



2021 Environmental Report

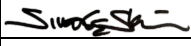
INEOS UK SNS LIMITED

CONTROLLED DOCUMENT

Title:

INEOS UK SNS Limited
2021 Environmental Report

Notes:

Revision Record:							
Rev.	Date Prepared	Author	Chk'd	Name	Title	Signed	Date App'd
1	12-04-22	R O'Sullivan	PJ	S Slater	Operations Director		12-04-22
0	23-03-22	R O'Sullivan	PJ	S Slater	Operations Director	-	30-03-22
Document Origination			Check	Document Approval for use by INEOS Energy			
The master original of this document is held by:				SHEQ Department			

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Glossary

BMS	Business Management System
EMS	Environmental Management System
HSE	Health and Safety Executive
ISO	International Standards Organisation
NUI	Normally unattended installation
OCNS	Offshore Chemical Notification Scheme
OPEP	Oil Pollution Emergency Plan
OSPAR	Oslo Paris convention for the protection of the marine environment of the NE Atlantic
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
PLONOR/ PLO	Poses Little or No Risk to the environment
PON1	Petroleum Operations Notice 1
PWT	Produced water treatment plant
SHE	Safety, health and environment
SHEMS	Safety, Health and Environment Management System
SNS	Southern North Sea
SUB	Chemical is a candidate for substitution
VOC	Volatile Organic Compounds

1 Introduction

This document is the 2021 Environmental Report for INEOS UK SNS Ltd ('INEOS') and describes offshore operations undertaken throughout the year.

This report is a public statement designed to:

- Describe the scope of the company's offshore activities;
- Provide a description of the INEOS Environmental Management System (EMS);
- State the company's environmental policy, goals, objectives and targets; and
- Provide a performance summary for 2021.

This document is the seventh annual Environmental Report to be issued as a public statement by INEOS UK SNS Limited.

2 Scope of Activities

This Section summarises activities undertaken in 2021.

2.1 Overview of INEOS

INEOS is a global manufacturer of petrochemicals, speciality chemicals and oil products with sales of around \$60 billion. INEOS UK SNS Limited was operator of the Breagh and Clipper South gas production fields during 2021. It was also operator of the non-producing Cavendish, Windermere and Topaz fields which are awaiting full decommissioning.

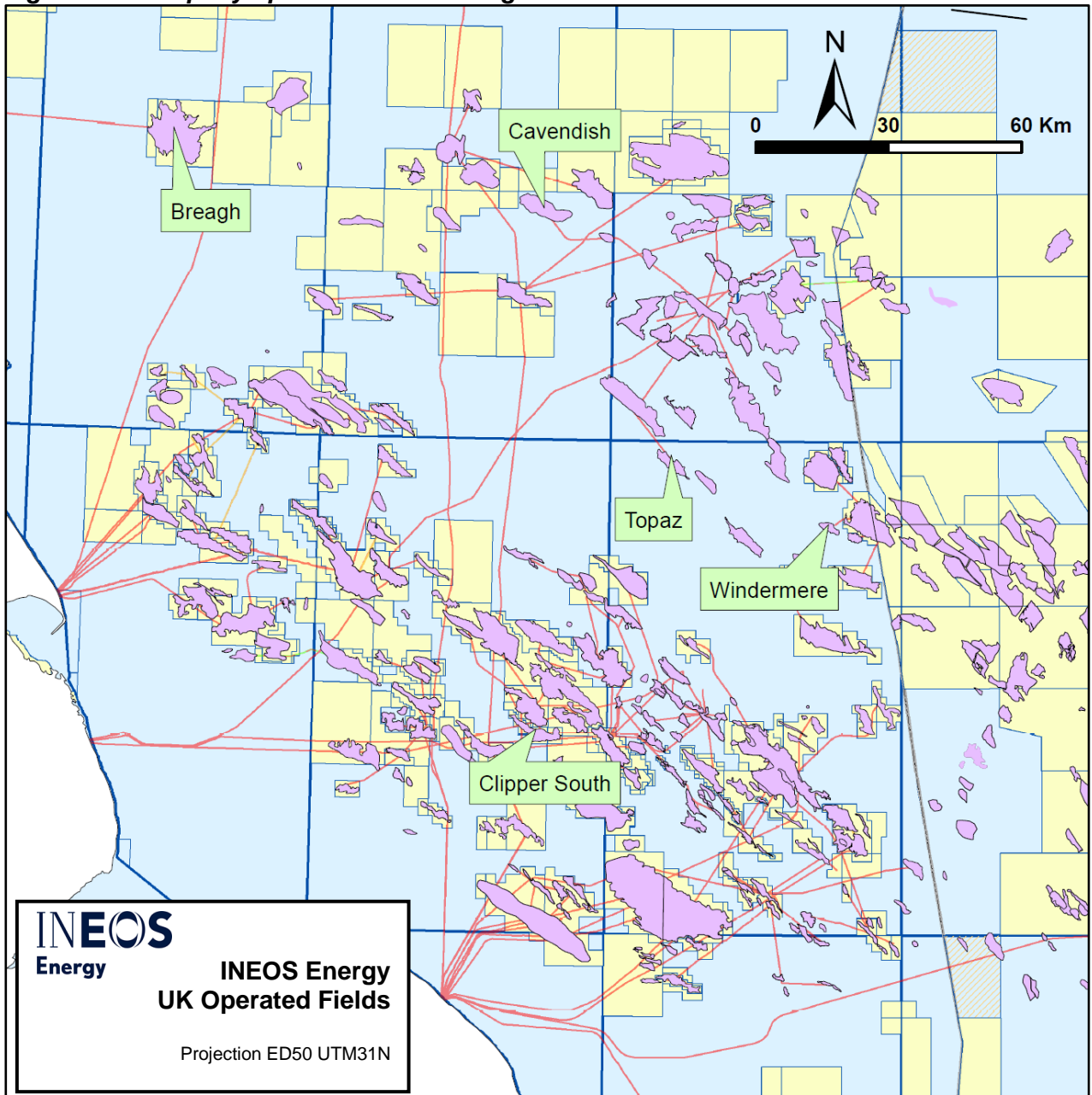
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2.2 Location of Offshore Activities during 2021

