

#### **Vermilion E&P Ireland Ltd**

# **Corrib Marine Mammal Observations**

Corrib Inshore Pipeline Inspection Survey 2020





# **RSK GENERAL NOTES**

Title: Corrib Marine Mammal Observations: Inshore Pipeline Inspection Surv	ev 2020
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Client: Vermilion E&P Ireland Ltd.

**Date:** 25 June 2020

Office: Helsby

Status: Final

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Date: 24 June 2020 Date: 25 June 2020



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### 1 INTRODUCTION

The Irish Whale and Dolphin Group (IWDG) has been engaged by Vermilion Exploration and Production Ireland Ltd (VEPIL) to provide marine mammal observation services during the inspection of the inshore Corrib gas pipeline.

Marine Mammal Observers (MMOs) are required to be present on vessels at the commencement of noise-generating activities (e.g. geophysical survey and dredging operations) under the code of practice agreed between VEPIL and National Parks and Wildlife Service (NPWS). Records are made of any marine mammals seen before or during inspection operations (which are delayed if marine mammals are sighted within 500m of the noise-generating vessel before it starts work), and reported monthly.

This report presents the survey activity and marine mammal observations during the inshore pipeline inspection survey undertaken aboard the inshore survey vessel *Leah C*, within Broadhaven Bay, Ireland. It was conducted on behalf of VEPIL and represents dedicated monitoring during the survey period from 18 May 2020 to 01 June 2020.

This report covers the inshore Corrib gas pipeline route from approximately KP80 in land; The Corrib Marine Mammal Observations: Field Inspection and Maintenance Survey 2020 report covers the offshore Corrib field and the offshore section of the pipeline and associated facilities. The series of reports will be submitted to the Department of Communications, Climate Action and Environment (DCCAE) and copied to NPWS.



### 2 RECORDS

#### 2.1 Summary

From 21 May until 01 June 2020, daily watches were conducted, weather permitting, for marine mammals by one MMO aboard the inshore survey vessel, *Leah C*, which conducted multi-beam and side-scan SONAR operations within Broadhaven Bay Special Area of Conservation (SAC). These operations utilised multi-beam echo sounder (MBES), sub-bottom profiler (SBP), side scan sonar (SSS) and a suitcase Remotely Operated Vehicle (ROV) with Ultra Short Baseline (USBL) transponders. Records from marine mammal observations during this period are presented in Appendix 1.

Previous survey sightings from the corresponding months of preceding years are included for historical context only, as the durations, locations and hours of effort vary between months and years. No survey took place in 2019. A selection of the best project photographs will be provided in the final (annual) report

#### 2.2 Sightings

During May 2020, there were a total of eleven (11) marine mammal sightings comprising two different species: harbour seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*). There were six (6) sightings in Broadhaven Bay SAC, five (5) in Ballyglass Harbour. Nineteen (19) individual animals were seen during the eleven (11) sightings: eighteen (18) were harbour seals and one (1) was a grey seal.

In previous years during May, effort in Broadhaven Bay SAC resulted in in twenty (20) sightings in 2016, six (6) sightings in 2015, four (4) sightings in 2010 and nine (9) sightings in 2009.

### 2.3 Mitigation

Of the eleven (11) sightings, seven (7) caused a delay to operations, as follows:

- During sighting 1 on 27/05/2020, two harbour seals were observed 150m from the inshore survey vessel, *Leah C*, during pre-watch and caused a delay of 9 minutes to MBES and SSS operations.
- During sighting 3 on 28/05/2020, five harbour seals were observed 250m from the inshore survey vessel, *Leah C*, during pre-watch and caused a delay of 10 minutes to MBES and SSS operations..
- During sighting 4 on 29/05/2020, one harbour seal was observed 150m from the inshore survey vessel, Leah C, during pre-watch of the SBP testing and caused a delay of 21 minutes.
- During sighting 6 on 30/05/2020, one grey seal was observed 150m from the inshore survey vessel, *Leah C*, during pre-watch and caused a delay of 30 minutes to SBP operations.
- During sightings 9, 10 and 11 on 31/05/2020, three harbour seals were observed 300m from the inshore survey vessel, Leah C, and then two individual harbour



seals were observed 100m and 200m respectively from the vessel during prewatch for the USBL testing in Ballyglass Harbour, causing a delay of 64 minutes.

