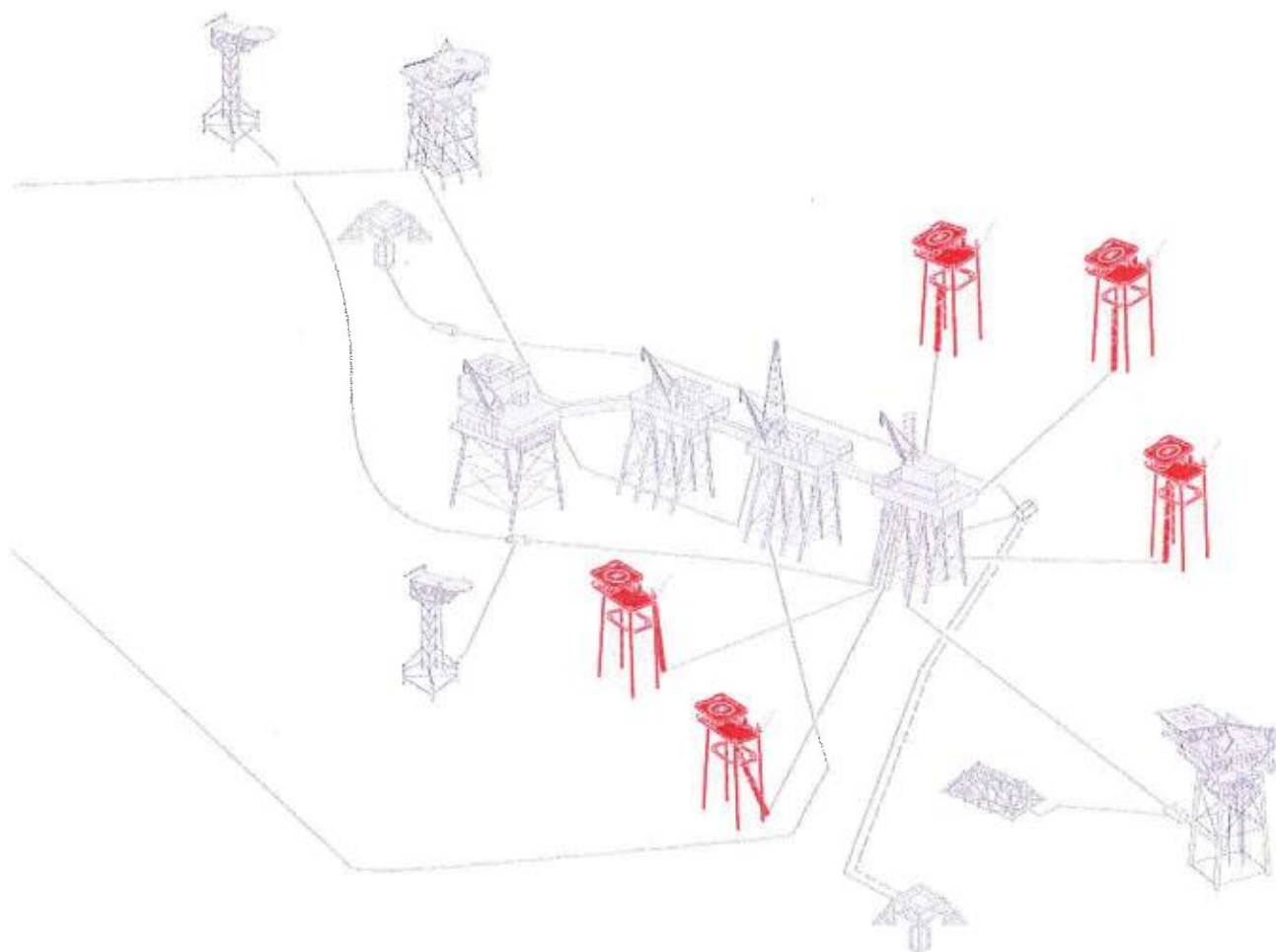


Decommissioning Programme


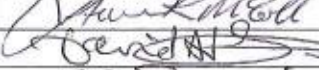
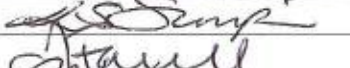



FINAL VERSION: 1 SEPTEMBER 2016



Viking Satellites CD, DD, ED, GD, HD

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David Farthing	ConocoPhillips	1
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A. Table of Terms and Abbreviations

Abbreviation	Explanation
AR	Viking A Riser Platform
BEIS	Department for Business, Energy, and Industrial Strategy (formerly DECC)
CA	Comparative Assessment
CD	Viking C Satellite Platform
CoP	Cessation of Production
DD	Viking D Satellite Platform
DECC	Department of Energy and Climate Change (now BEIS – Department for Business, Energy and Industrial Strategy)
ED	Viking E Satellite Platform
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ES	Environmental Statement
FD	Viking F Satellite Platform
GD	Viking G Satellite Platform
HD	Viking H Satellite Platform
HLV	Heavy Lift Vessel
KP	Kilometre Point
KPI	Key Performance Indicator
LAT	Lowest Astronomical Tide
LOGGS	Lincolnshire Offshore Gas Gathering System
MeOH	Methanol
NORM	Naturally Occurring Radioactive Material
NUI	Normally Unattended Installation
OGUK	Oil and Gas United Kingdom
P&A	Plug and Abandon
PMT	Project Management Team
PWA	Pipeline Works Authorisation
SCI	Site of Community Importance
SLV	Shear Leg Vessel
SNS	Southern North Sea
Te	Tonne
TGT	Theddlethorpe Gas Terminal
Tscf	Trillion standard cubic foot
UKCS	United Kingdom Continental Shelf

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None	

1. Executive Summary

1.1 Decommissioning Programme

This document contains the decommissioning programme for 5 Viking Satellite installations.

1.2 Requirement for Decommissioning Programme

Installations:

In accordance with the Petroleum Act 1998, ConocoPhillips (U.K.) Limited as Operator of the Viking Field and on behalf of the Section 29 notice holders (see Table 1.2 and Section 8) is applying to the Department for Business, Energy and Industrial Strategy to obtain approval for decommissioning of the Viking CD, DD, ED, GD and HD installations detailed in Section 2 of this document.

In conjunction with public, stakeholder and regulatory consultation, the decommissioning programme is submitted in compliance with national and international regulations and with consideration of BEIS guidelines. The schedule outlined in this document is for a 4 year decommissioning project beginning June 2014, when the Ensco 92 Jack Up Drilling Rig commenced well Plug and Abandonment (P&A) activities at the Viking GD satellite platform.

1.3 Introduction

The Viking Field was discovered in 1965 and is spread over a 24 km diameter sector in blocks 49/11d, 49/12a, 49/16a, 49/16c, 49/17a, and 49/18a in the Southern North Sea, approximately 138 km due East of Theddlethorpe on the Lincolnshire coast.

The reservoirs developed with wells from the Viking satellites covered by this document are in the following Quad/blocks:

- Viking CD 49/17a,
- Viking DD 49/17a/18a,
- Viking ED 49/16a,
- Viking GD 49/17a,
- Viking HD 49/12a/17a.

Production from the Viking reservoirs commenced in 1972 from two manned multi jacket bridge linked complexes Viking A (Alpha) and Viking B (Bravo). Gas export from Viking A and B was combined at the Viking A Riser (AR) platform prior to being exported to the Theddlethorpe Gas Terminal (TGT) via a 28" export pipeline. Normally Unattended Installations (NUI) were subsequently tied back to the two manned complexes as follows:

- 1974 – 1975, Viking CD, DD, ED, GD, HD tied back to Viking B complex
- 1975 Viking FD tied back to Viking A complex
- 1984 Victor JD tied back to Viking B complex
- 1995 Victor JM (subsea) tied-back to Victor JD
- 1998 Viking KD and LD tied back to Viking B complex
- 2000 Vixen VM (subsea) tied back to Viking B complex
- 2008 Victoria SM (subsea) tied back to Viking B complex

In 1991 the reservoirs produced by the Viking A Complex and Viking FD satellite became uneconomic and were decommissioned in 1995. The Viking AR platform was re designed as a Normally Unattended Installation (NUI) and transported export gas from the Viking B Complex to TGT until 2009. In 2009 Viking B export gas was rerouted to the Lincolnshire Offshore Gas Gathering System (LOGGS) manned Complex via a new 16" export pipeline.

