



Implementation report on
Recommendation 2006/5 on a management
regime for offshore cutting piles



OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.

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Background

Cuttings piles arise from drilling operations where the drilled cuttings and associated drilling fluids are discharged at the location of the well.

Contracting Parties with offshore installations were required to report by 30 November 2008 on the implementation of OSPAR Recommendation 2006/5 on a Management Regime for Offshore Cuttings Piles (OIC 2007, Summary Record, § 6.14).

Cuttings may contain traces of the drilling fluids used in the wells from which they are derived. Drilling fluids are categorised into either water-based or organic-phase fluids. Old cuttings piles may contain organic-phase drilling fluids and have been identified as possible sources of hydrocarbon releases into the marine environment, due to remobilisation of residues of oil still found in the piles and natural leaching in to the water column. Due to low rates of leaching, this is not considered a significant pressure. However, there have been concerns raised over the potential for oil and other contaminants to be released into the marine environment from the remobilisation of cuttings piles due to disturbance from other activities, *i.e.* trawling and decommissioning activities, and OSPAR is addressing the issue in the Assessment of impacts of offshore oil and gas activities in the North-East Atlantic (OSPAR publication 2009/453).

The purpose of OSPAR Recommendation 2006/5 is to reduce the impacts of pollution by oil and/or other substances from cuttings piles to a level that is not significant. The cuttings pile management regime is divided into two stages. Stage 1 requires the initial screening of all cuttings piles within two years of the Recommendation taking effect, which was 30 June 2006. Stage 2 calls for a Best Available Technique (BAT) and/or Best Environmental Practice (BEP) assessment and should, where applicable, be carried out in a timeframe determined in Stage 1.

The Stage 1 screening is to be carried out by assessing the rate of oil loss from the cuttings pile to the water column over time, compared to a threshold of 10 t/yr. The persistence of the cuttings pile should be assessed on the basis of the area of the seabed where the concentration of oil remains above 50 mg/kg and the duration that the area of contamination remains, in terms of square kilometer years (km² yrs).

Responses

Responses were received from the Netherlands, Norway and the United Kingdom.

The Netherlands implemented the recommendation by negotiated agreement; Norway and the United Kingdom implemented by administrative action.

Report on Effectiveness

The Netherlands reported that none of the former oil-based mud (OBM) discharge sites on the Dutch Continental Shelf meets the thresholds for Stage 1 and provided reports by TNO IMARES (Netherlands Organization for Applied Scientific Research / Institute for Marine Resources and Ecosystem Studies) in which the maximum oil loss at discharge sites is calculated to be two tones per year. The report stated that, twenty years after the last discharges of OBM contaminated cuttings, none of the discharge sites exceeds the persistence criterion of 500 km² yrs.

Norway noted the technical problems associated with sampling and the uncertainties in calculation of oil loss but is confident that the cuttings piles in the Norwegian sector are well below the thresholds in the Recommendation. A summary of a report by Det Norske Veritas (DNV) advised that the contaminated areas have been significantly reduced since 1993 by 50 – 100%. There are no contaminated areas larger than one km² indicating that the persistence threshold is not exceeded. In addition, modeling of oil loss from piles indicates that the amounts are below 10 t/yr for all piles.

The United Kingdom also noted the difficulties in establishing firm data for comparison with the thresholds in the Recommendation. But survey and sampling data for representative piles was used as a basis for estimating oil loss and persistence values for 174 piles on the United Kingdom Continental Shelf. The results indicate that the maximum rate of oil loss is below seven tonnes per year and for over half the piles it was less than 20% of the threshold value. All cuttings piles were calculated to be below persistence threshold of 500 km² yrs, with over 95% of the installations achieving a persistence value of less than half the threshold.

The reports from all three Contracting Parties make the point that discharges of cuttings contaminated with oil have been prohibited by OSPAR for many years and it is clear from various surveys that there is no evidence of substantial oil loss and the sites of discharges have recovered substantially. OSPAR Recommendation 2006/5 appears to have confirmed that OSPAR Decision 2000/3 on the Use of Organic-phase Drilling Fluids (OPF) and the Discharge of OPF-Contaminated Cuttings has resulted in significant reduction in pollution and recovery of the seabed.

This assessment indicates that there was no evidence of substantial loss of oil and immediate action was not required to reduce environmental impact of cutting piles. The management of cutting piles could be addressed as part of the decommissioning plan for the installations.

