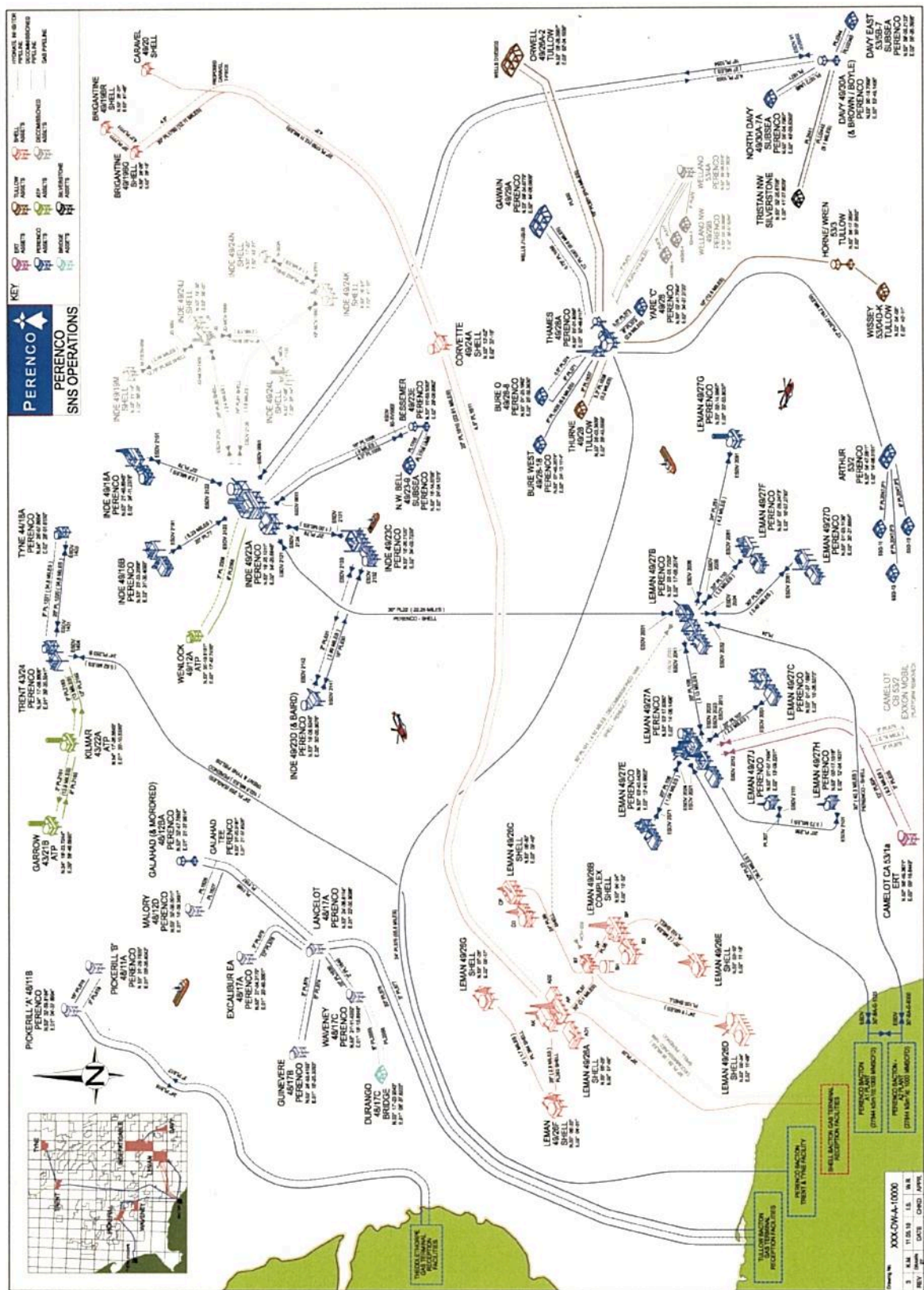




**OFFSHORE OIL POLLUTION EMERGENCY PLAN  
INCLUDING SPILL REPORTING PROCEDURE**



**CONTENTS**

1	DECC APPROVAL	1
2	ABBREVIATIONS	3
3	INTRODUCTION TO DOCUMENT	5
3.1	SCOPE	5
3.2	OIL SPILL TIERS	5
3.3	TECHNICAL SUPPORT	6
4	FIELD ASSETS	7
4.1	Leman Field - Perenco	7
4.2	Inde Field - Perenco	7
4.3	Wenlock field - ATP	7
4.4	Thames Field - Perenco	7
4.5	Horne & Wren Field - TULLOW	8
4.6	Pickerill Field - Perenco	8
4.7	Waveney Field - Perenco	8
4.8	Trent Field - Perenco	8
4.9	Tyne Field - Perenco	8
4.10	Kilmar and Garrow Field - ATP	8
4.11	LAPS Field - Perenco	9
5	OFFSHORE RESPONSE	10
6	OIL AND/OR CHEMICAL SPILL REPORTING PROCEDURE	11
6.1	HOW TO REPORT	11
7	ON SITE (TIER 1) RESOURCES	13
8	SELECTION OF AN OFFSHORE INITIAL RESPONSE STRATEGY	14
9	OIL SPILL RESPONSE STRATEGY GUIDANCE	16

9.1	NATURAL DISPERSION AND MONITORING RESPONSE	16
9.2	DISPERSANT SPRAYING (NOT IMMEDIATELY AVAILABLE IN THE FIELD)	17
10	SAMPLING PROCEDURE	18
11	TESTING DISPERSANT EFFICIENCY PROCEDURE	19
12	MANUAL CALCULATION OF SLICK MOVEMENT PROCEDURE	20
13	OIL SPILL SIZE ESTIMATION GUIDE	22
14	FIELD SPECIFIC INFORMATION	23
14.1	Perenco operated Gas and condensate pipelines	23
14.2	Leman field	26
14.3	Inde Field	32
14.4	Thames field	38
14.1	Pickerill Field	43
14.2	Waveney Field	47
14.3	Trent field	51
14.4	Tyne field	55
14.5	Kilmar and Garrow Field	58
14.6	LAPS Field	62
15	PON 1 REPORTING	66
APPENDIX 1	PETROLEUM OPERATIONS NOTICE NO.1	67
APPENDIX 2	GUIDANCE FOR COMPLETING PON1 REPORT	68
APPENDIX 3	CONTACTS	73



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## 1 DECC APPROVAL



**Registered Company Number: 04653066**

Perenco UK Limited  
Thamesfield Way  
Off Pasteur Road  
Great Yarmouth  
Norfolk  
NR31 0DW

**1292 – 01.08.06.05/146c**

**Date 27 May 2010**

**Energy Group**

Energy Development Unit  
Atholl House  
86-88 Guild Street  
Aberdeen  
AB11 6AR

**Tel +44 (0)1224**

**Fax +44 (0)1224**

[www.berr.gov.uk](http://www.berr.gov.uk)

[offshore.inspectorate@berr.gsi.gov.uk](mailto:offshore.inspectorate@berr.gsi.gov.uk)

Dear Sirs

### **OIL POLLUTION EMERGENCY PLAN – Perenco – Offshore**

Thank you for providing a copy of the **Offshore** oil pollution emergency plan which was received by the Department on **October 28, 2010** and updated on **March 25, 2010**, for our review.

The document is acceptable to this Department and accordingly I enclose the approval of the Secretary of State to this plan pursuant to the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998 and the Offshore Installations (Emergency Pollution Control) Regulations 2002.

Yours faithfully

Environmental Inspector

Continuation 2

**THE MERCHANT SHIPPING (OIL POLLUTION PREPAREDNESS, RESPONSE  
AND CO-OPERATION CONVENTION) REGULATIONS 1998**

**THE OFFSHORE INSTALLATIONS (EMERGENCY POLLUTION CONTROL)  
REGULATIONS 2002**

**APPROVAL OF OIL POLLUTION EMERGENCY PLAN**

Pursuant to the above-mentioned Regulations, the Secretary of State hereby approves the **Perenco, Offshore** oil pollution emergency plan, which was received by the Department on **October 28, 2010** and updated **March 25, 2010**.

For and on behalf of the Secretary of State

.....  
Authorised to act in that behalf

**27 May 2010**



## 2 ABBREVIATIONS

BES	Briggs Environmental Services
BST	Business Support Team
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EA	Environment Agency
EPC	Emergency Pollution Control (Regulations 2002)
E/HSEA	Environmental/Health Safety Environmental Advisor
FPSO	Floating Production Storage
GYCC	Great Yarmouth Control Centre
HSE	Health and Safety Executive
IMC	Incident Management Centre
IMT	Incident Management Team
ITOPF	International Tanker Owners Pollution Federation
JNCC	Joint Nature Conservancy Council
LA	Local Authority
MCA	Maritime Coastguard Agency
MCA-CPR	Maritime Coastguard Agency – Counter Pollution and Response Branch
MCO	Marine Casualty Officer
MMO (formerly MFA)	Marine Management Organisation (formerly Marine & Fisheries Agency)
MICO	Major Incident Communications Officer
MODU	Mobile Offshore Drilling Units
MRC	Marine Response Centre
NE	Natural England
NCP	National Contingency Plan
OBM	Oil Based Mud
OCES	Operators Co-operative Emergency Services
OCU	Operations Control Unit
O&GUK	Oil and Gas UK
OIM	Offshore Installation Manager
OPEP	Oil Pollution Emergency Plan
OPOL	Offshore Pollution Operators Liability
OPRC	The Merchant Shipping (Oil Pollution Preparedness, Response Co-operation Convention) Regulations
OSIS	Oil Spill Information Systems
OSR	Oil Spill Response
PBCR	Perenco Bacton Control Room
PON 1	Petroleum Operations Notice 1

RSPB	Royal Society for the Protection of Birds
RSPCA	Royal Society for the Protection of Cruelty to Animals
SBM	Synthetic Based Muds
SBV	Standby Vessel
SOPEP	Shipboard Oil Pollution Emergency Plan
SOSREP	Secretary of States Representative
SRC	Shoreline Response Centre
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
WBM	Water Based Mud

### 3 INTRODUCTION TO DOCUMENT

This oil pollution emergency plan is designed to be facility specific in line with the requirements of the OPRC convention. It covers the operation(s) as defined in the plan scope and comes in two parts.

This part of the plan contains:

1. Practical information that is required for offshore personnel to initially respond to the incident.
2. Field Specific data – information that may help respond to the event including inventory data for the installations, pipeline information and meteorological and spill modelling information.

**It is stressed that, despite the guidance given, the OIM's priority in the event of a spill is to take measures to ensure the safety of personnel and the installation, and to prevent escalation of the incident. This plan is for oil spills to the sea only.**

#### 3.1 SCOPE

The operations encompassed by this plan extend to routine production operations as well as pipeline, drilling and well interventions, decommissioning and well abandonment associated with the assets identified in Section 4 below.

Although included within the scope of this plan, activities involving 3rd parties (e.g. drilling contractors) shall be managed through the creation of a Bridging Document that describes the interfaces between the parties. An appendix to Perenco's OPEP will be submitted to DECC for approval prior to planned drilling campaigns.

All installations are >25 miles from the nearest landfall.

#### 3.2 OIL SPILL TIERS

This plan is limited to responses in respect of Tier 1 events, these being the maximum scale that can reasonably be expected. The response to more significant (Tier 2 & 3) events requiring the mobilisation of onshore resources and the possible involvement of the SOSREP is described in Perenco's Onshore Oil Pollution Emergency Plan.

**Tier 1:** Operational type spills which can be controlled by on-site resources. A Tier 1 spill is not likely to require mobilisation of additional resources.

**Tier 2:** A larger spill that can be handled by personnel offshore and Perenco at Great Yarmouth that will require additional resources.

**Tier 3:** A major incident that will require full mobilisation of Perenco resources, national and other industry resources.

### 3.3 TECHNICAL SUPPORT

Technical detail underpinning the instructions in the Perenco Offshore and Onshore OPEPs is presented in the Justification Document. This includes the assessment of environmental sensitivities associated with the locations of the installations and the scale of impact of any conceivable spill events, describing and justifying appropriate responses.



## 4 FIELD ASSETS

### 4.1 LEMAN FIELD - PERENCO

Block 49/27

- Normally Attended Installation:  
Leman 49/27A (5 bridge linked platforms AD, AP, AC, AX, and AQ).
- Normally Unattended Installations:  
Leman 49/27B (BD BP BT)                      Leman 49/27F (FD FP)  
Leman 49/27C (CD CP)                      Leman 49/27G  
Leman 49/27D (DD DP)                      Leman 49/27H  
Leman 49/27E (ED EP)                      Leman 49/27J.  
Camelot 53/1a (ERT Operated)

### 4.2 INDE FIELD - PERENCO

Block 49/23.

- Normally Attended Installation:  
Inde 49/23A (3 bridge linked platforms AD, AP, AT).
- Normally Unattended Installations:  
Inde 49/23C (AD AC)                      Inde 49/23D  
Inde 49/18A (AD. AP)                      Inde 49/23E (Bressemer) (BD BP)  
Inde 49/18B (AD. AP)                      Inde 49/30A (Davy) (BD BP)

### 4.3 WENLOCK FIELD - ATP

Block 49/12A.

- Normally Unattended Installation:  
Wenlock 49/12A.

### 4.4 THAMES FIELD - PERENCO

Block 49/28A

- Normally Attended Installation:  
Thames Alpha (AP AW AR) (49/28A).

- Normally Unattended Installation:  
Welland (Decommissioned).

#### **4.5 HORNE & WREN FIELD - TULLOW**

Block 53/3

- Normally Unattended Installation:  
Horne/Wren 53/3

#### **4.6 PICKERILL FIELD - PERENCO**

Block 48/11AB

- Normally Unattended Installations:  
Pickerill A                      Pickerill B.

#### **4.7 WAVENEY FIELD - PERENCO**

Block 48/17C

- Normally Unattended Installation:  
Waveney platform.

#### **4.8 TRENT FIELD - PERENCO**

Block 43/24

- Normally Unattended Installation:  
Trent Platform (TP TC).

#### **4.9 TYNE FIELD - PERENCO**

Block 44/18A

- Normally Unattended Installation:  
Tyne platform.

#### **4.10 KILMAR AND GARROW FIELD - ATP**

Block 43/21A 22B

- Normally Unattended Installations:  
Kilmar platform                      Garrow platform.

#### 4.11 LAPS FIELD - PERENCO

Block 48/17ABC 48/12AD

- Normally Unattended Installations:

Lancelot

Guinevere

Excalibur

Galahad

Malory.

## 5 OFFSHORE RESPONSE

Action	Responsible Position	Procedure
Alert/Notify	Person observing or suspecting a spill.	⇒ Report spill to OIM and provide the following: <ul style="list-style-type: none"> <li>⇒ location and source of spill;</li> <li>⇒ size of spill and type of oil;</li> <li>⇒ if ongoing;</li> </ul> ⇒ If spill noticed by third party e.g. surveillance aircraft, then assume spill has occurred from installation until disproved.
Raise alarm, put resource on standby	OIM	⇒ Raise the alarm by informing installation personnel. ⇒ Put any resources on standby.
Identify source of spill and make safe.	As required	⇒ Determine source of spill (if unknown). ⇒ Take appropriate action to stop or control spill.
Estimate spill size and movement and allocate Tier of spill	As required  Field OIM	⇒ If it is not possible to determine spill size from plant information, a visual estimate may be made <i>Refer to Section 13</i> . If possible use a helicopter or SBV to estimate area of slick. ⇒ <i>Refer to Section 12 for estimation of spill movement</i> ⇒ If it is not possible to respond to spill using infield resources, notify Perenco onshore IMT by calling Bacton Gatehouse on
Report Spill	As directed by field OIM	⇒ There are statutory and company oil spill to sea reporting requirements. <i>Follow the reporting requirements detailed in Section 6</i> . Provide regular reports to PBCR at an agreed time interval.
Obtain sample	Field OIM to request Master of SBV to take sample.	⇒ If possible a sample of the spilt oil should be taken. This may be important for post-incident inquiries. <i>Procedures for sampling are detailed in Section. 10</i> .
Spill Response	Field OIM	⇒ If weather and seastate conditions permit, and in consultation with IMT Manager, initiate a response. <i>Follow the Decision Guide and Response strategy guidance in Section. 9</i> .
Incident Log	As directed by OIM	Open and maintain incident log, which should include: <ul style="list-style-type: none"> <li>⇒ Accurate timing of events</li> <li>⇒ Actions taken</li> <li>⇒ Contacts made / received.</li> </ul>



## 6 OIL AND/OR CHEMICAL SPILL REPORTING PROCEDURE

All hydrocarbon (oil) and/or chemical spills to the sea, regardless of size, must be reported on a PON1 form, following procedure Notification of offshore spills and non-compliant discharges (BMS-EM-010 – A Perenco Procedure that deals specifically with the notification of oil spills), including:

- Any spillage of hydrocarbons and chemicals into the sea.
- Oil on the sea surface through incomplete burn or any hydrocarbon solids drop out during well testing or flaring.
- Produced water excursions if oil in water is > 100 mg/kg. If < 100 mg/kg but sheen looks unusual, then complete form.
- Oil from a third party source which is in the vicinity of the facility.

**Note:** All spills that cannot be managed using available infield resources must be reported immediately by phone to Perenco Bacton Control Room (PBCR). This will activate the Perenco Incident Management Centre Onshore.

### 6.1 HOW TO REPORT

The reporting requirements for oil spills are shown in the table below (note offshore requirements are shown in red italics). Where the incident is associated with the operation of a drilling rig, it must be reported immediately by telephone to the Drilling Rig Contractor's Duty Manager (by the OIM) and to the Perenco IMT Duty Manager (by the Perenco Offshore Drilling Supervisor), whatever the size of the oil spill.

There is also a statutory requirement to report all spills to:

- HMCG;
- DECC Environment and Decommissioning Branch; and
- JNCC (under certain circumstances EA should also be contacted).

The notification should be made using the EPON1 within 6 hours. For extended spill incidents the EPON1 should be updated periodically. Appendix 1 provides a template for the submission and an explanation of the information requirements.

**Summary of Reporting Requirements (offshore reporting requirements are in red italics)**

Notify this person or organisation*	Notification to be made by:	<1 tonne (Small Spill)	1-25 tonnes (Medium Spill)	>25 tonnes (Large Spill)	Spill is in an environmentally sensitive area, or at an installation operating in any block wholly or partly within 25 miles of the coast	> 1 tonne in blocks wholly or partly within 25 miles of the coast or in environmentally sensitive areas	Spill likely to become extensive	Spill is within, or may enter territorial waters (12 mile limit) or may reach the coast	Prior to dispersant use unless used to protect the safety of the rig	Following use of dispersant
<i>Offshore Installation Manager (OIM)</i>	<i>Receives notice from spill observer</i>									
<i>Drilling Rig Contractor Onshore Duty Manager</i>	<i>OIM</i>	✓	✓	✓						
<i>Perenco Offshore Drilling Supervisor (DS)</i>	<i>OIM</i>	✓	✓	✓						
<i>IMT Duty Manager (IMT DM)</i>	<i>DS</i>	✓	✓	✓						
Perenco Environmental / HSE Advisor	IMT DM	✓	✓	✓						
<i>HMCG</i>	<i>OIM</i>	<i>EPON1</i>								✓
<i>DECC</i>	<i>OIM</i>									✓
<i>JNCC</i>	<i>OIM</i>									
NE	E/HS EA					✓	✓	✓		
MMO (formerly MFA)	E/HS EA						✓	✓	✓	✓
MCA - CPR	E/HS EA						✓	✓		
EA	E/HS EA							✓		
Local Authority	E/HS EA							✓		
OSR Aerial Surveillance	E/HS EA		(✓)	✓						
OSR Advisor to Perenco IMT	E/HS EA		(✓)	(✓)						
UKO&G Equipment (OSR Southampton)	E/HS EA		(✓)	(✓)						
OSR Tier 3 equipment	E/HS EA			✓						

✓ telephone (or page) and follow up with a fax (✓) if required

\*Note: refer to relevant project specific appendices for contact telephone & fax numbers

## 7 ON SITE (TIER 1) RESOURCES

Tier 1 resources immediately available.

Principal response strategy is to monitor and evaluate natural dispersion.

The Emergency Response and Rescue Vessel can also promote natural dispersion by propeller action.

