

bluewater

**OSPAR Public Statement 2022
Environmental Performance**



Issue Date: 22nd May 2023

Contents

1. INTRODUCTION.....	3
2. OVERVIEW OF OPERATIONS	4
Pierce Field Offshore Activities.....	4
Lancaster Field Offshore Activities.....	5
3. SAFETY AND ENVIRONMENTAL (SEMS) MANAGEMENT SYSTEM.....	7
Bluewater Health, Safety, Environmental and Quality [HSEQ] Policy	7
Environmental Management	7
Key Environmental Management Activities in 2022.....	9
4. ENVIRONMENTAL PERFORMANCE	10
Hæwene Brim FPSO Environmental Performance.....	10
Atmospheric Emissions	10
Water and Oil in Water Discharges.....	11
Chemical Use and Discharge.....	12
Waste Management	14
2023 Key Activities.....	15
Aoka Mizu FPSO Environmental Performance.....	16
Atmospheric Emissions	16
Water and Oil in Water Discharges.....	17
Chemical Use and Discharge.....	19
Waste Management	21
2023 Key Activities.....	22
5. INCIDENTS.....	23
6. APPENDICES	24
List of figures.....	24
List of tables.....	24
Abbreviations.....	25

1. INTRODUCTION

Under Recommendation 2003/5 of the Oslo Paris Convention for the Protection of the Marine Environment of the North-East Atlantic [OSPAR], the Offshore Petroleum Regulator for Environment and Decommissioning [OPRED] requires that all companies operating in the United Kingdom Continental Shelf [UKCS] have systems and procedures in place to identify, monitor and control the environmental aspects associated with offshore activities.

This document details the 2022 OSPAR Public Statement for Bluewater Energy Services B.V. (hereinafter referred to as Bluewater) and reports the environmental performance of a) the Pierce Field operations and activities during 2022, and b) the Lancaster Field operations and activities during 2022, in line with the requirements of OSPAR Recommendation 2003/5. The scope focuses on the two offshore assets, the Hæwene Brim Floating Production Storage and Offloading [FPSO] and the Aoka Mizu FPSO for the period 1st January to the 31st December 2022. Bluewater operates the Haewene Brim as the Pierce Production Company Limited, and the Aoka Mizu as Bluewater Lancaster Production [UK] Ltd.

2. OVERVIEW OF OPERATIONS

Pierce Field Offshore Activities

The Pierce development is located in Blocks 23/22a and 23/27a of the Central North Sea [CNS]. The development is served by a FPSO facility, the Hæwene Brim (Figure 2-1). The Hæwene Brim FPSO is located at 57° 09' 38.834" N, 02° 17' 35.130" E, which is 247.5 km from the United Kingdom [UK] coastline, 2.6 km from the UK/Norwegian median line and in a water depth of approximately 85 m. On behalf of Shell UK Ltd, Enterprise Oil plc is the field operator in conjunction with joint venture partner Ithaca Energy UK Limited. Pierce Production Company Limited [PPCL] serve as the operator of the Hæwene Brim FPSO.



Figure 2-1 The Hæwene Brim FPSO

The Hæwene Brim FPSO's main functions are:

- Receipt of fluids from subsea wells;
- Control of the subsea wells;
- Processing of the incoming fluids for separation into crude, water and gas;
- Storage of the stabilised crude oil and maintaining it at the required temperature;
- Treatment of effluent for discharge of water to the sea;
- Chemical injection;
- Produced gas export;
- Offloading of crude into tandem moored shuttle tankers;
- Power generation for process, gas compression, offloading, utilities and ship systems; and
- Provide accommodation for operating and maintenance personnel.

In December 2021, the Hæwene Brim FPSO left the UKCS to undergo extensive upgrades in dry-dock in Norway. The FPSO returned to location in the UKCS in June 2022. Production operations resumed late December 2022. This report only covers the period the FPSO was on location in the UKCS.

Lancaster Field Offshore Activities

The Lancaster field is located in Blocks 205/21a to the west of the Shetland Islands. The development is served by the Aoka Mizu FPSO (Figure 2-2).

The Aoka Mizu FPSO is located at 60° 10' 49.82" N, 03° 52' 5.16" W, 98 km from the UK coastline, 54 km from the UK/Faroes median line and in a water depth of approximately 158 m. Hurricane Energy PLC (hereinafter referred to as Hurricane) is the licence operator for the Lancaster field. Bluewater Lancaster Production [UK] Ltd are the formally approved Installation Operator of the Aoka Mizu FPSO.



Figure 2-2 The Aoka Mizu FPSO

The Aoka Mizu FPSO's main functions are:

- Receipt of fluids from subsea wells;
- Control of the subsea wells;
- Processing of the incoming fluids for separation into crude, water and gas;
- Storage of the stabilised crude oil and maintaining it at the required temperature;
- Treatment of effluent for discharge of water to the sea;
- Chemical injection;
- Offloading of crude into tandem moored shuttle tankers;
- Power generation for process, gas compression, offloading, utilities and ship systems; and
- Provide accommodation for operating and maintenance personnel.

Operational activities during 2022 included normal production operations, maintenance and well optimisation work.

3. SAFETY AND ENVIRONMENTAL (SEMS) MANAGEMENT SYSTEM

Bluewater Health, Safety, Environmental and Quality [HSEQ] Policy

Bluewater Services [UK] Limited adopts the Bluewater HSEQ policy, which sets out the principles to which all the affiliates and the Hæwene Brim and Aoka Mizu FPSO activities comply with. These include:

- ✓ Promoting Health, Safety and Environmental [HSE] Protection;
- ✓ Seeking and achieving continual improvement;
- ✓ Working towards Net-Zero by 2050; and
- ✓ Compliance with all regulatory requirements.

The requirements of the policy are implemented through management systems, interface arrangements and operational management controls. The Bluewater policy is provided in Figure 3-1.

