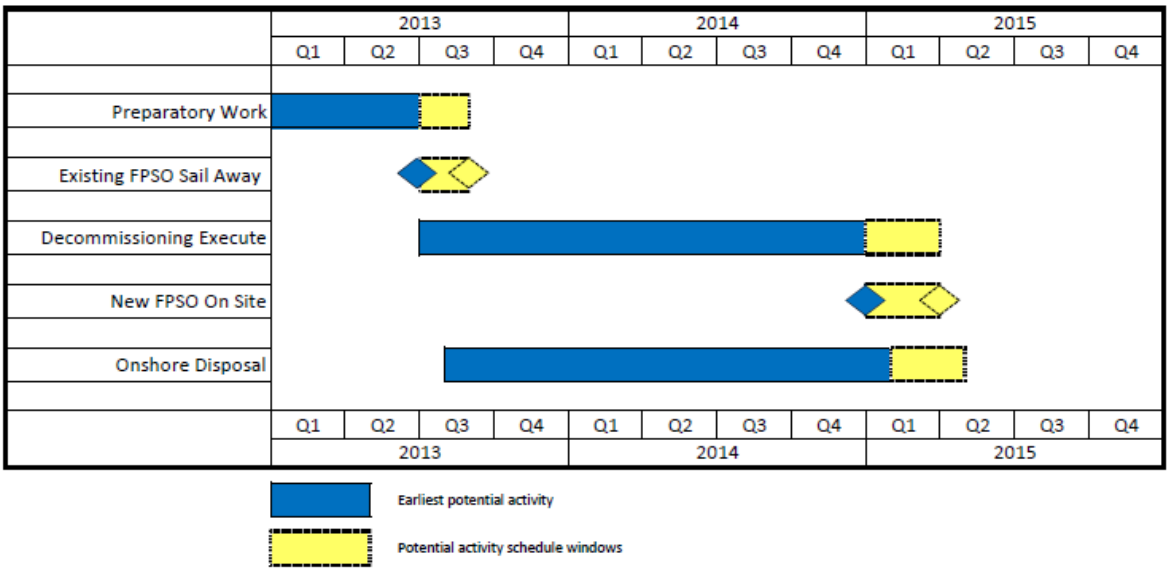
6.2 Post-Decommissioning Debris Clearance and Verification

Given that the majority of the subsea infrastructure will remain in place either for reconnection when the new FPSO is installed, for possible reuse or because removal is not practicable at this stage, it is inappropriate to trawl for debris. The decommissioning programme to be prepared at the end of field life will address debris clearance and independent verification in line with the requirements in force at that time.

6.3 Schedule

Project Plan:

Figure 6.1: Gantt Chart of Project Plan



6.4 Costs

Table 6.1 – Provisional Decommissioning Programmes costs	
Item	**Estimated Cost (£m)**
FPSO - Preparation / Removal and Disposal	£80m
Pipelines and Umbilicals Infrastructure Decommissioning	£173m
Continuing Liability – Future Pipeline and Environmental Survey Requirements	£3m
TOTAL	£256m

6.5 Close Out

A close out report will be submitted to DECC within 4 months of the completion of the offshore decommissioning scope covered by these programmes. Independent verification of completion of workscope will be included within the close out report. Refer also to Sections 6.1 and 6.2

6.6 Post-Decommissioning Monitoring and Evaluation

Surveys will be carried out as part of the continuing operation of the Schiehallion and Loyal Fields. All pipelines within the decommissioning programmes which remain in situ will be retained within the pipeline integrity management scheme and as such will be subject to periodic inspection in accordance with this inspection regime. Environmental monitoring will be undertaken in accordance with the BP environmental monitoring programme. The decommissioning programmes prepared at the end of field life will address environmental monitoring and evaluation in line with the requirements in force at that time.

7 SUPPORTING DOCUMENTS

Table 7.1: Supporting Documents	
Document Number	*Title*
DECOM-SCH-HS-IA-BP-0079	*Environmental and Socio-Economic Impact Assessment*
DECOM-SCH-HS-CAS-BP-0080-A1	*Schiehallion & Loyal Fields Phase 1 Decommissioning Comparative Assessment*
QD-JP-PL-ISO-005-01	*Field Isometric*
Aquatera (2007). Report reference P208 rev 2, June 2007	*Initial Screening Assessment of BP's UKCS Cuttings Piles*
UKOOA (2002). February 2002	*UKOOA Drill Cutting Initiative Final Report*
UKOOA (2005). Report number 20132900, 26 January 2005	*UKOOA JIP 2004 Drill Cutting Initiative Phase III: final report*

Use the web link below for the latest document versions.

