Tour d'Horizon 2020 and Multi-annual TdH Trends

Background

1. Belgium compiled the results of TdH flights of 2020 in a 'Report on Tour d'Horizon 2020' (see Annex 1). The TdH flight programme for 2020 (cf. BA Joint Action Programme) was scheduled as follows:

January/February:	Norway
March/April:	United Kingdom
May/June:	The Netherlands
July/August:	Denmark
September/October:	Belgium
October/November:	Germany
November/December:	Sweden

2. Each of the above CPs was requested by the BA Secretariat prior to OTSOPA 21 to submit their aerial surveillance data for 2020, including the TdH20 mission data. The BA Secretariat subsequently sent the submitted TdH20 data to Belgium in April 2021.

3. Unfortunately, DE, NL and SE had to cancel their TdH20 – DE due to technical problems with the aircraft, NL and SE due to the COVID-19 pandemic and restrictions. As a result, only 4 different TdH missions were carried out in 2020, by: (in chronological order) The United Kingdom, Norway, Belgium and Denmark.

Remarks and conclusions

TdH20 results

4. The total number of spill detections made during TdH campaigns in 2020 amounts to 29 – of which 27 were identified as oil (as added in the multi-annual overview table below) and 2 as other substances (OS). No 'unknown' detections were made. 25 oil detections were found connected to offshore installations, in NO and UK waters. All detections have been systematically reported post-flight by email to the national focal points concerned.

5. As in previous years, the n° of detections strongly varies between the various TdH missions. This is partly, but not solely due to variable weather conditions. It is partly also due to issues such as differences in flight patterns/approaches or changes in flight crew with consequent needs for training. The EAP (OTSOPA's Surveillance Expert Assessment Panel) has discussed the issue and identified ways to improve the effectiveness of TdH operations, which led to a series of conclusions and actions – a.o. aspects of training (ref. OTSOPA 21 SR).

6. No reporting issues appear to have occurred for the TdH20 missions, which is good news.

7. From the national inspectors' feedback received (detection investigation), it can be concluded that there were no irregularities found following the TDH detections reported in 2020.

Multi-annual trends in TdH oil detections

8. From the TdH 2020 report and the Table 1 and Figure 1 below, which summarize the confirmed oil detections made during all TdH campaigns in the framework of the Bonn Agreement since 2006 (and for part of the data since 1999)[1], it can be concluded that the joint results of the 4 TdH20 campaigns (27 oil detections, of which 25 associated to offshore installations, and 2 major oil detections with min. oil vol. > 1 m^3) follow the average trend in the period 1999-2020. It confirms the previously reported lack of trends (due to strong annual fluctuations) in annual TdH detections since 1999. This seems contrary to, for example, the significantly decreasing trend in oil pollution from ships. But it should be nuanced that such a comparison is difficult to make and strongly biased, since most TdH detections are assessed to be permitted OIW discharges, whilst oil spills detected in the wake of a ship are generally the result of an illegal discharge (violation of MARPOL Annex I discharge standards).

[1] 2006 is the year Belgium started compiling detailed annual TdH reports on behalf of OTSOPA. Data from 1999-2005 have been derived from the more general TdH data compiled in the Annual Surveillance Reports of these years.

Year	N° TdH flight hours	N° of confirmed oil detections	N° of confirmed oil detections connected to offshore installations	N° of 'major' oil detections (> 1 m³ min.vol.)
2020	**55.53**	**27**	**25**	**2**
2019	80.82	36	33	4
2018	97.83	33	32	5
2017	101.95	54	48	9
2016	86.75	14	14	3
2015	42.58	4	4	1
2014	99.3	58	54	10
2013	98.88	36	30	4
2012	69.57	16	13	1
2011	50.64	7	4	1
2010	82.19	45	39	7
2009	85.45	23	21	1
2008	56.39	34	25	4
2007	38.27	19	15	6
2006	73.11	24	21	3
2005	50.71	*17*[2]	*3*	*(-)* [2]
2004	82.67	*50*	*40*	*(-)*
2003	50.08	*23*	*6*	*(-)*
2002	81.82	*33*	*23*	*(-)*
2001	63.68	*60*	*51*	*(-)*
2000	84.3	*59*	*49*	*(-)*
1999	81.3	*34*	*24*	*(-)*

Table 1 – Multi-annual overview of joint TdH flight effort and confirmed oil detections for period 1999-2020.