Document title	Bluewater HSEQ Policy	
Document number	BW1-Q-100-PH-0001-001	
Accountable person	President and CEO	
Date published	28/12/2022	

HSEQ Policy

Bluewater is committed to delivering quality and continuous improvement throughout all its activities, while satisfying all applicable requirements.

To this end company goals are formulated by top management, taking into account our compliance obligations and other requirements from interested parties.


At Bluewater a pro-active and responsible approach to safety and environmental care is an essential part of doing our work. We require the participation of all our staff and contractors to implement this approach.

We aim to:

- actively minimise and control any occupational health and safety risks,
- prevent any loss of primary containment as per our Corporate Major Accident Prevention Policy and integrated process and functional safety management framework,
- prevent or minimise the adverse impacts of our activities on the environment,
- achieve net zero emissions by 2050 for emissions within our organisational boundary,
- develop solutions for renewable energy as well as energy efficient and emission-less production and transfer of energy offshore,
- actively present emission reduction solutions to our Clients to support them in achieving their obligations under net zero targets,
- maintain a granular set of (quality) assurance activities to demonstrate that expectations related to HSEQ are being met and
- continuously improve our work processes as part of our Corporate Management System.

As such, we will drive the development and implementation of industry best practices.

With all our personnel collectively and individually taking responsibility and accepting accountability for Bluewater's HSEQ performance, we create and maintain a healthy, safe and environmentally friendly place to work.



Hugo J. Heerema
President & CEO
December 2022

Figure 3-1 Bluewater HSEQ Policy

Environmental Management

Bluewater is certified to ISO 14001:2015 standard (a copy of the certificate is presented below). Bluewater's Environmental Management System [EMS] sets out guiding principles and mechanisms for managing HSE risk, impact and compliance in accordance with the Bluewater HSEQ Policy.



Current issue date: 1 July 2022
Expiry date: 8 November 2023
Certificate identity number: 10485470

Original approval(s):
ISO 14001 - 7 November 2008

Certificate of Approval

This is to certify that the Management System of:

Bluewater Energy Services B.V.

Taurusavenue 46, 2132 LS Hoofddorp, The Netherlands

has been approved by LRQA to the following standards:

ISO 14001:2015

Approval number(s): ISO 14001 – 0024489

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

Design, engineering, procurement, management of subcontracted fabrication, installation, commissioning and aftersales of Single Point Mooring systems (SPM), offshore renewable energy systems and Floating Production Storage Offloading (FPSO) systems. Operation and management of FPSOs.

Paul Graaf

Area Operations Manager, Europe

Issued by: LRQA Limited



Figure 3-2 Copy of ISO14001:2015 Certificate

The Corporate Management System [CMS] describes how HSE performance is managed, taking into account all relevant elements, such as legal requirements, stakeholders, risks / opportunities and company goals. The CMS is applicable to all employees and activities on all locations (onshore and installation and operational sites - offshore) and is based on the requirements of ISO 9001:2015 and

ISO 14001:2015. Within the overall CMS, the Safety and Environmental Management System [SEMS] is the framework of policies, processes standards and procedures that ensures that the health, safety and environmental objectives can be achieved. The SEMS acts as the link between the policies and standards and local processes and procedures. The high-level structure of the CMS is shown in Figure 3-3.

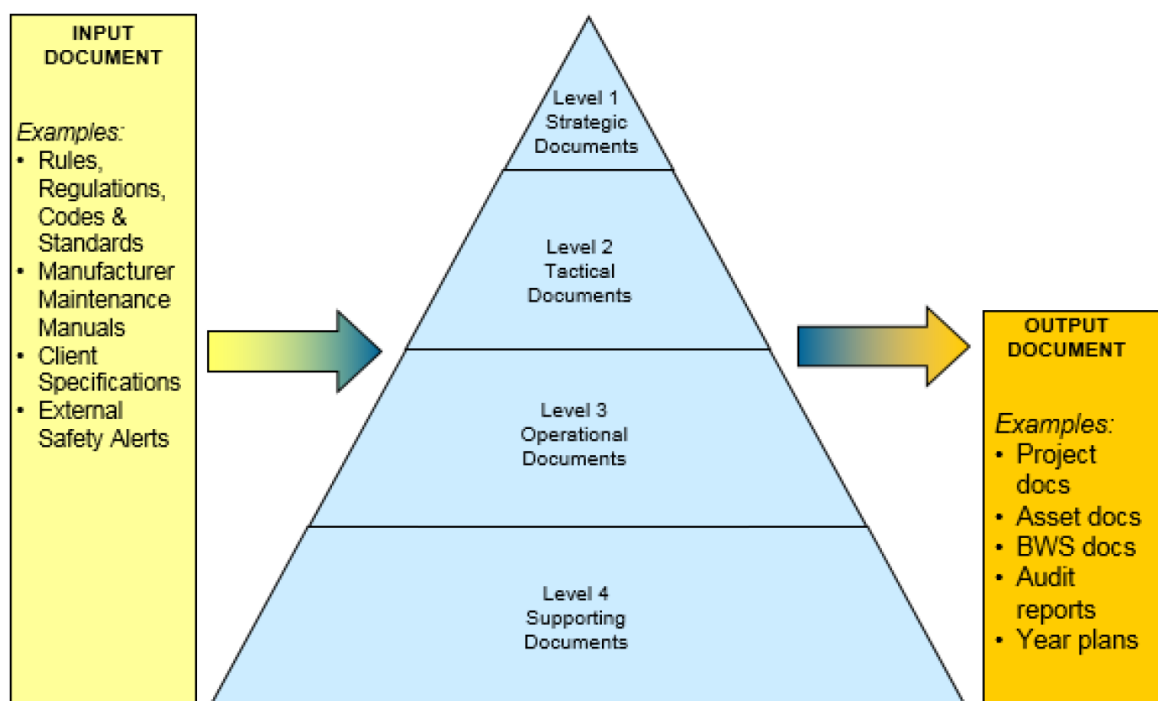


Figure 3-3 High Level Structure of the CMS

Key Environmental Management Activities in 2022

Bluewater's key environment related objectives and activities for 2022 were to ensure compliance with all environmental permits and relevant regulations and to progress a number of programmes to support continued improvement in performance, including:

- Offshore Environmental Compliance and Permit audits and inspections;
- Onshore Emergency Response exercises and Offshore Drills;
- Monitoring of asset performance and Environmental Key Performance Indicators [KPI] covering resource use and emissions to the environment;
- Maintenance of the assets' Environmental Aspects Registers.