Sightings 2 and 5 occurred while the acoustic source was fully operational. Sighting 7 occurred during the soft start procedure and the animal travelled away from the vessel. Sighting 8 occurred during the pre-watch for the USBL testing in Ballyglass Harbour but did not require mitigation due to distance from source.



# APPENDIX 1 - MARINE MAMMAL OBSERVATIONS (INITIAL PIPELINE SURVEY 2020)



### **Summary of Marine Mammal Sightings in June and July 2017**

						Closest	Lati	tude	Lon	gitude		
Sighting	Date	Observer	Ship / platform name	Species	Total number	distance of animals from airguns/ source (metres)	Deg	Min	Deg	Min	Mitigation Required	Vessel Activity
1	27/05/2020	Karl Bentley	Leah C	Harbour seal	2	150	54	15.26	9	53.07	Y	Pre-watch for MBES and SSS
2	27/05/2020	Karl Bentley	Leah C	Harbour seal	1	300	54	17.07	9	51.56	N	MBES and SSS fully operational
3	28/05/2020	Karl Bentley	Leah C	Harbour seal	5	250	54	15.39	9	53.06	Y	Pre-watch for MBES and SSS
4	29/05/2020	Karl Bentley	Ballyglass Pier	Harbour seal	1	150	54	15.18	9	53.46	Υ	Pre-watch for SBP testing
5	29/05/2020	Karl Bentley	Leah C	Harbour seal	1	750	54	17.03	9	50.08	N	SBP fully operational
6	30/05/2020	Karl Bentley	Leah C	Grey seal	1	150	54	17.05	9	49.52	Υ	Pre-watch for SBP
7	30/05/2020	Karl Bentley	Leah C	Harbour seal	1	350	54	17.08	9	49.62	N	SS of SBP
8	31/05/2020	Karl Bentley	Ballyglass Pier	Harbour seal	2	700	54	15.18	9	53.46	N	Pre-watch for USBL testing
9	31/05/2020	Karl Bentley	Ballyglass Pier	Harbour seal	3	300	54	15.18	9	53.46	Y	Pre-watch for USBL testing
10	31/05/2020	Karl Bentley	Ballyglass Pier	Harbour seal	1	100	54	15.18	9	53.46	Y	Pre-watch to USBL testing
11	31/05/2020	Karl Bentley	Ballyglass Pier	Harbour seal	1	200	54	15.18	9	53.46	Υ	Pre-watch to USBL testing

#### **Acronym**

MBES: multi-beam echo sounder

SBP: sub-bottom profiler

SS: soft start

SSS: side scan sonar UBSL: Ultra Short Baseline



#### **Field Notes**

Sighting 1: on 27/05/2020, two harbour seals were observed 150m from the inshore survey vessel, *Leah C*, during a pre-watch for MBES and SSS operations; no obvious interaction with vessel; 30 minute delay to soft start required.

Sighting 2: on 27/05/2020, one harbour seal was observed 300m from the inshore survey vessel, *Leah C*, while the MBES and SSS were fully operational; single surface of the animal observed; no mitigation was required.

Sighting 3: on 28/05/2020, five harbour seals were observed 250m from the inshore survey vessel, *Leah C*, during a pre-watch for MBES and SSS operations; no obvious interaction with vessel; 30 minute delay to soft start required.

Sighting 4: on 29/05/2020, one harbour seal was observed 300m from the inshore survey vessel, *Leah C*, during a pre-watch of SBP testing; no obvious interaction with vessel; 30 minute delay to soft start required.