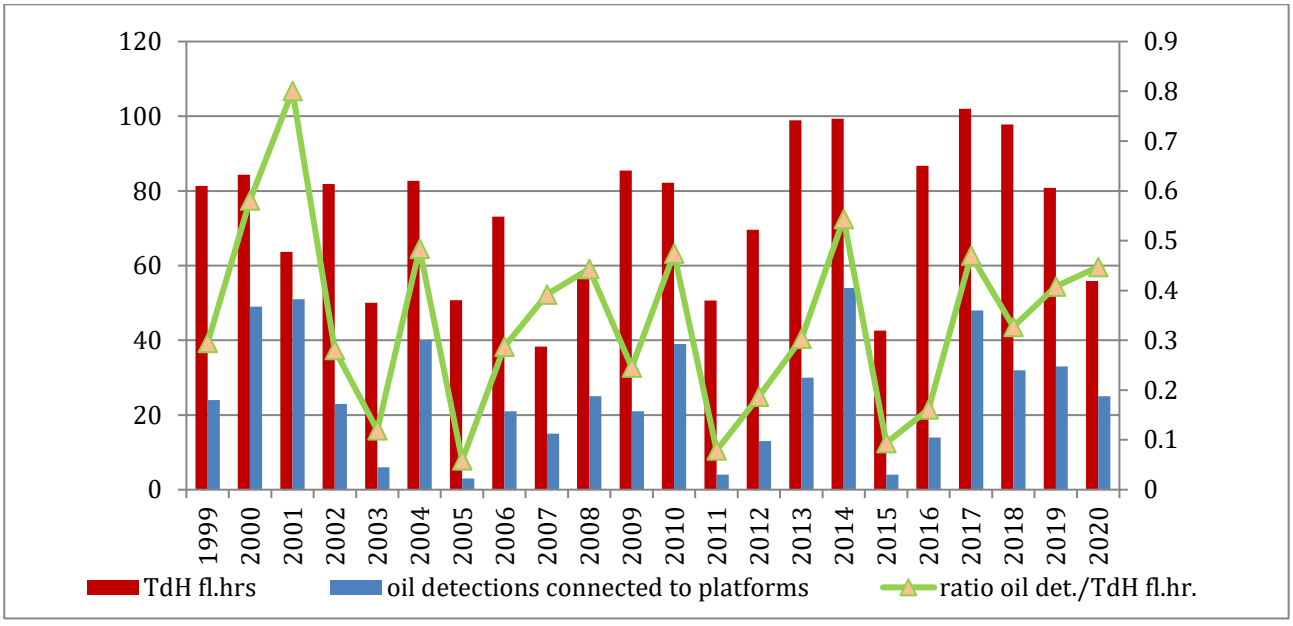


Fig. 1 – Multi-annual trends in confirmed oil detections associated with offshore installations, as observed during joint TdH campaigns for the period 1999-2020.

[2] For the period 1999-05, TdH data have been derived from the generalTdH table in the BA annual surveillance reports, which only reflect total number of detections (oil + other substances + unknowns) but not the total number of 'major' oil detections (>1 m³min.vol.) – therefore these data are still missing for these earlier years.

Report on Tour de Horizon flights carried out during 2020

Introduction

The Tour de Horizon (TdH) flights for 2020 were flown as follows: April: the United Kingdom; May: Norway, September: Belgium and October: Denmark. The flights took place over 14 flight days between 17 April and 10 October 2020, more specifically:

- 17-22 April (UK); (mission conducted over split dates due to technical issues aircraft)
- 28-29 May (NO);
- 14-18 September (BE);
- 8-10 October (DK).

All flight data have been sent to the BA Secretariat for compilation.

Detections

- A total of 29 detections were made during the 4 TdH 20 campaigns (24 in British area, 3 in Norwegian area, and 2 in Dutch area). 27 detections were identified as mineral oil. Two detections could not be specified after visual verification and have therefore been categorized as substances other than oil.
- 25 detections were found directly associated with offshore platforms (22 in UK area, and 3 in NO area), all of them consisted of mineral oil. The source of pollution of the 4 remaining detections (i.e. 2 oil detections and 2 detection of substances other than oil) could not be established. These 4 detections have an indication of "unknown slick" in the tables below.
- Of the 27 mineral oil detections, minimum 2 detections (~min. vol.) and maximum 10 detections (~max. vol.) consisted of major oil volumes - i.e. volume of more than 1 m^3. A more detailed overview of the number of oil detections per volume category is given below.

Volume category	N° of oil slicks (min. vol.)	N° of oil slicks (max. vol.)
10-100 m^3	0	2
1-10 m^3	2	8
0.5-1 m^3	1	5
0.1-0.5 m^3	7	5
< 0.1 m^3	17	7

CSN SAT support

CSN satellite surveillance support was made available for TdH20 missions, through a direct request procedure between TdH aircrew and EMSA. Of the 29 TdH detections made in 2020, 4 were reported as verifications of an initial CSN satellite detection alert. Additionally, 6 flight detections were later also detected by a satellite.