The 5 Viking satellites CD, DD, ED, GD, HD covered by this Decommissioning Programme has produced 1.7 Tscf of gas and depending on the satellite; last produced between 2002 and 2012. Cessation of Production applications were submitted and approved as follows:

Field	Reservoirs	Installation	Submission Date	Approval Date
Viking D Field	G	GD	01 April 2011	15 April 2011
Viking E Field	Gn	GD	22 July 2015	19 August 2015
Viking B Field	B, C, D	BD, CD, DD	15 May 2014	18 June 2014
Viking A Field	H	HD	14 August 2014	20 August 2014
Viking C Field	E	ED	25 June 2015	14 August 2015

All 5 Viking Satellites are small installations with total combined Topsides and Jacket weights ranging from 750 Te to 1358 Te; stand in 22m to 32m of water and are tied back to the Viking B complex by individual buried pipelines ranging between 4km and 12km in length. The small size, shallow water depth and design life of the 5 Viking Satellites has determined the philosophy of their decommissioning, which will be to:

- Well Plug and Abandon (P&A)
- Remove the satellite platforms

The other installations and pipelines in the Viking field will subsequently be decommissioned at an appropriate time and will be covered by their own Decommissioning Programmes.

1.4 Overview of Installations Being Decommissioned

1.4.1 Installations

Table 1.1 Installations Being Decommissioned			
Field Names		Quad / Block	
Fields	Viking A,B,C,D,E	Production Type	Gas / Condensate
Water Depth	22.6m – 32.3 m	UKCS block	Quad 49 Blocks 12a/16a/ 17a and 18a

Surface Installations			
Number	Type	Topsides Weight (Te)	Jacket Weight (Te)
5	Fixed steel jacket	1080	4021

Subsea Installations		Number of Wells	
Number	Type	Number	Type
0	N/A	15	Platform

Drill Cuttings Piles		Distance to Median	Distance from nearest UK coastline
Number of Piles	Total Est volume m ³	km	km
0	0	Viking DD 18 km	Viking ED 78 km

See Figure 1.1 for further details.

Table 1.2 Installation Section 29 Notice Holders Details		
Section 29 Notice Holders	Registration Number	Equity Interest
ConocoPhillips (U.K.) Limited	00524868	50%
ConocoPhillips Petroleum Limited	01247477	0%
Britoil Limited	SC077750	50%

1.5 Summary of Proposed Decommissioning Programme

Table 1.3: Summary of Decommissioning Programme		
Selected Option	Reason for Selection	Proposed Decommissioning Solution
1. Topsides		
Complete removal, dismantlement and reuse/ recycling and disposal.	Topsides past design life, equipment obsolete and degraded, or recovery no longer economic.	Removed wholly by Heavy Lift Vessel (HLV) transported to appropriate land based facility for dismantlement, recycling and disposal. Equipment that cannot be re-used will be recycled or disposed of as appropriate. Prior to topsides removal pipelines will be flushed and disconnected subsea from the satellite.
2. Jackets		
Complete removal (3m below seabed), dismantlement and reuse/recycling and disposal.	Meets BEIS regulatory requirements. Jackets past design life.	Removed by HLV, transported to appropriate land based facility for dismantlement, recycling and disposal.
3. Subsea Installations		
Not Applicable	Not Applicable	Not Applicable
4. Well Abandonment Operations		
Permanent well Plug and Abandonment (P&A).	Meets BEIS regulatory requirements.	Abandonment in accordance with Oil and Gas UK Guidelines for the Suspension and Abandonment of Wells.

Table 1.3: Summary of Decommissioning Programme (cont.)		
Selected Option	Reason for Selection	Proposed Decommissioning Solution
6. Drill Cuttings		
None required.	No Drill Cuttings Piles have been identified by seabed survey.	None required.
7. Interdependencies		
Platform removal can only occur after Well P&A and Topsides / Pipeline cleaning.		

1.6 Field Location including Field Layout and Adjacent Facilities

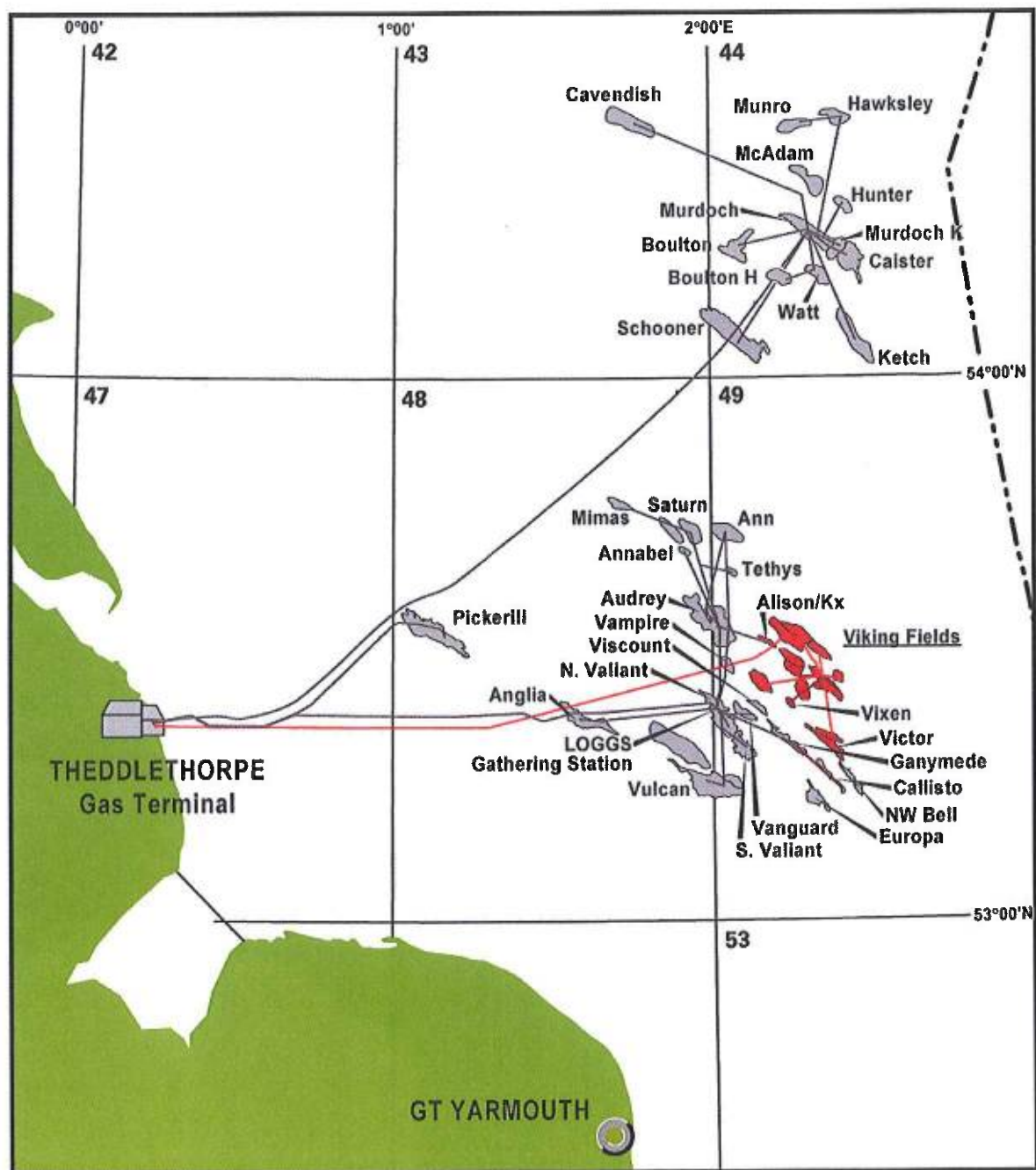


Figure 1.1 – Viking Field Location in UKCS

The Viking development is part of the ConocoPhillips Southern North Sea (SNS) Gas Operation