http://www.bp.com/sectiongenericarticle.do?categoryId=9041344&contentId=7060933

8. PARTNERS LETTERS OF SUPPORT

A letter of support from Britoil Limited for the Schiehallion Installation Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Murphy Schiehallion Limited for the Schiehallion Installation Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from OMV (U.K.) Limited for the Schiehallion Installation Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Shell U.K. Limited for the Schiehallion Installation Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Statoil (U.K.) Limited for the Schiehallion Installation Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Schiehallion Oil & Gas Limited for the Schiehallion Installation Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from BP Exploration Operating Company Limited for the Schiehallion Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Murphy Schiehallion Limited for the Schiehallion Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from OMV (U.K.) Limited for the Schiehallion Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Shell U.K. Limited for the Schiehallion Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Statoil (U.K.) Limited for the Schiehallion Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Schiehallion Oil & Gas Limited for the Schiehallion Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from BP Exploration Operating Company Limited for the Loyal Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Enterprise Oil Middle East Limited for the Loyal Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Shell U.K. North Atlantic Limited for the Loyal Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

A letter of support from Shell U.K. Limited for the Loyal Pipelines Decommissioning Programme will be provided here in the final version of the programmes.

Appendix 1 : Statutory Consultee Correspondence

From: Staples-Scott, Lynne
Sent: 01 February 2013 07:53
To: 'Benstead Julie (Energy Development)'; 's.alexander@sff.co.uk'; 'j.watt@sff.co.uk'; 'apiggott@nffo.org.uk'; 'john.wrottesley@globalmarinesystems.co'; 'nifpo@btconnect.com'
Subject: Schiehallion and Loyal Field Phase One Decommissioning Programmes

Schiehallion and Loyal Field Phase One Decommissioning Programmes

I am writing to inform you that BP has started preparations to decommission specific facilities associated with the Schiehallion and Loyal fields, located 130km West of Shetland and 35km east of the Faroe boundary in blocks 204/20; 204/25a; 204/25b; 205/16; 205/21b.

The fields were developed using a Floating Production Storage and Offloading (FPSO) vessel which has been operational since 1998. The development comprises five drill centres with 54 wells, an extensive subsea infrastructure, the FPSO and a gas export pipeline to Sullom Voe terminal.

Significant potential remains in the reservoirs and the fields are being redeveloped as Project Quad 204 with a new vessel, additional wells and expansion of the subsea infrastructure. However, while facilities are to be reused wherever possible, it will be necessary to decommission some facilities as part of the redevelopment project.

The scope of the phase one decommissioning programmes covers the pipelines and installations (mainly production flowlines and FPSO) not being reused as part of the redevelopment of the Schiehallion and Loyal Fields. The offshore removal and onshore disposal phase of BP's Schiehallion and Loyal decommissioning project will begin during 2013 once we have completed comparative assessments for the key removal and disposal options and obtained regulatory approval. In carrying out these assessments, we will take into consideration safety and the availability of suitable technology as well as the environmental, economic and social impacts of the different removal and disposal options.

We intend to consult with all who have an interest in the decommissioning of the Schiehallion and Loyal fields and invite you to take part in this consultation process.

If you are interested in taking part, I would be grateful if you could reply to this email, so that we can establish a register of interested organisations and individuals. Please pass this email to anyone else in your organisation who might be a more appropriate contact.

Representations regarding the Schiehallion and Loyal Field Phase One Decommissioning Programmes should be submitted in writing to myself by Friday 1 March 2013 and should state the grounds upon which any representations are being made.

In the meantime, basic information along with the full decommissioning programmes will be available on our website where we intend that new information and progress updates will be posted. Click here to access the relevant webpage.

Thank you.

Lynne Staples-Scott
Corporate Responsibility & Performance Manager, Scotland
Communications & External Affairs

T: 01224 832564
M: 07775 701672
E: lynne.staples-scott@uk.bp.com

13 Public Notices

PUBLIC NOTICE

The Petroleum Act 1998

Schiehallion and Loyal Phase One Decommissioning Project

BP has submitted, for the consideration of the Secretary of State for Energy and Climate Change, a draft Decommissioning Programmes for the Schiehallion and Loyal Fields 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 decommissioning proposals.

The Schiehallion and Loyal Fields are being redeveloped and the decommissioning programmes only cover the facilities that are not being re-used. The Fields are located in blocks 204/20; 204/25a; 204/25b; 205/16; 205/21b.

BP hereby gives notice that copies of the Schiehallion and Loyal Field Decommissioning Programmes can be viewed at the internet address: www.bp.com - Click on our Operations and North Sea Decommisioning

Alternatively a hard copy of the Programmes can be inspected at the following location during office hours:

BP
1 Wellheads Avenue
Dyce
Aberdeen AB21 7PB
Contact: Lynne Staples-Scott
Tel: 01224 832564
e-mail: Lynne.staples-scott@uk.bp.com

Representations regarding the Schiehallion and Loyal Field Phase One Decommissioning Programmes should be submitted in writing to Lynne Staples-Scott at this address where they should be received by Friday 1 March 2013 and should state the grounds upon which any representations are being made.

28th January 2013