All facilities have clean up material such as sorbents pads and granules to deal with minor deck spills.

Other Tier 2 and Tier 3 resources are available to assist. Refer to Perenco Onshore OPEP for details.



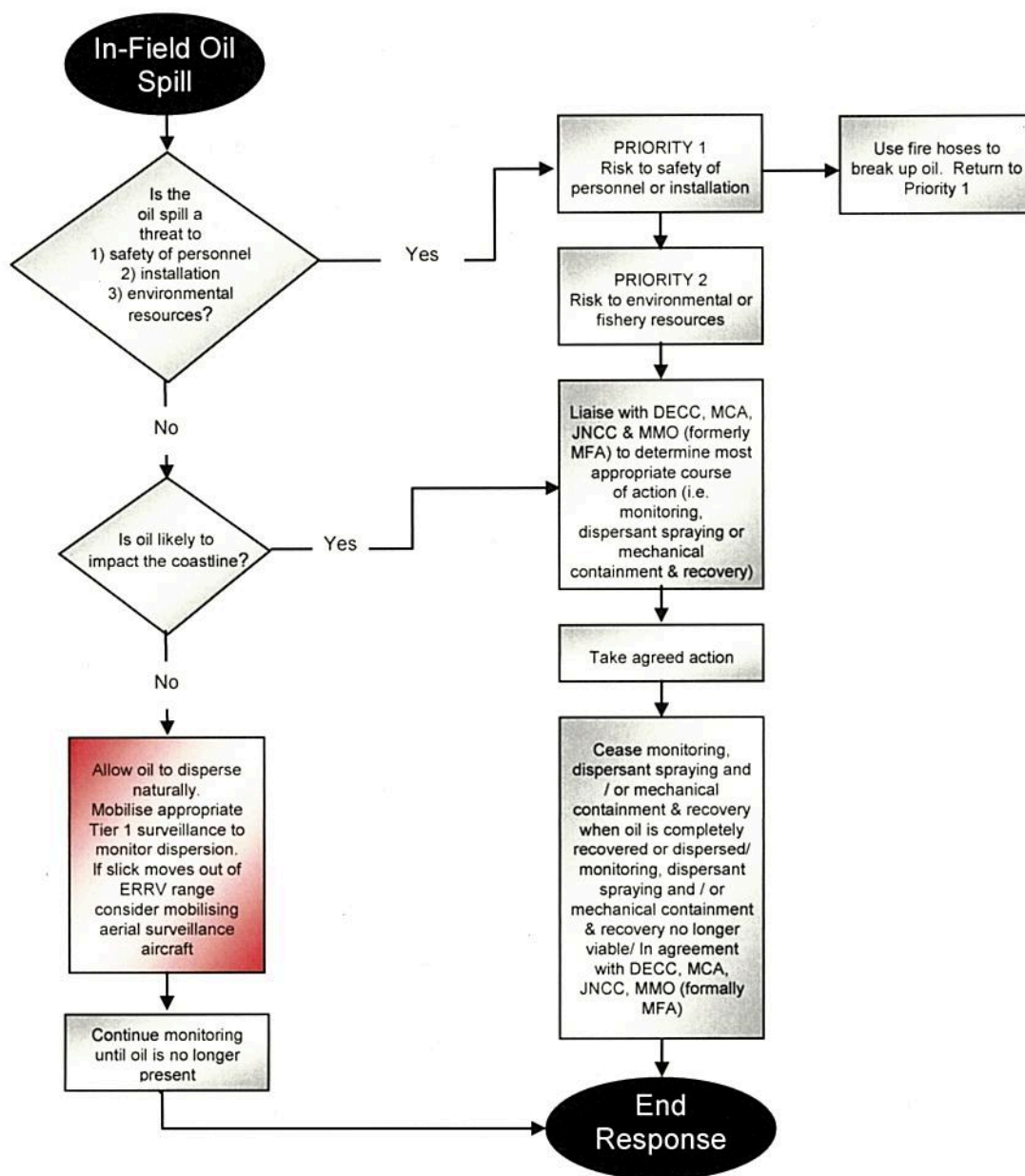
## 8 SELECTION OF AN OFFSHORE INITIAL RESPONSE STRATEGY

The scope of this offshore plan is limited to Tier 1 spills. The response to Tier 2 or 3 spills are detailed in the Perenco Onshore OPEP.

Notwithstanding anything in this guidance, the OIM of the installation should spray chemical dispersant (if available) if he considers that this would minimise threat to human life or valuable environmentally sensitive resources, provided the spill is one mile outside of the 20 metre depth contour. Within this boundary MMO (formerly MFA) must give approval for dispersant use, except when used to protect human life.

The following flow chart is to assist offshore personnel in selecting an oil spill response strategy. They demonstrate the steps to follow **without infield dispersant**.

**Response Strategy Decision Tree Without Infield Dispersant**





In all cases, any ongoing spills:

- Should be stopped, if safe to do so.
- Reported.
- Samples should be taken.
- Spill assessment procedures should be undertaken.

## 9 OIL SPILL RESPONSE STRATEGY GUIDANCE

### 9.1 NATURAL DISPERSION AND MONITORING RESPONSE

#### *Operational Considerations*

Monitoring of large spills should always be carried out using surveillance aircraft. Contact IMT Manager and request assistance.

For smaller spills, and if it is safe for the ERRV to move away from the installation, identify heaviest concentrations of oil using the colour guide table.

Follow patches of heaviest oil concentration and watch and report on break up of slick.

Determine and report direction of movement of other oil patches; note and report to PBCR movement of oil towards sensitive environmental resources. Refer to main plan for details.

Watch for and report any large flocks of birds on the sea surface.

Determine progress of natural dispersion or emulsion formation. Note that crude oil spilled at sea will undergo changes in appearance due to weathering. Thicker patches of crude oil will usually appear as dense black areas, but as emulsification occurs the colour will change to brown.

Condensate will naturally disperse very rapidly, within about 1-2 days.

Diesel and base oil will rapidly spread out to form a sheen and cannot be easily removed. Diesel should naturally disperse within about 1-2 days.

Light / medium crude oils will take about 1-3 days to naturally disperse, depending on amount spilt and sea state conditions.

Heavier crude oils will take longer to disperse, about 2-5 days.

Determine progress of natural dispersion.

**Note:** Crude oil, when spilt at sea, will undergo marked changes in appearance due to weathering.

## 9.2 DISPERSANT SPRAYING (NOT IMMEDIATELY AVAILABLE IN THE FIELD)

### *Operational Considerations*

Within 1 mile of the 20 metre depth contour approval from MMO (formerly MFA) must be sought before dispersant application unless safety of rig and personnel are endangered. Outside of this boundary, advice from MMO (formerly MFA) should be sought unless safety of rig and personnel are endangered.

May require some waves to agitate the water and mix the dispersant, wave height at least 30 cms required.

It is best to spray with equipment mounted on the bows of a vessel. This gets over the effect of the bow wave pushing oil away.

Upper limit for spraying will be about 25-30 knot wind speeds.

If dispersant to be used on the diesel, condensate or crude oil, this must be carried out within the first few hours of the spill. Dispersants may not work on spilt crude once it has been at sea for a long period of time, especially in winter.

Try initially for a 20:1 Oil/Dispersant ratio.

Refer to Section 9 for testing dispersant efficiency.

Actions required:

- Upper limit for spraying is about 25-30 knots wind speeds.
- Commence treatment from edge of the slick.
- Try and avoid cutting across slick.
- Treat slick with parallel and continuous runs to cover the whole area; treat slick into the wind.

As dispersion is achieved it will produce a "smoke plume" in the water. The dispersion will vary in colour between dark and light brown.

If dispersion is not taking place, large oil droplets will be evident. If this is the case, STOP spraying.

If the oil is dispersing satisfactorily, the speed of boat may be increased by 1 knot incrementally to find the optimum speed.

DO NOT spray sheen as they will rapidly disperse.

Do not attempt to spray very viscous or semi-solid oils.

Observe all safety advice when using dispersants.

Keep full log of dispersant use.



## 10 SAMPLING PROCEDURE

In instances where the source of the slick is in doubt, or even if it is known, it is advisable to take a sample of spilt oil for fingerprinting or evidence. Each facility should have an oil sampling kit.

The following points should be noted when taking the sample:

1. Glass containers should be used. Metal and plastic containers should be avoided as they may interfere with subsequent fingerprinting.
2. Sampling may be done in a variety of ways:
  - If the oil is sufficiently thick, it should be possible to carefully skim the oil from the sea surface using a bucket or similar receptacle. More than one pass may be required to achieve a sample of sufficient size. Carefully transfer oil into a clean glass jar.
  - Use of a container with a bottom outlet and tap is recommended as water can be drained off from the bottom.
  - A funnel can be used to improvise the above receptacle, using the finger to release the water and retain the oil.
  - Where the oil is very thin, use the absorbent pads provided. The oil contaminated pad should be placed in a sealed airtight container for transport to the laboratory.
3. The following sample sizes provide guidance to what is required for laboratory analyses:
  - For freshly spilled, relatively non-emulsified oils take minimum of 100 millilitres (ml).
  - For emulsions, take a minimum of 500 ml.
  - If quantities cannot be obtained, a sample should still be taken.
4. Ensure jars are stored in safe place away from heat.
5. Label or accompanying documentation should contain the following information:
  - Sample Identification No.
  - Date, time and place of sampling.
  - Name of Company and person taking sample.
  - Method of sampling.
  - Purpose for which sample was taken.
  - Source if known or suspected.
  - Particulars of any photos or supporting evidence.

## 11 TESTING DISPERSANT EFFICIENCY PROCEDURE

1. Test the amenability of the spilt oil to dispersants following the sampling of the slick. Do this as quickly as possible after taking the sample.

Test carried out as follows:

- Fill a clean screw top jar with seawater.
  - Carefully place about 25 ml of spilt oil on the surface.
  - Add about 1 ml of dispersant (ca. 2 drops) onto the surface.
  - Shake the jar. If the oil does not rise again to the surface but breaks up in the seawater, the slick should be amenable to dispersant spraying.
2. Undertake calculations to select correct pumping rate and boat speed in relation to nozzle size (delivery rate) and effective swath width of the equipment. You should start off with a ratio of 1:20 dispersant / oil.
  3. Initially, spray boat should enter the oil on surface at recommended speed to spray at a constant rate and agitate the area.
  4. Watch oil for evidence of dispersion.
  5. As dispersion is achieved it will produce a "smoke plume" in the water. The dispersion will vary in colour between dark and light brown.
  6. If dispersion is not taking place, large oil droplets will be evident. If this is the case STOP spraying.



## 12 MANUAL CALCULATION OF SLICK MOVEMENT PROCEDURE

After the initial spill assessment has been completed, the slick should be tracked and monitored throughout the incident to evaluate the extent of the slick, monitor the movement of the slick and decide on the appropriate action. This will occur as follows:

1. In the early stages of the incident, the slick may be monitored from the jetty or a vessel. Figure 1, which predicts the movement of oil on water as a function of wind and current, should be used to assist this.
2. For medium to large spills, the IMT Manager should authorise the Environmental / HSE advisor to mobilise aircraft to undertake aerial surveillance. Surveillance should be undertaken at least twice per day until such time as no oil is visible on the sea surface. Offshore will notify the HM Coastguard of its intentions to use aerial surveillance. Aerial surveillance will be undertaken as soon as possible after an incident has occurred.

### Slick Surveillance/Tracking Checklist

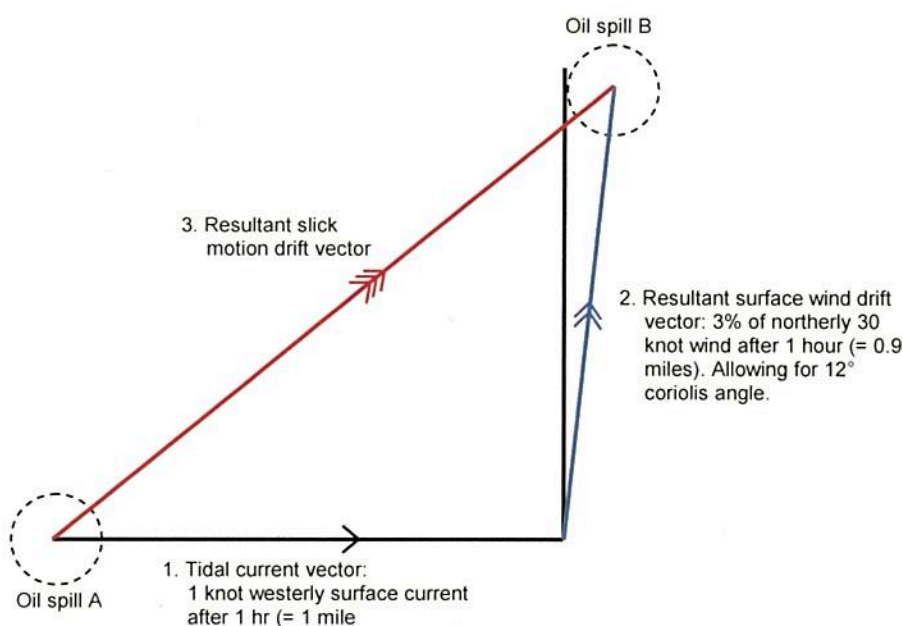
Checklist	Notes
Determine extent and co-ordinates of slick.	
Chart slick size, growth patterns and affected area(s); estimate quantities if possible.	Estimate by direct observation and use Section 11.
Carry out slick trajectory predictions.	Use vectors (Figure 1).
Follow direction of movement of slick.	
Identify heaviest concentrations of oil.	Likely to be at downwind leading edge of spill.
Identify onset and progress of water in oil emulsion formation.	Heavy oil (e.g. intermediate fuel oil) will change in appearance soon after spill; in initial stages, the thicker parts will appear as dense, black areas, but as emulsification takes place, the colour will change to brown, orange or yellow.
Watch for any flocks of birds.	
Watch for any oil floating subsurface.	
Watch for break up of slick and determine direction of movement of any oil patches.	
Report on progress of natural dispersion.	This is likely to be required for all spills.
Report on effectiveness of response.	

In addition to gravity spreading which will cause the oil to cover a progressively larger area, the oil moves on water as a function of wind and current - the current has a 100% influence and the wind a 3% influence. A slick will continue to spread until a thickness of about 1mm is reached. Once this stage is reached, the slick may break up into windrows, which will further increase the spread of the slick. To plot the movement of a slick, the following steps should be taken in association with Figure 1:

1. Plot 100% of the current speed on an appropriate chart in the direction that it flows (i.e. if the current is 1 knot, then plot 1 nautical mile on an appropriate chart).
2. From this end point then plot the wind direction as 3% of its value in the direction it is blowing (i.e. if the wind is 30 knots, then plot 0.9 nautical miles in the direction it is blowing).
3. Point B will be the centroid of the oil spill 1 hour later and vector AB its predicted trajectory.

For best results, the plot should be updated hourly and verified with overflights.

**Figure 1 – Manual Prediction of Oil Slick Trajectory Prediction**





### 13 OIL SPILL SIZE ESTIMATION GUIDE

Estimation of Quantity from Appearance of Oil at Sea (Taken from the Bonn Agreement Pollution Observation Log) When using this technique, bear in mind that the entire area of the slick may not be visible and this can only provide an order of magnitude estimate of the amount of oil spilt.

1. Measure the parameter of the area affected, by flying / steaming along the length and breadth to calculate the area of coverage in square kilometres (km<sup>2</sup>).
2. Determine the appearance of the oil (i.e. Silvery, Rainbow etc) as described below.
3. Calculate the % coverage of oil appearance and multiply this by the total area affected.
4. Multiply the total area affected by its colour code quantity to determine the total tonnes spilt. See example overleaf.

Code	Oil Appearance / Colour	Quantity (litres / km <sup>2</sup> )
1	Sheen (Silvery/ Grey)	40- 300
2	Rainbow	300- 5000
3	Metallic	5000 - 50,000
4	Discontinuous true oil colour	50,000- 200,000
5	Continuous true oil colour	200,000 – more than 200,000

For example:

If the total area of coverage is 5kilometres x 5kilometres (Total = 25 km<sup>2</sup>) and the area within that covered by oil is estimated to be about 80%, then the total area affected will be 20 km<sup>2</sup>.

If the area covered by rainbow oil is 30% then take the total area affected figure (20 km<sup>2</sup>) x 30% = 6 km<sup>2</sup>.

Then, take 6 km<sup>2</sup> and multiply by Colour Code Quantity, in this case Rainbow, that = 300 litres/km<sup>2</sup> giving a total of 1800 litres spilt.

If the area covered by metallic oil is 70%, then take the total area affected figure (20 km<sup>2</sup>) x 70% = 14 km<sup>2</sup>.

Then, take 14 km<sup>2</sup> and multiply by Colour Code Quantity, in this case Metallic, that = 5000 litres/km<sup>2</sup> giving a total of 70,000 litres spilt.

Sum =

Rainbow: – 20 km<sup>2</sup> x 30% = 6 km<sup>2</sup> x 300 litres/km<sup>2</sup> = 1800 litres Spilt.

Metallic: – 20 km<sup>2</sup> x 70% = 14 km<sup>2</sup> x 5000 litres/km<sup>2</sup> = 70,000 litres Spilt.

Therefore, total amount of oil spilt = 71,800 litres

## 14 FIELD SPECIFIC INFORMATION

## 14.1 PERENCO OPERATED GAS AND CONDENSATE PIPELINES

Operator	Asset	DTI Number	Status	From	To	Description	Date of Installation	Nominal Dia	Length (kilometres)	Through put Mil F3/day	Design Pressure (barg)
Perenco	Inde-Joint	PL-22	Operating	23-AT	27-BT	30" Joint Trunkline from 49/23-AT to 49/27-BT	1971	30	35.80	1200	110.3
Perenco	Inde-Joint	PL-24	Operating	27-BT	Bacton	30" Joint Trunkline from 49/27-BT to Bacton A2	1970	30	64.88	900	99.3
Perenco	Indefatigable	PL-76	Operating	18-AP	23-AT	22" Infield Line from 49/18-AP to 49/23-AT	1971	22	4.50	450	96.6
Perenco	Indefatigable	PL-77	Operating	18-BP	23-AT	20" Infield Line from 49/18-BP to 49/23-AT	1974	20	8.40	330	117.2
Perenco	Indefatigable	PL-78	Operating	23-CP	23-AT	20" Infield Line from 49/23-CP to 49/23-AT	1977	20	1.60	330	113.1
Perenco	Indefatigable	PL-630	Operating	23-D	23-CP	18" Infield Line from 49/23-D to 49/23-CP	1989	18	4.8	118	46.2
ATP owned, Perenco operated	Indefatigable	PL-2355	Operating	Wenlock	23-AT	8" gas condensate line from Wenlock to 49/23-AT	2007	8	36.1	70	1
Perenco	Leman	PL-23	Operating	27-AP	Bacton	30" Trunkline from 49/27-AP to Bacton A1	1968	30	61.50	900	93.1
Perenco	Leman	PL-106	Operating	27-BP	27-AP	20" Infield Line from 49/27-BP to 49/27-AP	1969	20	3.40	400	55.2
Perenco	Leman	PL-107	Operating	27-CP	27-AP	20" Infield Line from 49/27-CP to 49/27-AP	1969	20	3.50	800	55.2
Perenco	Leman	PL-108	Operating	27-EP	27-AP	20" Infield Line from 49/27-EP to 49/27-AP	1972	20	1.70	120	53.8
Perenco	Leman	PL-109	Operating	27-DP	27-BT	30" Infield Line from 49/27-DP to 49/27-BT	1972	30	5.40	330	96.6
Perenco	Leman	PL-110	Operating	27-FP	27-BT	20" Infield Line from 49/27-FP to 49/27-BT	1974	20	2.40	300	96.5
Perenco	Leman	PL-206	Operating	27-H	27-AC	20" Infield Line from 49/27-H to 49/27-AC	1984	20	6.00	250	48.3
Perenco	Leman	PL-207	Operating	27-J	Tee on PL206	16" Infield Line from 49/27-J to the Tee on PL-206	1984	16	0.2	150	48.3
Perenco	Leman	PL-251	Operating	27-G	27-BT	24" Infield Line from 49/27-G to 49/27-BT	1984	24	6.8	300	95.2
Perenco	Bessemer	PL-1056	Operating	23-A	23-E	16" Interfield Line from 49/23-A to 49/23-E	1995	16	15.6	90	138
Perenco	N.W. Bell	PL-1705	Operating	NW Bell	23-E	6" Interfield line from N.W. Bell wellhead to 49/23-E	1999	6	9.4	80	237.5
Perenco	Davy	PL-1054	Operating	30-A	23-A	16" Interfield Line from 49/30-A to 49/23-A	1995	16	42.4	124	138
Perenco	Davy	PL-1871	Operating	North Davy	Davy	8" Interfield line from North Davy wellhead to Davy	2001	8	10.2	100	238
Perenco	Davy	PL-2344	Operating	Davy East	Davy	6" wet gas flowline from Davy East to Davy (SS Manifold)	2006	6	5.7	50	238
Granby owned, Perenco operated	Davy	PL-2441	Operating	NW Tristan	Davy	8" wet gas flowline from NW Tristan to Davy (SS Manifold)	2007	8	15	80	238
Perenco	Pickernill	PL-816	Operating	Pickernill A	Theddlethorpe	24" gas export pipeline from Pickernill A to Theddlethorpe	1992	24"	64.3	225	96
Perenco	Pickernill	PL-818	Operating	Pickernill B	Pickernill A	Interfield 16" gas pipeline from Pickernill B to Pickernill A	1992	16"	6.7	105	96
Perenco	Tyne	PL-1220	Operating	Tyne	Trent	Tyne to Trent 20" Interfield gas pipeline	1996	20"	56.9	148.5	139.3
Perenco	Trent	PL-253	Operating	Eagles Spur	Bacton	Eagles Spur to Bacton dry gas pipeline	1984	24"	165	255	131