4. ENVIRONMENTAL PERFORMANCE

Hæwene Brim FPSO Environmental Performance

Atmospheric Emissions

Atmospheric emissions arise from power generation, flaring and fugitive emissions. The Hæwene Brim FPSO holds an Offshore Combustion Installation [PPC] Permit under the Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013 (as amended) for the combustion equipment on-board. Shell UK Ltd is the holder of the greenhouse gas emissions trading scheme (UK ETS) permit, therefore certain emissions may be duplicated within their 2022 annual environmental statement.

Table 4-1 provides the Production related fuel combustion and flaring emissions as reported into the Environmental Emissions Monitoring System [EEMS] through the UK Energy Portal. This covers the period from the 1st January 2022 to 31st December 2022.

Table 4-1 Hæwene Brim Atmospheric Emissions (1st January 2022 to 31st December 2022)

Atmospheric Emissions	Unit	Fuel Gas	Diesel	Flaring	Totals
Fuel Use	Tonnes	52.73	3,956.19	2,717.03	N/A
CO ₂	Tonnes	145.18	12,633.96	7,369.63	20,148.77
NO _x	Tonnes	0.16	157.39	3.26	160.81
SO ₂	Tonnes	-	7.91	0.03	7.94
CO	Tonnes	0.32	41.55	18.20	60.07
CH ₄	Tonnes	0.05	0.48	27.17	27.70
VOC	Tonnes	-	5.21	27.17	32.38

Water and Oil in Water Discharges

Liquid associated with the oil produced by the Pierce Field (oil and produced water) is processed through oil and water separation systems offshore with the cleaned produced water being discharged to sea. The Hæwene Brim FPSO holds a permit for produced water discharge under the Petroleum Operations (Oil Pollution Prevention and Control [OPPC]) Regulations. The Hæwene Brim FPSO has two discharge routes for produced water and the installations drainage systems, as follows:

- The primary route is via the produced water treatment system. All produced water from the separators is routed to designated hydrocyclones via inline coalescers. The in-line coalescers help improve the performance of the downstream hydrocyclones by increasing the oil droplet size in the feed stream.
- The secondary route is from the FPSO slops tanks. Liquids are processed through a centrifuge system before being discharged to sea.

No water discharges took place in 2023 due to the short period the Haewene Brim was operational.

Chemical Use and Discharge

Under the Offshore Chemical Regulations [OCR] 2002 (as amended), the Hæwene Brim FPSO holds a permit for the use and discharge of chemicals. During 2022, 81.1 tonnes of production chemicals were used and 122.4 tonnes were discharged to sea. The discrepancy between used and discharged chemicals is due to the discharge of preservative chemicals remaining in subsea pipelines whilst the FPSO was in the yard.

The Regulator has highlighted certain chemicals to be phased out by mean of substitution warning (SUB chemical warning). Three SUB chemicals were used during 2022, Castrol Transaqua HT2 – Hydraulic Fluid, EMBR4344C - Demulsifier and M-Gel Pig - Pipeline Pig/Cleaning fluid. A detailed breakdown of each chemical’s tracked usage and discharge against the permitted quantities is presented in Figure 4-1 and Figure 4-2 respectively.