ANNEX 1 – The Netherlands

Format for Reporting on Implementation of OSPAR Recommendation 2006/5 on a Management Regime for Offshore Cuttings Piles

(Note: In accordance with paragraph 5.1 of the Recommendation, this format should be used as far as possible in implementation reports)

I. Implementation Report on Compliance

Country:

The Netherlands

Reservation applies

no

Is measure applicable in your country?

no

If not applicable, then state why not (for example. no relevant cuttings piles)

Based on a study by a Joint Industry Government Working Group within the framework of the Environmental Covenant in the Netherlands, it is concluded that on the basis of monitoring programmes carried out up to 2005 none of the former OBM discharge sites on the Dutch Continental Shelf meets the OSPAR criteria for further assessment of cuttings piles that exceed the rate of oil loss or persistence criteria. So the Dutch Government decided that no further action is needed in relation to managing former OBM drill cuttings sites.

Means of Implementation:

by legislation	by administrative action	by negotiated agreement
Not needed	Not needed	yes

Please provide information on:

- specific measures taken to give effect to this measure;
- any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported;
- if appropriate, progress towards being able to lift the reservation.

Results Working Group on Drill Cuttings

To : Level II

From : Working group Drill Cuttings

Date : 5 September 2008

Number : N0809005a

Discussion point: 5

1. Introduction

The working group on drill cuttings started working in 2004 on the basis of terms of reference contained in N030926V&W.c d.d. 27 November 2003.

This report contains a description of the results of the activities of the working group, the conclusions of studies and recommendations on the basis of the outcome.

2. Results of the working group

Below, the results of the working group are listed on the basis of the terms of reference of the working group.

Goal

An assessment of the recovery of selected locations where OBM cuttings discharges took place, was carried out. Monitoring took place at four selected locations (L4-A, K12-A, L13-FE and G13-1), in line with previous monitoring programmes in the 80's and 90's (MONMIJ). On the first three locations, offshore installations were still in place. The abandoned location G13-1 was selected in order to determine the possible effect of fishing activities on the possible dispersion of OBM contaminated cuttings.

Netherlands Oil and Gas Exploration and Production Association (NOGEPA) commissioned the Royal Netherlands Institute for Sea Research (NIOZ) for biological monitoring of the four locations. This resulted in the report *"Oil contaminated sediments in the North Sea: environmental effects 20 years after discharges of OBM drill cuttings"*, NIOZ-Report 2006-4.

The North Sea Directorate commissioned TNO (Bouw en Ondergrond) for chemical analysis of sediment samples on the same locations. This resulted in TNO report B&O-DH R 2005/256, *"Herstelmonitoring OBM locaties 2005"*.

In 2006, OSPAR Recommendation 2006/5 on a Management Regime for Offshore Cuttings Piles came into effect. In October 2006 the working group advised Level II to follow this OSPAR regime, rather than to develop new (national) machinery as originally agreed in the terms of reference (N06927a d.d. 27 September 2006). Therefore, the following goals as defined in the terms of reference were abandoned:

- to provide adequate reasoning that no substantial residues of OBM cuttings are present at locations in the erosion zone;
- depending on the outcome of monitoring and that reasoning, to prepare a methodology for the assessment of locations where OBM drill cuttings are present, in analogy with the so called BSB methodology; and
- to provide advice regarding locations in the transition zone, on the basis of available data and information.

Instead, the North Sea Directorate commissioned TNO IMARES to prepare an evaluation of available long term monitoring data of former OBM discharges locations against the OSPAR criteria. This resulted in TNO-report 2006-DH-R0315/B, *"Evaluation of OBM discharge sites on the Dutch Continental Shelf"*.

3. Results

3.1 Biological monitoring and chemical analysis

After 20 years, measurable effects on the macrobenthic community are generally limited to an area within 100 m from platforms. At the species level effects may occur in an area within 100 m to maximally 250 m from well sites.

Elevated oil concentrations have been found close to the drilling point (≤ 100 m distance) at all four locations. Compared to previous studies, oil concentrations are sometimes strongly reduced. However, within a distance of *circa* 250 m, the oil concentrations have not yet reached the level of average background concentrations (<10 mg/kg). At distances of more than 250 meters, no elevated oil concentrations have been found at any of the four locations.