Operator	Asset	DTI Number	Status	From	To	Description	Date of Installation	Nominal Dia	Length (kilometres)	Through put Mil Ft3/day	Design Pressure (barg)
Perenco	Trent	PL-253b	Operating	Trent	Eagles Spur	Trent to Eagles Spur 24" dry gas pipeline	1996	24"	1	255	139.3
ATP owned, Perenco operated	Trent	PL-2162	Operating	Kilmar	Trent	12" gas condensate line	2005	12"	21.5	110	110
ATP owned, Perenco operated	Trent	PL-2160	Operating	Garrow	Kilmar	8" gas condensate line	2006	8"	22.4	50	130
Perenco	LAPS	PL-874	Operating	Guinevere	Lancelot	8" Interfield line from Guinevere to Lancelot	1992	8"	6.9	70	240
Perenco	LAPS	PL-876	Operating	Lancelot	Bacton	20" trunkline from Lancelot to Bacton	1992	20"	61.5	400	144
Perenco	LAPS	PL-978	Operating	Excalibur	Lancelot Tee Assembly	12" Interfield line from Excalibur to Lancelot Tee Assembly	1993	12"	7.5	120	144
Perenco	LAPS	PL-1166	Operating	Galahad	Lancelot Tee Assembly	12" Interfield line from Galahad to Lancelot Tee Assembly	1995	12"	15	120	144
Perenco	LAPS	PL-1627	Operating	Malory	Galahad Tee	10" Interfield line from Malory to Galahad Tee	1998	10"	8.4	100	144
Perenco	LAPS	PL-1639	Operating	Waveney	L.A.P.S Tee	10" Waveney line to L.A.P.S. tie-in	1998	10"	7.8	80	144
Bridge Res. owned, Perenco operated	Durango	PL-2555	Operating	Durango	Waveney	8" Interfield line from Durango to Waveney	2008	8"	14.3	*	218
Perenco	Thames	PL-370	Operating	Thames AW	Bacton	24" Trunkline from Thames AW to Bacton	1986	24"	89.5	660	129
Perenco	Thames	PL-371	Operating	Bure 'O'	Thames AW	8" Interfield line from Bure 'O' to Thames AW	1986	8"	9.3	90	230.7
Perenco	Thames	PL-372	Operating	Yare 'C'	Thames AW	8" Interfield line from Yare 'C' to Thames AW	1986	8"	4.8	90	230.7
Perenco	Thames	PL1057	Operating	Gawain	Thames AW	12" Interfield line from Gawain to Thames AW	1995	12"	15.1	124	241.4
Perenco	Thames	PL-1635	Operating	Bure West	Thames AR	8" Interfield line from Bure West to Thames AR	1999	8"	11.2	33	241
Perenco	Thames	PL-2047	Operating	Arthur	Thames AW	12" Interfield line from Arthur to Thames AW	2004	12"	30	80	179
Perenco	Thames	PL-2047JP1	Operating	Arthur 1	Arthur Manifold	8" Well production line from 53/2-11 to Arthur	2004	8"	0.07	80	180
Perenco	Thames	PL-2047JP2	Operating	Arthur 2	Arthur Manifold	8" Well production line from 53/2-12 to Arthur	2004	8"	3.24	80	180
Perenco	Thames	PL-2047JP3	Operating	Arthur 3	Arthur Manifold	8" Well production line from 53/2-13 to Arthur	2004	8"	2	70	180

\* Data not available



## PERENCO OPERATED MEG PIPELINES

Operator	Asset	DTI Number	Status	From	To	Description	Date of Installation	Nominal Dia	Length (kilometres)	Through put	Design Pressure (barg)
ATP owned, Perenco operated	Indefatigable	PL-2356	Operating	23-AT	Wenlock	3" piggybacked MEG line to 8"	2007	3"	36.1		
Perenco	Bessemer	PL-1055	Operating	23-E	23-A	4.5" Piggybacked Line to 16" (PL-1054)	1995	4.5	15.6	1000bbbls	310
Perenco	Davy	PL-1053	Operating	23-A	30-A	4.5" Piggybacked Line to 16" (PL-1054)	1995	4.5	42.4	1000bbbls	310
Perenco	Tyne	PL-1221	Operating	Trent	Tyne	Tyne to Trent 3" Interfield MEG pipeline	1996	3"	56.9	1.25m <sup>3</sup> /h	165
ATP owned, Perenco operated	Trent	PL-2163	Operating	Trent	Kilmar	3" piggybacked MEG line to 12"	2005	3"	21.5	0.49m <sup>3</sup> /h	296
ATP owned, Perenco operated	Trent	PL-2161	Operating	Kilmar	Garrow	3" piggybacked MEG line to 8"	2006	3"	22.4	0.21m <sup>3</sup> /h	
Perenco	LAPS	PL-875	Operating	Lancelot	Guinevere	3" Piggybacked line to 8" (PL-874)	1992	3"	6.9		275
Perenco	LAPS	PL-877	Operating	Bacton	Lancelot	3" Piggybacked line to 20" (PL-876)	1992	3"	61.5		275
Perenco	LAPS	PL-979	Operating	Lancelot Tee Assembly	Excalibur	3" Piggybacked line to 12" (PL-978)	1993	3"	7.5		275
Perenco	LAPS	PL-1167	Operating	Lancelot Tee Assembly	Galahad	3" Piggybacked line to 12" (PL-1166)	1995	3"	16		275
Perenco	LAPS	PL-1628	Operating	Galahad Tee	Malory	3" Piggybacked line to 10" (PL-1627)	1998	3"	8.4		275
Perenco	LAPS	PL-1640	Operating	L.A.P.S Tee	Waveney	3" Piggybacked line to 10" (PL-1639)	1998	3"	7.8		274

## PERENCO OPERATED UMBILICALS

Operator	Asset	DTI Number	Status	From	To	Description	Date of Installation	Nominal Dia	Length (kilometres)	Through put	Design Pressure (barg)
Perenco	Thames	PL-374	Operating	Thames AW	Bure 'O'	Umbilical from Thames AW to Bure 'O'	1986	4"	9.3	-	272
Perenco	Thames	PL-1058	Operating	Thames AW	Gawain	Umbilical from Thames AW to Gawain	1995	5"	15.4	-	-
Perenco	Davy	PL-1872	Operating	Davy	North Davy	Control Umbilical from Davy to North Davy wellhead	2001	-	10.44	-	-
Granby owned, Perenco operated	Davy	PLU-2442	Operating	Davy	NW Tristan	4" control umbilical	2007	4"	15	-	-
Perenco	Davy	PLU-2345	Operating	Davy	East Davy	4" control umbilical	2006	4"	5.7	-	-

**14.2 LEMAN FIELD**

Approximately 50 kilometres east of Bacton. Water depth 38 metres

59 kilometres to UK/Dutch median line

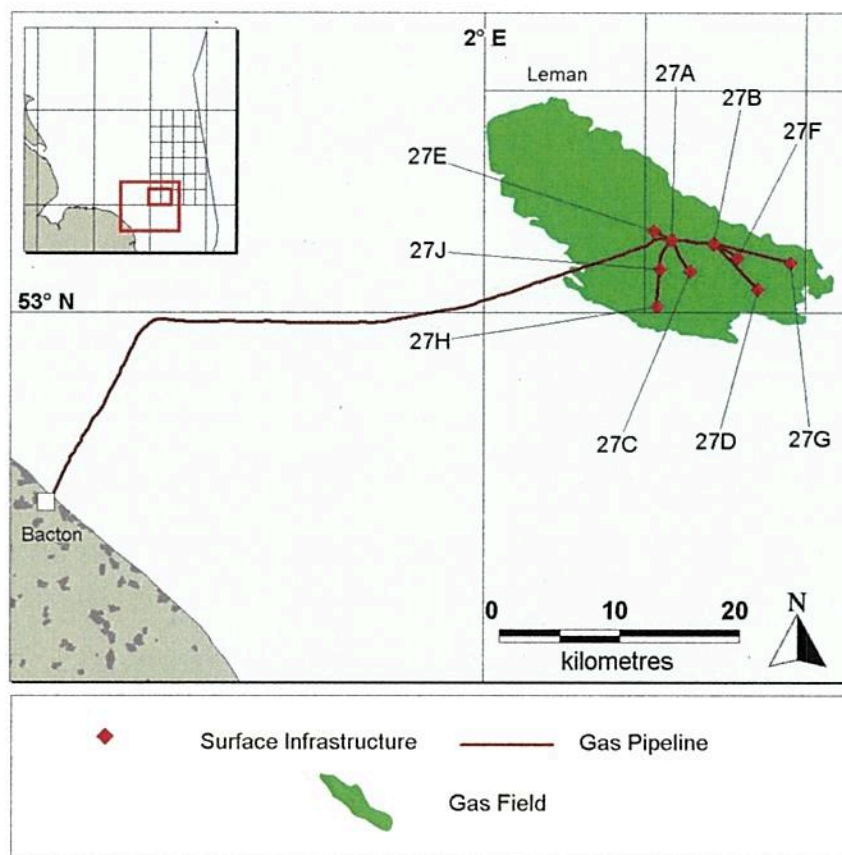
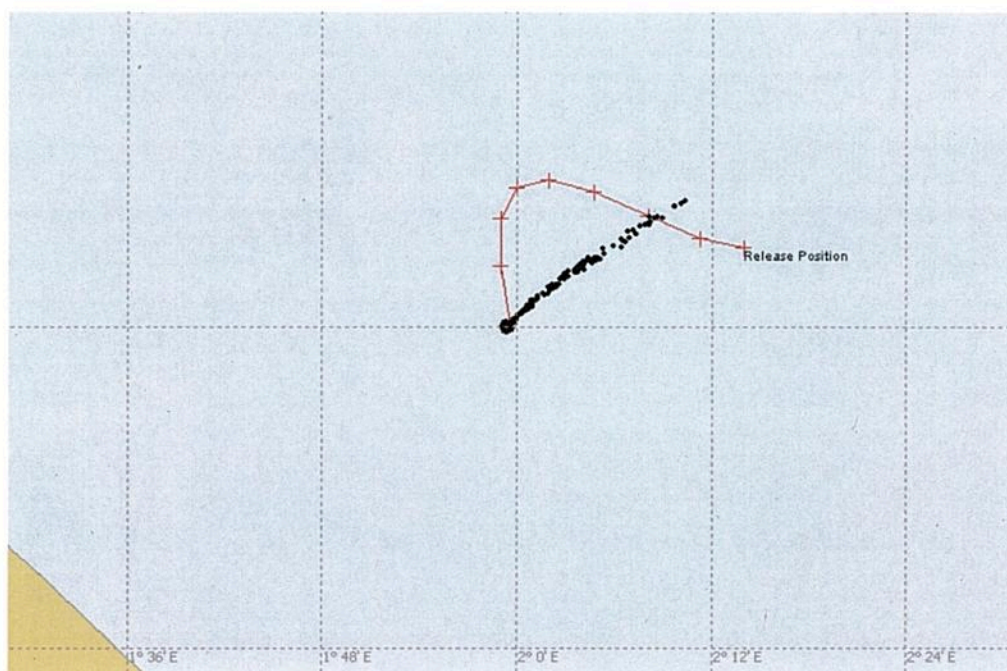
*OSR Contingency Conclusion:*

Low spill risk, readily dispersible products. Gas field.

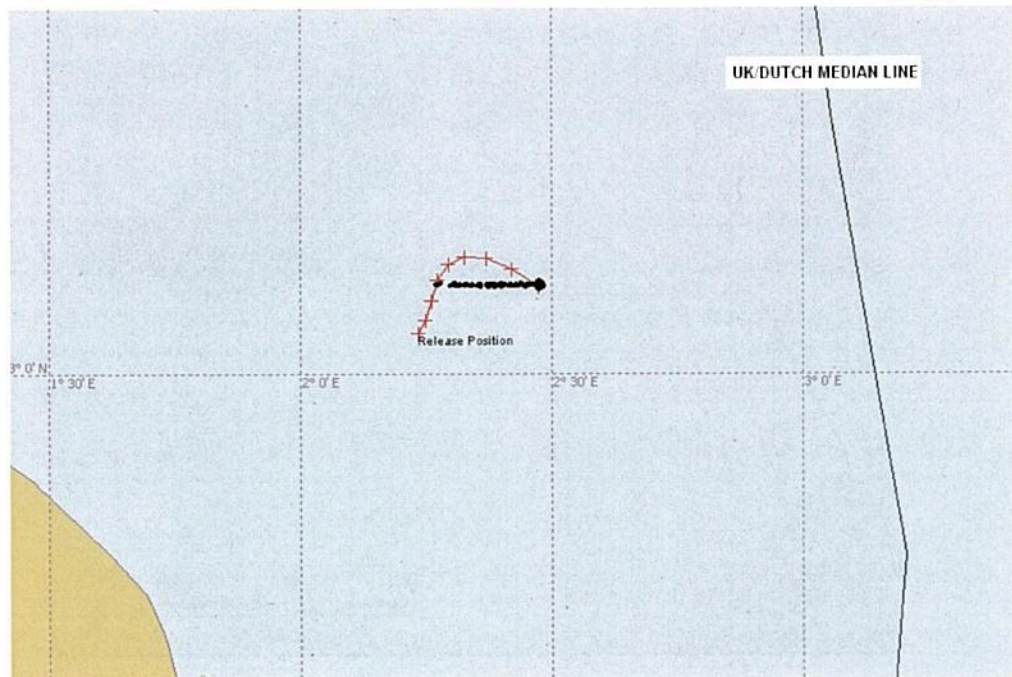
No on-site dispersant capability.

Facility	Block	Type	Export	Oil Type Produced*	Position
Leman 49/27A	49/27	5 platforms	Export line to Bacton Gas Terminal	Gas / Condensate (Oil Type 1)	53 03N 2 14E
Leman 49/27B	49/27	3 platforms	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 03 N 2 17E
Leman 49/27C	49/27	2 platforms	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 01N 2 15E
Leman 49/27D	49/27	2 platforms	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 01N 2 20E
Leman 49/27E	49/27	2 platform	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 03 N 2 12E
Leman 49/27F	49/27	2 platforms	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 02N 2 18E
Leman 49/27G	49/27	1 platform	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 02N 2 22E
Leman 49/27H	49/27	1 platform	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 00N 2 12E
Leman 49/27J	49/27	1 platform	In field to 49/27AC	Gas/ Condensate (Oil Type 1)	53 01N 2 13E

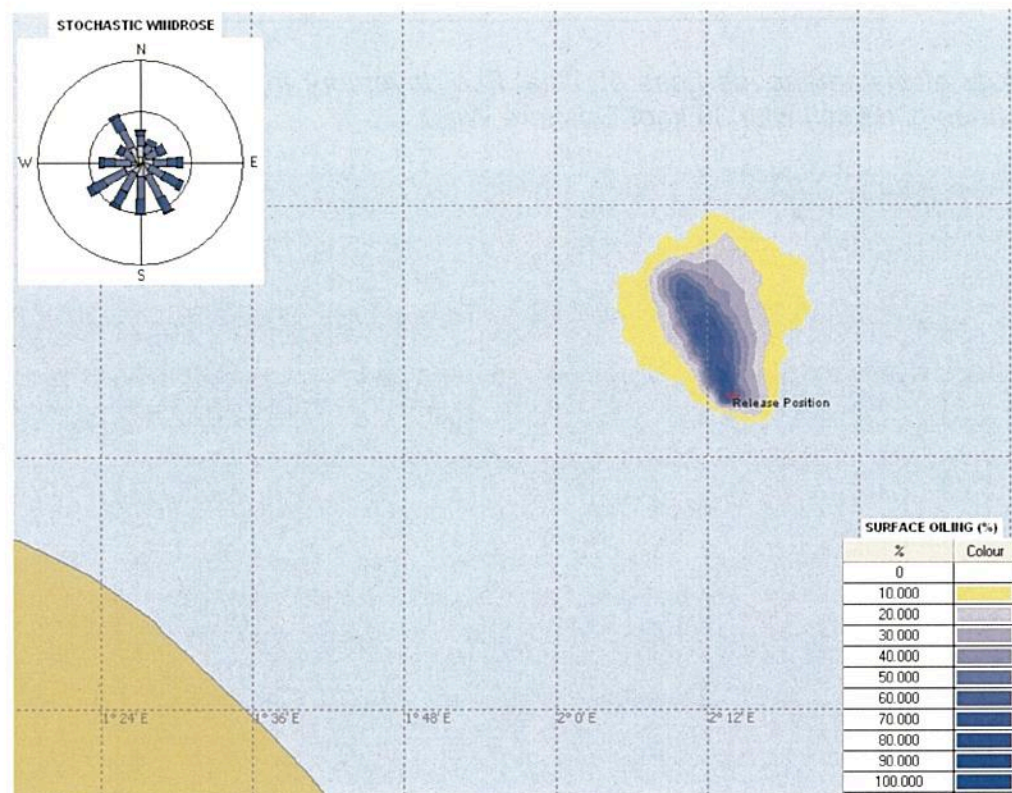


*Leman Field Location Map**Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*



*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*





*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 8 hours, 34 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 8 hours, 41 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

<b>Leman 27A</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 47m <sup>3</sup>
Storage of ATK	Main Tank capacity 7.5m <sup>3</sup>
Storage of Lube / Hydraulic oil	Main Tank capacity 4m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of ATK	By supply boat - tote tank
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27B</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 13m <sup>3</sup>
Storage of Lube / Hydraulic oil	Main Tank capacity 5.6m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27C</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 15m <sup>3</sup>
Storage of Lube / Hydraulic oil	Main Tank capacity 4.6m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27D</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 9m <sup>3</sup>
Storage of Lube / Hydraulic oil	Main Tank capacity 3.8m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums

<b>Leman 27E</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 14m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 1.2m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17 m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27F</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 25m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 5m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27G</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 38m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 5m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27H</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 34m <sup>3</sup>
Storage of Lube / Hydraulic oil	Main Tank capacity 1.3m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Leman 27J</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 34m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 1.3m <sup>3</sup>
Transfer of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums



*Environmental Sensitivities*

Activity in Block 49/27 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Plaice														
	Mackerel														
	Sprat														
	Whiting				N	N	N	N	N						
Seabirds	Block 49/27 (Offshore Vulnerability)	4	3	3	4	3	4	4	3	4	3	4	2		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (ICES Rectangle 35F2)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity (Block 49/27)														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
	Tourism, recreation & leisure activities														
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence		Activity in Block 49/27 and surrounding waters													
	Peak		Low		None		Peak		High		Low		None	N	Nursery

**14.3 INDE FIELD**

Approximately 81 kilometres North east of Bacton. Water depth 36 metres

Approx 40 kilometres to UK/Dutch median line

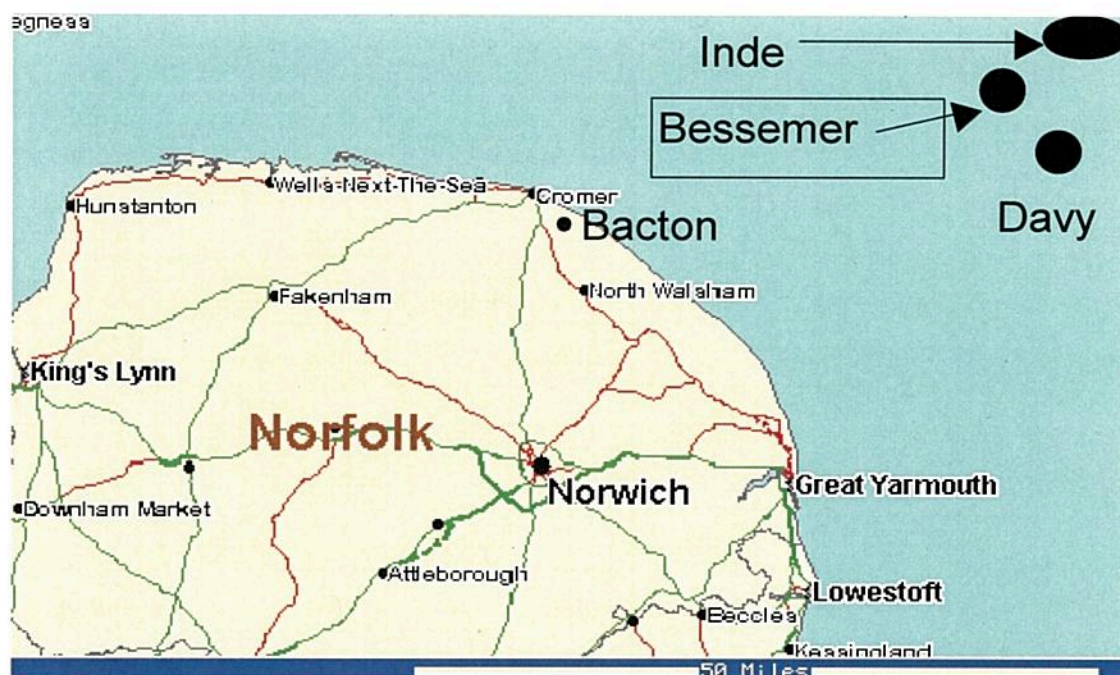
*OSR Contingency Conclusion*

Low spill risk, readily dispersible products. Gas field.