Sighting 5: on 29/05/2020, one harbour seal was observed 750m from the inshore survey vessel, *Leah C*, while the SBP was fully operational; animal static and vessel moving away; no mitigation was required.

Sighting 6: on 30/05/2020, one grey seal was observed 150m from the inshore survey vessel, *Leah C*, during pre-watch for SBP operations; 30 minute delay to soft start.

Sighting 7: on 30/05/2020, one harbour seal was observed 350m from the inshore survey vessel, *Leah C*, during the soft start procedure for SBP operations; animal moving away from vessel; no mitigation required.

Sighting 8: on 31/05/2020, two harbour seals were observed 700m from the inshore survey vessel, *Leah C*, in Ballyglass harbour during the pre-watch for the USBL testing; no mitigation required.

Sighting 9: on 31/05/2020, two harbour seals were observed 300m from the inshore survey vessel, *Leah C*, in Ballyglass harbour during the pre-watch for the USBL testing; possibly the same two individuals as in sighting 8; 30 minute delay to soft start.

Sighting 10: on 31/05/2020, one harbour seal was observed 100m from the inshore survey vessel, *Leah C*, in Ballyglass harbour during the pre-watch for the USBL testing; 30 minute delay to soft start.

Sighting 11: on 31/05/2020, one harbour seal was observed 200m from the inshore survey vessel, *Leah C*, in Ballyglass harbour during the pre-watch for the USBL testing; 30 minute delay to soft start.