1. Platform L13-fe, erosion area:

Results biological monitoring: Slight contamination levels occurred up to at least 100 m, but to less than 25 m from the platform. Oil seems to have disappeared for the greater part after 18 years. A clear effect on the benthic community could only be observed at the station nearest to the platform (40 m). Here the fauna was substantially impoverished. The sea urchin *Echinocardium cordatum* seemed to be affected in its abundance up to 250 m from the platform.

Results chemical analysis: The oil concentrations are strongly decreased over the years and only close to the drilling point the sediment is still oil contaminated. The results show that the oil is related to cuttings, oil contaminated mud has probably been washed away. Deeper in the sediment there is still oil contamination present.

2. Platform K12-a, transition zone:

Results biological monitoring: The sediment conditions seem to have considerably improved compared to the first 7 years after the discharges. Patchiness in the distribution of discharged material may have camouflaged the presence of local higher contamination levels. At 35 m from the platform the benthic fauna was clearly affected. The fauna composition at this station was different and substantially poorer than at stations further away from the platform. At 100 m the benthic community seemed to be only slightly affected.

Results chemical analysis: The oil concentrations have strongly decreased over the years. Close to the drilling point, however, the sediment is still contaminated. Although in 1992 a high concentration of oil was detected in the deeper layer of the sediment, in this survey no elevated oil concentrations have been found at 25 – 30 cm depth. The oil contamination seems to have spread over the area, which is expected because the location is situated in a transition area, where erosion and sedimentation alternate.

3. Platform L4-a, sedimentation area:

Results biological monitoring: At 100 m the fauna seemed to be not or hardly affected, in spite of the presence of oil in the sediment. At 45 m from the platform the benthic fauna was severely impoverished. Most species that were common or even abundant further away from the platform were absent or occurred in very low densities.

Results chemical analysis: At 45 m from the platform the sediment was severely contaminated. The oil concentration (32 g/kg dry sediment) was higher than ever measured near L4-a. The chromatogram of the sediment sample was different from those usually found near old OBM locations and indicated that the oil was not or hardly weathered. This has led to the idea that the oil could be rather 'fresh'. The probable cause was found after the NIOZ report was finalized. It is highly unlikely that the elevated oil concentration was related to former OBM discharges.

Deeper in the sediment (25 – 30 cm) the oil concentration is higher than in the top layer. At this depth there has been no or little decrease in oil concentration compared to ten years ago, indicating that no or little degradation has occurred.

4. Location G13-1, sedimentation area, abandoned well site:

Results biological monitoring: A measurable effect of beamtrawl fishing on the distribution of discharged material could not be demonstrated. As a consequence of the very patchy distribution of the discharged material, a much more extensive sampling program would be necessary to detect such an effect.

Results chemical analysis: The oil concentration is decreased at nearly all sample points compared to 1995. The results show that a slight contamination is now only present at ca. 100 m distance from the drilling point and in the deeper layer of the sediment. The platform at location G13-1 has been removed so the area can be used for beam trawl fishing. This can cause spreading of the contamination. As expected, the variation in concentrations between different distances from the drilling point has decreased compared to 1995, which indicates spreading.

3.2 Evaluation of OBM discharge sites against OSPAR criteria

Data from the long-term monitoring programme (MONMIJ) and the 2005 monitoring programme has been used to evaluate OBM discharge sites on the DCS. Although the data gives a good overview of the contaminated area, it provides no actual data on oil loss rates. Therefore a worst case scenario approach has been chosen to be able to draw a conclusion. It appeared that none of the sites exceeds the persistence criterion of 500 km² yr. Based on historical monitoring data an oil reduction rate of 19% per year was derived, resulting in an estimated (worst case) current oil loss of less than two tonnes per year, well within the OSPAR criterion of 10 t/ yr. It is noted that most former OBM discharge locations have specifics that are well below the worst case scenario.

The overall conclusion of this evaluation is that none of the former OBM discharge sites on the Dutch Continental Shelf is subject to further assessment of BAT and BEP according to OSPAR criteria.

4. Recommendations

Twenty years after the discharge of OBM contaminated cuttings, measurable effects on the macrobenthic community are generally limited to an area within 100 m from platforms. Although at a distance of ca. 250 m, the oil concentrations have not yet reached the level of average background concentrations (<10 mg/kg), no elevated oil concentrations have been found at any of the four locations at distances of more than 250 m.