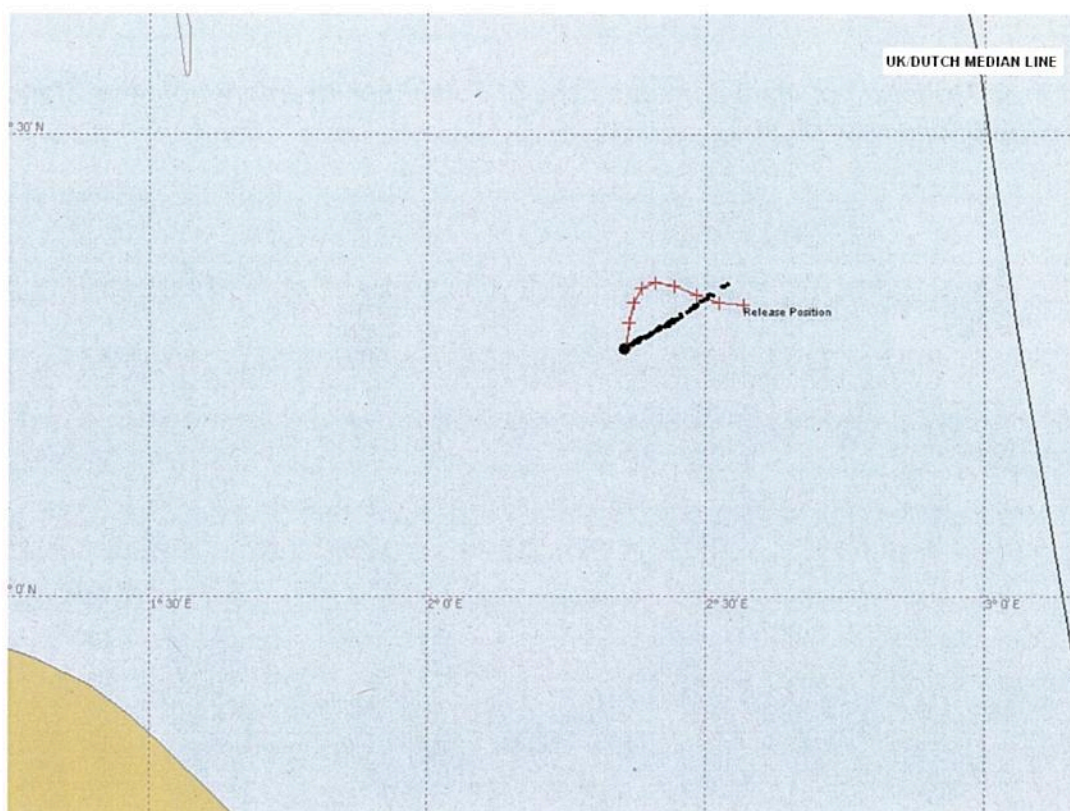
No on-site dispersant capability.

Facility	Block	Type	Export	Oil Type Produced*	Position
Inde 49/23A	49/23	3 platforms	30" gas export to Leman B & Bacton	Gas / Condensate (Oil Type 1)	53 19N 2 34E
Inde 49/23C	49/23	2 platforms	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 18N 2 34E
Inde 49/23D	49/23	1 platform	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 18N 2 30E
Inde 49/18A	49/18	2 platforms	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 21N 2 34E
Inde 49/18B	49/18	2 platforms	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 23N 2 31E
Davy 49/30A	49/30	1 platform	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 00N 2 53E
Bessemer 49/23E	49/23	1 platform	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 12N 2 29E
Wenlock	49/12a	1 platform	Gas export to Inde 49/23A	Gas / Condensate (Oil Type 1)	53 35N 2 17E



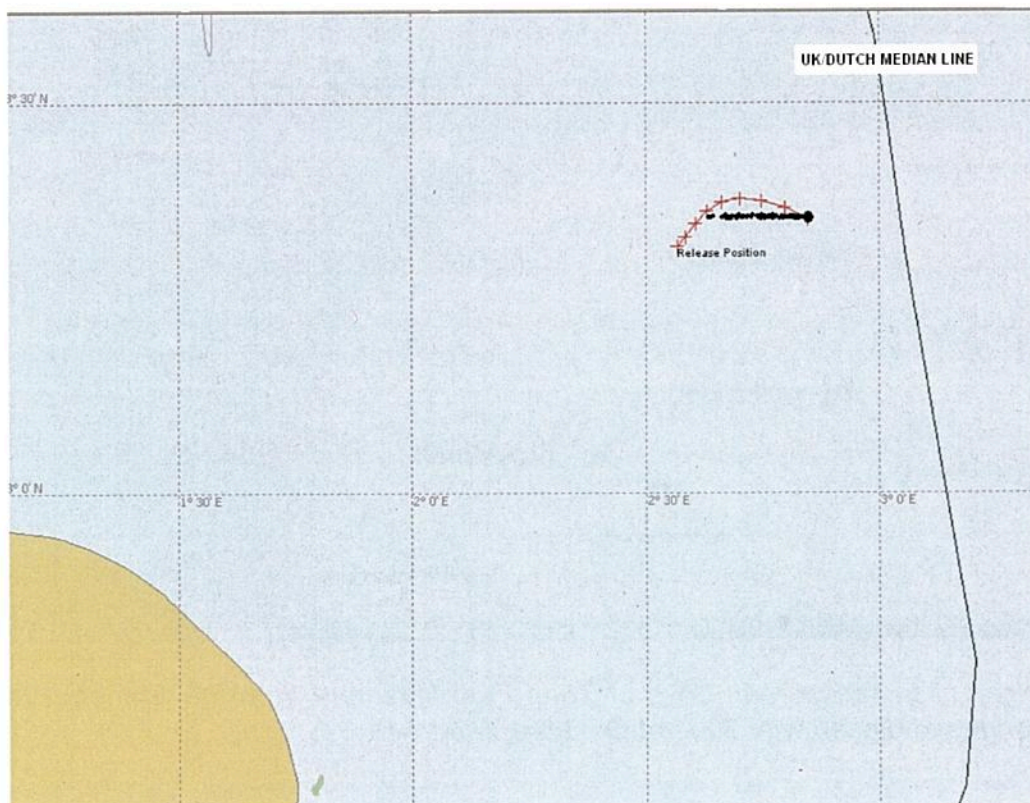
*Inde Field Location Map*

*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

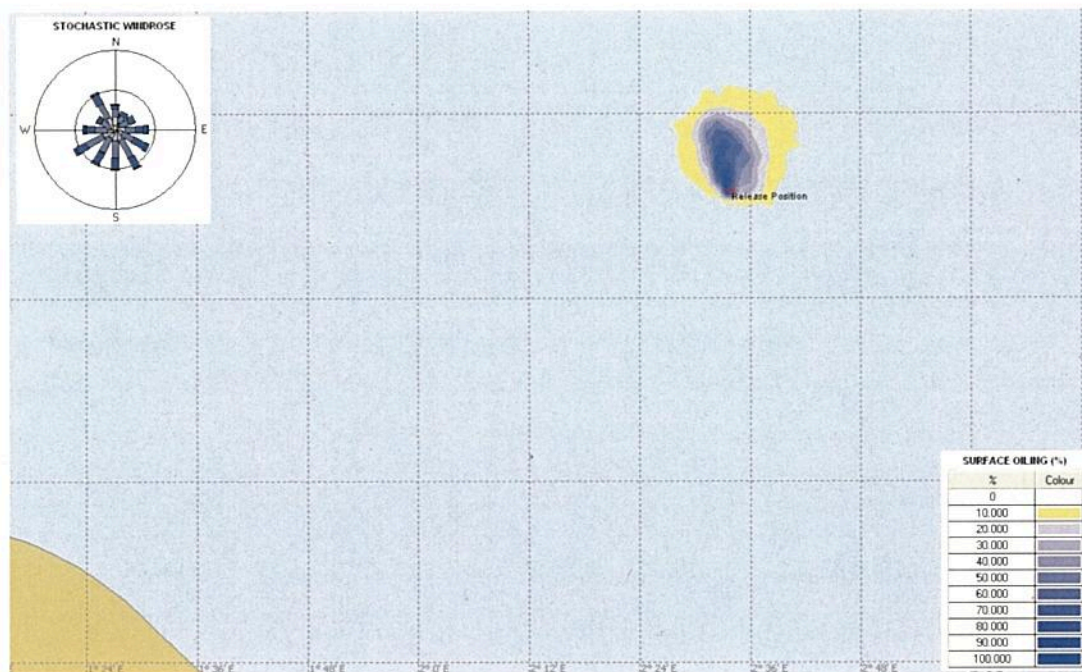




*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*



*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 8 hours, 72 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 8 hours, 12 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

<b>Inde 49/18A</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 20m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 2.5m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Inde 49/18B</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 22m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 4.4m <sup>3</sup>
Transfers of diesel onto inst	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Inde 49/23A</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 15m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 12m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Inde 49/23C</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 55m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 9m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
<b>Inde 49/23D</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 10m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 2m <sup>3</sup>
Transfers of diesel onto	By supply boat at 17m <sup>3</sup> / hr



installation	Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Davy 49/30A</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 10m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 1.3m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Bessemer 49/23E</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 10m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 1.3m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Wenlock</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 25m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 0.1m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums



*Environmental Sensitivities*

Activity in Block 49/18, 49/23 and 49/30 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Plaice														
	Mackerel														
	Sprat														
	Whiting				N	N	N	N	N						
Seabirds	Block 49/18 (Offshore Vulnerability)	2	2	1	2	3	4	4	3	3	2	2	3		
	Block 49/23 (Offshore Vulnerability)	3	2	2	4	3	4	4	3	4	3	4	2		
	Block 49/30 (Offshore Vulnerability)	4	2	2	4	3	4	4	3	4	4	4	2		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (35F2)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
	Tourism, recreation & leisure activities														
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence				Activity in Block 49/18, 49/23 and 49/30 and surrounding waters											
	Peak		Low		None		Peak		High		Low		None	N	Nursery

#### 14.4 THAMES FIELD

Approx. 37 kilometres to UK/Dutch median line & 80 kilometres NE of Bacton

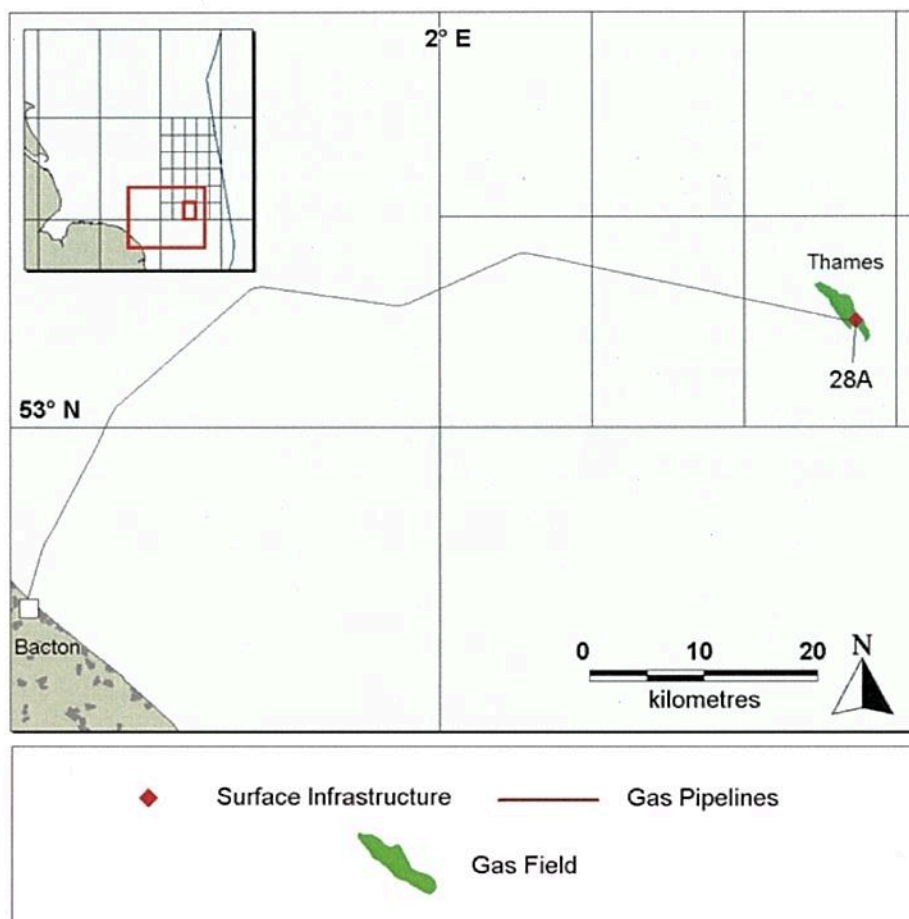
##### *OSR Contingency Conclusion*

Low spill risk, readily dispersible products. Gas field. Water depth 32.5 metres

No dispersant on site

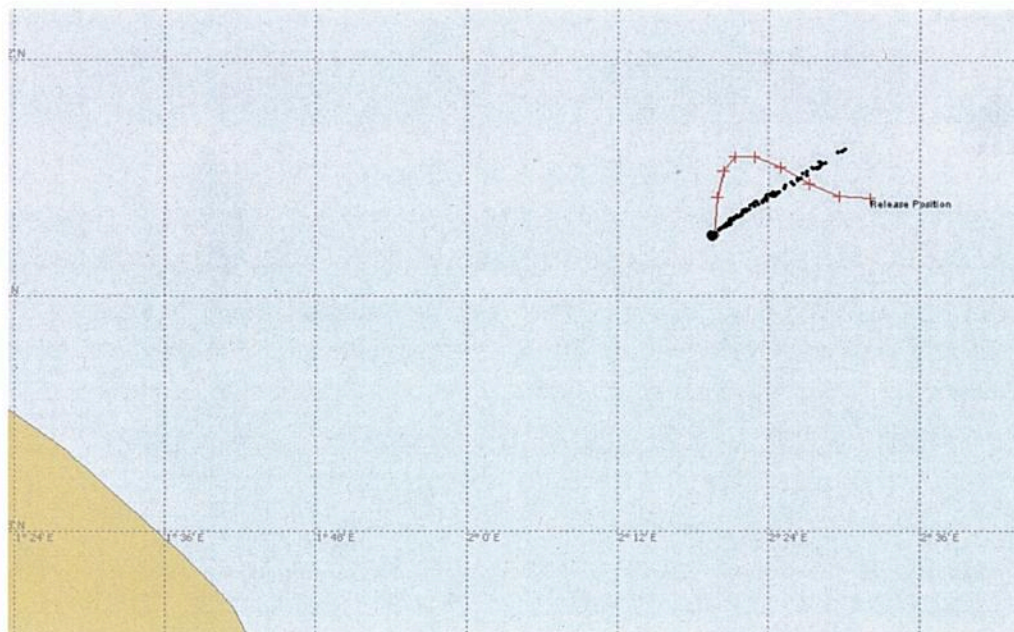
Facility	Block	Type	Export	Oil Type Produced*	Position
Thames	49/28	3 platforms	Export line to Bacton Gas Terminal	Gas / Condensate (Oil Type 1)	53 05N 2 32E
Welland	53/4a	1 platform (NUI)	In field to Thames	De-commissioned	52 59 N 2 44E