Flight routes

Four flight maps have been added to this report. The maps visualize the flight routes of the performed TdH20 missions and the degree of coverage of the central part of the North Sea where most offshore installations are located. They also show the locations of the detections made during the various TdH20 campaigns.

Detection investigation

The overview of the national inspectors' detection investigation is added on pp.8-9 of the TdH 2020 report. This detection investigation summary shows that:

- There were no irregularities. In general, oil detections originated from permitted produced water discharges.
- Furthermore, CLYDE (14/09/2020) was commissioning improvements to the Flyndre produced water system (PWS) at the time of oil detection; HUMMINGBIRD (15/09/2020) was doing a squeeze treatment which was discharged with the slops (for which a permitted discharge notification was submitted); and TRITON (17/09/2020) was performing a sand discharge (with 70 kg oil) with a reported total possible mass discharged between oil on sand and oil in produced water of 0.64 tonnes.

TOUR D'HORIZON 2020 RESULTS

1. SUMMARY OF RESULTS

Summary of data relating to Tour d'Horizon (TdH) flights during 2020

Country	No. of flights	No. of flight hours			No. of detections			No of detections identified as oil	Estimated volume m^3	No of 'other substance' detections	No of 'unknown' detections	No. of sources/polluters				Remarks
		Daylight	Darkness	Sum	Daylight	Darkness	Sum					Rigs	Ships	(Unknown)	Total	
Belgium	6	22:00	00:00	22:00	25	0	25	23	7.55	2	0	21	0	4	25	
Denmark	3	09:31	00:00	09:31	0	0	0	0	-	0	0	0	0	0	0	
Germany	0	00:00	00:00	00:00	0	0	0	0	-	0	0	0	0	0	0	1)
Netherlands	0	00:00	00:00	00:00	0	0	0	0	-	0	0	0	0	0	0	2)
Norway	2	10:47	00:00	10:47	3	0	3	3	0.07	0	0	3	0	0	3	
Sweden	0	00:00	00:00	00:00	0	0	0	0	-	0	0	0	0	0	0	2)
UK	3	13:35	00:00	13:35	1	0	1	1	<0.01	0	0	1	0	0	1	
Total	**11**	**55:53**	**00:00**	**55:53**	**29**	**0**	**29**	**27**	**7.62**	**2**	**0**	**25**	**0**	**4**	**29**	

1) DE had to cancel its TdH mission due to technical problems

2) NL and SE had to cancel their TdH mission due to COVID-19 restrictions

2. OVERVIEW OF DETECTIONS/OBSERVATIONS PER CONTRACTING PARTY

2.1 UNITED KINGDOM: 17-22 April 2020.

No	Date (dd.mm.yy)	Time (UTC)	Position (dec. degr.) N	Position (dec. degr.) E/W	CP Area	Min. Quan.(m³)	Max. Quan.(m³)	Source ID	Pollution type
1	17/04/2020	09:00	56.3995	2.0618	UK	<0.01	0.01	AUK ALPHA	OIL

- In-flight reporting was performed. The detection was also reported post-flight by email, to the National Focal Point concerned.

2.2 NORWAY: 28 – 29 May 2020.

No	Date (dd.mm.yy)	Time (UTC)	Position (dec. degr.) N	Position (dec. degr.) E/W	CP Area	Min. Quan.(m³)	Max. Quan.(m³)	Source ID	Pollution type
1	29/05/2020	09:42	60.5000	3.1000	NO	0.02	0.30	BRAGE	OIL
2	29/05/2020	11:15	58.3700	0.2000	UK	0.01	0.23	SCOOT	OIL
3	29/05/2020	12:32	61.4000	1.8500	NO	0.03	0.43	STATFJORD C	OIL

- No in-flight reporting was performed. The detection was reported post-flight by email.

2.3 BELGIUM: 14-18 September 2020.

No	Date (dd.mm.yy)	Time (UTC)	Position (dec. degr.) N	Position (dec. degr.) E/W	CP Area	Min. Quan.(m³)	Max. Quan.(m³)	Source ID	Pollution type
1	14/09/2020	07:39	52.6761	3.3475	NL	-	-	-	OS
2	14/09/2020	07:40	52.7822	3.3617	NL	-	-	-	OS
3	14/09/2020	08:07	53.0936	2.1289	UK	0.01	0.10	LEHMAN A	OIL
4	14/09/2020	08:07	53.1108	2.0556	UK	0.01	0.07	LEHMAN F	OIL
5	14/09/2020	13:42	56.3983	2.0669	UK	0.07	0.71	AUK-A	OIL
6	14/09/2020	13:46	56.4519	2.2881	UK	0.30	3.01	CLYDE	OIL
7	14/09/2020	14:42	57.7306	0.9664	UK	0.56	5.64	FORTIES A	OIL
8	14/09/2020	14:42	57.7131	0.8833	UK	0.09	0.90	FORTIES D	OIL
9	14/09/2020	14:43	57.7253	0.8333	UK	0.15	1.51	FORTIES C	OIL
10	15/09/2020	09:34	58.4486	0.2566	UK	2.28	23.26	CLAYMORE	OIL