The locations of INEOS UK SNS Ltd operated fields are shown in Figure 2.1 below.

Figure 2-1 Company operated fields during 2021



2.2.1 Production Operations

2.2.1.1 Breagh

The Breagh A platform is located in SNS Block 42/13a in a water depth of 62m. The platform was installed in late 2011 and production commenced in October 2013. The platform is normally operated unmanned, typically for periods of 25-30 days in between maintenance visits.

The Breagh platform was controlled, operated and maintained for production purposes in 2021 by INEOS.

During 2021 drilling was undertaken at the platform (see 2.2.2.4 for details). Whilst the MODU was alongside Breagh a number of additional operations were conducted including installation of velocity strings at two existing wells (A6 and A10z) and flow testing of A1 as well as installation of accommodation on the platform which will allow crew to stay onboard during periodic maintenance visits.



2.2.1.2 Clipper South

Production operations commenced at the Clipper South platform in August 2012. It is located in SNS Block 48/19, in a water depth of 23.5m. The platform is operated as a NUI and maintenance visits typically occur for approximately six days per month.

Clipper South originally exported gas via the ConocoPhillips owned LOGGS platform. This was taken out of service in October 2018 and a new pipeline between Clipper South and the Shell owned Clipper platform was installed. A produced water treatment plant was also installed in 2018 due to the liquids handling requirements at the Clipper platform.



2.2.2 Other Operations

2.2.2.1 Cavendish

The Cavendish platform is a fixed four-legged jacket that produced gas and condensate and is located in SNS Block 43/19a. The platform was tied back via a 47 kilometre long 10-inch pipeline to the ConocoPhillips operated Murdoch host platform however production ceased in 2018 and the wells were shut in. Work was undertaken in 2019 to put the platform into lighthouse mode, where no hydrocarbons are present. Access is via walk-to-work vessel only. No visits were made during 2021.



2.2.2.2 Windermere

The Windermere platform is a NUI located in SNS Block 49/09b. This is now operating in Lighthouse Mode (LHM), following the plugging and abandonment of the two platform wells in 2019. Maintenance visits occur when required by walk-to-work vessel. No visits were made during 2021.