VIKING 'B' COMPLEX (VIKING TRANSPORTATION SYSTEM)

Legend:
 Red box: Gas
 Blue box: MeOH

Wells and Distances:

- VIKING KD: 26" GAS 3" MEQH 138 Km
- VIKING AR: 26" GAS 3" MEQH 10.9 Km
- VIKING HD: 12" GAS 2" MEQH 4.1 Km
- VIKING DD: 12" GAS 2" MEQH 3.9 Km
- VIKING CD: 12" GAS 2" MEQH 3.9 Km
- VIKING LD: 16" GAS 3" MEQH 13.4 Km
- VIKING GD: 12" GAS 2" MEQH 5.1 Km
- VIKING ED: 12" GAS 2" MEQH 12 Km
- VIKING JM: 15" GAS 3" MEQH 13.5 Km
- VIKING VM: 12" GAS 3" MEQH 14.8 Km
- VIXEN VM: 10" GAS 2" MEQH 10 Km

Pipelines and Distances:

- BA: 8" GAS + MEQH 3.8 Km
- BC: 16" GAS 3" MEQH 13.4 Km
- BP: 12" GAS 2" MEQH 5.1 Km
- BD: 12" GAS 2" MEQH 12 Km
- PL130 piggy backed
- PL93
- PL131 piggy backed
- PL66 piggy backed
- PL92
- PL133 piggy backed
- PL91
- PL89
- PL132 piggy backed

Directions:
 Viking to TGT
 Viking to LOGGS

Facilities adjacent to the Viking Satellites that are potentially impacted by this decommissioning programme are listed below in Table 1.6 and highlighted in Figure 1.3.

Table 1.4 List of Adjacent Facilities

Owner	Name	Type	Distance / Direction	Information	Status
ConocoPhillips / BP	Viking Bravo Complex	Manned 4 Jacket bridge linked complex	CD to BD 4km DD to BD 4km ED to BD 12 km GD to BD 5km HD to BD 6 km	The decommissioning of the infield pipelines connecting the Viking satellites to Viking BD platform are covered by a separate standalone decommissioning programme.	Operational
ConocoPhillips / BP	PL2643	16" Gas Pipeline	Viking BP to LOGGS	Crosses over PL91 & PL92	Operational
ConocoPhillips / BP	PL2644	3" MeoH Pipeline	LOGGS to Viking BP	Piggy backed onto PL2643. Crosses over PL91 & PL92	Operational
ConocoPhillips / BP	PL1767	10" Gas Pipeline	Vixen VM to Viking BD	Crosses over PL89	Operational
ConocoPhillips / BP	PL1768	Control Umbilical	Viking BD to Vixen VM	Crosses over PL89	Operational
Verus Petroleum	PL2526	6" Gas Pipeline	Victoria SM to Viking BD	Crosses over PL90 & PL93	Operational
Verus Petroleum	PLU2527	Umbilical	Viking BD to Victoria SM	Crosses over PL90 & PL93	Operational

Impacts of Decommissioning Proposals

No anticipated impact on adjacent facilities.



1.7 Industrial Implications

Principles of the contracting and procurement strategies to be utilised by ConocoPhillips as operator and on behalf of the other Section 29 notice holders, for the decommissioning of the Viking Satellites are listed below:

1. Publish project information and contact details on the BEIS website:
www.gov.uk/oil-and-gas-projectpathfinder
2. ConocoPhillips participated in the PILOT Share Fair event in November 2014 providing one to one sessions with the UK supply chain on the SNS decommissioning programme and timeline.
3. ConocoPhillips decommissioning representatives attended the Energy Industry Council CONNECT event held in Manchester November 2014 and provided one to one sessions for EIC members.
4. The First Point Assessment (FPAL) database is the primary source for establishing tender lists for contracts / purchases valued at US \$ 100,000 and above, although it is also used under this limit.
5. ConocoPhillips is committed to competitively bidding all of its major contracts where possible and practicable. We are supporters of the UK Supply Chain Code of Practice and our performance in this regard has been acknowledged through Excellence Awards from Oil & Gas UK.

2. Description of Items to be Decommissioned

2.1 Surface Facilities (Topsides and Jackets)

Table 2.1 Surface Facilities Information								
Name	Facility Type	Location	Topsides / Facilities		Jacket (if applicable)			
		WGS84 Format	Weight (Te)*	No of modules	Weight (Te)**	No of Legs	No of piles	Weight of piles (Te)
Viking CD	Fixed steel jacket	53° 25.396'N 02° 22.524'E	172	1	1185	10	12	62.4 below mudline
Viking DD	Fixed steel jacket	53° 26.469'N 02° 23.630'E	171	1	756	4	8	15.5 below mudline
Viking ED	Fixed steel jacket	53° 25.986'N 02° 09.191'E	409	1	752	4	8	15.5 below mudline
Viking GD	Fixed steel jacket	53° 26.851'N 02° 15.291'E	164	1	586	4	6	15.5 below mudline
Viking HD	Fixed steel jacket	53° 29.797'N 02° 19.464'E	164	1	743	4	8	15.5 below mudline

Note* Weights are based on structural designs and review of the Return to Scene (R2S) footage

Note** Weights are based on design drawings, include piles to mudline, (excludes marine growth)



Figure 2.1.1 Photograph of Viking CD



Figure 2.1.2 Photograph of Viking DD



Figure 2.1.3 Photograph of Viking ED



Figure 2.1.4 Photograph of Viking GD



Figure 2.1.5 Photograph of Viking HD

2.2 Subsea Installations and Stabilisation Features

Table 2.2 Subsea Installation and Stabilisation Features				
Subsea installations and stabilisation features	Number	Size / Weight (Te)	Locations	Comments / Status
Wellheads	0	0	None	None present
Manifolds	0	0	None	None present
Templates	0	0	None	None present
Protection frames	0	0	None	None present
SSIV	0	0	None	None present
Concrete mattresses	0	0	None	None present
Grout bags	0	0	None	None present
Formwork	0	0	None	None present
Fronnd mats	0	0	None	None present
Rock dump	0	0	None	None present
Other	0	0	None	None present

2.3 Wells

Table 2.3 Well Information			
Platform Wells	Designation	Status	Category of Well
GB_049_17_C01	Gas Production	Shut-in	PL 3-3-3
GB_049_17_C02Z	Gas Production	Shut-in	PL 3-3-3
GB_049_17_C03	Gas Production	Suspended	PL 3-3-3
GB_049_17_C04	Gas Production	Shut-in	PL 3-3-3
GB_049_17_D01	Gas Production	Shut-in	PL 3-3-4
GB_049_17_D02	Gas Production	Shut-in	PL 3-3-3
GB_049_16_E03A	Gas Production	Shut-in	PL 3-3-3
GB_049_16_E04	Gas Production	Shut-in	PL 3-3-3
GB_049_16_E05	Gas Production	Shut-in	PL 3-3-3
GB_049_17_G01	Gas Production	Suspended	PL 3-3-3
GB_049_17_G04	Gas Production	Shut-in	PL 3-3-3
GB_049_17_G05	Gas Production	Shut-in	PL 3-3-3
GB_049_17_05Z	Gas Production	Suspended	PL 4-4-4
GB_049_17_H02	Gas Production	Shut-in	PL 3-3-3
GB_049_17_H03	Gas Production	Shut-in	PL 3-3-3
Subsea Wells	Designation	Status	Category of Well
0	Not Applicable	N/A	Not Applicable

Note: Status of wells prior to commencement of P&A campaign June 2014

For further details of well categorisation see OGUK guidelines for the Suspension or Abandonment of Wells –Issue 4 –July 2012.