No	Date (dd.mm.yy)	Time (UTC)	Position (dec. degr.) N	Position (dec. degr.) E/W	CP Area	Min. Quan.(m³)	Max. Quan.(m³)	Source ID	Pollution type
11	15/09/2020	09:54	58.4594	0.2333	UK	0.44	4.81	PIPER B	OIL
12	15/09/2020	10:06	58.2889	0.2006	UK	0.31	3.16	SCOTT	OIL
13	15/09/2020	10:25	58.0600	1.0714	UK	0.41	4.47	ALBA NORTH	OIL
14	15/09/2020	10:30	58.0458	1.3992	UK	0.09	0.92	ANDREW	OIL
15	15/09/2020	10:30	57.9778	1.2367	UK	0.29	3.13	HUMMINGBIRD	OIL
16	15/09/2020	10:51	58.2264	1.1103	UK	0.03	0.33	BALMORAL	OIL
17	15/09/2020	11:05	58.4078	0.8508	UK	0.01	0.04	-	OIL
18	16/09/2020	10:49	60.5403	3.0403	NO	0.07	0.66	BRAGE	OIL
19	16/09/2020	11:45	59.5872	1.0517	UK	0.43	2.37	MARINER A /NOBLE	OIL
20	17/09/2020	09:43	58.4592	0.2333	UK	0.01	0.08	PIPER B	OIL
21	17/09/2020	09:57	58.2886	0.2011	UK	0.06	0.63	SCOTT	OIL
22	17/09/2020	10:25	57.4672	0.5130	UK	<0.01	0.03	KITTIWAKE	OIL
23	17/09/2020	10:36	57.2964	0.8667	UK	0.01	0.09	-	OIL
24	17/09/2020	10:47	57.0856	0.8833	UK	1.91	19.18	TRITON	OIL
25	17/09/2020	10:48	57.1831	0.9833	UK	0.01	0.05	GANNET A	OIL

- 4 flight detections were verifications of a CSN SAT alert (13, 16, 17, 18). 6 other flight detections (1,2, 5, 6, 8, 9) were also detected by satellite after the flight.
- In-flight reporting performed. All detections were reported post-flight by email, to the National Focal Point concerned.

2.4 DENMARK: 8-10 October 2020.

No observations/detections made during the Danish TdH20 campaign.

TOUR D'HORIZON 2020 – DETECTION INVESTIGATION SUMMARY

UNITED KINGDOM:

Date (ddmmyy)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
17/04/2020	09:00	AUK ALPHA	<0.01	0.01	UK inspector's assessment: No follow up with operator. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.

NORWAY:

Date (ddmmyy)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
29/05/2020	09:42	BRAGE	0.02	0.30	NO inspector's assessment: Normal operation on platform. Oil in Produced water within legal limits.
29/05/2020	11:15	SCOOT	0.01	0.23	UK inspector's assessment: No follow up with operator. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.
29/05/2020	12:32	STATFJORD C	0.03	0.43	NO inspector's assessment: Normal operation on platform. Oil in Produced water within legal limits.

BELGIUM:

Date (ddmmyy)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
14/09/2020	08:07	LEHMAN A	0.01	0.10	UK inspector's assessment: Operator contacted. No activities that could result in a sheen. Operator advised streaks on the sea surface are common and attributed to convergence of tides and currents over the shallow Leman bank.
14/09/2020	08:07	LEHMAN F	0.01	0.07	UK inspector's assessment: Operator contacted. No activities that could result in a sheen. Operator advised streaks on the sea surface are common and attributed to convergence of tides and currents over the shallow Leman bank.
14/09/2020	13:42	AUK-A	0.07	0.71	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.