None of the former OBM discharge sites on the Dutch Continental Shelf meets the OSPAR criteria for further assessment of cuttings piles that exceed the rate of oil loss or persistence criteria. OSPAR recommends cuttings piles where both the rate and persistence are below the thresholds (and no other discharges have contaminated the cuttings pile), no further action is necessary and the cuttings pile may be left in situ to degrade naturally.

In view of the results of the monitoring programmes that were carried out up to 2005 and on the basis of the conclusions of the studies that were carried out, the Working Group Drill Cuttings unanimously agreed that at this stage, no further action is needed in relation to managing former OBM drill cuttings discharge sites.

Finally it is suggested that the activities of the working group be terminated.

ANNEX 2 - Norway

Format for Reporting on Implementation of OSPAR Recommendation 2006/5 on a Management Regime for Offshore Cuttings Piles

(Note: In accordance with paragraph 5.1 of the Recommendation, this format should be used as far as possible in implementation reports)

I. Implementation Report on Compliance

Country:

Norway

Reservation applies

no

Is measure applicable in your country?

yes

If not applicable, then state why not (for example no relevant cuttings piles)

Means of Implementation:

by legislation	by administrative action	by negotiated agreement
no	yes	no

Please provide information on:

- a. specific measures taken to give effect to this measure;
- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;.

A: The Norwegian Pollution Control Authority made a request to all operators on the Norwegian Shelf to provide the necessary information to fulfil the measure from OSPAR.

The Norwegian Oil Industry Association (OLF) coordinated the information to be reported by Det Norske Veritas (DNV) in an over all report (Summary and table available in appendixes).

B: Due to technical problems in sampling and uncertainties in calculation of loss *etc.* (see summary from the DNV report) it was difficult to come up with exact numbers. However, we are quite confident that the cutting piles in the Norwegian sector are well below the thresholds in the OSPAR Recommendation.

II. Implementation Report on Effectiveness

NOTE: The following data and information should be reported to the extent possible. Please state the reasons, if some required data and information cannot be provided.

Total number of cuttings piles for which Stage 1 Assessment has been completed	120		
Total number of cuttings piles for which Stage 2 Assessment has been completed	0		
Total number of cuttings piles receiving:			
onshore treatment and reuse	none		
onshore treatment and disposal	none		
offshore injection	none		
bioremediation <i>in situ</i>	none		
covering <i>in situ</i>	none		
natural degradation <i>in situ</i>	All reported		
other treatment option explain...	none		
For cuttings piles assessed under Stage 1			
A summary of the Norwegian report are presented in Appendix. 1			
The main table containing estimations of areas contaminated (for the oil fields having the largest cutting piles) is presented in Appendix 2.			
For the regions used in table/Appendix 2, see map of Norwegian sediment monitoring regions in Appendix 3.			
Field	Rate of oil loss (t/yr)	Persistence (km ² yr)	

Appendix 1

Summary of the Det Norske Veritas (DNV) report to Norwegian Oil Industry Association (OLF):

This report discusses the discharges and existence of drill cuttings at the Norwegian sector. The information is based on a data set compiled in 2000 and updated information for the years 2000 – 2007 received by the operators. Norwegian Pollution Control Authority (SFT) requested the report as a basis for the Norwegian reply to the OSPAR requirements for a status on drill cuttings. In order to leave drill cuttings on the seabed, OSPAR Recommendation 2006/5 on a Management Regime for Offshore Cuttings piles states that the following main thresholds must be met:

Rate of oil loss to water column:	10 t/yr
Persistence over the area of seabed contaminated: ¹	500 km ² yr

The results from previous investigations indicate that the cuttings piles are variable in their quality, both between piles and within one pile.

To evaluate the piles against the OSPAR Recommendation, the size and persistence of total hydro-carbon (THC) contamination (> 50 mg/kg) within an area and the leaching of oil to the water column has to be discussed. The size and volume of the piles are, in this respect, of minor importance.

The THC contaminated areas have been significantly reduced since 1993 when it was forbidden to discharge oil-based drill cuttings. Available time series indicates that the contaminated areas are reduced by 50 – 100 %. Based on data from the environmental sediment investigations, there are at present no contaminated areas that are larger than one square kilometre, and it seems likely that the contaminated areas will exist for much less than 500 years. This indicates that the OSPAR criterion of 500 km²yr is fulfilled. The contaminated area at most of the field/installations is less than 0.1 km², thus they can persist for a maximum of 5000 years and still comply with the OSPAR criteria.