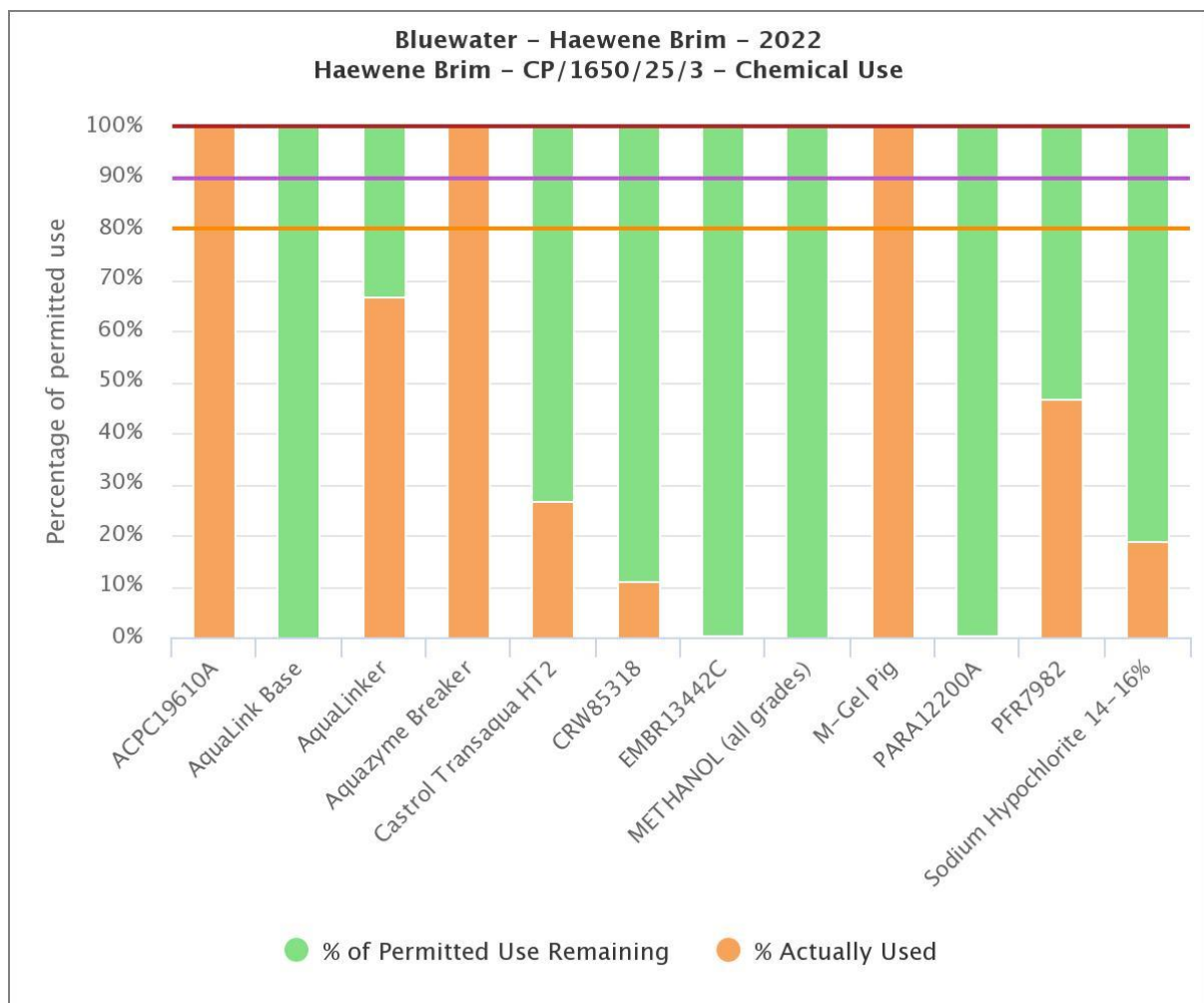


Figure 4-1 Hæwene Brim 2022 Chemical Use vs Permitted Quantities

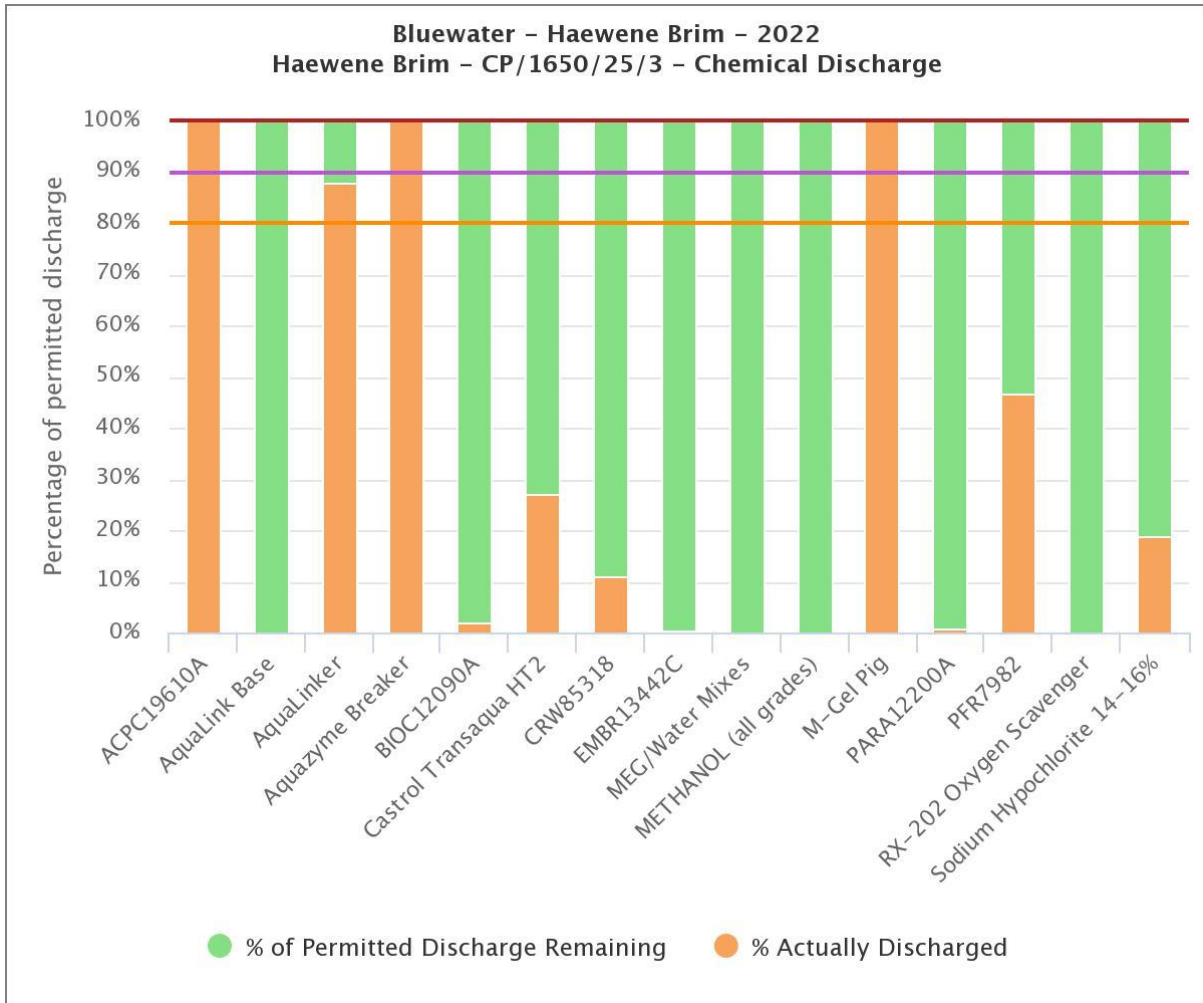


Figure 4-2 Hæwene Brim 2022 Chemical Discharge vs Permitted Quantities

Note that Aqualink Base, MEG/Water mixes and Methanol are PLONOR (Poses Little Or NO Risk) chemicals, therefore there are no permit limits for use.