2.4 Drill Cuttings

Table 2.4 Drill Cuttings Pile Information		
Location of Pile Centre (Latitude / Longitude)	Seabed area (m ²)	Estimated volume of cuttings (m ³)
None of the facilities has a cuttings pile present	0	0

A 2013 Fugro survey (Fugro 2013c) found no evidence of cuttings piles from around the 5 Viking Satellites covered by this decommissioning programme. The dynamic marine environment has resulted in the redistribution of drill cuttings.

2.5 Inventory Estimates

Table 2.5 Current Installation Material Functional Category Summary							
Installation	Haz Mat / NORM	Concrete	Ferrous Metal	Non- Ferrous Metal	Plastics	Other Non-Haz	Total
	Te	Te	Te	Te	Te	Te*	Te
Viking CD	15	0	1334	0	0.25	10	1359
Viking DD	15	0	905	0	0.25	8	928
Viking ED	28	0	1035	0	0	100	1163
Viking GD	14	0	727	0	0.25	8	749
Viking HD	15	0	885	0	0.25	8	908
Total	87	0	4886	0	1	134	5108

*Note** Weights exclude the calculated ¹⁴²Te marine growth associated with all assets

3. Removal and Disposal Methods

In line with the waste hierarchy, the re-use of an installation (or parts thereof) is first in the order of preferred decommissioning options considered.

Options considered for re-use of the Viking Satellites were:

- Further Hydrocarbon production from development local to the satellites
- Relocation elsewhere to produce hydrocarbons
- Sale for reuse to others

No economic or technical hydrocarbon developments local to any of the Viking Satellites were identified. The 5 Viking Satellites are past their design life, require refurbishment; contain obsolete control systems and components all of which makes their re-use uneconomic and therefore non-viable.

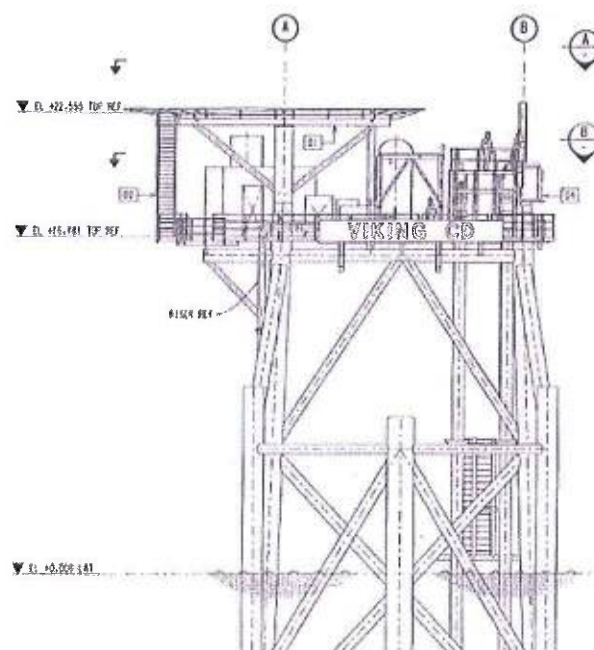
The selected option for the 5 Viking Satellites CD, DD, ED, GD, HD is to remove, dismantle and dispose of them, ensuring a high level of material recycling.

3.1 Topsides

3.1.1 Topsides Descriptions

Viking CD

The Viking CD topsides are a minimal facility designed for use as a NUI which extends 22.6m above Lowest Astronomical Tide (LAT). The Topsides weigh 172Te have a deck size of 12.2m by 8.5m and comprise of a wellbay, local equipment room, diesel power generation, pedestal crane and Helideck.

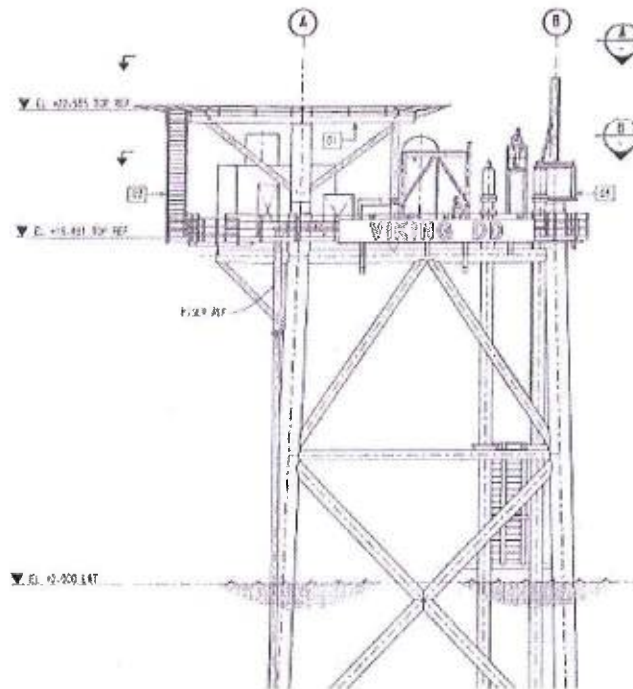


ELEVATION LOOKING WEST ON VIKING CD PLATFORM

Figure 3.1.1 CD Topsides

Viking DD

The Viking DD topsides are a minimal facility designed for use as a NUI which extends 22.6m above LAT. The Topsides weigh 171Te have a deck size of 12.2m by 8.6m and comprise of a wellbay, local equipment room, diesel power generation, pedestal crane and Helideck.

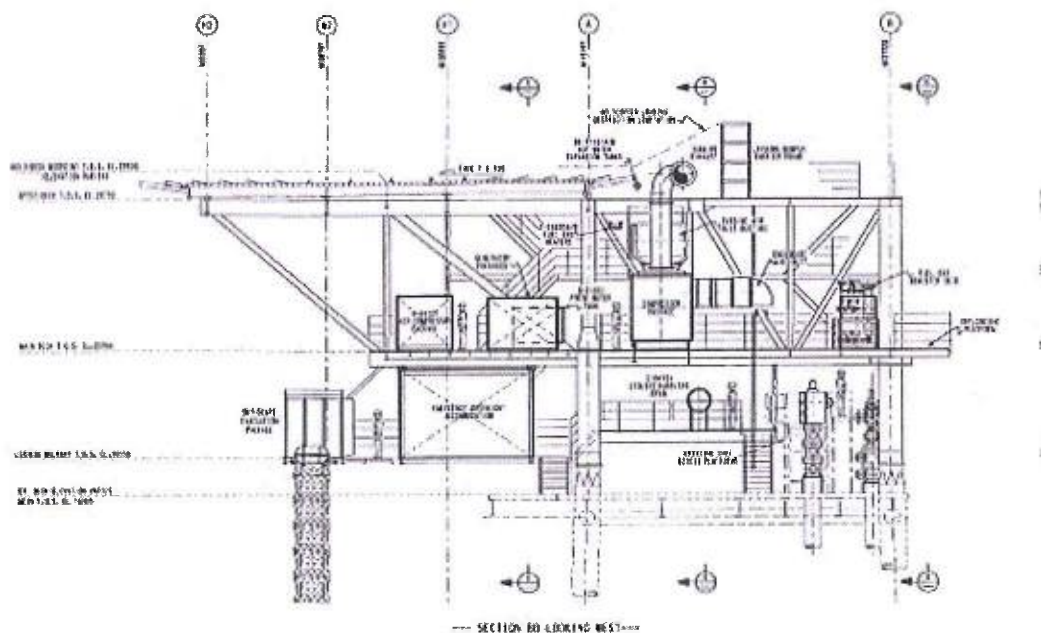


ELEVATION LOOKING WEST ON VIKING DD PLATFORM

Figure 3.1.2 DD Topsides

Viking ED

The Viking ED topsides are a minimal facility designed for use as a NUI which extends 29.5m above LAT. The Topsides weigh 409Te have a deck size of 20.0m by 16.5m and comprise of a wellbay, test separator, gas driven compressor, local equipment room, gas power generation, pedestal crane and Helideck.