##### *Thames Field location*

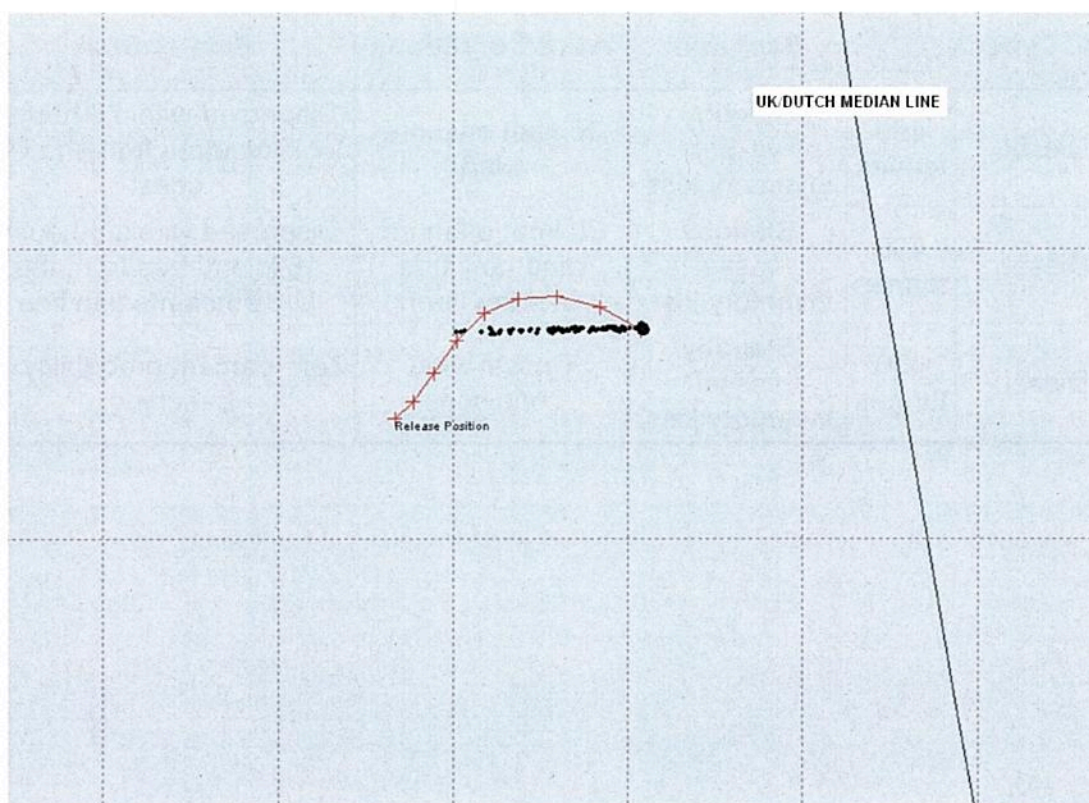




*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

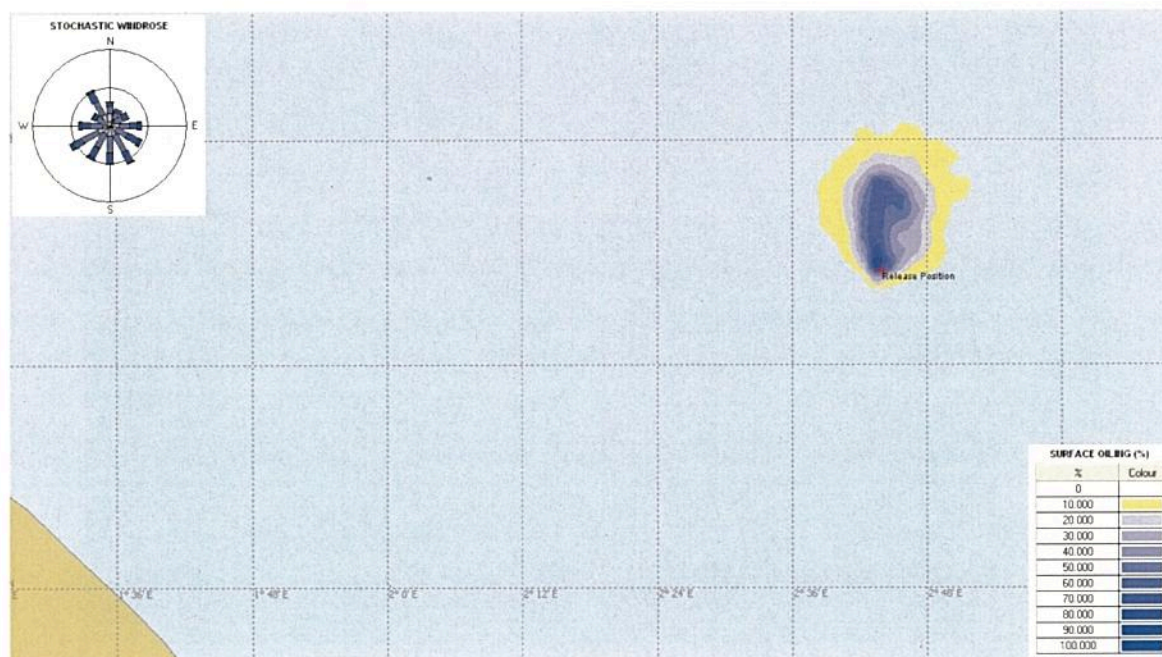


*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*





*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 8 hours, 54 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 8 hours, 18 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

<b>Thames 49/28A</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 12m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 2.5m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums
<b>Welland 53/4</b>	<b>Capacities / rates</b>
Storage of diesel	Main Tank capacity 12m <sup>3</sup>
Storage of Lub / Hyd oil	Main Tank capacity 2.5m <sup>3</sup>
Transfers of diesel onto installation	By supply boat at 17m <sup>3</sup> / hr Line content 180 lts
Transfers of Hydraulic / Lube oils	By supply boat - drums

*Environmental Sensitivities*

Activity in Block 49/28 and 53/4 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Plaice														
	Mackerel														
	Sprat														
	Whiting				N	N	N	N	N						
Seabirds	Block 49/28 (Offshore Vulnerability)	4	3	2	4	3	4	4	3	4	3	4	2		
	Block 53/4 (Offshore Vulnerability)	3	2	2	4	3	4	4	3	4	4	4	2		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (35F2)														
	Commercial fishing (34F2)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
	Tourism, recreation & leisure activities														
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence				Activity in Block 49/28 and 53/4 and surrounding waters											
	Peak		Low		None		Peak		High		Low		None	N	Nursery



### 14.1 PICKERILL FIELD

Approximately 57 kilometres to eastern England. Water depth 20 metres

Distance to median line approx. 30 kilometres

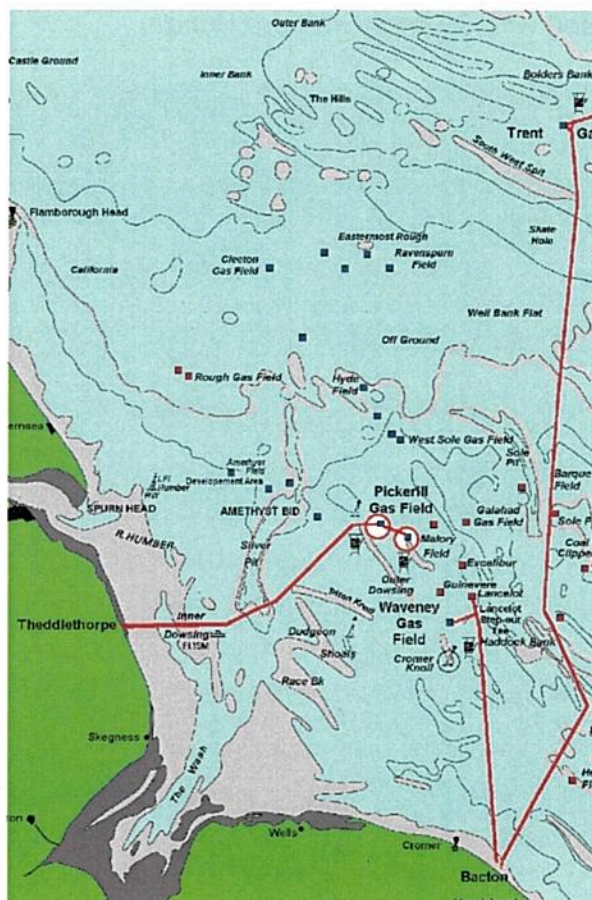
#### OSR Contingency Conclusion

Low spill risk, readily dispersible products. Gas field.

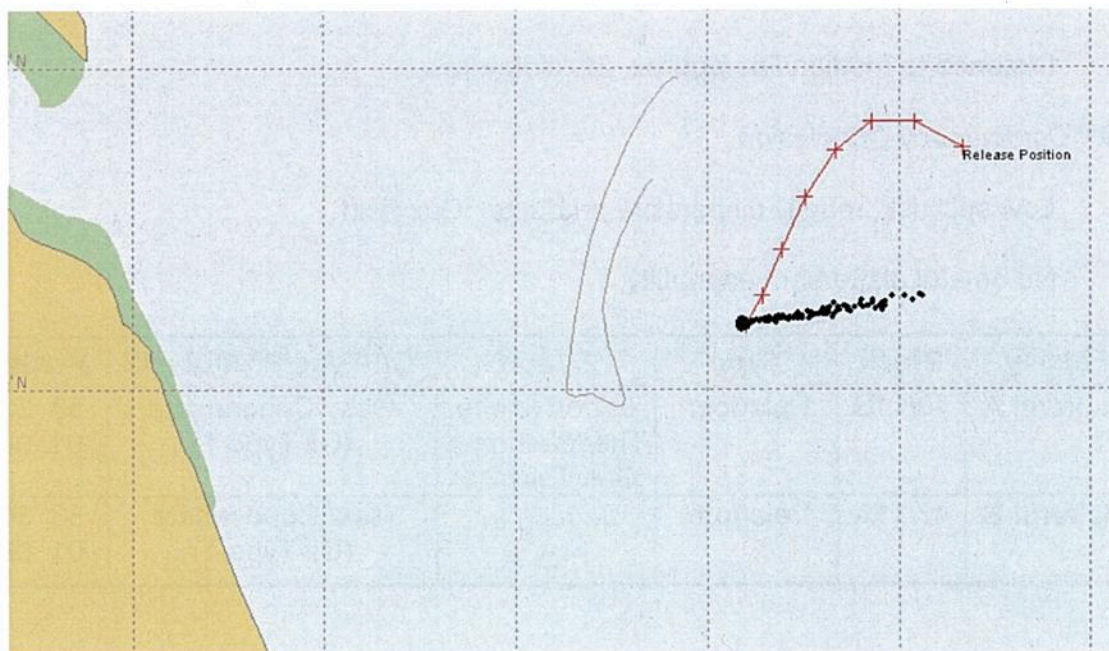
No on-site dispersant capability.

Facility	Block	Type	Export	Oil Type Produced*	Position
Pickerill A	48/11B	1 platform	Export line to Theddlethorpe Gas Terminal	Gas / Condensate (Oil Type 1)	53 33 N 01 04 E
Pickerill B	48/11A	1 platform	In field to Pick A	Gas/ Condensate (Oil Type 1)	53 31 N 01..09 E

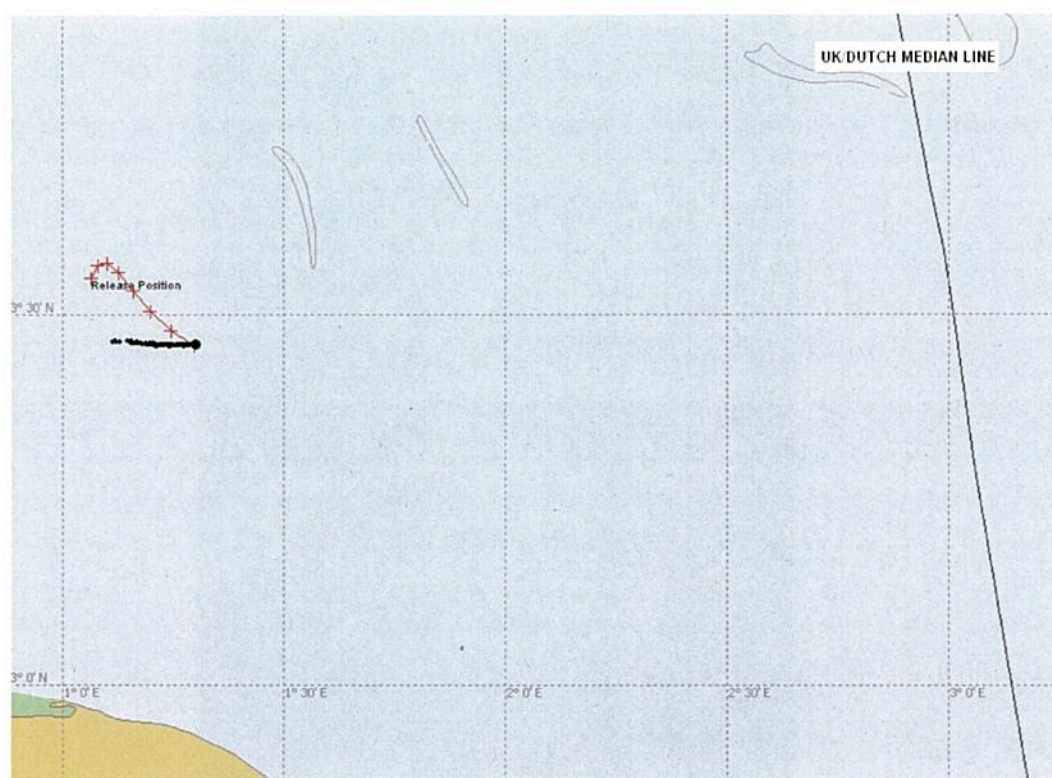
#### Pickerill Field Location Map



*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

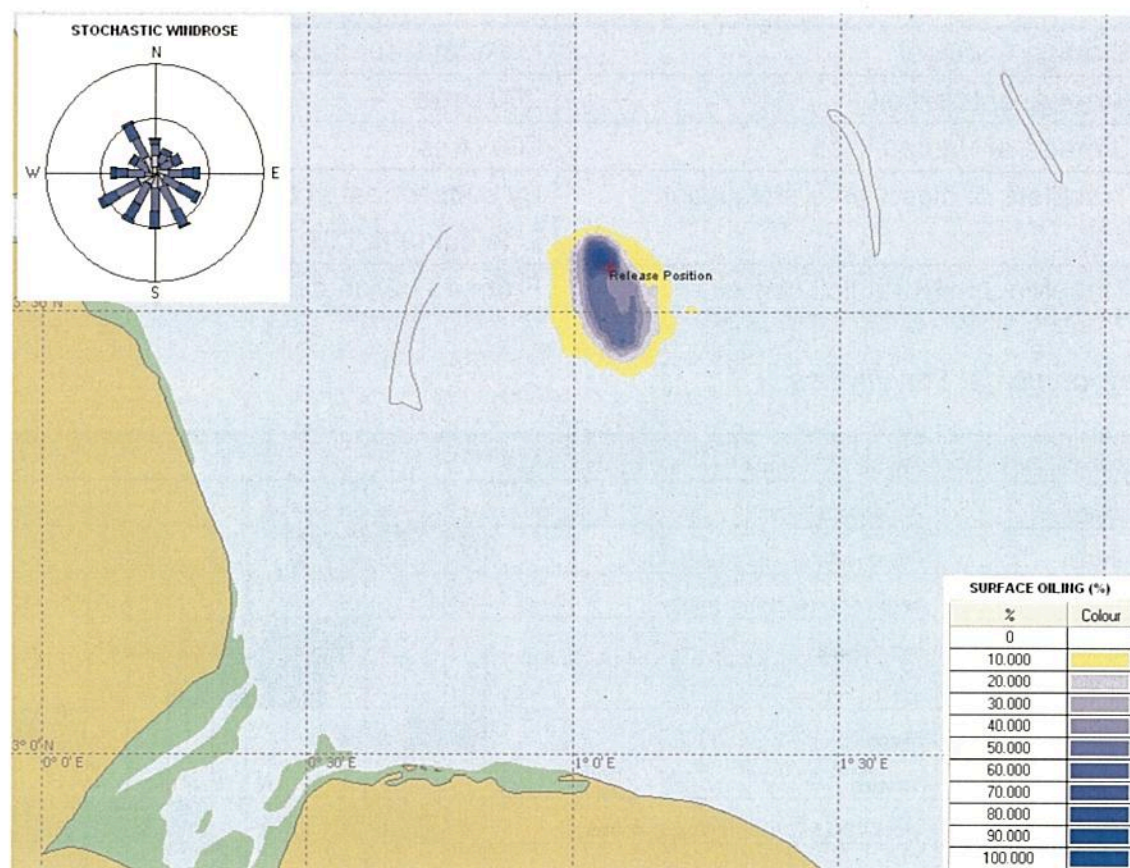


*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*





*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 8 hours, 38 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 8 hours, 112 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.



*Hydrocarbon Inventories*

Pickerill A and B	Capacities/rates
Storage of diesel	Main tank capacity 30 tonnes.
Storage of Lube oil	200 litres.
Storage of Hydraulic oil	200 litres.
Transfers of diesel onto installations	By supply boat at 80 m <sup>3</sup> /hr. Line content, 200 litres.
Transfers of Hydraulic/Lube oils	From 45 gallon drums.

*Environmental Sensitivities*

Activity in Block 48/11 and surrounding waters and adjacent coast													
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D
Plankton	Phytoplankton and zooplankton												
Benthic Fauna	Benthic faunal communities												
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N		
	Sprat							N	N	N	N		
	Sandeels	N	N	N	N								
	Whiting				N	N	N	N	N				
Seabirds	Block 48/11 (Offshore Vulnerability)	4	2	3	2	3	4		1	2	2	1	2
Cetaceans	Harbour porpoise abundance												
Resource Users	Commercial fishing (36F1)												
	Shipping and ports												
	Offshore Windfarms												
	Military Activity												
	Oil and gas activity (inc. pipelines / cables)												
	Marine Protected Sites												
	Dredging and dumping												
	Coastal Protected Sites												
	Tourism, recreation & leisure activities												
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.													
Coastal occurrence				Activity in Block 48/11 and surrounding waters									
	Peak		Low		None	Peak		High		Low		None	Nursery

## 14.2 WAVENEY FIELD

Approximately 40 kilometres to Cromer, eastern England. Water depth 23 metres

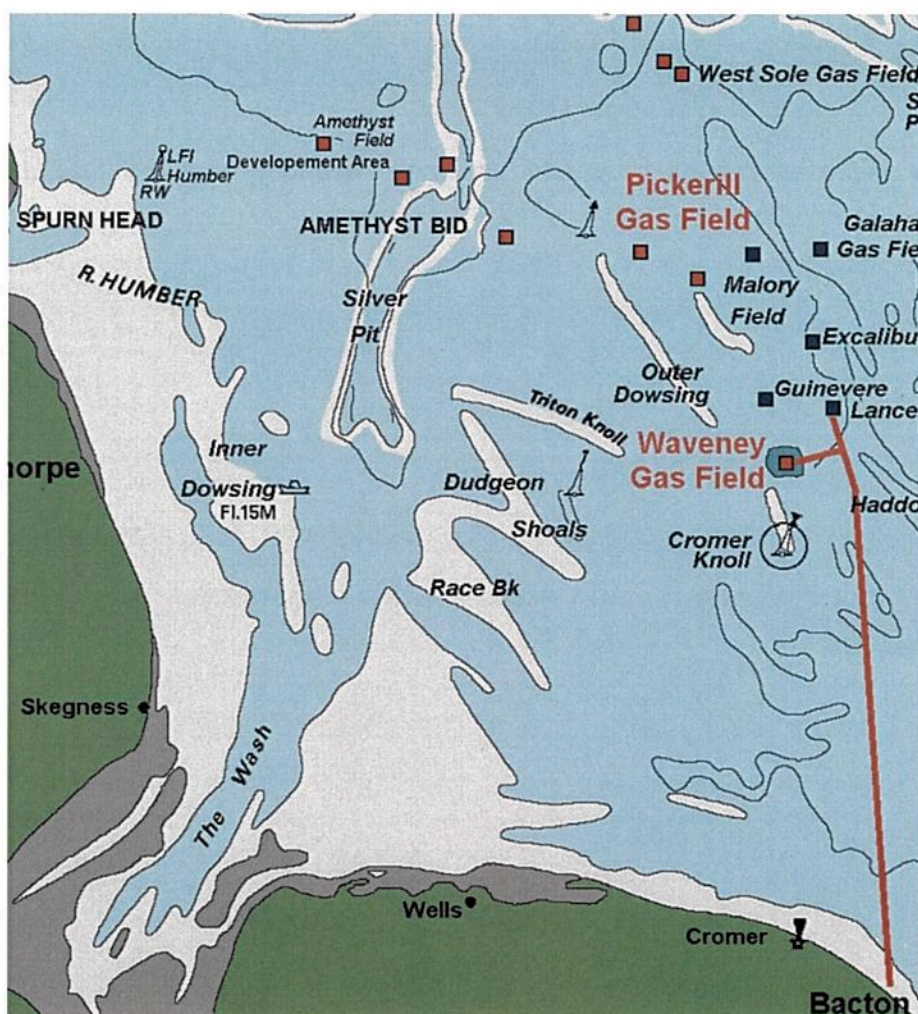
Approx. 30 kilometres to UK/Dutch median line

### OSR Contingency Conclusion

Low risk of spill. Prevailing wind takes oil away from coastline. Oil naturally dispersible. No on site dispersant capability.