2.2.2.3 Topaz

The Topaz subsea well head and protective structure was a gas producing seabed installation located in SNS Block 49/02a. The facility was tied back to the Schooner host platform via a 15.2 kilometre long 6-inch gas export line, with associated methanol feed line and control and communications cable. Due to low flow rates, the Topaz well has been shut in and production ceased on 31st October 2017. Operations were undertaken in 2019 to flush and flood the pipelines between Topaz and Schooner and to cut and remove a section of the pipeline at the Topaz wellhead end.

2.2.2.4 Other Activities

Additional operations were completed at Breagh between August and December 2021, comprising the drilling, completion and hydraulic stimulation of an additional well, A11, at the platform, along with the installation of velocity strings in A6 and A10Z and well testing at A1. Whilst the Maersk Resolve was at Breagh, works were completed on the platform to convert the existing overnight emergency accommodation area into a dedicated accommodation area with bedrooms, wet rooms and a revised food preparation area.

3 EMS Summary

This Section provides a brief description of the company's EMS as it operated in 2021.

3.1 Introduction

The EMS is a component of the overall Business Management System (BMS) that defines the organisational structure, planning activities, responsibilities, procedures, business processes and resources required for developing, implementing, achieving, reviewing and maintaining the environmental policy.

The EMS is a tool for identifying and managing the impact the business has on the environment. It works to reduce this impact by controlling the quantity of materials and energy used and the amount of waste produced. As well as facilitating the management of environmental impacts in a credible way, the EMS provides a practical tool to help evaluate and improve performance.

The following guiding principles and methodologies are incorporated into the OSPAR Strategy and integrated, as appropriate, into the EMS:

- the precautionary principle;
- the polluter pays principle;
- best available techniques and best environmental practice, including, where appropriate, clean technology;
- sustainable development;
- the application of an integrated ecosystem approach; and
- the waste management hierarchy of avoidance, reduction, re-use, recycling, recovery, and residue disposal.

3.2 Verification

The offshore operations undertaken by the business have had ISO 14001 certification since 2010, which was first obtained by previous owners of the business, and has continued through into INEOS ownership. This covers the management of all the company's exploration, drilling, development and production operations. Recertification was achieved in December 2019 and a verification audits were undertaken in September 2020 and 2021. Re-certification is due in 2022.

3.3 Review

A formal review of SHEQ performance is conducted annually. This is an essential step required to assess the effectiveness of the SHEMS in achieving the aims of the company's policy and objectives and to achieve continuous improvement in the control system.

The review process enables the company to:

- review progress against existing objectives and targets;
- consider evidence of performance, such as audits and other reports;
- consider the sufficiency of the organisational structure, the available resources, the policy and the management system in general; and
- agree new objectives and targets.

Internal auditing is used to objectively investigate how each element of the management system is being applied. Internal audit reports provide input to management review, along with other performance indicators.

4 Environmental Policy

This Section provides a brief description of the company's environmental policy, including relevant environmental goals, objectives and targets set for significant environmental aspects and impacts.

4.1 Introduction

In line with the OSPAR Strategy, the company has established an environmental goal of protecting and conserving the maritime area against any potentially adverse effects resulting from its activities. To achieve this goal, programmes and measures to identify, prioritise, monitor and prevent/reduce/eliminate any emissions, discharges or losses of substances which could cause pollution have been developed.

Non-polluting activities, that may have potentially adverse effects on the ecosystems and biological diversity of the maritime area, include exploration activities and the installation or decommissioning of structures, cables and pipelines.

4.2 SHE Policy Statement

The components of the SHE Policy Statement that relate to environmental management are stated in the remainder of this Section.

The Company recognises its moral and legal obligations to conduct all activities in a manner which protects the natural environment with the prevention of pollution. All employees are required to act responsibly so as to protect the environment.

In relation to environmental management, the company will:

- annually set SHEQ objectives, seeking to achieve continual improvement;
- ensure that a competent workforce is established and receives all necessary information, instruction and training and that all personnel have a clear understanding of their roles and responsibilities;
- provide all personnel with opportunities for participation in SHE decisions, risk assessments and aspects of SHE management as well as undertaking consultation and communication regarding SHE issues;
- monitor and record SHEQ performance and assess compliance through internal audits;
- annually conduct management review of performance against objectives, including review and development of the Policy and BMS and communicate the results of this review with the workforce;
- ensure that sufficient resources are provided to achieve its objectives.