The chemicals used comprised water based hydraulic fluids, biocides, wax inhibitors, corrosion inhibitors, gas hydrate inhibitors, scale inhibitors, demulsifiers and pipeline chemicals. The majority of these chemicals were Hazard Quotient [HQ] Gold or Category ‘E’ or ‘D’ chemicals (the ratio of Predicted Effect Concentration against No Effect Concentration), thus have the least potential impact on the marine environment.

Chemicals are subject to continual review and Bluewater will continue to seek suitable alternatives, where appropriate to minimise impact on the marine environment.

Waste Management

Management and segregation of waste takes place on the installation prior to transfer to onshore facilities for recycling or disposal. Total waste arising during 2022 from the Hæwene Brim FPSO and the disposal routes is provided in Table 4-2.

Table 4-2 Hæwene Brim Waste Arising and Disposal Routes during 2022

Category	Reuse (t)	Re-cycling (t)	Waste to Energy (t)	Incinerate (t)	Landfill (t)	Other (t)	Total (t)
Group I – Special							
Chemicals/ Paints	-	-	0.210	0.274	-	3.313	3.797
Drums/ Containers	0.240	3.630	-	-	-	-	3.870
Oils	-	29.060	-	-	-	-	29.060
Miscellaneous Special Waste	-	3.355	3.56	-	0.100	-	7.015
Sludge's / Liquids / Washings	-	17.620	0.700	-	-	96.810	115.13
Sub-Total	0.240	53.665	4.470	0.274	0.100	100.123	158.872
Group II - General							
Chemicals/ Paints	-	-	-	-	-	0.002	0.002
Drums/ Containers	0.080	-	-	-	-	0.001	0.081
Scrap metal	-	8.940	-	-	-	-	8.940
Segregated Recyclables	-	12.585	-	-	-	-	12.585
General Waste	-	-	28.615	-	-	-	28.615
Sludge's / Liquids / Washings	-	-	-	-	-	-	-
Sub-Total	0.080	21.525	28.615	-	-	0.003	50.223
Group III - Other							
Asbestos	-	-	-	-	-	-	-
Radioactive Materials (exc NORM)	-	-	-	-	-	-	-
Clinical	-	-	-	-	-	-	-
Explosives	-	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-	-
Grand Total	0.320	75.190	33.085	0.274	0.100	100.126	209.095

Figure 4-3 shows that the Hæwene Brim FPSO recycled ~36% of the total waste produced. Waste disposed to landfill amounted to 0.05% of the total waste produced. As of 2022, all general waste from the Hæwene Brim is utilised for waste to energy, with waste no longer sent to landfill. There was also ~100 tonnes of “other” waste, mostly sludge and liquid washings, equating to 48% of total waste.



Figure 4-3 Hæwene Brim 2022 breakdown of generated waste

2023 Key Activities

The main offshore aims and objectives for the Hæwene Brim FPSO during 2023 are:

- ✓ Ongoing maintenance and implementation of the EMS, including
 - Maintenance of 14001:2015 Standard;
 - Environmental data monitoring & reporting schedules;
 - Environmental KPIs;
 - Environmental Aspects Registers and Controls;
 - HSE Management System Interface documentation.
- ✓ Audit and review of Permits and Consents management and compliance associated with Environmental Management Systems and Processes;
- ✓ Continued management of asset integrity and process safety to minimise the risk of spills;
- ✓ Duty of Care audit of waste management processes and contractor.

Aoka Mizu FPSO Environmental Performance

Atmospheric Emissions

Atmospheric emissions arise from power generation, flaring and fugitive emissions. The Aoka Mizu FPSO holds a PPC Permit under the Offshore Combustion Installations [PPC] Regulations 2013 (as amended) for the combustion equipment on-board. Hurricane holds the UK ETS GHG permit. Hurricane is not required to prepare an Environmental Statement under OSPAR 2003/5 but do prepare an annual ESG report which will duplicate elements of the Aoka Mizu performance.

Table 4-3 provides the Production related fuel combustion and flaring emissions as reported into EEMS. This covers the period from the 1st January 2022 to 31st December 2022.

Table 4-3 Aoka Mizu Atmospheric Emissions (1st January 2022 to 31st December 2022)

Atmospheric Emissions	Unit	Fuel Gas	Diesel	Flaring	Totals
Fuel Use	Tonnes	11,124.81	2,353.08	21,862.34	N/A
CO ₂	Tonnes	29,580.92	7,529.86	57,411.38	94,522.16
NO _x	Tonnes	134.42	95.85	26.23	256.50
SO ₂	Tonnes	0.14	4.71	0.28	5.13
CO	Tonnes	66.75	24.77	146.48	238.00
CH ₄	Tonnes	10.23	0.29	218.62	229.14
VOC	Tonnes	0.40	3.14	218.62	222.16

Water and Oil in Water Discharges

Liquid associated with the oil produced by the Lancaster Field (oil and produced water) is processed through oil and water separation systems offshore with the cleaned produced water being discharged to sea. The Aoka Mizu FPSO holds a permit for produced water discharge under the OPPC Regulations.

All produced water from the installation was discharged overboard. This amounted to 411,400 cubic metres for 2022. The Aoka Mizu FPSO has two discharge routes for produced water and the installations drainage systems, as follows:

- The FPSO’s hydrocyclone units; and
- The FPSO’s slops tanks.

Table 4-4 provides the details for the produced water discharges as reported into the EEMS through the UK Energy Portal (only months with reported discharges are shown). This covers the period from the 1st January 2022 to 31st December 2022.