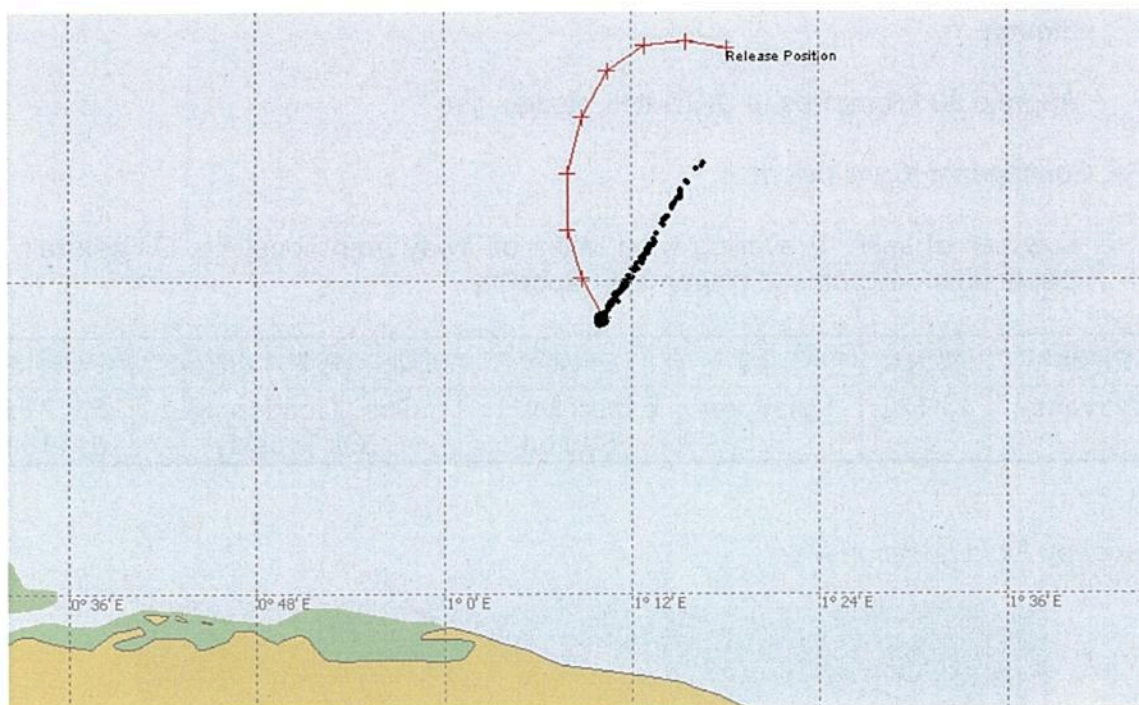
Facility	Block	Type	Export	Oil Type Produced*	Position
Waveney	43/17C	1 platform	Export line to Bacton	Gas / Condensate (Oil Type 1)	53 21 N 01 18 E

Waveney Field Location Map

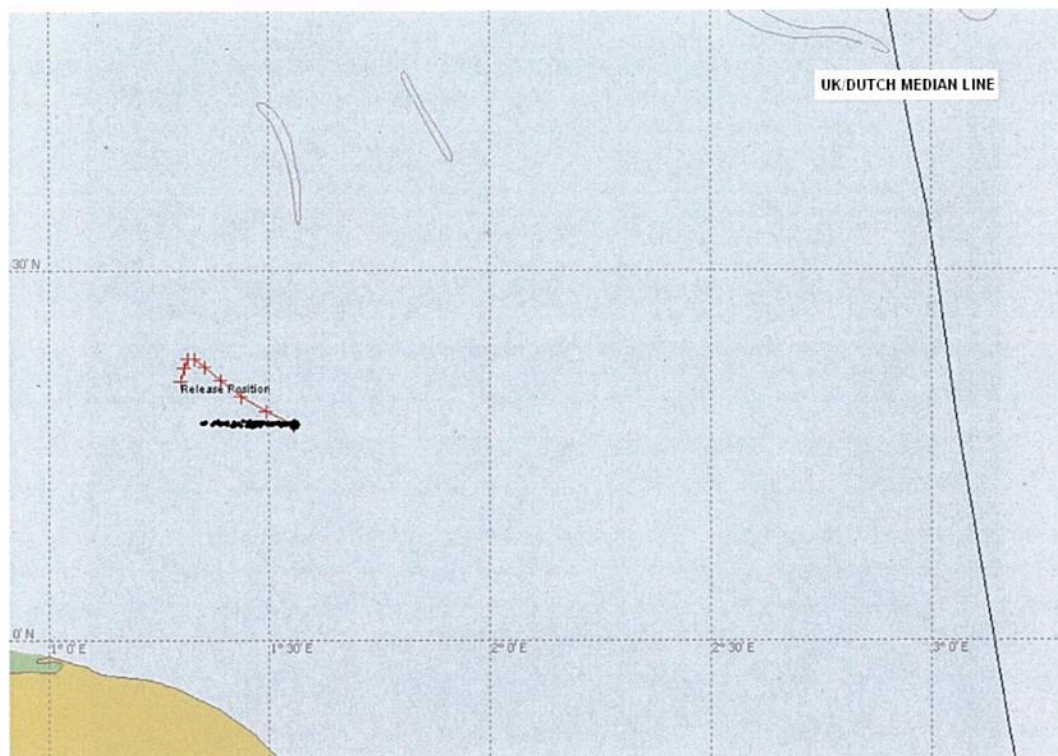




*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

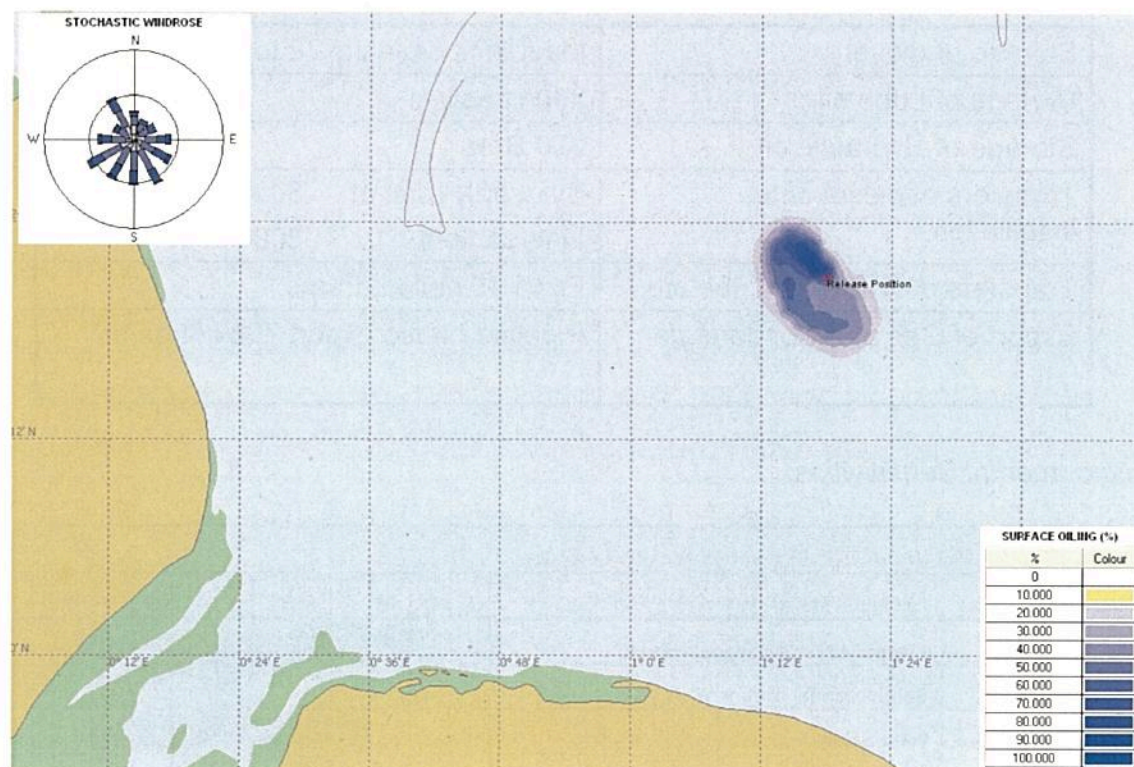


*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*





*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 8 hours, 23 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 8 hours, 99 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

Waveney	Capacities/Rates
Storage of diesel	Main tank capacity 22 tonnes
Storage of Lube oil	200 litres
Storage of Hydraulic oil	200 litres
Transfers of diesel onto installation	By supply boat at 80 m <sup>3</sup> /hr Line content 200 litres
Transfers of Hydraulic/Lube oils	From 45 gallon drums
Export of Gas and Condensate	Pipeline / hose export 7084 litres/hr

*Environmental Sensitivities*

Activity in Block 43/17 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Sprat							N	N	N	N				
	Sandeels	N	N	N	N										
Seabirds	Block 43/17 (Offshore Vulnerability)	1	1	1	1	1	4	3	2	1	1	2	2		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (37F1)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
	Tourism, recreation & leisure activities														
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence				Activity in Block 43/17 and surrounding waters											
	Peak		Low		None		Peak		High		Low		None	N	Nursery



### 14.3 TRENT FIELD

Approximately 98 kilometres to Flamborough Head, eastern England. Water depth 49 metres

Approximately 40 kilometres to UK/Dutch median line

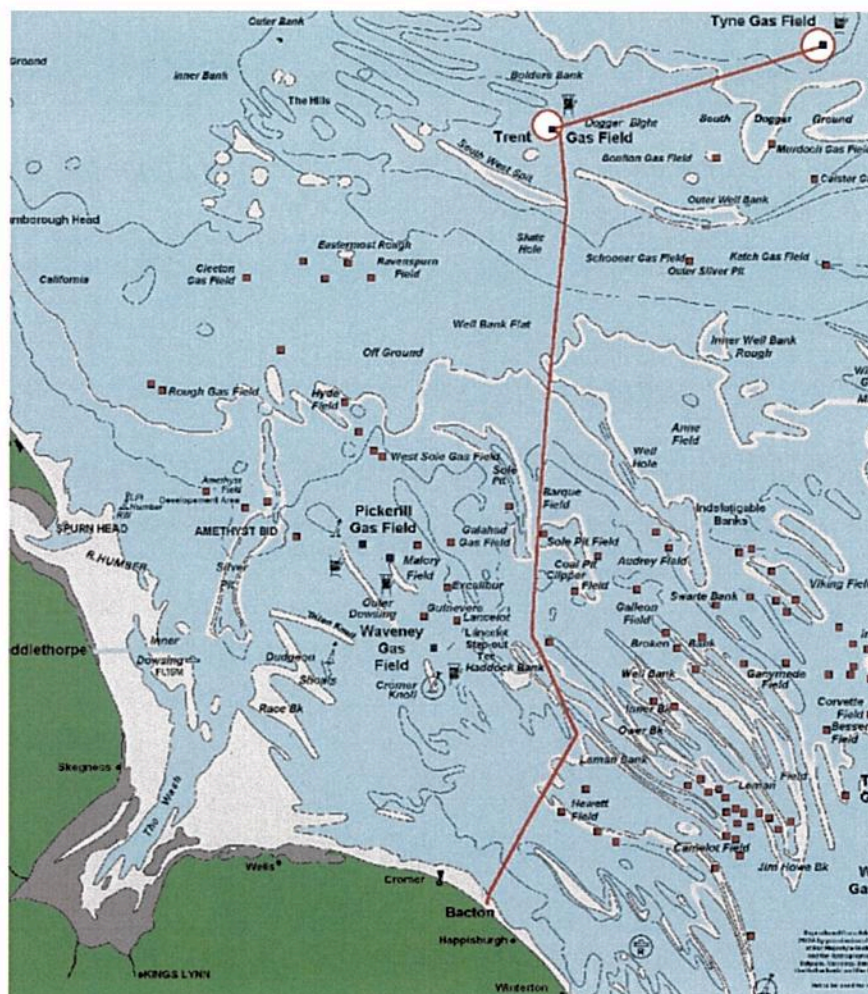
#### OSR Contingency Conclusion:

Low risk of spill. Prevailing wind takes oil away from coastline. Oil naturally dispersible.

No on site dispersant capability.

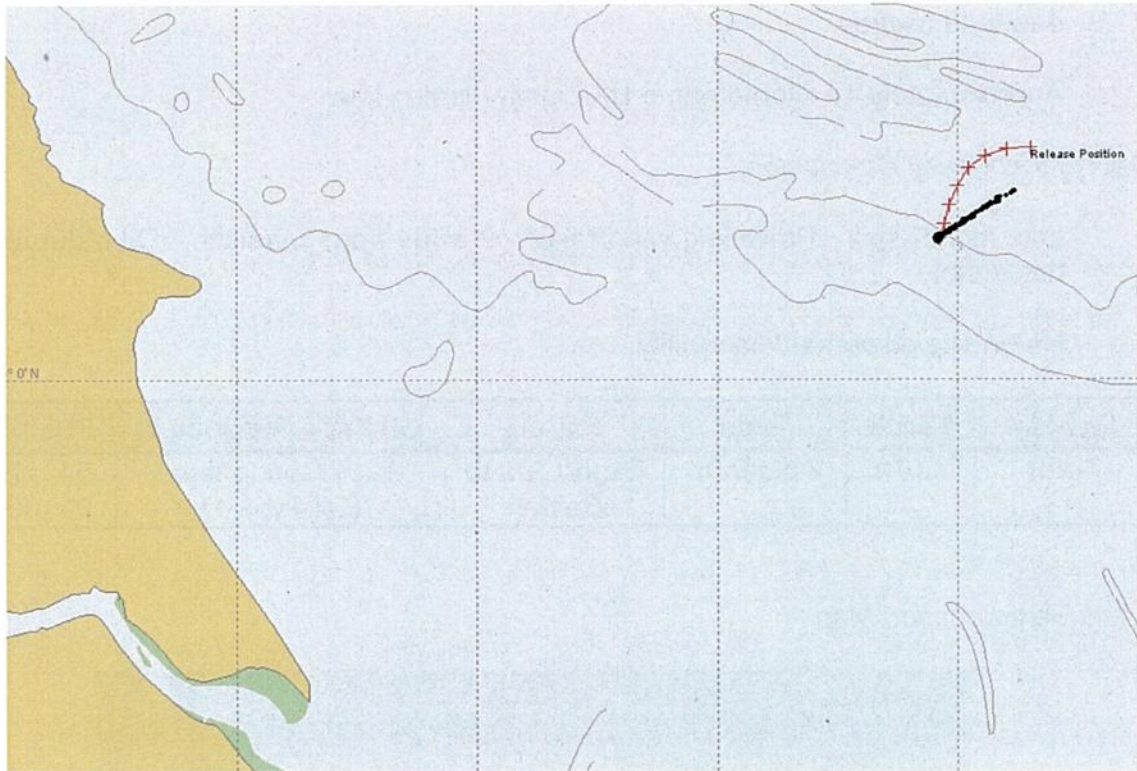
Facility	Block	Type	Export	Oil Type Produced*	Position
Trent	43/24	2 platform	Export line to Bacton	Gas / Condensate (Oil Type 1)	54 17 N 01 39 E

Trent Field Location Map





*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*



*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*



*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 7 hours, 104 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 7 hours, 58 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

Trent	Capacities/Rates
Storage of diesel	Maximum capacity of 16 tons
Storage of Lube oil	400 litres
Storage of Hydraulic oil	200 litres
Transfers of diesel onto installation	By supply boat at 80 m <sup>3</sup> /hr Line content 200 litres
Transfers of Hydraulic/Lube oils	45 gallon drums



*Environmental Sensitivities*

Activity in Block 43/24 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Sprat							N	N	N	N				
	Sandeels	N	N	N	N										
Seabirds	Block 43/24 (Offshore Vulnerability)	1	1	2	2	1	4	2	2	1	1	1	1		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (37F1)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
	Tourism, recreation & leisure activities														
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence				Activity in Block 43/24 and surrounding waters											
	Peak		Low		None		Peak		High		Low		None	N	Nursery



#### 14.4 TYNE FIELD

Approximately 150 kilometres to Flamborough Head, eastern England. Water depth 17.5 metres

Approximately 20 kilometres to UK/Dutch median line

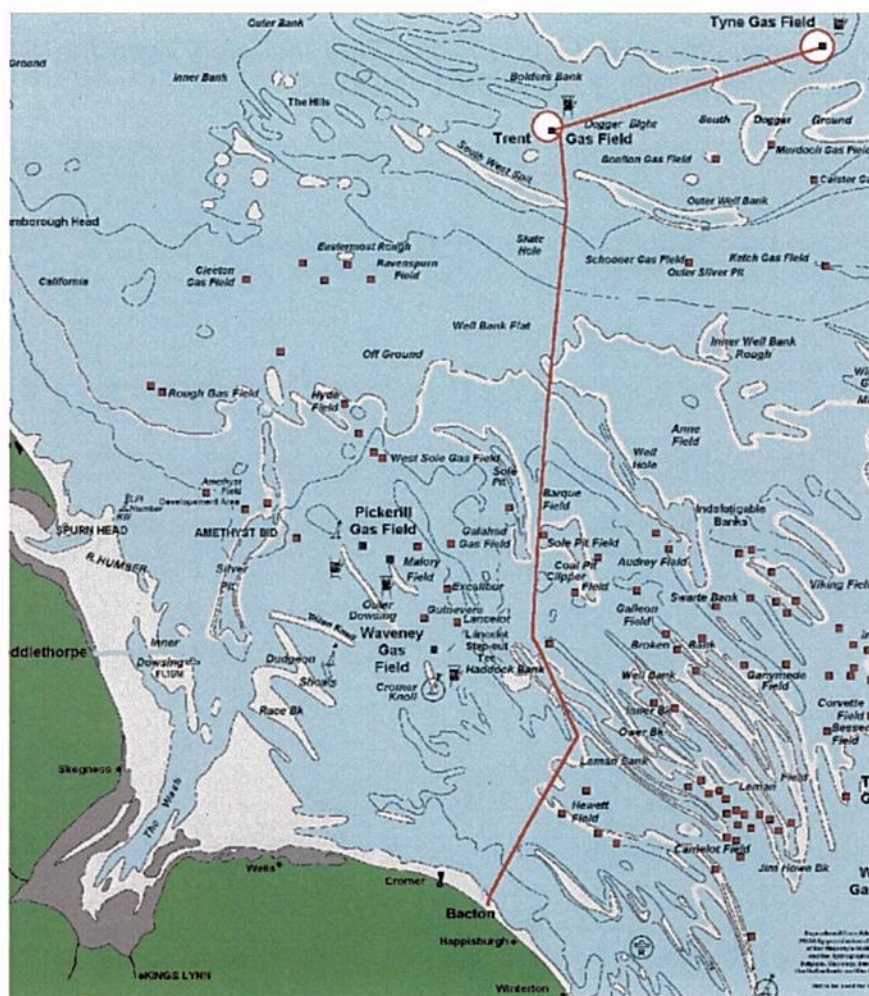
##### OSR Contingency Conclusion:

Low risk of spill. Prevailing wind takes oil away from coastline. Oil naturally dispersible.

No on site dispersant capability.