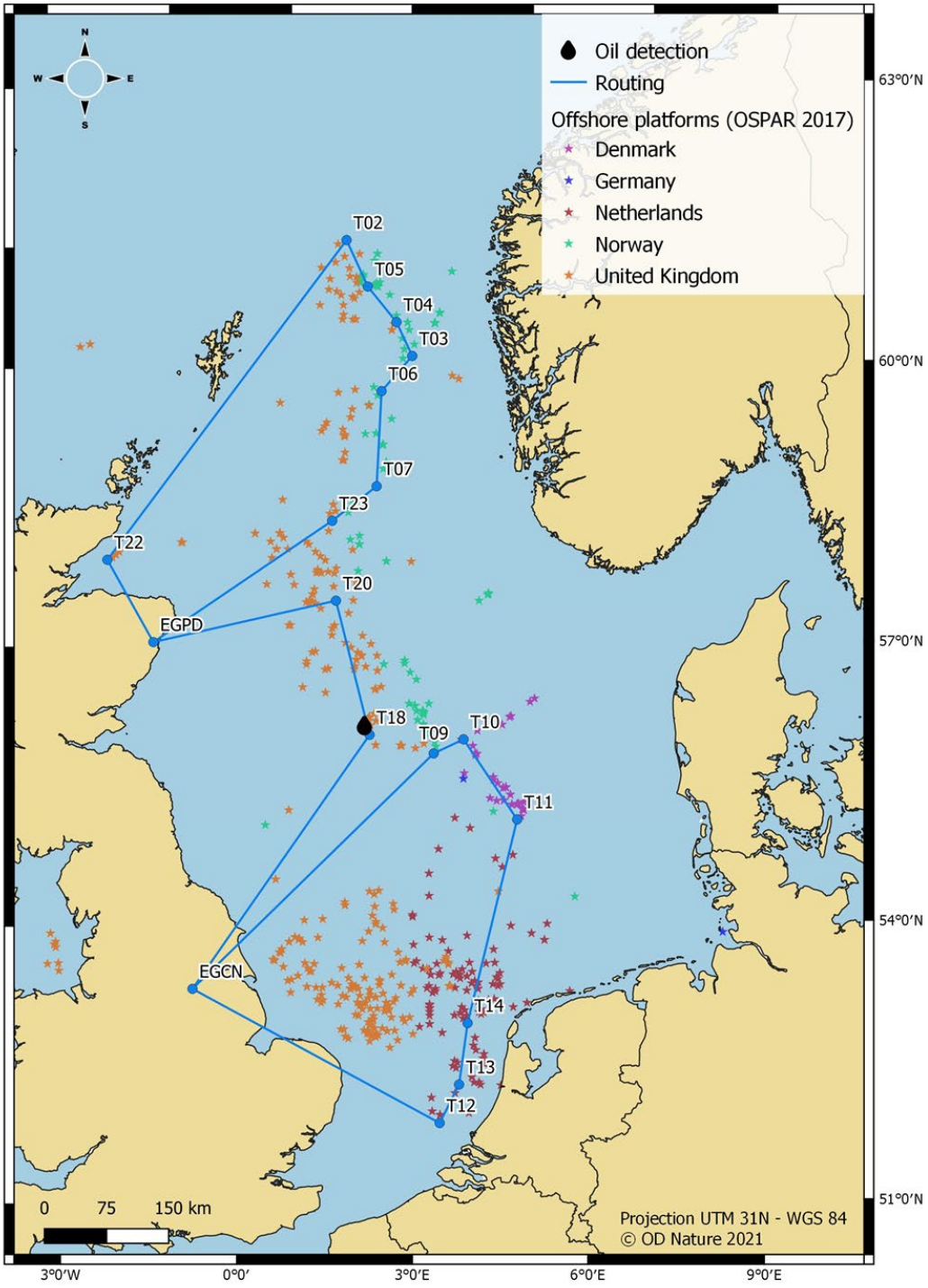
Date (ddmmyy)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
14/09/2020	13:46	CLYDE	0.30	3.01	UK inspector's assessment: Operator contacted. Clyde was commissioning improvements to the Flyndre Produced Water System (PWS) at the time of the detection. The operator had put in place a number of controls to mitigate the potential risk of an increased emission of residual oil in the produced water caisson. The operator submitted a Permitted Discharge Notification PON1/9765 to notify this emission oil. Following commissioning of the Flyndre PWS, oil in produced water analysis results were very low i.e. 5.43mg/L monthly average oil for September.
14/09/2020	14:42	FORTIES A	0.56	5.64	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.
14/09/2020	14:42	FORTIES D	0.09	0.90	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.
14/09/2020	14:43	FORTIES C	0.15	1.51	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.
15/09/2020	09:34	CLAYMORE	2.28	23.26	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit. No other discharge.
15/09/2020	09:54	PIPER B	0.44	4.81	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit. No other discharge.
15/09/2020	10:06	SCOTT	0.31	3.16	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit and sheen considered normal for calm conditions. No other discharge.
15/09/2020	10:25	ALBA NORTH	0.41	4.47	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit and sheen considered normal for calm conditions. No other discharge.
15/09/2020	10:30	ANDREW	0.09	0.92	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit and sheen considered normal for calm conditions. No other discharge.
15/09/2020	10:30	HUMMINGBIRD	0.29	3.13	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit on 14 & 15/09/2020. Doing a squeeze treatment which is discharged with the slops however, no sheen was observed from the Hummingbird.
15/09/2020	10:51	BALMORAL	0.03	0.33	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.
16/09/2020	10:49	BRAGE	0.07	0.66	NO inspector's assessment: The operator company confirmed that they were operating within permit limits at the time and that no unusual discharge has been recorded. The slick is due to discharges of produced water on Brage and especially visible since the sea is relatively calm.