The leaching rate of oil from the cuttings piles and the THC contaminated area are not measured conclusively and can still be debatable. However, leaching experiments and measurements indicates that the leaching rate is low and connected to the low solubility of THC in water. Loss of THC to the water column will vary over time and between different piles, thus the usage of a specific leaching rate is questionable. However, based on present knowledge, the leaching rate is well below the OSPAR threshold of 10 t/yr. Modelling of oil loss from cuttings piles indicates that the amounts are below 10 t/yr, even for the largest known cutting piles.

It is likely that all the existing cuttings piles on the Norwegian sector fulfil the OSPAR Recommendation and in respect of this no further evaluation is necessary. It is more than 15 years since it was forbidden to discharge oil contaminated cuttings, and therefore the contaminated areas have been greatly reduced and the leaching rate diminished compared to the situation when the discharges were newly deposited.

¹ A persistence of 500 km²yr could mean an area of 1km² is contaminated for 500 years or an area of 500 km² is contaminated for 1 year.

Appendix 2

The first table (on a white background) shows the estimated area (km²) at several fields and installations contaminated with THC in concentrations > 50 mg/kg dry weight.

The second table (with grey shading) gives an overview of more installations; however, here the background level is used. The background levels are calculated as LSC (Limit of Significant Contamination) according to Norwegian guidelines. The LSC varies from region to region (THC concentration often between 5 – 10 mg/kg) and over time due to its influence from the latest analysed data. The low contamination concentrations (LSC values) explain why these areas in general are of a greater magnitude than the > 50 mg/kg areas. (See: OLF borekaks, datasammenstilling Det Norske Veritas report report 2008-4132 – Norwegian only)

Field/ year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	% reduction
Ekofisk 2/4 A									0.58			0.25			0.1	83
Ekofisk senter															0.86	-
Eldfisk 2/7 A															0.17	-
Eldfisk B															0	-
Total for the whole Ekofisk region												9			1.13	87
Tor, Trym/Kogge, Tambar, Embla, Hod og Gyda															0	-
Ula	5											2.5			0.1	98
Valhall	4.4					4.4			3.8			2.7			0.15	97
Brage			0.6	5.3	5.9			2.4			0.2					96
Gullfaks A	6.5	2.5	1.7	0.2		3.1			0.2			0.2				97
Gullfaks B	3.2	2.8	1.4	0.5		0.6			0.2			0.2				94
Gullfaks C	2.5	8.1	2	2.4	1.2	1			2.4			0.3				88
Oseberg C			2.5	"42"*	1.3			3.5			0.3					88
Oseberg F		"24"*	4.6	1.1	0.56			1.3			2					57
Statfjord A	4	3.4	4.6	3.4		3.4			2.5			1.8				55
Statfjord B	6.8	3.1	0	1.3		2.7			0.5			1.2				82
Statfjord C	4	3.4	4.6	3.4		3.4			2.5			1.8				55

* The figure in quotation marks for Oseberg C and F is dubious and should be used with care. The % in area reduction are calculated by using the first year with confident contamination area calculations and the last reported area

Field /year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Tor, Trym/Kogge, Tambar, Embla, Hod og Gyda															3.3			
Gullfaks ABC												1.45			0.91			
Gullfaks Satelitter												1.01			1.09			
Oseberg C																	<0.31	
Oseberg Feltsenter																	<1	
Statfjord ABC												12.66			8.12			
Region I, Ekofisk																		
Ekofisk 2/4 A												>5			10.2			
Eldfisk B												>5			1			
Ekofisk senter												>15			41			
Eldfisk 2/7 A												>5			1.2			
Ula												1			1.4			
Valhall												>20			39			
Hod												>6			1.95			
Tor												1			0.38			
Trym/Kogge												-			0			
Tambar												>0,2			0.27			
Embla												>2			0.2			
Gyda												1			0.5			