Facility	Block	Type	Export	Oil Type Produced*	Position
Tyne	44/18A	1 platform	Export line to Bacton	Gas / Condensate (Oil Type 1)	54 26 N 02 28 E

Tyne Field Location Map

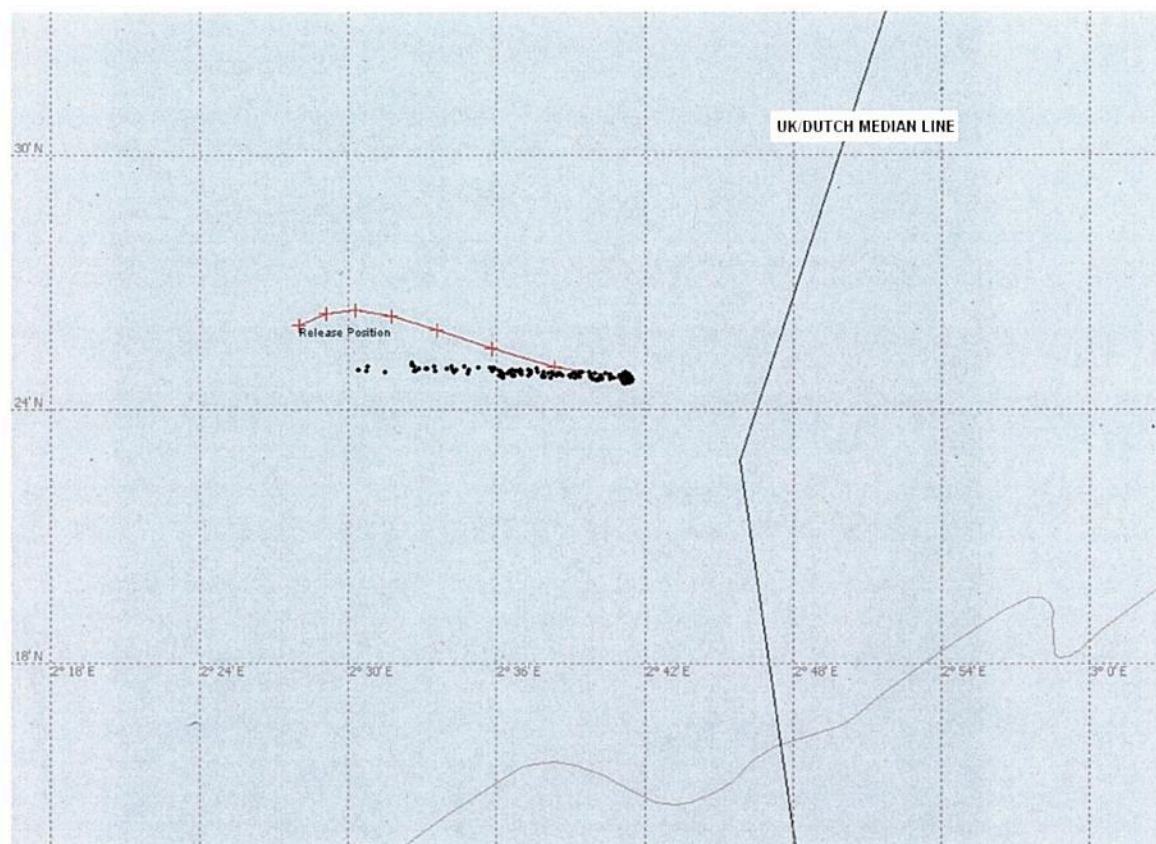




*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

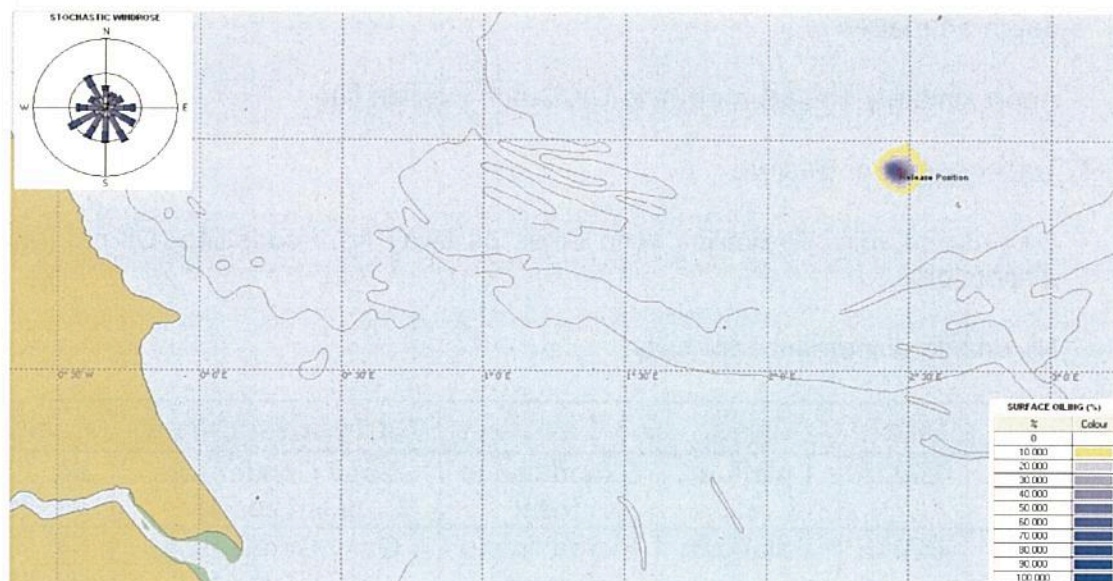


*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*





*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 7 hours, 157 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 7 hours, 5 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

Tyne	Capacities/Rates
Storage of Diesel	Main tank capacity 20 tonnes
Storage of Lube oil	400 litres
Storage of Hydraulic oil	200 litres
Transfers of diesel onto installation	By supply boat at 80 m <sup>3</sup> /hr Line content 200 litres
Transfers of Hydraulic/Lube oils	From 45 gallon drums
Export of Gas and Condensate	Pipeline/hose export 1000 litres/hr



### 14.5 KILMAR AND GARROW FIELD

Approximately 83 kilometres to Flamborough Head, eastern England. Water depth 54 metres

Approximately 100 kilometres to UK/Dutch median line

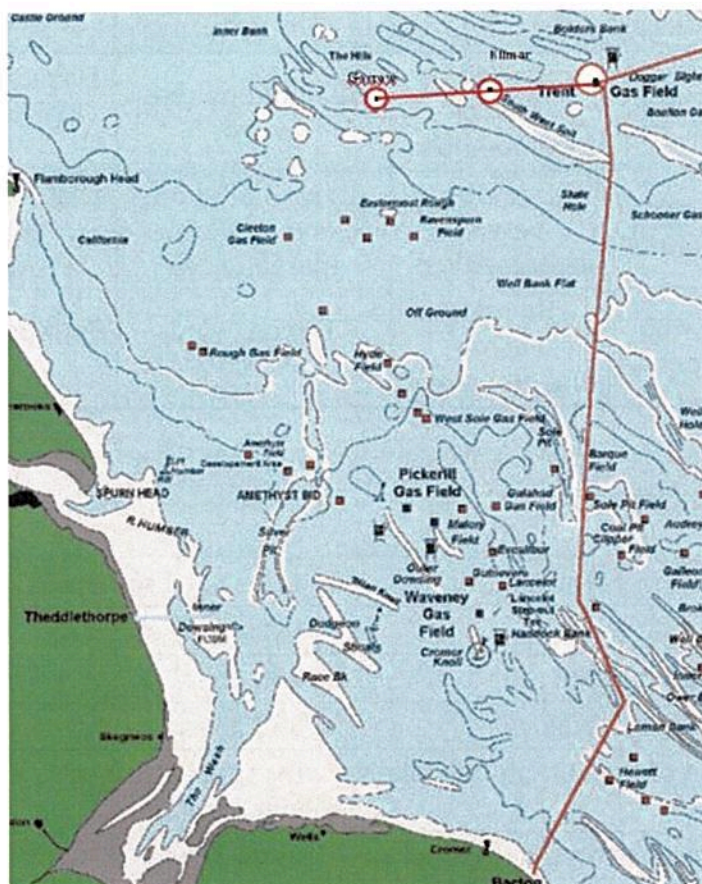
#### OSR Contingency Conclusion:

Low risk of spill. Prevailing wind takes oil away from coastline. Oil naturally dispersible.

No on site dispersant capability.

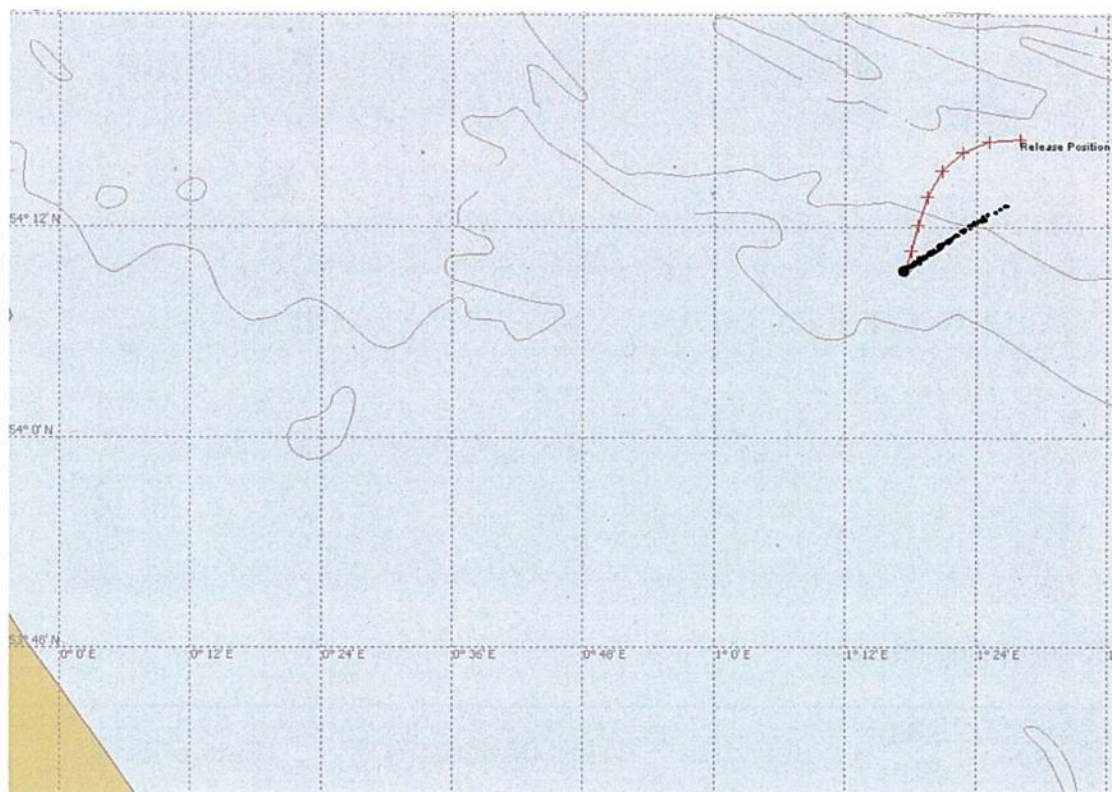
Facility	Block	Type	Export	Oil Type Produced*	Position
Kilmar	43/22A	1 platform	Export line to Trent	Gas / Condensate (Oil Type 1)	54 17 N 01 20 E
Garrow	43/21B	1 platform	Export line to Kilmar	Gas / Condensate (Oil Type 1)	54 16 N 00 28 E

*Kilmar and Garrow Field location Map*

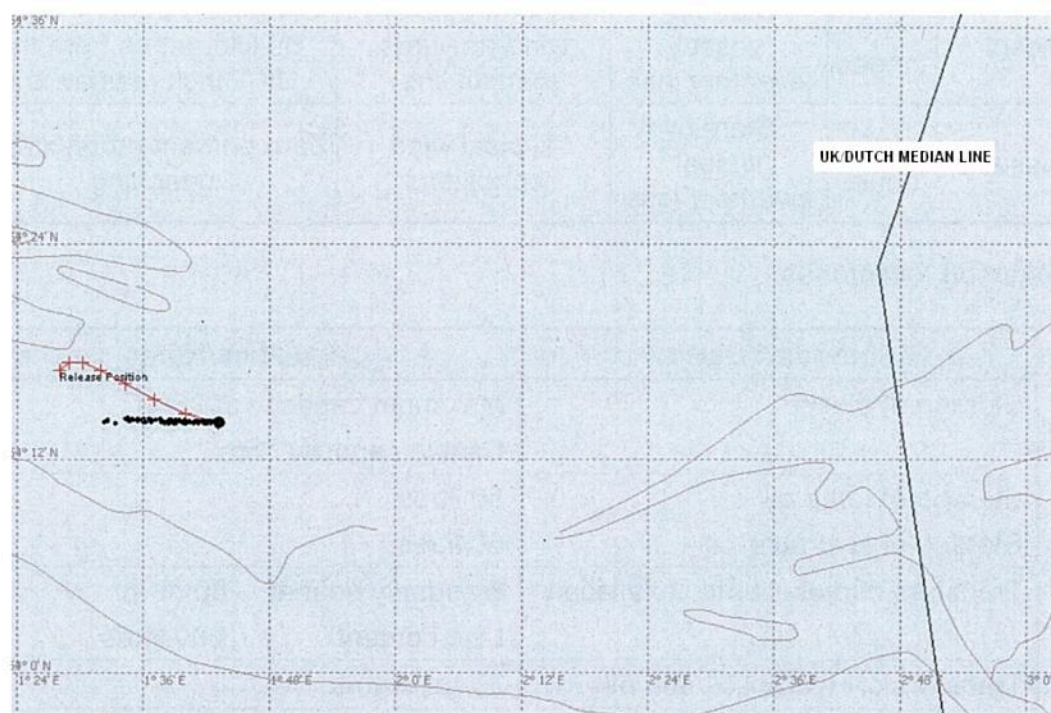




*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

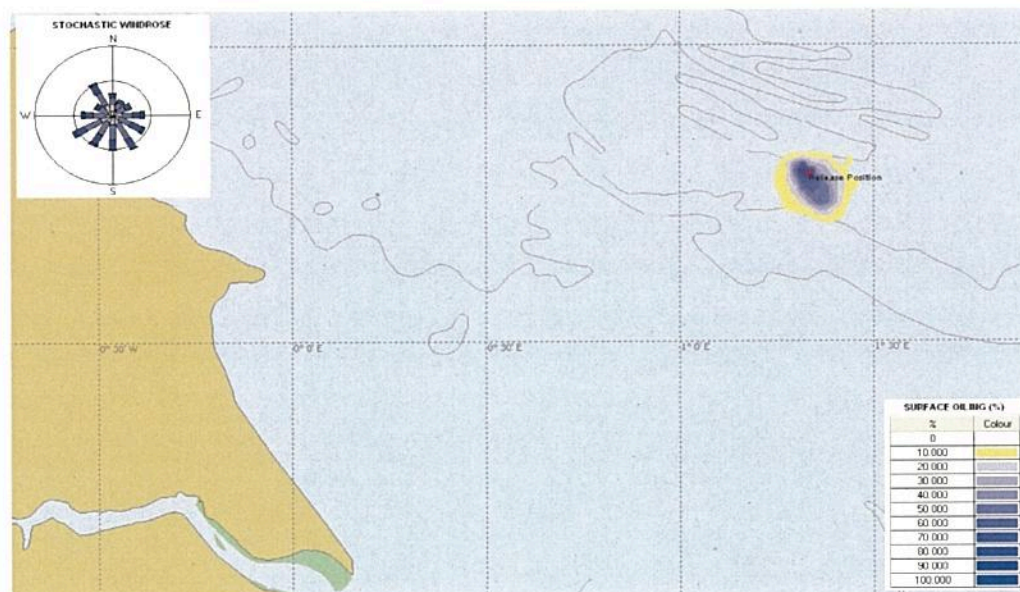


*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*





*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 7 hours, 94 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 7 hours, 69 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

Kilmar and Garrow	Capacities/Rates
Storage of diesel	Maximum capacity of 25m <sup>3</sup> Usable capacity 15m <sup>3</sup>
Storage of Lube oil	50 litres
Storage of Hydraulic oil	50 litres
Transfers of diesel onto installation	By supply boat at 80 m <sup>3</sup> /hr Line content 200 litres
Transfers of Hydraulic/Lube oils	25 Ltr drums

*Environmental Sensitivities*

Activity in Block 43/21 and 43/22 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Sprat						N	N	N	N	N				
	Sandeels	N	N	N	N										
Seabirds	Block 43/21 (Offshore Vulnerability)	1	1	2	2	1	4	3	1	1	1	2	1		
	Block 43/22 (Offshore Vulnerability)	1	1	2	2	1	4	3	1	1	1	2	1		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (37F1)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
Tourism, recreation & leisure activities															
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence		Activity in Block 43/21 and 43/22 and surrounding waters													
	Peak		Low		None		Peak		High		Low		None	N	Nursery



## 14.6 LAPS FIELD

Approximately 52 kilometres to Flamborough Head, eastern England. Water depth 17 – 23 metres

Approximately 100 kilometres to UK/Dutch median line

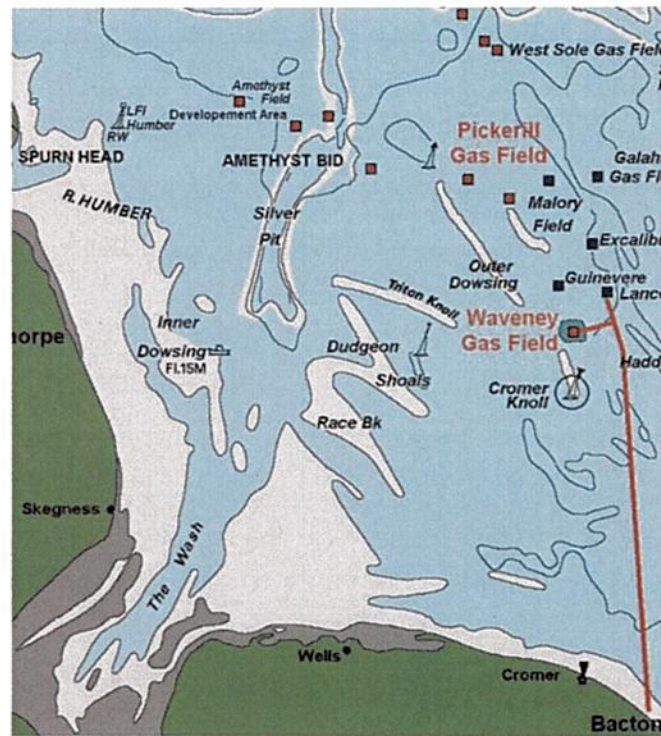
### OSR Contingency Conclusion:

Low risk of spill. Prevailing wind takes oil away from coastline. Oil naturally dispersible.

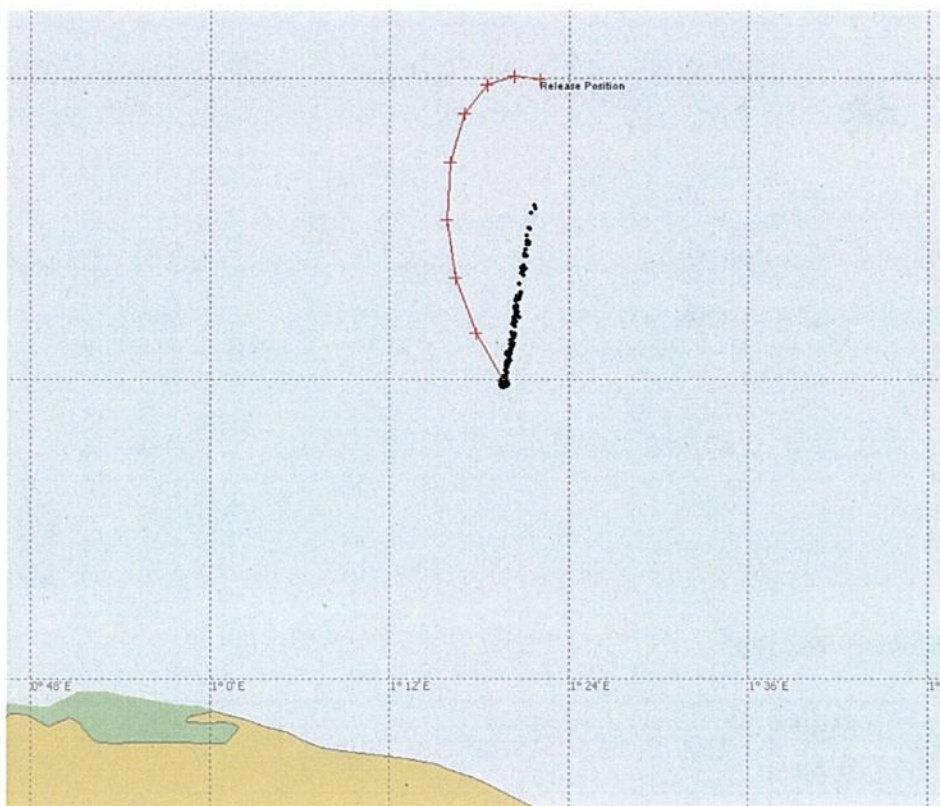
No on site dispersant capability.