Table 4-4 Aoka Mizu Produced Water Discharge Data (1st January 2022 to 31st December 2022)

Month	Sample Point (Source)	Produced Water Volume (m3)	Monthly Average Oil in Water (mg/l)	Calculated Weight of Oil (tonnes)
January	Hydrocyclones	30,708.24	7.06	0.217
	Slops Tanks	761	18.61	0.014
February	Hydrocyclones	28,388.00	5.47	0.155
	Slops Tanks	-	-	-
March	Hydrocyclones	31,992.50	4.68	0.150
	Slops Tanks	1,723.00	10.27	0.018
April	Hydrocyclones	32,940.24	4.85	0.160
	Slops Tanks	-	-	-
May	Hydrocyclones	30,409.59	8.18	0.249
	Slops Tanks	4,370.60	10.08	0.044
June	Hydrocyclones	33,473.00	8.07	0.270
	Slops Tanks	726	11.00	0.008
July	Hydrocyclones	34,784.00	8.32	0.289
	Slops Tanks	672	7.57	0.005
August	Hydrocyclones	36,652.20	8.85	0.325
	Slops Tanks	833	7.71	0.006
September	Hydrocyclones	25,772.67	8.70	0.224
	Slops Tanks	1,110.00	6.67	0.007
October	Hydrocyclones	37,982.80	6.91	0.262
	Slops Tanks	770	6.80	0.005
November	Hydrocyclones	37,403.00	6.25	0.234
	Slops Tanks	505	12.75	0.006
December	Hydrocyclones	39,607.70	5.73	0.227
	Slops Tanks	-	-	-
Totals	All sources	411,591.54	-	2.875

The total mass of oil discharged with the produced water during 2022 was 2.874 tonnes.

Figure 4-4 and Figure 4-5 present the oil in water average concentration from the primary and secondary route, respectively. No breaches of the 20 mg/l monthly permit limit were observed for the period for either the primary or the secondary disposal route (Figure 4-4 & Figure 4-5).

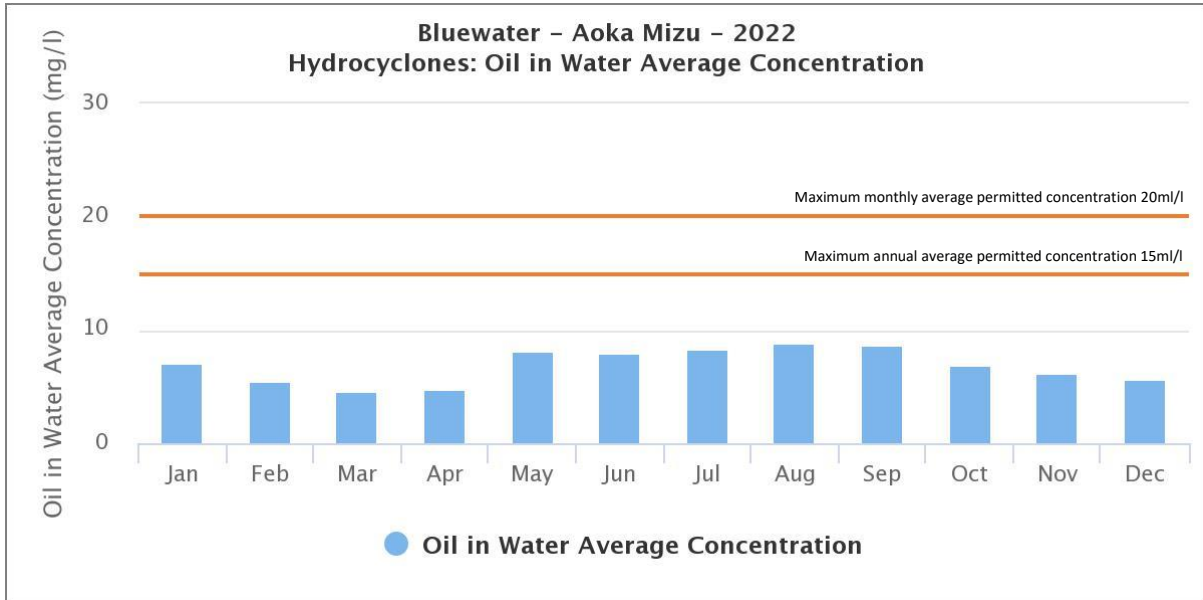


Figure 4-4 Hydrocyclones: Oil in Water Average Concentration

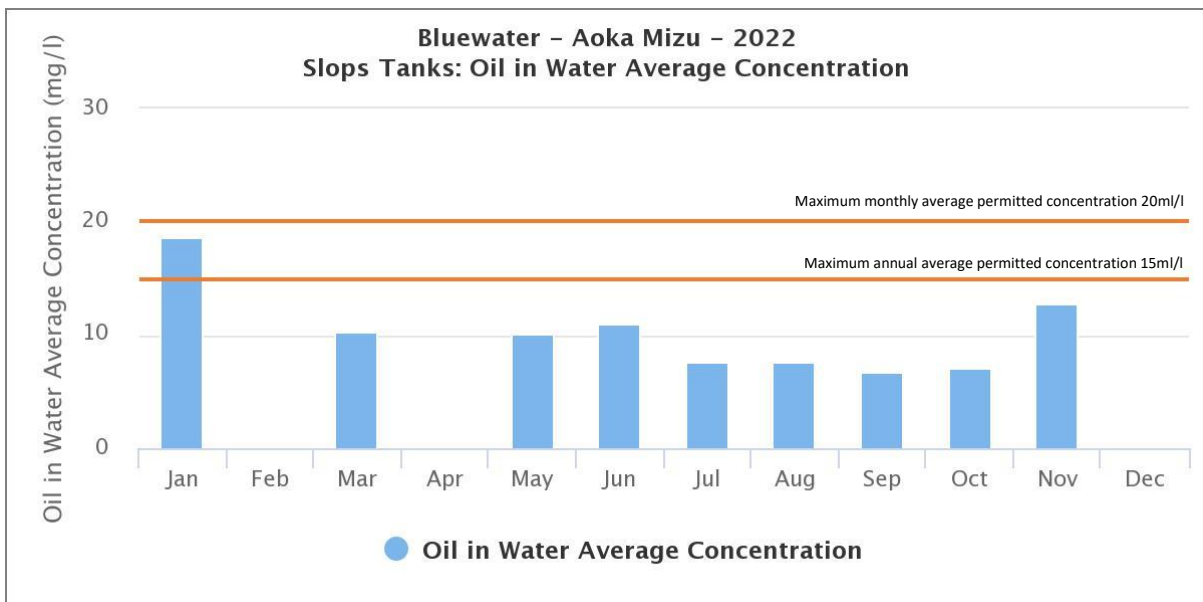


Figure 4-5 Slops Tanks: Oil in Water Average Concentration

Chemical Use and Discharge

Under the OCR 2002 (as amended), the Aoka Mizu FPSO holds a permit for the use and discharge of chemicals. During 2022, 80.6 tonnes of production chemical were used. Approximately 78% (62.8 tonnes) of the used chemicals were discharged to sea.