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## Sightings Form – Leah C

Regulatory	Ship/ platform name	Sighting	Acoustic	Date	Time at	Time at	Were	How	Observer's/	Position -	Position -	Position -	Position - I	osition - Position -	Water	Species or species group	Description (visual sighting only)	Bearing	Range	Total	Number	Number	Behaviour (visual sightings only	/) Direction	Direction	Airgun/	Airgun/	Closest	Time of	First	Closest	Last	What action was Length En	stimated (	Comments	Flag
reference		number	detection	l .	start of	end of	animals	were the	operator's name	degrees	minutes	north/	degrees	ninutes east/	depth			to	of	number	of adult	of calves		of travel	of travel	source	source	distance	closest	observed	observed	observed	taken? of power-to	ss of		record
number			number	l .	encounte	rencounter	r detected	animals	Ι'	latitude	latitude	south	longitude I	ongitude west	(metres)			animal	animal		(visual	(visual		(relative	(compass	activity	activity	of i	approach	distance	distance	distance	down pr	roduction		
				l .	(UTC)	(UTC)	visually	and/ first	1			l	1 1	-					(metres)		sighting	s sightings		to ship)	points)	when	when	animals	(UTC)	during	during	during	and/ or (if			
				l			or .	detected	?	- 1		l	1 1								only)	only)				animals	animals	from		soft start	soft start	soft start	shut- re	levant)		
				l	l		acoustic	ally		- 1		l	1 1													first	last	airguns/		Of	Gf	Gf	down (if du	ue to		
				l .	l	1	2	1	1			l	1 1		l											detected	detected	source		relevant)	relevant)	relevant)	relevant) m	itigating		
				l .	l	1	ľ		1			l	1 1		l													(metres)			(metres)			rtions		
				l .	l		1			1		l	1 1																	(	,,	,	06	m)		
INS052020	Leah C			27/05/2020	7:1	9 7:2	2 v	v	Karl Bentley	54	15.26	n	9	53.07 w	10.0	Harbour seal	Mottled grey pelage, Dipped forehea	33	30 15	0	2	2 (	0 Bottling, dive	c	e	n	n	150	7:19				d	- 3	Omin delay to SS, No obs intera	action w/ vessel
INS052020	Leah C	- 2	2	27/05/2020	13:1	7 13:1	7 v	v	Karl Bentley	54	17.07	n	9	51.56 w	23.0	Harbour seal	Large adult, Mottled grey pelage, Di	1	10 30	0	1	1 (	0 Single surface	х	var			300	13:17				n	5	Single surface	$\neg$
NS052020	Leah C	- 3	3	28/05/2020	7:2	6 7:3	οv	v	Karl Bentley	54	15.39	n	9	53.06 w	10.0	Harbour seal	Mottled grey pelage, Dipped forehea	31	10 40	0	5	5 (	0 Logging, slow swim	0	SW	n	n	250	7:27				d	3	Omin delay to SS. No obs intera	action w/ vesse
NS052020	Ballydass Pier	- 4		29/05/2020	10:4	6 10:5	6 v	v	Karl Bentley	54	15.18	n	9	53.46 w		Harbour seal	Mottled grey pelage, Dipped forehea	9	18	0	1	1 (	0 Bottling, dive	m	var	n	n	150	10:49				d	3	Omin delay to SS, No obs intera	action w/ vesse
INS052020	Leah C		5	29/05/2020	15:2	1 15:2	6 v	v	Karl Bentley	54	17.03	n	9	50.08 w	8.3	Harbour seal	Mottled grey pelage, Dipped forehea		30 75	0	1	1 0	0 Bottling, milling	m	var	1	1	750	15:21				n		BP FP/ Animal static + vessel r	
INS052020	Leah C	- 6	5	30/05/2020	10:2	7 10:3	O v	v	Karl Bentley	54	17.05	n	9	49.52 w	2.7	Grev seal	Mottled grey pelage. Straight forehe	18	30 20	0	1		0 Bottling, dive, milling	m	var	n	n	150	10:30				d	3	Omin delay to SS	$\neg$
INS052020	Leah C	- 7	-	30/05/2020	12:0	7 12:1	5 v	v	Karl Bentley	54	17.08	n	9	49.62 w	3.0	Harbour seal	Mottled grey pelage, Dipped forehea	15	36 35	0	1	1 (	0 Bottling, dive	a	var	**	s	350	12:07	35	35	600	) n	- 4	knimal travelled away from vesse	during SS
INS052020	Ballyglass Pier		3	31/05/2020	12:5	6 13:00	2 v	v	Karl Bentley	54	15.18	n	9	53.46 w		Harbour seal	Mottled grey pelage, Dipped forehea		17 90	0	2		0 Bottling, dive	t	nw	n	n	700	13:02				n			$\neg$
NS052020	Ballydass Pier	9	9	31/05/2020	13:2	0 13:2	6 v	v	Karl Bentley	54	15.18	n	9	53.46 w		Harbour seal	Mottled grey pelage, Dipped forehea	17	76 40	0	3	3 (	0 Bottling, dive	a	SW	n	n	300	13:23				d	3	Omin delay to SS, Possibly sam	ne as sighting ?
NS052020	Ballyglass Pier	10	)	31/05/2020	13:2	6 13:2	7 v	v	Karl Bentley	54	15.18	n	9	53.46 w		Harbour seal	Mottled grey pelage, Dipped forehea	10	10	0	1	1 (	0 Bottling, dive	m	var	n	n	100	13:26				d		Omin delay to SS.	$\neg$
	Ballydass Pier	- 11		31/05/2020	13:4	7 13:4	7 v	v	Karl Bentley	54	15.18	n	9	53.46 w		Harbour seal	Mottled grey pelage, Dipped forehea	11	17 20	0	1	1 0	0 Single surface	x	var	n	n	200	13:47				d	3	Omin delay to SS. Single Surfac	30