Date (ddmmyy)	Time (UTC)	Platform	Reported quantity (m^3)		Government inspectors assessment
			Min.	Max.	
16/09/2020	11:45	MARINER A/NOBLE	0.43	2.37	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit and sheen considered normal for calm conditions. Note that Equinor in process of commissioning new well for produced water re-injection to eliminate surface discharge of produced water.
17/09/2020	09:43	PIPER B	0.01	0.08	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit and sheen considered normal for calm conditions. No other discharge.
17/09/2020	09:57	SCOTT	0.06	0.63	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.
17/09/2020	10:25	KITTIWAKE	<0.01	0.03	UK inspector's assessment: Ongoing problems that the inspector is aware of and improvement plan in place with an additional filter unit mobilised.
17/09/2020	10:47	TRITON	1.91	19.18	UK inspector's assessment: Operator contacted. Produced water within permitted discharge limit. Sand discharge on 17th (70kg oil). Total possible mass discharged between oil on sand and oil in produced water is 0.64t. Sheen considered normal for calm conditions.
17/09/2020	10:48	GANNET A	0.01	0.05	UK inspector's assessment: Operator not contacted. On review of photographs and report, inspector concluded discharge was likely to be as a result of a normal permitted produced water discharge from the platform.

TOUR D'HORIZON 2020 – FLIGHT MAPS

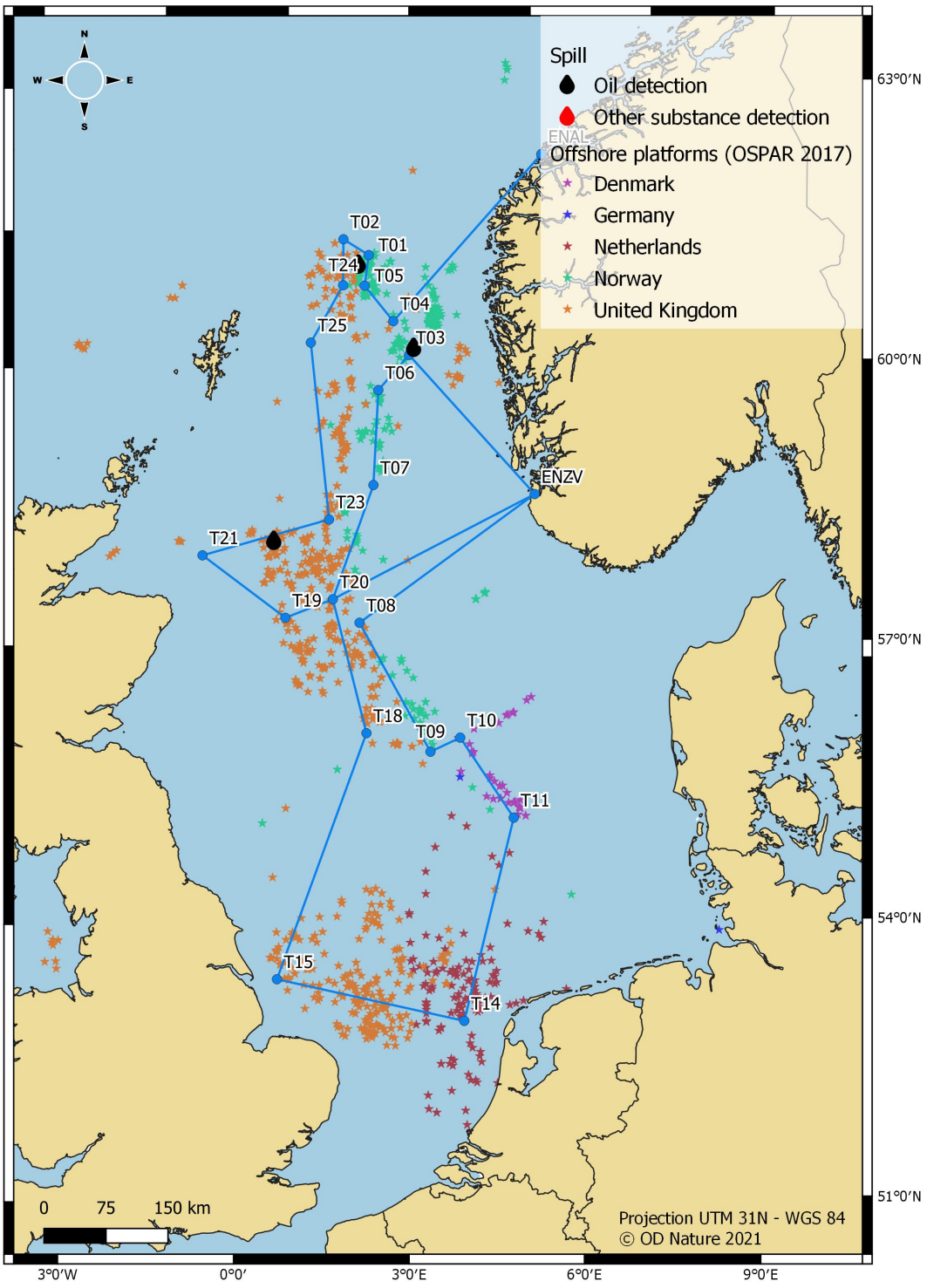
UNITED KINGDOM: 17-22 April 2020.