For all business activities and projects, the company will;

- comply, as a minimum, with all SHE legislation applicable in the UK, to discharge its Duty of Care, applying best industry practice and undertaking steps to improve safety or environmental protection levels where appropriate;
- ensure that systematic hazard identification, assessment of risk and incorporation of measures to minimise and control risks are central to all our activities;
- apply all necessary control measures in the design, construction and operation of offshore facilities to prevent the occurrence of major accident events;
- select competent contractors with regard to their SHEQ management capability and provide them with all necessary information, including definition of INEOS's SHEQ requirements;
- monitor and audit contractors as necessary to ensure satisfactory quality assurance and SHE performance; and
- maintain emergency and contingency plans.

The company requires each of its contractors and suppliers to:

- operate effective SHEQ management systems; and
- comply with INEOS's SHEQ requirements including appropriate SHEQ planning, hazard identification, risk control, performance monitoring and reporting.

4.3 Objectives and targets for 2021

The environmental management objectives and targets for the period between January and December 2021 were determined in order to progressively achieve the commitments set out in the SHEQ Policy Statement. Section 5.2 provides further detail.

5 Performance Summary

This Section provides a summary of performance in relation to compliance with relevant legislative requirements and compliance with the environmental policy, goals, objectives and targets. A summary of offshore environmental aspects, and their associated emissions and impacts, is also provided.

5.1 Introduction

The company's internal and external auditing processes enabled reporting on the areas of environmental performance defined in Section 4, i.e. the extent to which the environmental goals listed below have been achieved:

- compliance with legislation;
- progress made in achieving environmental goals; and
- continual improvement in environmental performance.

5.2 2021 Environmental Performance Summary

Progress against the identified objectives and targets for 2021 is considered in the annual Management Review. Key objectives and targets are related to incidents, BMS development and certification, competence, emergency preparedness and response, audit and review and the offices. The majority of objectives were achieved; the only objective not achieved that relates to environmental issues was zero environmental incidents (see 5.2.1.1). The audit schedule continues throughout the year in order to ensure that progress against objectives and targets is maintained.

For the first time INEOS Energy participated in the INEOS Group EcoVadis assessment. INEOS Group were awarded a Gold standard and INEOS Energy was noted to have scored highly on environmental performance.

5.2.1 Production Activities

Production operations during 2021 were undertaken at Breagh and Clipper South. Section 5.2.2 provides information concerning other activities.

5.2.1.1 PON1 Incidents

There was one PON1 incident during 2021; in February a diesel spill to sea occurred caused by a loose hose connection on the break tank of the diesel generator. A maximum of 1.4 tonnes of diesel was released. A full investigation was undertaken and the findings reported to OPRED and HSE.

5.2.1.2 Chemical use and discharge

During 2021, Breagh production operations used methanol gas-hydrate inhibitor in order to undertake well start-up operations. The methanol remained within the production system and therefore was not discharged to sea at the platform. MEG is used in a closed loop system and is therefore not required to be permitted.

Three products are used regularly for Clipper South operations: EC66721A (colour band White), Ethylene Glycol (OCNS category E) and SURFLO PLUS® SFPEC1610A (colour band Gold). These products inhibit the formation of hydrates and prevent corrosion in the pipeline between Clipper South and Clipper and must be added to ensure pipeline integrity. These products are not discharged.

SOBO S GOLD 08 (colour band Gold) rigwash detergent was also used on Breagh for platform cleaning. No other chemicals were used or discharged.

Table 5-1 below presents the quantities of chemicals used and discharged at Breagh and Clipper South during 2021 based on label and ranking categories.

Table 5-1 Chemicals Used and Discharged during normal platform operations

OCNS category or colour band ranking	Additional Label	Quantity (kg)	
		Use	Discharge
E	PLONOR	41,595	0
Gold	-	46,144	25
White	-	8,063	0

5.2.1.3 Produced water discharges

The Breagh platform utilises a closed production system and there are no separation facilities or disposal caissons; therefore there are no discharges of produced water.

Clipper South has a produced water treatment (PWT) plant to remove produced water prior to export to Clipper. Table 5-2 below presents the volume of water that was processed by the PWT plant and the results of the sampling of the water that is discharged once treated.