#### Effort Form – Leah C

Regulatory	Ship/ platform name	Date	Visual	Observer's / operator's	Time of	Time	of Start	Start	Start	Start	Start	Start	Depth of	End	End	End	End	End	End	Depth of	Speed	Source	Wind	Wind	Sea state	Swell	Visibility	Sunglare	Comments	Flag
reference			watch	name(s)	start of	end o	f position	- position -		position -	position -	position	- water at	position -	position -		position -	position -	position -	- water at	of	activity	direction	force			(visual	(visual		record
number			or		watch	watch	degrees	minutes	north/	degrees		east/		degrees	minutes	north/	degrees		east/	end	vessel			(Beaufort)	)		watch	watch		
			PAM?		(UTC)	(UTC)	latitude	latitude	south	longitude	longitude	west		latitude	latitude	south	longitude	longitude	west	position	(knots)						only)	only)		
													(metres)							(metres)										
INS052020	Leah C	21/05/2020		Karl Bentley	8:21			15.22		9	53.50		2.1	54	17.17		9	51.23		20.8	0.0		sw	3	s	0	g	v		
INS052020	Leah C	21/05/2020		Karl Bentley	8:41			17.17		9	51.23		20.8	54	4 17.17		9	51.11		19.6	0.7		sw	3	s	0	g	v		
INS052020	Leah C	21/05/2020		Karl Bentley	9:07		U.2.1	17.17		9	51.11		19.6	54	17.22		9	51.12		20.7	0.7		sw	3	s	0	g	s		
INS052020	Leah C	21/05/2020		Karl Bentley	9:27		0:22	54 17.22		9	51.12		20.7	54	4 17.03		9	51.08		20.€	0.8		sw		s	0	g	s		
INS052020	Leah C	21/05/2020		Karl Bentley	11:51			17.26		9	51.51		18.0	54			9	51.18		18.0			sw		s	0	g	s		
INS052020	Leah C	21/05/2020		Karl Bentley	12:21			17.18		9	51.18		18.0	54			5	51.26		19.6			sw		s s	0	g	s		
INS052020	Leah C	27/05/2020		Karl Bentley	7:13			15.22		9	53.50		2.7	54			9	50.16		9.1	0.8		se		s	0	m	n		
INS052020	Leah C	27/05/2020		Karl Bentley	7:52			54 17.08		9	50.16		9.1	54			9	50.19		10.0			se	2	s	m	m	n		
INS052020	Leah C	27/05/2020		Karl Bentley	8:13		0.20	17.05		9	50.19		10.0	54	4 17.19		9	53.41		23.0			se	2	s	m	g	w		
INS052020	Leah C	27/05/2020		Karl Bentley	11:14	4 1	4:40	16.59		9	52.17		24.0	54	4 17.07		9	51.35		23.0	3.4	4 f	w	2	s	0	g	s		
INS052020	Leah C	27/05/2020		Karl Bentley	15:19		5:29	54 17.09		9	53.16		24.0	54	17.25		9	54.04		23.0	1.4		w		s	0	g	s		
INS052020	Leah C	28/05/2020		Karl Bentley	7:20			15.10		9	53.21		7.0	54			9	50.43		12.5			se		s	0	g	s		
INS052020	Leah C	28/05/2020		Karl Bentley	8:00	0	8:20	54 17.12		9	50.43		12.5	54	4 17.11	n	9	50.22	w	12.3	0.2	2 s	se	2	s	0	g	s		
INS052020	Leah C	28/05/2020		Karl Bentley	8:20	0 1	0:11	54 17.1		9	50.22	w	12.3	54	4 17.18	n n	9	51.07		17.0	3.7		se	2	s	0	g	s		
INS052020	Leah C	28/05/2020	v	Karl Bentley	10:11	1 1	0:41	54 17.18		9	51.07		17.0	54	4 17.02	n .	9	52.39		28.0	3.0	0 f	se	2	s	0	g	s		
INS052020	Leah C	28/05/2020	v	Karl Bentley	11:13	3 1	4:58	54 17.1		9	50.55		16.0	54	4 17.04		9	51.58		23.0	3.7		se	2	s	0	g	s		
INS052020	Ballyglass Pier	29/05/2020	v	Karl Bentley	10:34		1:25	54 15.1		9	53.28			54	4 15.11		9	53.28			0.0	0 n	se	4	c	0	g	s	Pre-watch at end of Ballyglass pier	T
INS052020	Ballyglass Pier	29/05/2020	v	Karl Bentley	11:25	5 1	1:45	54 15.1	n	9	53.28	w		54	4 15.11	n	9	53.28	w		0.0	0 s	se	4	c	0	g	s	Watch at end of Ballyglass pier	T