UNITED KINGDOM



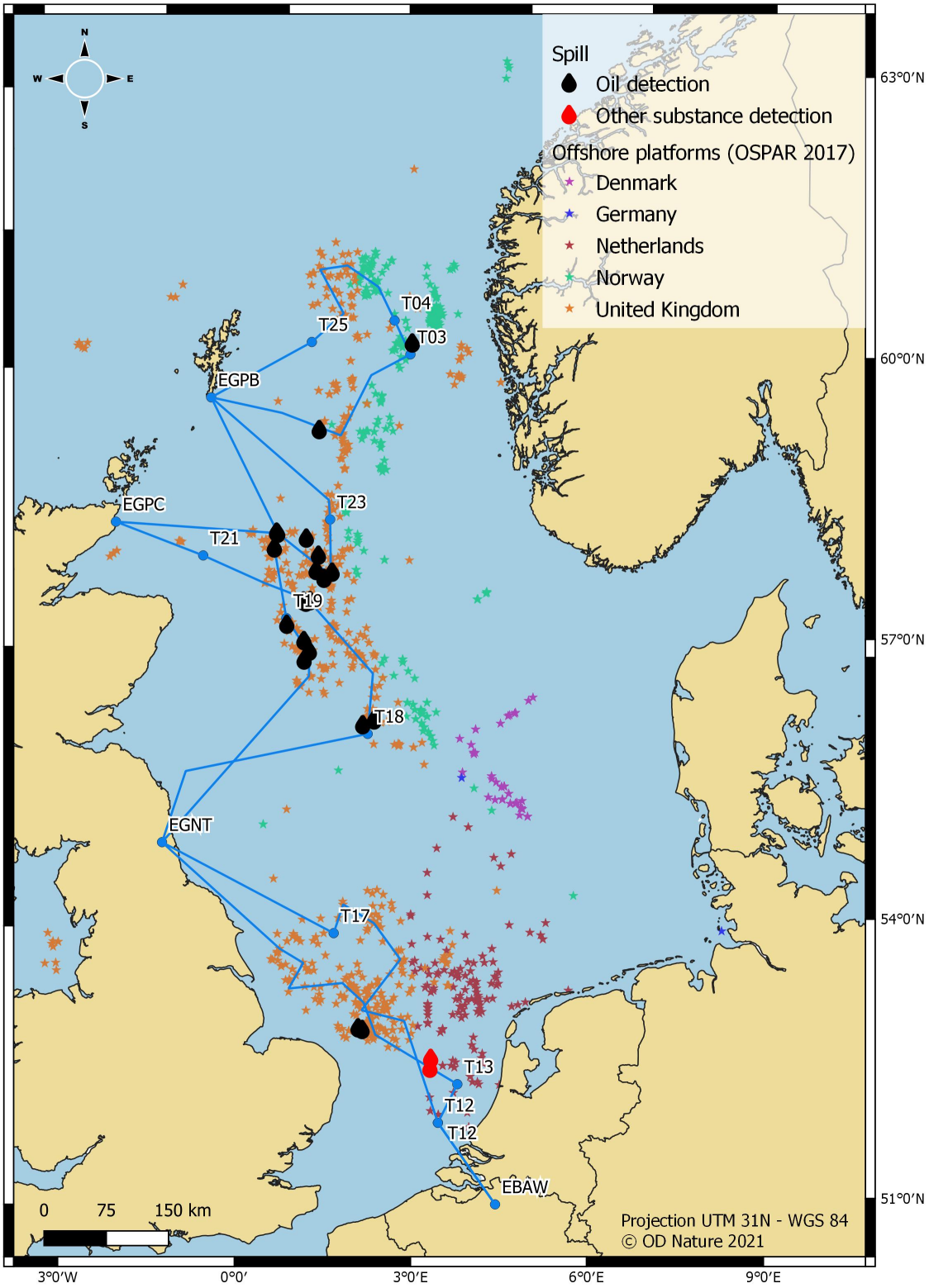
NORWAY: 28 – 29 May 2020.