Table 5-2 Clipper South PWT Discharge Results

Month	Total Volume of Water (m ³)	Average Oil in Water (mg/l)	Weight of Oil (t)
January	767.64	9.7	0.008
February	1,174.31	9.7	0.011
March	5,743	9.41	0.054
April	3,179	6.75	0.021
May	3,143.07	6.8	0.021
June	3,153.68	7.86	0.025
July	478.8	4.13	0.002
August	1,893.3	4.13	0.008
September	4,840	35.4	0.171
October	4,399.67	33.74	0.148
November	4,373	39	0.171
December	6,738	29	0.195
Total	39,883.47	-	0.835

Operations at Clipper South were switched from high pressure to low pressure during the summer shut down resulting in a lower flow through the PWT. Reduced water volumes decreases the efficiency of its operation, increasing the concentration of oil in water that is discharged. In addition there has been an increase in the amount of fines (very small particles) that have been emanating from the reservoir which can affect the efficiency of oil removal. From September onwards higher concentrations of average oil in water were identified and discussions have been held with OPRED regarding the likely causes of the results and the actions that are being taken to reduce the concentration. Non-Conformance Notifications were submitted to OPRED on 6th October, 29th October, 15th November and 13th December regarding monthly average concentrations above

30mg/l or periods of discharge exceeding 100mg/l. All of these reports have been closed with no further action taken by OPRED.

5.2.1.4 Waste

A total of 95.3 tonnes of waste was generated by Clipper South and Breagh during 2021. A summary is provided as Table 5-3 below. The majority was recycled with no waste directed to landfill.

Table 5-3 Summary of Waste from Production Operations (tonnes), 2021

Asset	Group	Type	Reuse	Re-cycling	Waste to Energy	Incinerate	Landfill	Other	Total	Comments	
Breagh	Group I	Chemicals / paints	0	8.806	0	0	0	0	0		
		Drums / Containers	0	0.3	0	0	0	0	0	0	
		Oils	0	0	0	0	0	0	0	0	
		Misc	0	0	0.8	0	0	0	0	0	
		Sludges/ Liquids/ Washings	0	3.5	0	0	0	0	0	0	
	Group II	Scrap Metal	0	0	0	0	0	0	0	0	
		Drums / Containers	0	0	0	0	0	0	0	0	
		Segregated recyclables	0	1.74	0	0	0	0	0	0	
		Misc	0	0.48	0	0	0	0	0	0	
		General	0	0.69	2.77	0	0	0	0	0	
Clipper South	Group I	Chemicals / Paints	0	17.81	0	0	0	0.12	0	Treatment	
		Drums/ Containers	0	0.017	0	0	0	0	0	0	
		Oils	0	0	0	0	0	0	0	0	
		Misc	0	0.2	0.6	0	0	0	0	0	
		Sludges/ Liquids/ Washings	0	29.96	0	0	0	4.44	0	0	Treatment
	Group II	Drums/ Containers	0	0.248	0	0	0	0	0	0	
		Scrap Metal	0	3.98	0	0	0	0	0	0	
		Segregated Recyclables	0	7.155	0	0	0	0	0	0	
		Sludges/ Liquids/ Washings	0	0.086	0.344	0	0	0	0	0	
		General	0	2.372	8.768	0	0	0	0	0	
Group III	Clinical	0	0	0	0.07	0	0	0	0		
TOTAL			0	77.35	13.28	0.07	0	4.56	0		

In addition to the above wastes, the liquid waste generated at the Breagh platform during routine maintenance visits was limited to small volumes of wastewater, from the sink and shower, as well as sewage from the toilets, which was discharged to sea. The Clipper South platform has a macerator for all black waste. The small amounts of domestic waste generated during NUI visits is

bagged and returned onshore. Company policy states that no garbage, including plastic, is to be disposed of overboard.

5.2.1.5 Atmospheric emissions

The Breagh and Clipper South platforms have self-sufficient power supplies in the form of standalone diesel generators. Operational emissions to air from combustion of diesel to power generators is summarised in Table 5-4 below.