INS052021	Ballyglass Pier	29/05/2020	v	Karl Bentley	11:45	5 1	2:28	54 15.1	n	9	53.28	w		54	4 15.11	n	9	53.28	w		0.0	0 f	se	4	С	0	g	s	Watch at end of Ballyglass pier	1
INS052020	Leah C	29/05/2020	v	Karl Bentley	13:29	9 1	4:00	54 15.1	n	9	53.30	w	3.0	54	4 17.20	n n	9	51.24	w	22.0	1.2	2 n	se	3	С	0	g	s		1
INS052020	Leah C	29/05/2020	v	Karl Bentley	14:00	0 1	4:20	54 17.20	n n	9	51.24	w	22.0	54	4 17.00	n n	9	51.12	w	18.0	4.7	7 s	se	3	С	0	g	s		1
INS052020	Leah C	29/05/2020	v	Karl Bentley	14:20	0 1	6:09	54 17.00	n n	9	51.12	w	18.0	54	4 17.13	n	9	50.70	w	14.7	4.2	2 f	s	3	s	0	g	s		
INS052020	Leah C	29/05/2020	v	Karl Bentley	16:09	9 1	6:55	54 17.13	n n	9	50.70	w	14.7	54	4 17.00	n n	9	51.27	w	20.2	4.0	0 f	s	3	s	0	g	s		
INS052020	Leah C	30/05/2020	v	Karl Bentley	7:37	7	8:07	54 15.1		9	53.19		3.0	54	4 17.08	n n	9	53.04		27.0	0.5	5 n	se	2	g g	0	g	s		T
INS052020	Leah C	30/05/2020	v	Karl Bentley	8:07	7	8:27	54 17.08	n	9	53.04	w	27.0	54	4 17.24	n	9	53.32	w	29.0	0.5	5 s	se	2	s	0	g	s		
INS052020	Leah C	30/05/2020	v	Karl Bentley	8:27	7 1	0:00	54 17.24	n	9	53.32	w	29.0	54	4 17.13	n	9	53.49	w	80.0	6.0	0 f	s	2	s	0	g	s		1
INS052020	Leah C	30/05/2020	v	Karl Bentley	10:00	0 1	1:00	54 17.13		9	53.49		80.0	54			9	49.59		3.0	0.4		n	2	g	0	g	s		
INS052020	Leah C	30/05/2020	v	Karl Bentley	11:00	0 1	1:25	54 17.06	n	9	49.59	w	3.0	54	16.98	n	9	49.60	w	2.1	2.4	4 s	n	2	g	0	g	s		
INS052020	Leah C	30/05/2020	v	Karl Bentley	11:25			16.98		9	49.60	w	2.1	54	16.96	n	9	51.68	w	22.0	2.9	9 f	ne	2	s	0	g	s		
INS052020	Ballyglass Pier	31/05/2020	v	Karl Bentley	12:43	3 1	4:17	54 15.1	n	9	53.28	w		54	4 15.11	n	9	53.28	w		0.0	0 n	nw	1	g	0	g	s	Pre-watch at end of Ballyglass pier	T
INS052020	Ballyglass Pier	31/05/2020		Karl Bentley	14:17	7 1	4:37	54 15.1		9	53.28			54	4 15.11	n	9	53.28			0.0	0 f	nw	1	g	0	g	s	Watch at end of Ballyglass pier	
INS052020	Ballyglass Pier	31/05/2020	v	Karl Bentley	14:37		5:15	54 15.1		9	53.28			54	15.11	n	9	53.28			0.0	0 f	nw	2	s	0	g	s	Watch at end of Ballyglass pier	
INS052020	Leah C	31/05/2020		Karl Bentley	16:36	6 1	7:06	54 15.40		9	53.27	w	9.5	54	4 16.02	n .	9	52.96	w	19.4	0.4	4 n	nw	2	c c	0	g	s		
INS052020	Leah C	31/05/2020	v	Karl Bentley	17:08	6 1	7:26	16.02	n	9	52.96	w	19.4	54	4 16.09	n	9	53.02		21.5			n	2	s	0	g	v		
INS052020	Leah C	31/05/2020	v	Karl Bentley	17:26	6 1	7:32	16.09	n	9	53.02	w	21.5	54	4 16.09	n	9	52.86	w	19.9			n	2	s	0	g	w		1
INS052020	Leah C	01/06/2020	v	Karl Bentley	8:52	2	9:22	54 15.22	n	9	53.31	w	13.1	54	4 17.16	n	9	50.66	w	14.1	2.6	6 n	nw	1	s	0	g	s		T
INS052020	Leah C	01/06/2020	v	Karl Bentley	9:22	2 1	0:16							54	17.15	n	9	50.72	w	15.1	0.2	2 f	nw	1	s	0	g	s		1
INS052020	Leah C	01/06/2020	v	Karl Bentley	10:16	6 1	0:46							54	17.15	n	9	50.80	w	17.4	0.1	1 n	nw	1	s	0	g	s		1
INS052020	Leah C	01/06/2020	v	Karl Bentley	10:46	6 1	2:00							54	17.16	n	9	51.43	w	21.9	0.2	2 f	w	2	s	0	g	s		1
INS052020	Leah C	01/06/2020	v	Karl Bentley	12:00	0 1	3:28							54	4 17.00	n	9	52.86	w	27.5	0.2	2 f	w	2	s s	0	g	s		1