The Regulator has highlighted certain chemicals to be phased out by mean of substitution warning (SUB chemical warning). Two SUB chemicals EMBR18636A and RX 7025 were used during 2022 with a total use of 16.2 tonnes and 6.15 tonnes respectively. A detailed breakdown of each chemical’s tracked usage and discharge against the permitted quantities is presented in Figure 4-6 and Figure 4-7.

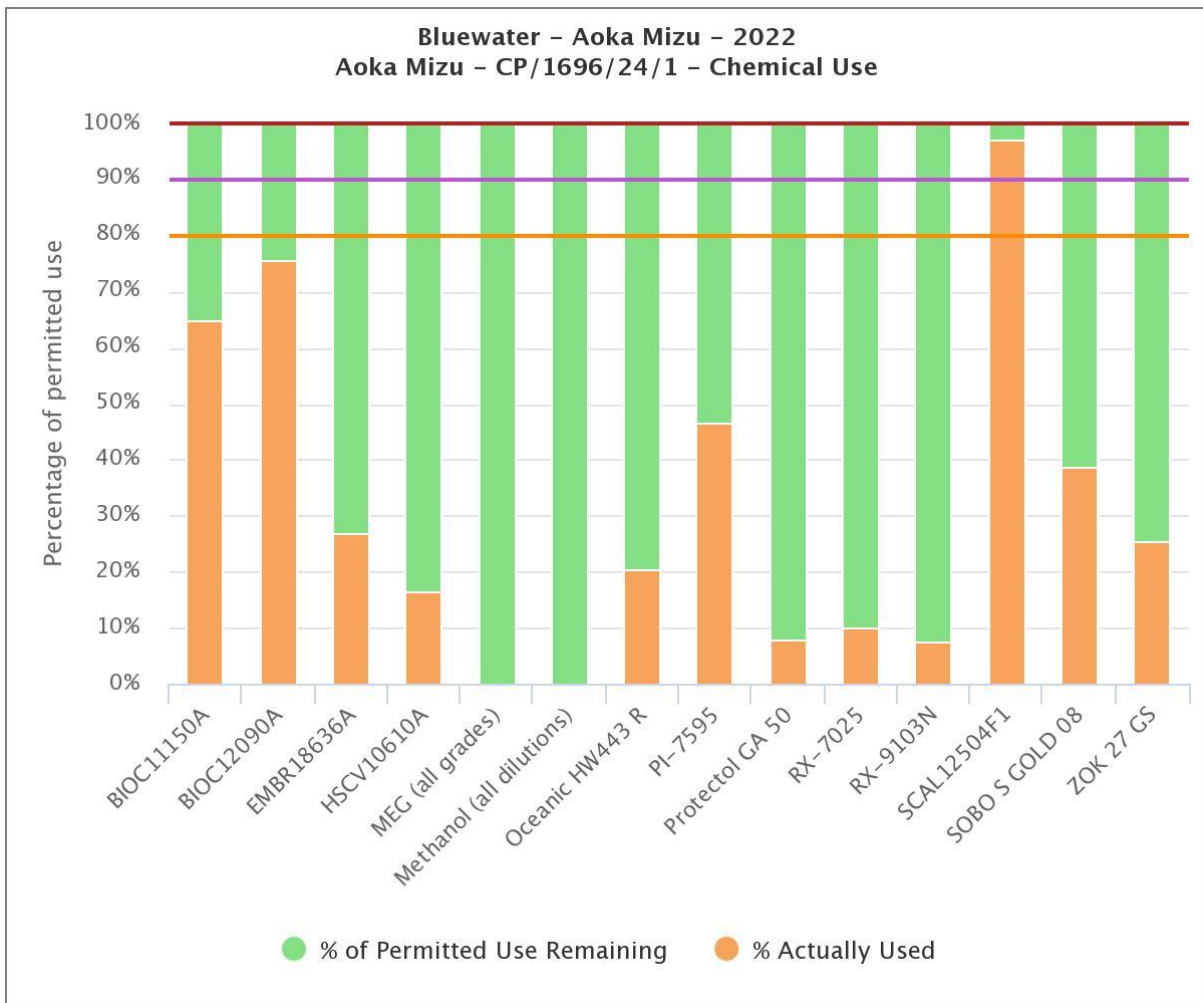


Figure 4-6 Aoka Mizu 2022 Chemical Use vs Permitted Quantities

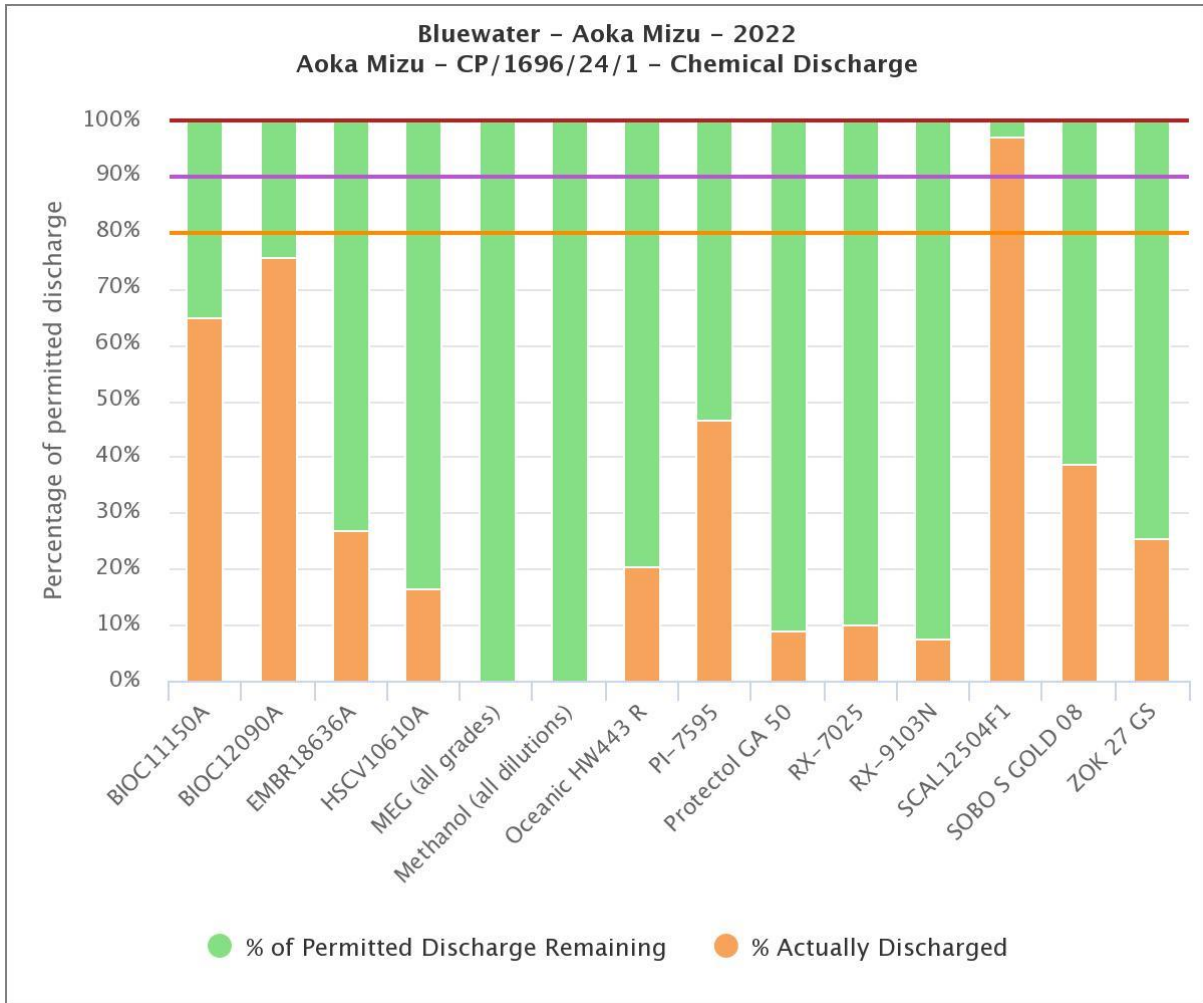


Figure 4-7 Aoka Mizu 2022 Chemical Discharge vs Permitted Quantities

Note that MEG and Methanol are PLONOR (Poses Little Or NO Risk) chemicals, therefore there are no permit limits for use

The chemicals used comprised of biocides, demulsifiers, water based hydraulic fluids, asphaltene inhibitors, wax inhibitors, corrosion inhibitors, scale inhibitors, hydrogen sulphide scavengers, hydrate inhibitors, antifoams and cleaning fluids utilised during routine production operations. The majority of these chemicals were Hazard Quotient [HQ] Gold or Category ‘E’ or ‘D’ chemicals (the ratio of Predicted Effect Concentration against No Effect Concentration), thus have the least potential impact on the marine environment.

Chemicals are subject to continual review and Bluewater will continue to seek suitable alternatives, where appropriate to minimise impact on the marine environment.

Waste Management

Management and segregation of wastes takes place on the installation prior to transfer to onshore facilities for recycling or disposal. Total waste arising during 2022 from the Aoka Mizu FPSO and the disposal routes are provided in Table 4-5.