Table 5-4 Emissions to Air from Breagh and Clipper South (tonnes), 2021

Asset	Diesel Used	Emissions to Air						
		CO ₂	CO	NO _x	N ₂ O	CH ₄	VOC	SO _x
Breagh	90.75	290	1.4	5	0.02	0.02	0.18	0.36
Clipper South	119.7	383	1.9	7	0.03	0.02	0.24	0.48

Atmospheric emissions relating to production operations at Breagh and Clipper South were also generated as a result of the combustion of fuel on board the helicopters and supply/standby vessels utilised during planned maintenance visits.

In addition to the above, emissions to air from operational facilities emanated from the manual venting of produced gas for maintenance purposes. The calculated emissions of direct gas from operational facilities in 2021 comprised the following from maintenance venting:

- Breagh – 2.06 tonnes
- Clipper South – 0.68 tonnes

5.2.1.6 Oil spills

Oil Pollution Emergency Plans (OPEPs) were in place to cover all operations at Breagh, Clipper South, Cavendish and Windermere during 2021. Each OPEP lists the required offshore and onshore actions and responses, defines roles and responsibilities in the event of an oil spill and provides a risk assessment. Five yearly reviews of Breagh, Clipper South and Cavendish OPEPs were submitted and approved.

5.2.2 Other activities

As previously described, a number of additional activities were undertaken at Breagh including the drilling of A11, installation of the velocity strings on A6 and A10Z, the well test at A1 and installation of the Breagh accommodation.

5.2.2.1 PON1s

There were no PON1s submitted in association with the additional work at Breagh.

5.2.2.2 Chemical Use

Two chemical permits were obtained for the additional operations at Breagh (CP/2593 for Breagh A11 and CP/2677 for A6 and A10Z). Tables 5-5 and 5-6 below present the quantities of chemicals used and discharged based on label and ranking categories. Work was undertaken to reduce the use of chemicals marked with a Substitution Warning (SUB) and the majority (92%) of chemicals were labelled E or Gold and did not have a SUB warning. No chemicals were used which had a SUB warning on the velocity string installations.

Table 5-5 Chemicals used and discharged during drilling of Breagh A11

OCNS category or colour band ranking	Additional Label	Quantity (kg)	
		Use	Discharge
E	PLO	3,613,635	1,553,226
	-	427,987.4	427.4
	SUB	109,849.1	1,259.5
Gold	-	51,118.1	29,158.8
	SUB	7,089.8	569.3
Silver		600	0
D		202,627.5	106.5
C		32.2	0
B	-	115.4	0
	SUB	2607.8	0
A	SUB	15,980	0

Table 5-6 Chemicals used and discharged during installation of velocity strings at A6 and A10Z

OCNS category or colour band ranking	Additional Label	Quantity (kg)	
		Use	Discharge
E	PLONOR	5,682	5,682
Gold	-	150	150
D	-	20	0

5.2.2.3 Discharge of Water

The drilling of A11 required an oil discharge permit (OTP/1122) which allowed the discharge of water potentially contaminated with reservoir hydrocarbons. During the operation 334m³ of water was discharged containing an average of 16.17mg/l of oil resulting in a discharge of 0.0054t of oil to sea.

5.2.2.4 Waste

The Maersk Resolve was alongside the Breagh platform from August until the end of the year. During this time 644.76 tonnes of waste was generated.

Table 5-7 Waste Generated by Maersk Resolve whilst at Breagh (tonnes), 2021

Group	Type	Reuse	Re-cycling	Waste to Energy	Incinerate	Landfill	Other	Total	Comments
Group I	Chemicals / paints	0	4.64	1.71	0	0	0.001	6.346	Treatment
	Drums / Containers	0.08	0.77	0	0	0	0	0.852	
	Oils	0	11.7	0.17	0	0	0	11.870	
	Misc	0	0.56	2.64	0	0	0	3.204	
	Sludges/ Liquids/ Washings	0	0	2.31	0	0	557.2	559.54	Discharged with consent or treatment
Group II	Scrap Metal	0	12.52	0	0	0	0	12.52	
	Drums / Containers	0	0.35	0	0	0	0	0.346	
	Segregated recyclables	0	8.23	0	0	0	0.70	8.925	Treatment
	Misc	0.57	7.26	0	0	0.37	0	8.200	
	General	0	5.94	10.75	0	16.16	0	32.846	
Group III	Clinical	0	0	0	0.107	0	0	0.107	
Total		0.650	51.96	17.58	0.107	16.53	557.9	644.76	