## Operations Form – *Leah C*

Regulatory reference number	Ship/ platform name	Date	Reason for firing	Time soft start/ ramp-up began		start of	end of line (UTC)	reduced output	Time airguns/ source stopped	Time pre- shooting search began		Time PAM began (UTC)	PAM ended	Was it day or night in the period prior to		Comments	Flag record
				(UTC)				relevant)	(UTC)	(UTC)				firing?			
INS052020	Leah C	21/05/2020	t	9:07	9:27				13:08	8:21	9:07			d	n	Patch test using MBES followed by	SSS
INS052020	Leah C	27/05/2020	I	7:52	8:13	8:13	15:29		15:29	7:13	7:52			d	У	Delay of soft start due to sighting in	MZ
INS052020	Leah C	28/05/2020	I	8:00	8:20	8:20	15:12		15:12	7:20	8:00			d	у	Delay of soft start due to sighting in	MZ
INS052020	Ballyglass Pier	29/05/2020	t	11:25	11:45				13:18	10:34	11:25			d	У	SBP test in Harbour, sighting in MZ/	Delay of SS
INS052020	Leah C	29/05/2020	I	14:00	14:20	14:20	16:55		16:55	13:30	14:00			d	n		
INS052020	Leah C	30/05/2020	I	8:07	8:27	8:27	10:00		10:00	7:37	8:07			d	n		
INS052020	Leah C	30/05/2020	I	11:00	11:20	11:25	12:41		12:41	10:00	11:00			d	У	Delay of soft start due to sighting in	MZ
INS052020	Ballyglass Pier	31/05/2020	t		14:17				16:15	12:43	14:17			d	У	USBL test in Harbour, sighting in Ma	Z/Delay of S
INS052020	Leah C	31/05/2020	t		17:06				17:32	16:36	17:06			d	n	USBL Calibration	
INS052020	Leah C	01/06/2020	I		9:22		10:16		10:16	8:52	9:22			d	n		
INS052020	Leah C	01/06/2020	ı		10:46		13:28		13:28	10:16	10:46			d	n		