SECTION DD LOOKING WEST

Figure 3.1.3 ED Topsides

Viking GD

The Viking GD topsides are a minimal facility designed for use as a NUI which extends 22.6m above LAT. The Topsides weigh 164 Te have a deck size of 12.2m by 8.8m and comprise of a wellbay, local equipment room, diesel power generation, pedestal crane and Helideck.

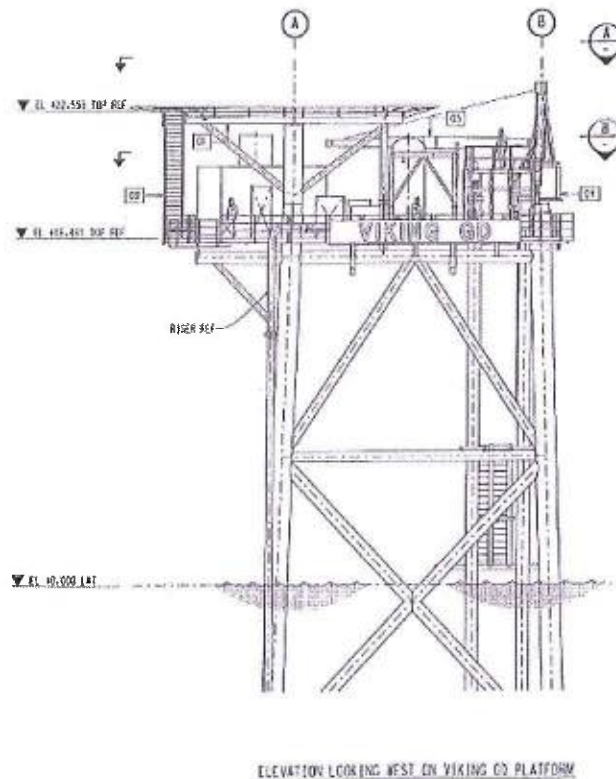


Figure 3.1.4 GD Topsides

Viking HD

The Viking HD topsides are a minimal facility designed for use as a NUI which extends 23.2m above LAT. The Topsides weigh 164Te have a deck size of 12.2m by 8.9m and comprise of a wellbay, local equipment room, diesel power generation, pedestal crane and Helideck.

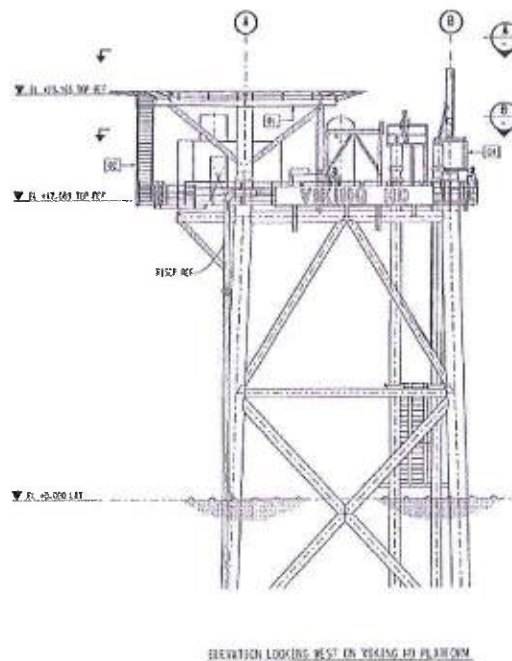


Figure 3.1.5 HD Topsides

Preparation / Cleaning: Table 3.1 describes the methods that will be used to flush, purge and clean the topsides offshore, prior to removal to shore.

Table 3.1 Cleaning of Topsides for Removal		
Waste Type	Composition of Waste	Disposal Route
Hydrocarbons	Process fluids	Will be flushed, Nitrogen purged and vented
Produced solids	Sand, NORM	Produced solids will be removed and disposed of during the dismantlement of the Topsides onshore.
Diesel	Bunkered Diesel fuel	Bunkered Diesel will be drained and returned onshore for re-use or disposal.
Lubricating oils	Lubricants for equipment e.g. gearboxes, pumps, pedestal crane compressor skid	Lubricating oils will be drained and returned onshore for re-use or disposal.

3.1.2 Removal Methods

Given the small size and combined weight of the Viking Satellites Topsides and Jackets, there is potential to remove both together in a single lift.

The exception to this is ED which has a larger and heavier topsides, where it is likely that the topsides may be separated from the Jacket and two lifts carried out and CD where the 2 Jacket tripod support frames will have to be removed prior to the Topsides and Jacket being removed in a single lift.

Table 3.2 Topsides Removal Methods

<input checked="" type="checkbox"/> 1) HLV (semi-submersible crane vessel) <input checked="" type="checkbox"/> 2) Monohull crane vessel <input checked="" type="checkbox"/> 3) SLV <input checked="" type="checkbox"/> 4) Piece small <input checked="" type="checkbox"/> 5) Other Simultaneous removal of Topsides with Jacket	
Methods Considered	Description
Single lift removal complete with Jacket by HLV / Monohull crane vessel / SLV	Removal of Topsides complete with Jacket in a single lift and transportation to shore for dismantlement, disposal and recycling.
Modular lift removal of Topsides by HLV / Monohull crane vessel / SLV	Removal of Topsides for transportation to shore for dismantlement, disposal and recycling.
Offshore removal "piece small" for onshore disposal	Removal of Topsides and dismantlement offshore for transportation onshore for disposal and recycling.
Proposed removal method and disposal route.	Removal of Topsides complete with Jacket in a single lift for CD,DD,GD,HD. Modular lift for ED Topsides. Transportation to shore for dismantlement, disposal and recycling. Trans-frontier shipment of waste will be addressed during the commercial tendering process.

3.2 Jackets

The jackets of all five Viking Satellites are of the same basic design with the following differences:

- The Jackets for Viking CD & GD were identical up until 1983 when the 2 Jacket tripod support frames were added to the Viking CD Jacket.
- The Jackets for Viking DD, ED and HD were designed with 2 extra piles to account for greater water depth.

3.2.1 Jacket Decommissioning Overview

All Jackets will be removed to 3m below the seabed. As stated in section 3.1, given the small size of the Viking Satellites the Jackets except for ED will be removed in a single lift with the Topsides.