Field /year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Region II, Frigg																		
Varg South							1.18			1.33			0.07			0.05		
Sigyn										0			0.02			0.02		
Sleipner East							0.07			0.4			0.44			0		
Vale											0		0			0		
Frigg							0			0.06			0.06			0.02		
Sleiner West							0.88			0.74			0.79			0.02		
Alfa North																0.03		
Glitne										0			0.88			0		
Grane							0.18						0.1			0		
Balder							1.09			0.54			2.38			0.25		
Ringhorne										0			3.93			0.03		
Jotun							0			1.77			ib			0		
Volund																0		
Heimdal							0.25			0.12			0			0		
Skirne																0		
Byggve																0		
Frøy							0.28			0.07			0.2			0.001		

Field /year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Region III, Oseberg																		
Oseberg East																	>2.76	
Oseberg South																	<0.44	
Oseberg G																	<0.60	
Oseberg J																	<0.44	
Oseberg D																	<0.20	
Brage																	<0.79	
Veslefrikk																	>12.6	
Huldra																	<0.20	
Tune																	<0.20	
Troll A																	<0.63	
Troll B																	<0.20	
Troll C																	>1.23	
Fram V-A1/2																	<3.14	

Region IV, Statfjord																		
Visund North												1.18			0.1			
Visund												0.12			0.31			
Snorre TLP/UPA												1.16			2.21			
Snorre B												0.3			0.99			
Vigdis												0.7			0.79			

Field /year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Vigdis D												ib			0.12			
Vigdis F												ib			0.12			
Tordis												0.53			0.36			
Sygna												0.07			0.11			
Statfjord East												0.27			0.22			
Statfjord North												0.32			0.12			
Statfjord ABC												12.66			8.12			
Statfjord Northern area												0.08			0.12			
Gullfaks ABC												1.45			0.91			
Gullfaks Satelites												1.01			1.09			
Kvitebjørn												0			0.07			

Region V, Ormen Lange																		
														0*				

Region VI, Haltenbanken																		
Njord																	9.62	
Heidrun																	9.62	
Heidr. N																	1.23	
Norne W																	2.41	
Norne S																	1.46	
Rogn S																	1.76	

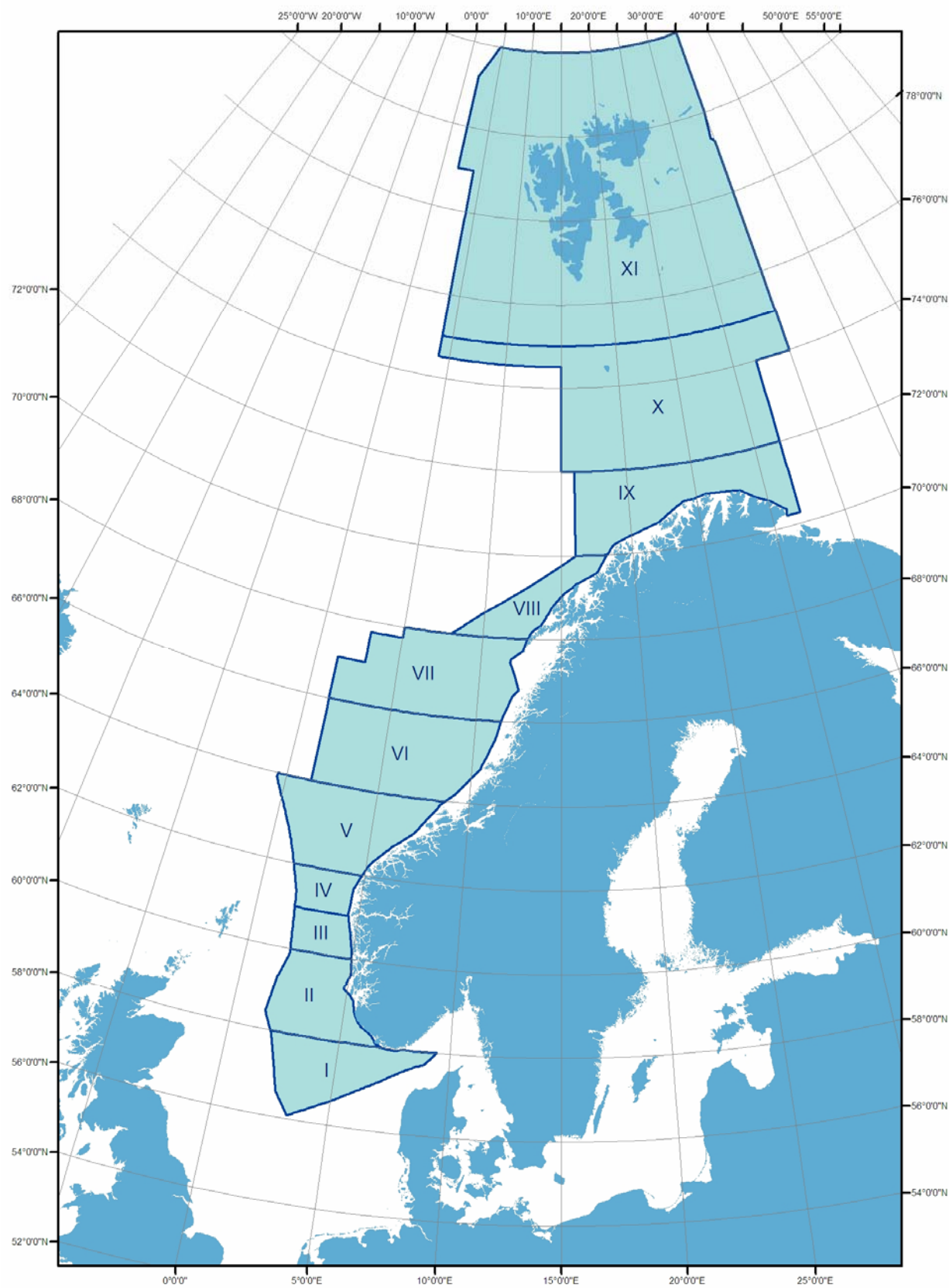
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Field /year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Mikkel																	0.51	
Åsgard-N																	0.47	
Åsgard-S																	1.23	
Åsgard-Q																	0.79	
Åsgard-M																	3.14	
Draugen																	7.07	
Garn V																	8.3	
Garn C																	2.76	
Kristin N																	0.6	
Kristin P																	0.79	
Kristin R																	2.41	
Kristin S																	1.23	
Urd - J																	1.77	
Urd - G																	2.18	
Alve																	0.6	
Skarv BC																	0.62	
Skarv A																	0.79	
IDUN																	1.23	
Hans																	4.91	
Tyrihans A																	3.14	
Tyrihans B																	3.14	
Tyrihans D																	5.94	