NORWAY

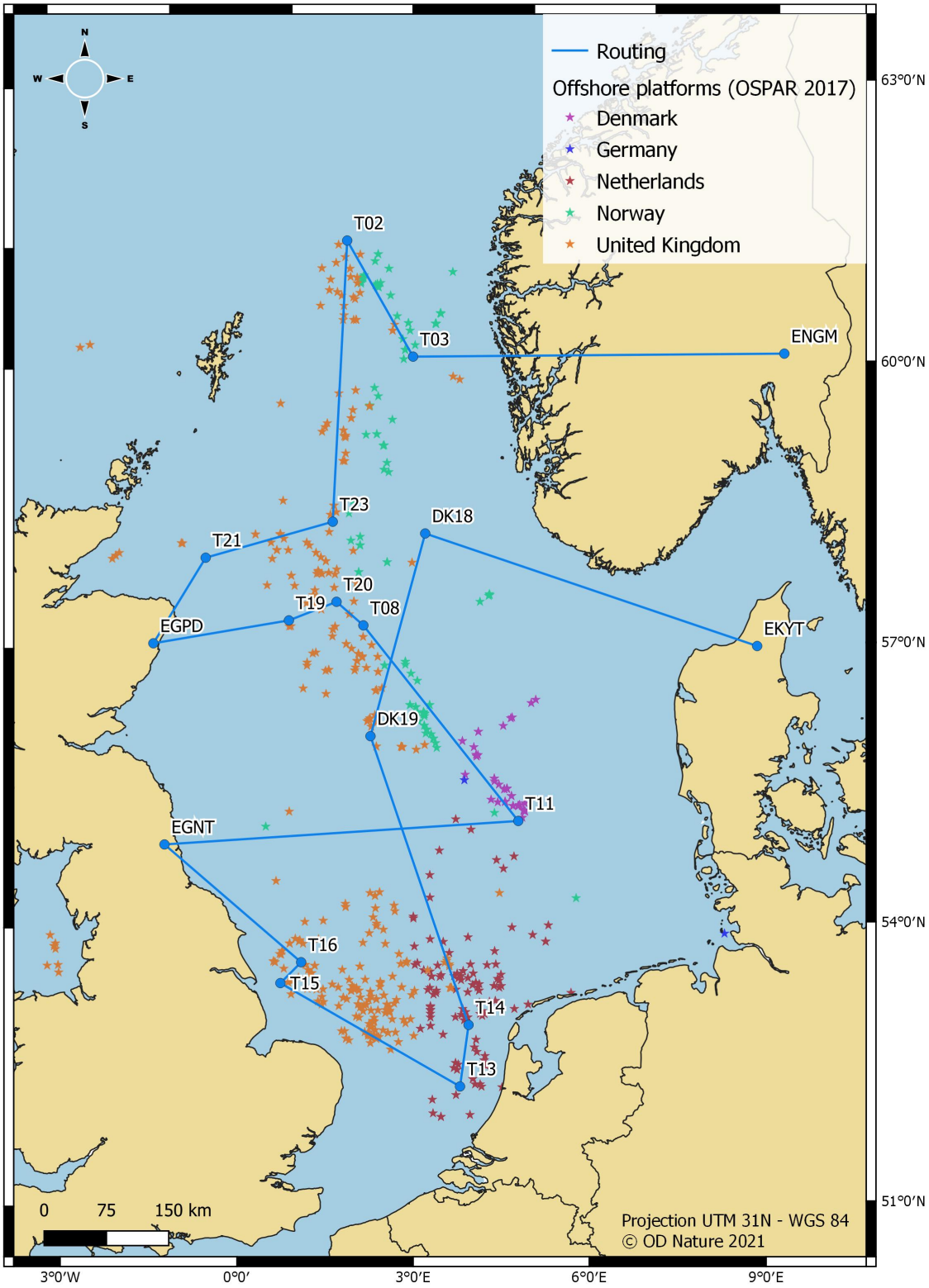


BELGIUM: 14-18 September 2020

BELGIUM



DENMARK


Routing
Offshore platforms (OSPAR 2017)
Denmark
Germany
Netherlands
Norway
United Kingdom
T02
T03
ENGM
T23
DK18
T21
T20
T19
T08
EGPD
EKYT
DK19
T11
EGNT
T16
T15
T14
T13
0
75
150 km
Projection UTM 31N - WGS 84
© OD Nature 2021
63°0′N
60°0′N
57°0′N
54°0′N
51°0′N
3°0′W
0°0′
3°0′E
6°0′E
9°0′E