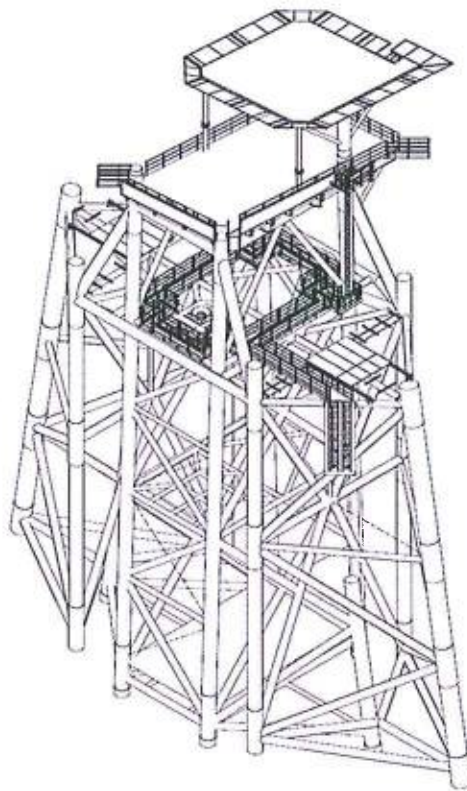


Figure 3.2.1 CD Jacket Elevation

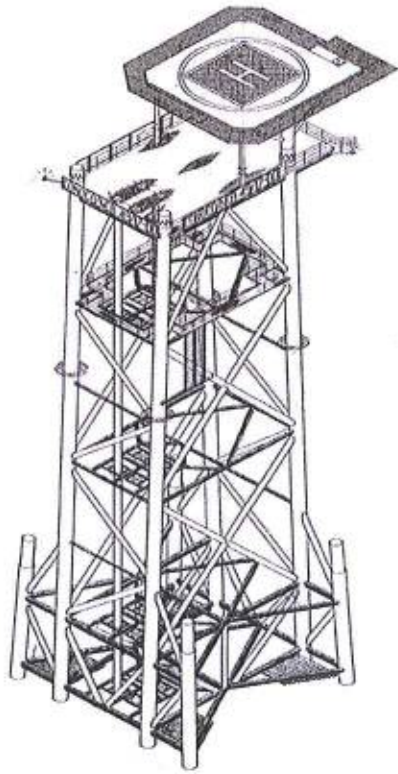


Figure 3.2.2 DD Jacket Elevation

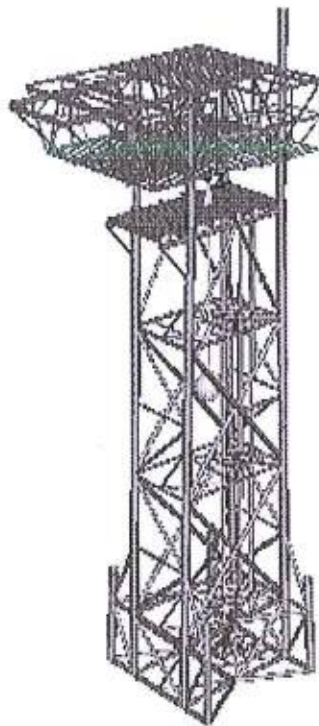


Figure 3.2.3 ED Jacket Elevation

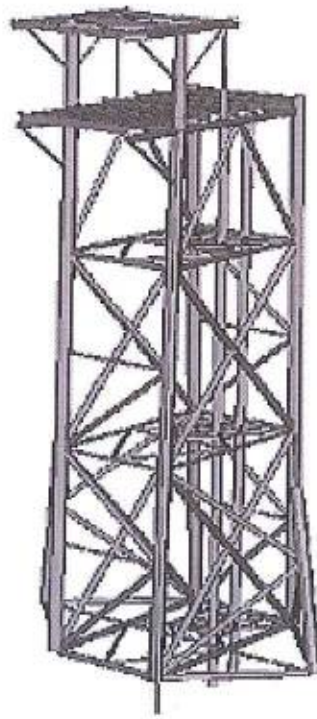


Figure 3.2.4 GD Jacket Elevation

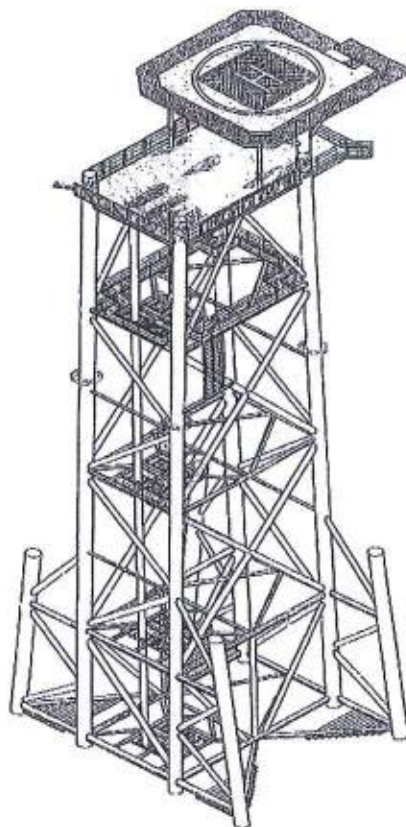


Figure 3.2.5 HD Jacket Elevation

3.2.2 Jacket Removal Methods

Table 3.3 Jacket Removal Methods	
<input checked="" type="checkbox"/> 1) HLV (semi-submersible crane vessel) <input checked="" type="checkbox"/> 2) Monohull crane vessel <input checked="" type="checkbox"/> 3) SLV <input checked="" type="checkbox"/> 4) Piece small <input checked="" type="checkbox"/> 5) Other Simultaneous removal of Topsides with Jacket	
Method	Description
Jacket Piles cut 3m below seabed and removed via single lift complete with Topsides by HLV / Monohull crane vessel / SLV	Jacket Piles cut 3m below seabed. Removal of Jacket complete with Topsides in a single lift and transportation to shore for dismantlement, disposal and recycling.
Jacket Piles cut 3m below seabed and removed via single lift by HLV / Monohull crane vessel / SLV	Jacket Piles cut 3m below seabed. Removal of Jacket in a single lift and transportation to shore for dismantlement, disposal and recycling.
Offshore removal "piece small" for onshore disposal	Jacket Piles cut 3m below seabed. Removal of Jacket and dismantlement offshore for transportation onshore for disposal and recycling.
Proposed removal method and disposal route.	<p>Jacket Piles cut 3m below seabed.</p> <p>Removal of Jacket complete with Topsides for CD, DD, GD, HD in a single lift.</p> <p>Separate single lifts for CD jacket tripod support frames and ED jacket.</p> <p>Transportation to shore for dismantlement, disposal and recycling.</p> <p>Transfrontier shipment of waste will be addressed in during the commercial tendering process.</p>

3.3 Subsea Installations and Stabilisation Features

Table 3.4 Subsea Installations and Stabilisation features			
Subsea installations and stabilisation features	Number	Option	Disposal Route
Wellheads	0	None	None
Manifolds	0	None	None
Templates	0	None	None
Protection frames	0	None	None
SSIV	0	None	None
Concrete mattresses	0	None	None
Grout bags	0	None	None
Formwork	0	None	None
Froned mats	0	None	None
Rock dump	0	None	None
Other	0	None	None

3.4 Wells

Table 3.5: Well Plug and Abandonment
<p>The wells which require to be abandoned, as listed in Section 2.3 (Table 2.3) are plugged and abandoned in accordance with OGUK Guidelines for the suspension and abandonment of wells.</p> <p>The 15 Viking Satellite wells were plugged and abandoned by the Ensco 92 Jack up Mobile Offshore Drilling Unit in an estimated 541 day programme of work, which commenced 11th June 2014.</p> <p>A Master Application Template (MAT) and the supporting Subsidiary Application Templates (SATs) have been submitted in support of all well plug and abandonment activities.</p>

3.5 Drill Cuttings

3.5.1 Drill Cuttings Decommissioning Options:

Not applicable, a 2013 Fugro survey (Fugro 2013c) found no evidence of cuttings piles from around the 5 Viking Satellites covered by this decommissioning programme.

3.6 Waste Streams

Table 3.6 Waste Stream Management Methods	
Waste Stream	Removal and Disposal method
Bulk liquids	Pipeline flushing fluids will be injected into redundant gas production wells. Bulk liquids removed from vessels and transported to shore. Vessels and pipework will be drained prior to removal to shore and shipped in accordance with maritime transportation guidelines. Bulk fluids taken onshore for handling at the appropriately permitted facilities prior to onshore treatment and disposal.
Marine growth	To be taken onshore with the infrastructure identified for removal for handling at the appropriately permitted disposal yard prior to onshore disposal.
NORM	To be taken onshore with the infrastructure identified for removal and decontamination at the appropriately permitted disposal yard prior to onshore disposal.
Asbestos	To be taken onshore with the infrastructure identified for removal for handling at the appropriately permitted disposal yard prior to onshore disposal.
Other hazardous wastes	To be taken onshore with the infrastructure identified for removal for handling at the appropriately permitted disposal yard prior to onshore disposal.
Onshore Dismantling sites	Appropriately permitted sites will be selected through the ConocoPhillips procurement process. Disposal yard selection has not yet concluded however the selection process will consider proven materials re-use and recycling performance including the use of innovative materials management practices to minimise the quantity of materials disposed of.

Table 3.7 Inventory Disposition			
	Total inventory Tonnage	Planned Tonnage to shore*	Planned Tonnage Decommissioned in situ
Installations	5232	5108	124 (Below Mudline)

Note* Excludes 142Te marine growth associated with the installation jackets and weight

It is not currently possible to predict the market for re-usable materials with confidence however there is a target that >95% of the materials will be recycled.