Field /year	1990	1991	1992	1993	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
The Halten bank total																	79.72	
2,89 km2 was in i 2006 over 50 mg/kg																		
Region IX, Snøhvit																		
Snøhvit																	0.18	

Appendix 3

Regions for sediment monitoring on the Norwegian Continental Shelf



ANNEX 3 – United Kingdom

Format for Reporting on Implementation of OSPAR Recommendation 2006/5 on a Management Regime for Offshore Cuttings Piles

(Note: In accordance with paragraph 5.1 of the Recommendation, this format should be used as far as possible in implementation reports)

I. Implementation Report on Compliance

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (for example no relevant cuttings piles)

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	no	yes	no

Please provide information on:

- specific measures taken to give effect to this measure;
- any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported;
- if appropriate, progress towards being able to lift the reservation.

ed for the 174 UKCS installations where potentially significant piles may be present were all below the 10 t/yr OSPAR threshold value. The oil loss rate calculated for over half of the installations was less than 20% of the threshold value (Figure 1).

Persistence of the area contaminated by UKCS cuttings piles

The calculated persistence values for the 174 UKCS installations where potentially significant piles may be present were all below the 500 km²/yr OSPAR threshold value. The persistence calculated for over 95% of the installations was less than half of the threshold value (Figure 2).