Facility	Block	Type	Export	Oil Type Produced*	Position
Lancelot	48/17	1 platforms	Export line to Bacton	Gas / Condensate (Oil Type 1)	53 24 N 01 22 E
Excalibur	48/17	1 platform	Export line to Bacton	Gas / Condensate (Oil Type 1)	53 27 N 01 20 E
Galahad	48/12A	1 platform	Export line to Bacton	Gas / Condensate (Oil Type 1)	53 32 N 01 21 E
Guinevere	48/17B	1 platform	Export line to Lancelot	Gas / Condensate (Oil Type 1)	53 24 N 01 16 E
Malory	48/12D	1 platform	Export line to Bacton	Gas / Condensate (Oil Type 1)	53 32 N 01 14 E

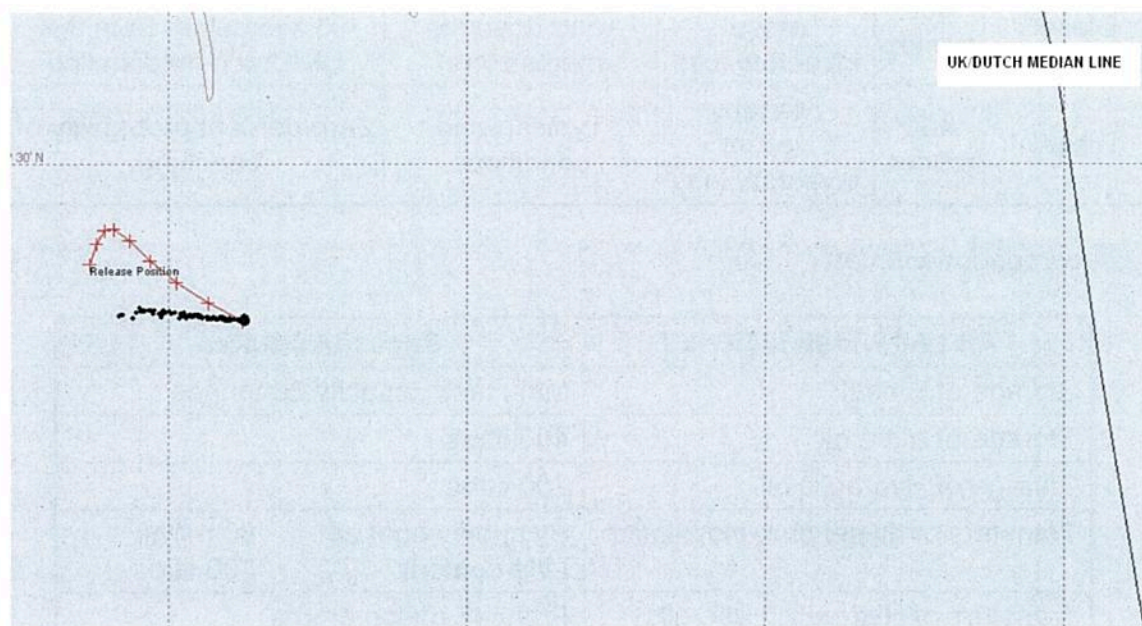
### LAPS Field Location Map



*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Onshore Wind*

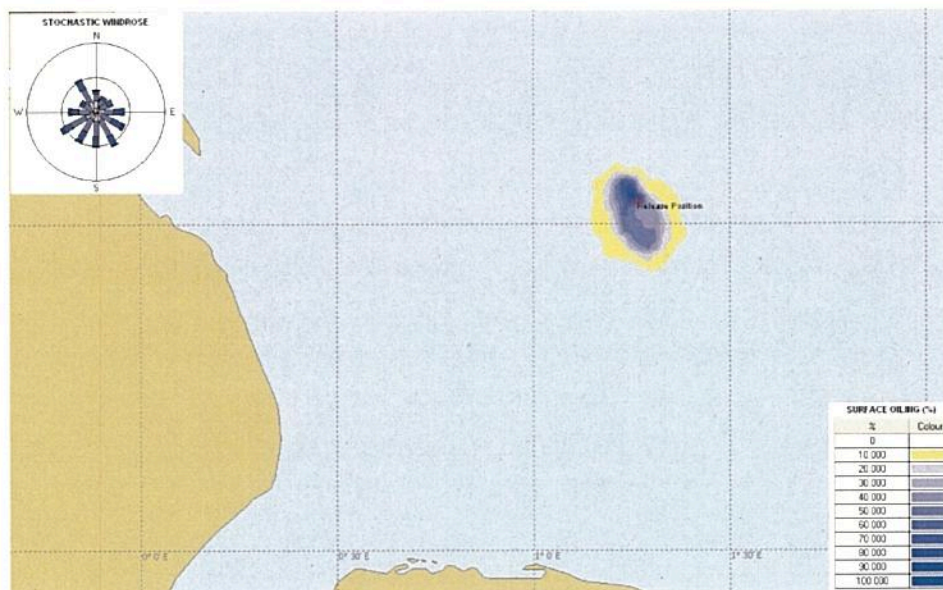


*Trajectory of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel) with 30 knot Offshore Wind*





*Stochastic Modelling of Instantaneous Loss of Total Fuel Inventory from the Standby Vessel (400 tonnes of diesel)*



*OSIS Modelling Results*

Oil Type	Spill Size	Scenario	Wind Conditions	Fate of Spill
Diesel	400 tonnes	Standby vessel inventory loss	30 knot onshore wind	Dispersed within 8 hours, 20 kilometres from the UK coast
Diesel	400 tonnes	Standby vessel inventory loss	30 knot offshore wind (towards median line)	Dispersed within 8 hours, 93 kilometres from the UK/Dutch median line
Diesel	400 tonnes	Standby vessel inventory loss	Typical wind conditions	Zero percent probability of beaching.

*Hydrocarbon Inventories*

All LAPS installations	Capacities/Rates
Storage of Diesel	Main tank capacity 20 tonnes
Storage of Lube oil	400 litres
Storage of Hydraulic oil	200 litres
Transfers of diesel onto installation	By supply boat at 80 m <sup>3</sup> /hr Line content 200 litres
Transfers of Hydraulic/Lube oils	From 45 gallon drums
Export of Gas and Condensate	Pipeline export

*Environmental Sensitivities*

Activity in Block 48/12 and 48/17 and surrounding waters and adjacent coast															
Component	Abundance/Activity	J	F	M	A	M	J	J	A	S	O	N	D		
Plankton	Phytoplankton and zooplankton														
Benthic Fauna	Benthic faunal communities														
Fish Spawning and Nursery areas	Lemon sole						N	N	N	N	N				
	Sprat						N	N	N	N	N				
	Sandeels	N	N	N	N										
	Whiting					N	N	N	N						
Seabirds	Block 48/12 (Offshore Vulnerability)	4	2	3	2	3	4		1	2	2	1	2		
	Block 48/17 (Offshore Vulnerability)	4	2	3	2	3	4	4	1	2	2	1	2		
Cetaceans	Harbour porpoise abundance														
Resource Users	Commercial fishing (35F1)														
	Commercial fishing (36F1)														
	Shipping and ports														
	Offshore Windfarms														
	Military Activity														
	Oil and gas activity (inc. pipelines / cables)														
	Marine Protected Sites														
	Dredging and dumping														
	Coastal Protected Sites														
	Tourism, recreation & leisure activities														
Numbers refer to the seabird vulnerability index used by JNCC (1999) – (1) highest vulnerability (4) lowest.															
Coastal occurrence				Activity in Block 43/21 and 43/22 and surrounding waters											
	Peak		Low		None		Peak		High		Low		None	N	Nursery



## 15 PON 1 REPORTING

Note that submission of PON1s is done online through the DECC Oil and Gas Portal. Detailed instructions are provided in the procedure Notification of offshore spills and non-compliant discharges (BMS-EM-010 – A Perenco Procedure that deals specifically with the notification of oil spills).

See DECC internet web site for the latest guidance on issue of PON1:

[https://www.og.decc.gov.uk/regulation/pons/pon\\_01\\_fax\\_guidance.doc](https://www.og.decc.gov.uk/regulation/pons/pon_01_fax_guidance.doc)

Appendix 1 contains the form detailing the information that is required for completion of the EPON1. In the event that online submission is not possible, fax-based submission may still be used.

## APPENDIX 1 PETROLEUM OPERATIONS NOTICE NO.1

*Annex 1***Petroleum Operations Notice No.1**

Pro-forma for reporting Oil and Chemical Spills/discharges from Offshore Installations and Pipelines

Fax To:  
Nearest Coastguard Fax:  
Station  
DECC Aberdeen Fax:  
JNCC Fax:

<b>Identity of Observer/Reporter</b>		
Full Name:		Organisation/Company:
Contact Telephone No:		Contact E-Mail:
<b>Incident Details</b>		
Operator/Organisation/Company Responsible for Incident:		
Date of Incident:		Time of Incident:
Installation/Facility:	Fixed / Mobile (delete as applicable)	Field Name:
Latitude:	Longitude:	Quad & Block No.:
<i>Oil Spill / Chemical Spill or Permitted Discharge Notification (tick below and complete column details as applicable)</i>		
Oil Spill Notification: <input type="checkbox"/>	Chemical Spill Notification: <input type="checkbox"/>	Permitted Discharge Notification: <input type="checkbox"/>
Max Spilled (tonnes):	Quantity Spilled (kg):	Max oil discharged (tonnes):
Min Spilled (tonnes):	Chemical Name:	Min oil discharged (tonnes):
Type of Oil:	Chemical Use:	Type of Oil:
Tier of Response (1,2 or 3): (As per Oil Spill Contingency Plan)	% oil if OBM or base oil:	Oil Conc. in discharge:
	Warning label:	Discharge rate m <sup>3</sup> /hr:
Appearance:	Appearance:	Appearance:
Approx. spill area on sea surface (m <sup>2</sup> or km <sup>2</sup> ):	Approx. spill area on sea surface (m <sup>2</sup> or km <sup>2</sup> ):	Approx. sheen area on sea surface (m <sup>2</sup> or km <sup>2</sup> ):
Is Spillage Ongoing? YES / NO (If YES PON1 must be updated & reported each 24 hr period unless otherwise directed by DECC/MCA)		
Spillage since last report (tonnes):		Total Spillage to date (tonnes):
Source of pollution:		
Cause of pollution:		
Steps taken to prevent re-occurrence/respond to spill:		
Spill likely to reach Median line YES / NO : Shore YES / NO If YES approx location/time:		
Photographs taken: YES / NO		Samples taken for Analysis: YES / NO
<b>Weather Conditions</b>		
Wind Speed (knots):		Wind Direction (0-360°):
Beaufort Scale (1-12):		Wave Height (metres):

*Version 3 – October 2008 DECC PON1 Guidance Document*



## APPENDIX 2 GUIDANCE FOR COMPLETING PON1 REPORT

The following gives guidance in relation to the information required when submitting a **PON1** Report.

- **Identity of Observer/Reporter:**

Full details of the person submitting the PON1 should be completed as per requested details.

- **Incident Details:**

*Operator/Organisation/Company Responsible for the Incident:* In the majority of incidents it is foreseen that this will be the licensed operator or identify other/unknown as applicable.

*Date of incident:* Date of when incident was observed.

*Time of incident:* Time at which incident was observed.

*Installation Facility:* Name of installation/facility from where spill has occurred. If unknown and spill is not suspected from reporters installation mark as 'unknown/third party'.

*Fixed/Mobile:* Refers to installation. Delete as applicable.

*Field Name:* Name of the field where spill has been detected/occurred.

*Latitude & Longitude:* Provide spill location.

*Quad & Block No:* Where spill has been detected/occurred.

Oil Spill/Chemical Spill Notification or Permitted Discharge Notification:

Tick appropriate incident notification and complete column details on PON1

- **Oil Spill Notification**

*Maximum and Minimum Spilled:*

This is the total quantity spilled to sea in tonnes. On all occasions efforts should be made to quantify maximum total lost using measured/calculated or estimated operational/production losses. No minimum figure is required if using these methods.

Where the above is not possible the following Bonn Agreement Codes shall be utilised to estimate losses from a visual assessment of oil on the sea surface. A maximum and minimum figure shall be provided where Bonn codes are utilised in order to allow a suitable assessment of potential pollution in the sea.

Code	Spill/Discharge Appearance	Litres per km <sup>2</sup>	
1	Sheen (silvery/grey)	40	to 300
2	Rainbow	300	to 5000
3	Metallic	5000	to 50,000
4	Discontinuous true oil colour	50,000	to 200,000
5	Continuous true oil colour	200,000	to more than 200,000

*Type of Oil:*

Example-Crude, Condensate, Diesel, if other-please state, or Unknown.

*Appearance:*

Report in accordance with Bonn Agreement Appearance Codes : Either: Not visible; Sheen (silver/grey); Rainbow; Metallic; Discontinuous true oil colour; Continuous true oil colour as per table above

*Approx area:*

If conditions permit indicate the area of the visual evidence of oil on the sea surface in either m<sup>2</sup> or km<sup>2</sup> indicating as applicable

*Tier of response:*

In accordance with Oil Spill Contingency Plan arrangements indicate whether a Tier 1, Tier 2 or Tier 3 response to the incident is being activated.

- Chemical Spill Notification

*Quantity Spilled:*

Total quantity of chemical/substance spilled to sea in kilograms (kg).

*Chemical Name:*

Name of Chemical Spilled (as per CEFAS lists if approved) i.e. OBM XPO7.

*Chemical use:*

What is the chemical used for on the installation i.e. drilling fluid.

*% oil if OBM or base oil:*

State the % of oil in the product spilled.



*Warning label:*

Enter chemical warning label i.e. Substitution or Pb (lead).

*Appearance:*

If applicable, information relating to the appearance of the spill i.e. white/ cloudy or using Bonn codes as per table above.

*Approx area:*

If conditions permit indicate the area of the spill event on the sea surface in either m<sup>2</sup> or km<sup>2</sup> indicating as applicable.

- **Permitted Discharge Notification:**

This should only be utilised for discharges associated with an OPPC Permitted activity as per Section 1.2. All other un-permitted or spill discharges must be notified as either an oil or chemical spill.

*Maximum and Minimum Oil discharged:*

This is the total quantity of oil that has been discharged to sea causing circumstances to warrant notification using a PON1. For example, if a produced water treatment upset has been ongoing for three hours then it is the total quantity of oil which has been discharged to sea over that three hour period. On all occasions efforts should be made to quantify maximum total discharged using measured/calculated or estimated operational/production figures. No minimum figure is required if using these methods.

Where the above is not possible, the following Bonn Agreement Codes shall be utilised to estimate the quantity of oil within the discharge using a visual assessment of the oil on sea surface. A maximum and minimum figure shall be provided where the following Bonn codes are utilised in order to allow a suitable assessment of potential pollution in the sea.

Code	Spill/Discharge Appearance	Litres per km <sup>2</sup>	
1	Sheen (silvery/grey)	40	to 300
2	Rainbow	300	to 5000
3	Metallic	5000	to 50,000
4	Discontinuous true oil colour	50,000	to 200,000
5	Continuous true oil colour	More than 200,000	

*Type of Oil:*

Example-Crude, Condensate, Diesel, if other-please state, or Unknown.

*Oil Concentration in discharge:*

If known enter the concentration of oil within the discharge being made (mg/l).

*Discharge Rate:*

The rate at which the discharge is/was being discharged from the installation (m<sup>3</sup>/hour).

*Appearance:*

Report in accordance with Bonn Agreement Appearance Codes : Either: Not visible; Sheen (silver/grey); Rainbow; Metallic; Discontinuous true oil colour; Continuous true oil colour as per above table.

*Approx area:*

If conditions permit indicate the area of the visual evidence of oil on the sea surface in either m<sup>2</sup> or km<sup>2</sup> indicating as applicable.

*Is Spillage Ongoing:*

If spillage/incident is ongoing this should be indicated and a PON1 report, giving the spillage since last report (tonnes), and the total spillage to date (tonnes), must be submitted each 24 hr period for the duration of the incident unless otherwise directed by MCA/DECC. If a number of PON1s are submitted in connection with the same incident these will be logged as a single incident event within PON1 Incident database.

*Source of Pollution:*

Brief details should be given of where the spill is originating i.e. area of the installation and/or part of the process e.g. Module 4 hydraulic skid unit.

*Cause of Pollution:*

Brief details should be given of the circumstances that caused the incident. It is appreciated that in the early stages of an incident these details may not be fully available but all efforts should be made to provide information where available.

*Steps taken to Prevent Re-occurrence/Response to Spill:*

Brief details should be given if actions have been identified or have been taken to prevent re-occurrence of the incident and/or to respond to any spill/discharge.

*Spill Likely to Reach Median Line or Shore:*



Indicate YES or NO as applicable. If Yes give an approximate location and time if available.

- Weather Conditions**

*Wind Speed:* Enter in Knots.

*Wind Direction:* Enter between 0 and 360<sup>0</sup>.

*Wave Height:* Enter in metres.

*Beaufort Scale:* Enter 1-12 as applicable.

Beaufort Scale (Force)	Wind Speed (knots)	Description	State of Sea	Probable Wave Height (m)
0	0 – 1	Calm	Like a mirror	0
1	1 – 3	Light Air	Ripples like scales are formed	0
2	4 – 6	Light Breeze	Small wavelets, still short but more pronounced, not breaking	0.1
3	7 – 10	Gentle Breeze	Large wavelets, crests begin to break; a few white horses	0.4
4	11 – 16	Moderate Breeze	Small waves growing longer; fairly frequent white horses	1
5	17 – 21	Fresh Breeze	Moderate waves taking more pronounced form; many white horses, perhaps some spray	2
6	22 – 27	Strong Breeze	Large waves forming; white foam crests more extensive; probably some spray	3
7	28 – 33	Near Gale	Sea heaps up; white foam from breaking waves begins to blow into streaks	4
8	34 – 40	Gale	Moderately high waves of greater length; edge of crests breaks into spindrift; foam blown into well-marked streaks	5.5
9	41 – 47	Severe Gale	High waves with tumbling crests; dense streaks of foam; spray may affect visibility	7
10	48 – 55	Storm	Very high waves with long overhanging crests; dense streams of foam make surface of sea white. Heavy tumbling seas; visibility affected	9
11	56 – 63	Violent Storm	Exceptionally high sea waves, sea completely covered with long white patches of foam, edge of wave crests blown into froth, visibility affected	11
12	64 and above	Hurricane	Air filled with foam and spray; sea completely white with driving spray; visibility very seriously affected	14

## APPENDIX 3 CONTACTS

ORGANISATION	CONTACT	TELEPHONE	FAXSIMILE	24 H. TELEPHONE	24 H. FAXSIMILE	MOBILE/PAGER E-MAIL / TELEX
Perenco	Duty Manager	XXX	XXX	XXX	XXX	XXX
	HSE Advisor	XXX	XXX	XXX	XXX	XXX
	Bacon Control Room					
	Great Yarmouth Control Centre					
DRILLING COMPANY						
See project Specific Appendix						
ACTIVE INSTALLATIONS AND PIPELINES IN THE VICINITY OF THE PROPOSED WELL						
See project Specific Appendix						
AGENCY CONTACT						
HM Coastguard (HMCg)	Great Yarmouth Duty Officer			01493 851338		-
DECC –only for oil and chemical spills	Duty Officer Incident Response Desk					-
Joint Nature Conservation Committee (JNCC)	Oil Spill Contact	07974 257464		-	-	
Natural England (NE)	Marine Pollution Advisor				-	
Marine Management Organisation (MMO formerly MFA)	Duty Officer	0870 785 1050	020 7270 8125 (DEFRA Duty Room) 0191 376 2682 (MMO – not 24 hrs) 020 7270 8345 (Fisheries Agency Operations Room)	Marine Management Organisation Duty Officer (MMO formerly MFA) Duty Officer: 07770 977 825  Failing above: 020 7270 8960 (24hr DEFRA Duty Room)		<a href="mailto:dispersants@mfa.gsi.gov.uk">dispersants@mfa.gsi.gov.uk</a>
Environment Agency	Main	01925 653 999		0800 807 060	-	-



ORGANISATION	CONTACT	TELEPHONE	FAXSIMILE	24 H. TELEPHONE	24 H. FAXSIMILE	MOBILE/PAGER E-MAIL / TELEX
Great Yarmouth Port Authority	Duty Officer	01493 335 500	-	-	-	-
Lowestoft Harbour Master	Duty Officer	01502 572 286	-	-	-	-
<b>LOCAL AUTHORITIES (LA)</b>						
Lincolnshire Council	Civil Protection Unit				-	-
North Yorkshire County Council	Emergency Planning	01609 780780	01609 532 009	01609 780780	-	-
East Riding County Council	Emergency Planning	01482 887700	01482 393 939	01482 887700	-	-
Norfolk County Council	Emergency Planning Duty Officer		-		-	-
<b>OTHER CONTACTS</b>						
Aerial Surveillance via Oil Spill Response oil spill contractor	Duty Manager (Oil Spill Response)	023 8033 1551	-	023 80331551	-	
International Tanker Owners Federation (ITOPF)	-	020 7566 6999	020 7566 6950	1	-	-
Health and Safety Executive Offshore Safety Division, Lord Cullen House, Fraser Place, Aberdeen, AB25 3UB	Incident Number	-	-	0845 300 9923 (24 hours)	-	-
Customs and Excise Excise and Inland Customs Advice Centre, Caledonian House, Greenmarket, Dundee, DD1 1HD	National Advice Service	08450 109 000 (general enquiries)	-	-	-	enquiries.sco@hmce.gsi.gov.uk
Leman CR						

ORGANISATION	CONTACT	TELEPHONE	FAXSIMILE	24 Hr. TELEPHONE	24 Hr. FAXSIMILE	MOBILE/PAGER E-MAIL / TELEX
Inde CR						
Thames CR						