4. Environmental Impact Assessment

4.1 Environmental Sensitivities

Table 4.1: Environmental Sensitivities	
Environmental Receptor	Main Features
Conservation interests	<p>Annex I Habitats The Viking Satellite installations are located with the North Norfolk Sandbanks and Saturn Reef Site of Community Importance (SCI), currently under consideration as a UK Special Area of Conservation (SAC).</p> <p>Annex I habitats occurring in this area include sandbanks and biogenic reef habitats formed by <i>Sabellaria spinulosa</i>.</p> <p>Annex II Species Annex II species likely to be sighted within the Viking area include harbour porpoise, grey seals and common or harbour seals (ES Section 4.3).</p>
Seabed	<p>The seabed in the vicinity of the Viking Satellite installations comprises of ripples and sand formations. The sediments are comprised of fine to coarse sands, often silty with variable amounts of shell fragments and occasional pebbles and cobbles. The highly dynamic marine environment restricts the silt and clay content to less than 15% (Fugro, 2013a) (ES Section 4.2.6). There is no evidence of bedrock, pockmarks or unusual or irregular bedforms.</p> <p>Dominant taxa are typical of the mobile sands and coarser sediments present across the decommissioning area.</p> <p>There is a high probability of <i>Sabellaria spinulosa</i> across the region. The Fugro (2013a) report identified a mosaic of small patches of <i>Sabellaria spinulosa</i> aggregations to the west of the Viking ED platform. The spatial extent of these aggregations was limited and they were not elevated above the seabed and do not fit the criteria to be considered as <i>Sabellaria spinulosa</i> reef (ES Section 4.2.6).</p>
Fish	<p>The Viking infrastructure is located within the spawning grounds of mackerel, cod, whiting, plaice, lemon sole, sole, sandeel, sprat and Nephrops.</p> <p>The plaice spawning area within the vicinity of the decommissioning infrastructure is considered to be part of an important spawning area for the species, with a relative high intensity spawning recorded from the International Council for the Exploration of the Sea (ICES) fish survey data.</p> <p>The infrastructure also lies within the nursery grounds throughout the year for mackerel, herring, cod, whiting, plaice, lemon sole, sandeel, Nephrops and tope shark (ES Section 4.4)</p>

Table 4.1: Environmental Sensitivities (Cont)

Environmental Receptor	Main Features
Fisheries	<p>Fishing activity in the Viking area is described as moderate to low. Vessel Monitoring Satellite data indicates that the majority of fishing effort is targeted outside the area.</p> <p>The Netherlands have the greatest fishing interests in the area with between 30-35 vessels engaged in fishing the grounds within which the decommissioning infrastructure is situated; however this is lower than activity observed further south.</p> <p>The Dutch vessels consist predominantly of beam trawlers fishing for demersal species. However, there is shift to electric beam trawl gear which requires a clean seabed; as a result fewer vessels are fishing near the current infrastructure (ES Section 4.8.1).</p>
Marine Mammals	<p>The main cetacean species occurring in the area include white-beaked dolphin, white-sided dolphin and harbour porpoise. Additional species observed in the surrounding area include minke whale, long-finned pilot whale, bottlenose dolphin and common dolphin.</p> <p>Pinnipeds sighted in the area include grey seals and harbour or common seals. Grey seals may travel past the infrastructure towards foraging grounds, but densities generally reduce with distance offshore. Harbour seals are more likely to be sighted further offshore; travelling to this area from haul-out sites in The Wash to forage for food (ES Section 4.6).</p>
Birds	<p>Seabirds found in the North Sea waters include fulmars, gannets, auks, gulls and terns. Peak numbers of seabirds occur following the breeding season and through winter.</p> <p>The overall seabird vulnerability to surface pollution in the decommissioning area is classified as moderate. March, August, November and December are the most sensitive times of year for seabirds, with vulnerability to oil pollution classified as very high (ES Section 4.5).</p>
Onshore Communities	<p>An onshore decommissioning facility will be used that complies with all relevant permitting and legislative requirements.</p>
Other Users of the Sea	<p>Shipping Shipping density in the area of the infrastructure to be decommissioned ranges from very low to high (ES Section 4.8.4).</p> <p>Oil & Gas Industry The infrastructure is located in the SNS gas basin which is currently home to 177 installations, eight of which are currently listed as un-operational (ES Section 4.8.2).</p> <p>See table 1.6 for a list of adjacent facilities.</p> <p>Offshore Renewables The infrastructure to be decommissioned is located approximately (at their closest point) 32 km south of the Hornsea Wind farm zone and 42 km NW of the East Anglia Wind farm zone. (ES Section 4.8.3)</p>
Atmosphere	<p>Local atmospheric emissions arise from the Viking operations, vessel use and nearby oil and gas facilities (ES Section 7).</p>

4.2 Potential Environmental Impacts and their Management

4.2.1 Environmental Impact Assessment Summary

The potential environmental impacts associated with Viking Satellites decommissioning activities have been assessed and it is concluded that the proposed decommissioning of the Viking satellites can be completed without causing significant adverse impact to the environment. The results of the Environmental Impact Assessment (EIA) will be reported in an Environmental Statement (ES) accompanying the Decommissioning Programme.

The ES identifies potential environmental impacts by identifying interactions between the proposed decommissioning activities and the associated environmental receptors. The ES also describes the proposed mitigation measures designed to avoid or reduce the identified potential environmental impacts and how these will be managed in accordance with ConocoPhillips's Environmental Management System (EMS) while considering responses from stakeholders.

Table 4.2: Environmental Impact Management		
Activity	Main Impacts	Management
Topsides Removal	Energy use and atmospheric emissions (ES Section 7)	All engines, generators and combustion plant on the vessels will be well maintained and correctly operated to ensure that they are working efficiently to minimise energy use and gaseous emissions. Vessel operations will be minimised where practical.
	Underwater noise (ES Section 8)	A noise assessment has been completed to determine the likely impact of noise generated by the proposed operations on marine mammals in the surrounding area. The results of the assessment will be used during the planning of vessel operations.
	Accidental hydrocarbon release (ES Section 12)	Hydrocarbon inventories are to be removed from the topsides prior to commencing removal operations. The SNS Oil Pollution Emergency Plan will be updated in agreement with BEIS to include all planned decommissioning operations.

Table 4.2: Environmental Impact Management (cont)

Activity	Main Impacts	Management
Jacket Removal	Energy use and atmospheric emissions (ES Section 7)	<p>All engines, generators and combustion plant on the vessels will be well maintained and correctly operated to ensure that they are working efficiently to minimise energy use and gaseous emissions.</p> <p>Vessel operations will be minimised where practical.</p>
	Underwater noise (ES Section 8)	<p>A noise assessment has been completed to determine the likely impact of noise generated by the proposed operations on marine mammals in the surrounding area. The results of the assessment will be used during the planning of vessel operations.</p> <p>There is no intention to use underwater explosives during these activities.</p>
	Accidental hydrocarbon release (ES Section 12)	The SNS Oil Pollution Emergency Plan will be updated in agreement with BEIS to include all planned decommissioning operations.
	Seabed disturbance (ES Section 9)	<p>The decommissioning operations will be carefully designed and executed so as to minimise the area of seabed that will be disturbed within the SCI.</p> <p>The introduction of new material to the marine environment is to be avoided or minimised throughout the proposed operations.</p>
Subsea Installation Removal	None	None

Table 4.2: Environmental Impact Management (cont)		
Activity	Main Impacts	Management

Table 4.2: Environmental Impact Management (cont)		
Activity	Main Impacts	Management
Decommissioning Drill Cuttings Piles	No drill cuttings piles present	No drill cuttings piles present.

5. Interested Party Consultations

Note A separate standalone Decommissioning Programme covering the Viking Satellite Infield pipelines will contain stakeholder comments on those aspects within that programme.