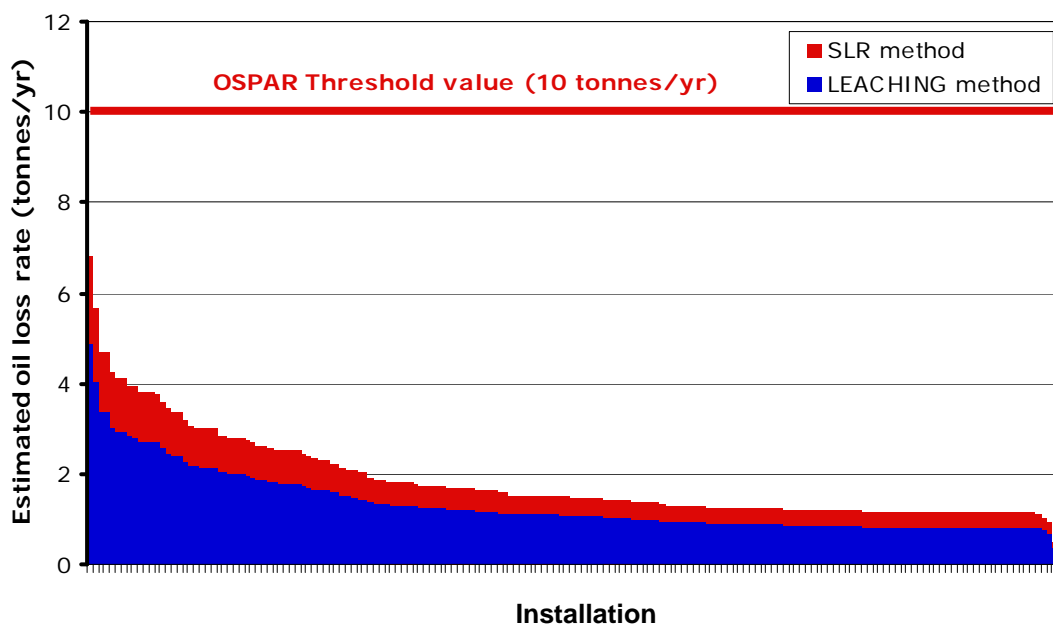


Figure 1 Comparison of the estimated rates of oil loss from the 174 potentially significant UKCS cuttings piles with the proposed threshold value (10 t/yr)

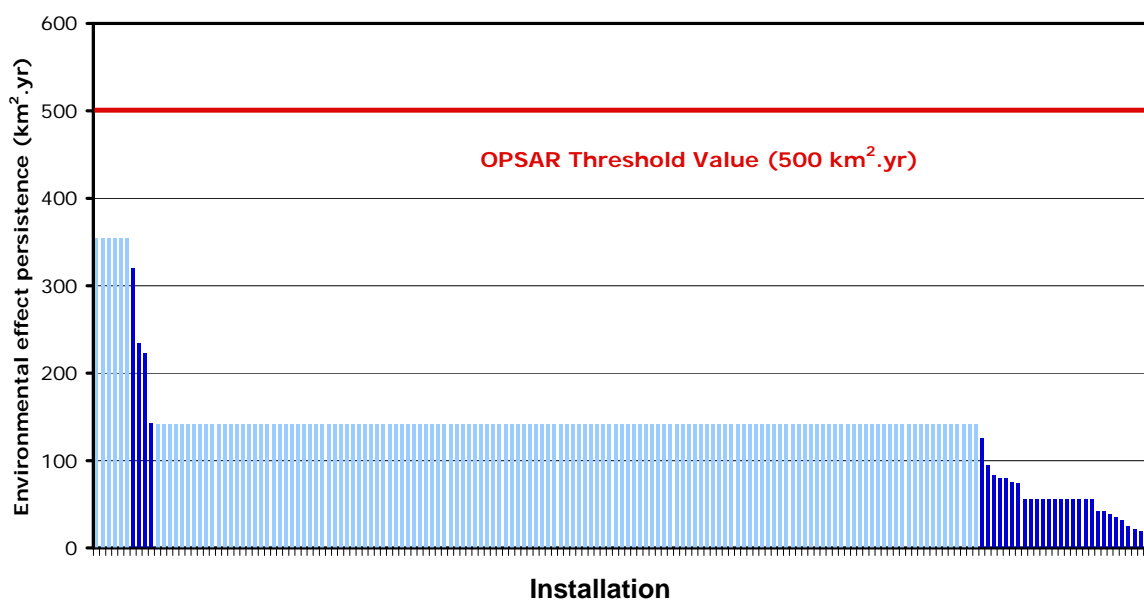


Figure 2 Comparison of the estimated persistence of environmental effect around the 174 potentially significant UKCS cuttings piles with the proposed threshold value (500 km².yr)



New Court
48 Carey Street
London WC2A 2JQ
United Kingdom

t: +44 (0)20 7430 5200
f: +44 (0)20 7430 5225
e: secretariat@ospar.org
www.ospar.org

OSPAR's vision is of a healthy and diverse North-East Atlantic ecosystem

ISBN 978-1-906840-98-3
Publication Number: 451/2009

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