Table 5.1 Summary of Stakeholder Comments		
Stakeholder	Comment	Response
Statutory Consultees (GMS, NFFO, SFF, NIFPO, ANIFPO)	NFFO: Concerns on the amount of rock placement were elevated to the degree that the Federation has no further issues with the Viking De com program.	The rock placement being referred to is primarily in respect of the Accommodation Work Vessel's requirements to allow vessel location alongside the satellites during the pipeline flushing and topsides disconnection. This activity has been completed.
Public	No comments received.	N/A
Other (VisNed)	Although VisNed are not a statutory consultee their views were obtained during stakeholder engagement in 2015 and no issues were raised.	N/A

6. Programme Management

6.1 Project Management and Verification

ConocoPhillips has established a UK Decommissioning organisation as a department to manage and execute decommissioning projects. ConocoPhillips existing processes for Operations, Planning, Project Management, Procurement, Health Safety and Environment, will be used and tailored to meet the specific requirements of decommissioning projects. ConocoPhillips will manage all permitting, licences, authorisations, notices, consents and consultations.

Any changes to this decommissioning document will be discussed and agreed with BEIS.

6.2 Post-Decommissioning Debris Clearance and Verification

A post decommissioning site survey will be carried out around a 500m radius of installation sites of each Viking Satellite when the decommissioning scope of this programme and the associated Viking Satellites Infield Pipelines programme is completed. Oil and Gas seabed debris will be recovered for onshore disposal or recycling in line with existing disposal methods.

Independent verification of seabed state will be obtained by trawling the platform area of each Viking Satellite. This will be followed by a statement of clearance to all relevant governmental departments and statutory consultees.

6.3 Schedule

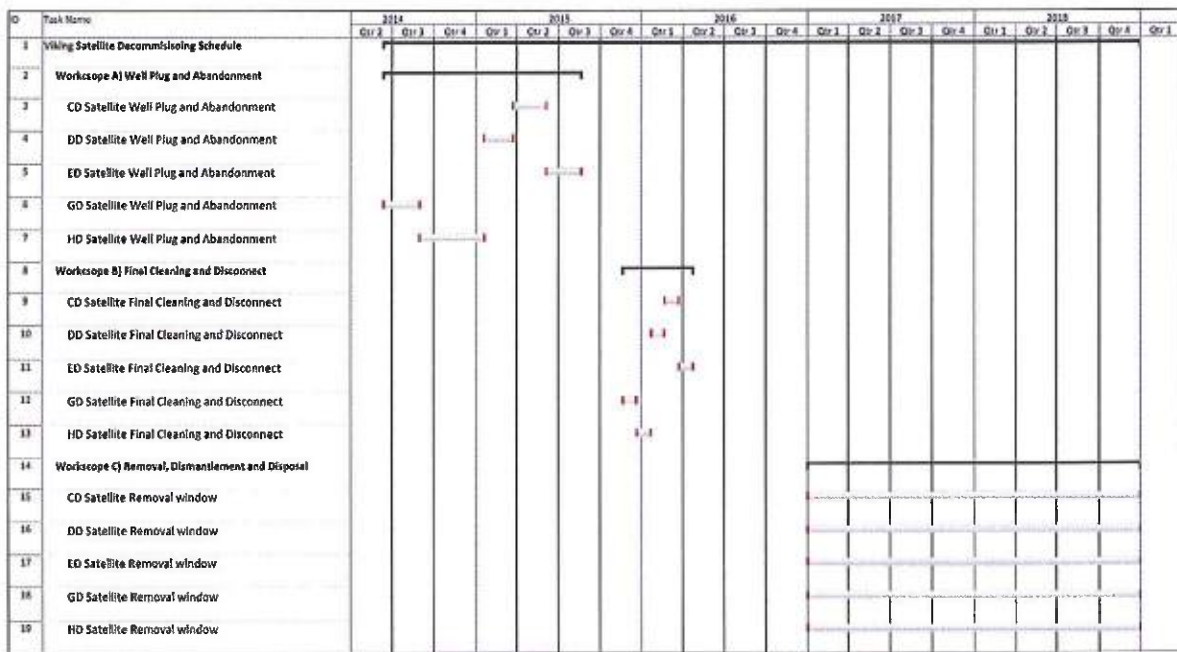


Figure 6.1: Gantt Chart of Project Plan

Note: This is an indicative schedule and is subject to change based on technical, market, and commercial factors.

6.4 Costs

Table 6.1 – Provisional Decommissioning Programme costs	
Item	Estimated Cost (millions)
Platform / Jacket – Preparation / Removal and Disposal	Provided to BEIS*
Pipelines flushing and topsides disconnection	Provided to BEIS*
Well Abandonment	Provided to BEIS*
Continuing Liability – Future Environmental Survey Requirements	Provided to BEIS*
Total	Provided to BEIS*

**An estimate of the overall cost has been provided separately to BEIS.*

Note: Provisional estimate subject to change based on technical, market, and commercial, factors.

6.5 Close Out

In accordance with BEIS guidelines a close out report will be submitted to BEIS within 4 months of completion of the offshore decommissioning scope covered by this decommissioning document and the completion of the workscope of the associated standalone Viking Satellites Infield Pipelines decommissioning programme. The close out report will contain debris removal and independent verification of seabed clearance, the first post-decommissioning environmental survey and explanation of any variations to the approved Decommissioning Programme.

6.6 Post Decommissioning Monitoring and Evaluation

A post decommissioning environmental seabed survey will be carried out when the decommissioning scope of this programme and the workscope of the associated standalone Viking Satellites Infield Pipelines decommissioning programme is completed. The survey will include seabed sampling to monitor levels of hydrocarbons, heavy metals and other contaminants to allow for a comparison with the results of the pre-decommissioning survey.

After the surveys have been issued to BEIS and reviewed, a post monitoring survey regime covering the sites of the former platforms will be agreed by both parties.

7. Supporting Documents

Table 7.1 : Supporting Documents	
Document Number	Title
BMT-SNS-P-XX-X-HS-02-00006	Environmental Statement
J/1/20/2342	Fugro EMU Limited, 2013c. Decommissioning Environmental Survey Report

8. Partner Letters of Support



Sandra Turin

Decommissioning Business Manager
North Sea



Britoil Limited
North Sea Headquarters
1 Wellheads Avenue
Dyce
Aberdeen
AB21 7PB

7th September 2016

Offshore Decommissioning Unit
Department for Business, Energy and
Industrial Strategy (BEIS)
3rd Floor, AB1 Building
Crimon Place
Aberdeen AB10 1BJ
FAO: Fiona Livingston, Senior
Decommissioning Manager

Direct 01224 934834
Main 01224 832000
Mobile 07825 675 964
sandra.turin@bp.com

Dear Fiona,

PETROLEUM ACT 1998

Decommissioning of Viking Satellite Installations CD, DD, ED, GD, and HD

We acknowledge receipt of your letter dated 24th August 2016.

We, Britoil Limited (company number SC077750), a company incorporated in Scotland having its registered office at 1 Wellheads Avenue, Dyce, Aberdeen, AB21 7PB, as a holder of a section 29 notice relative to the Viking field and in accordance with the Guidance Notes¹ confirm that we hereby authorise ConocoPhillips (U.K.) Limited (company number 00524868), a company incorporated in England and Wales having its registered office at Portman House, 2 Portman Street, London, W1H 6DU, to submit on our behalf an abandonment programme relating to the Viking CD, DD, ED, GD, HD facilities as directed by the Secretary of State on 24th August 2016.

We confirm that we support the proposals detailed in the Viking Satellites CD, DD, ED, GD, HD Decommissioning Programme dated 1st September 2016, which is to be submitted by ConocoPhillips (U.K.) Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours sincerely,

Sandra Turin
Decommissioning Business Manager
For and on behalf of Britoil Limited (company number SC077750)

¹ Guidance Notes issued by the Department of Energy and Climate Change on Decommissioning of Offshore Oil and Gas Installations and Pipelines under the Petroleum Act 1998