Table 4-5 Aoka Mizu Waste Arising and Disposal Routes during 2022

Category	Reuse	Re-cycling	Waste to Energy	Incinerate	Landfill	Other	Total
	(t)	(t)	(t)	(t)	(t)	(t)	(t)
Group I – Special							
Chemicals/ Paints	-	0.625	-	-	-	7.765	8.390
Drums/ Containers	-	1.586	-	-	-	-	1.586
Oils	-	0.205	-	-	-	-	0.205
Miscellaneous Special Waste	-	5.945	1.670	-	0.150	2.007	9.772
Sludge's / Liquids / Washings	-	-	-	-	-	6.500	6.500
Sub-Total	-	8.361	1.670	-	0.150	16.272	26.453
Group II - General							
Chemicals/ Paints	-	-	-	-	-	-	-
Drums/ Containers	-	-	-	-	-	-	-
Scrap metal	-	11.800	-	-	-	-	-
Segregated Recyclables	-	35.729	18.190	-	-	-	53.919
General Waste	-	15.172	-	-	22.998	-	38.170
Sludge's / Liquids / Washings	-	-	-	-	-	-	-
Sub-Total	-	50.901	18.190	-	22.998	-	92.089
Group III - Other							
Asbestos	-	-	-	-	-	-	-
Radioactive Materials (exc NORM)	-	-	-	-	-	-	-
Clinical	-	-	-	0.250	-	-	0.250
Explosives	-	-	0.013	0.022	-	-	0.035
Sub-Total	-	-	0.013	0.272	-	-	0.285
Grand Total	-	71.062	19.873	0.272	23.148	16.272	118.827

Figure 4-8 shows that the Offshore Installation recycled 54% of the total waste produced. Waste disposed to landfill amounted to 18% of the waste produced, while Waste to Energy accounted to 15%. There was also approximately 16 tonnes of "Other" waste, mostly comprising of sludge, liquids, and paints equating to 12% of total waste (Table 4-5). With the exception of 250 kg of clinical waste and 22 kg of explosives waste no other Group III [Other Wastes] wastes were produced in 2022.

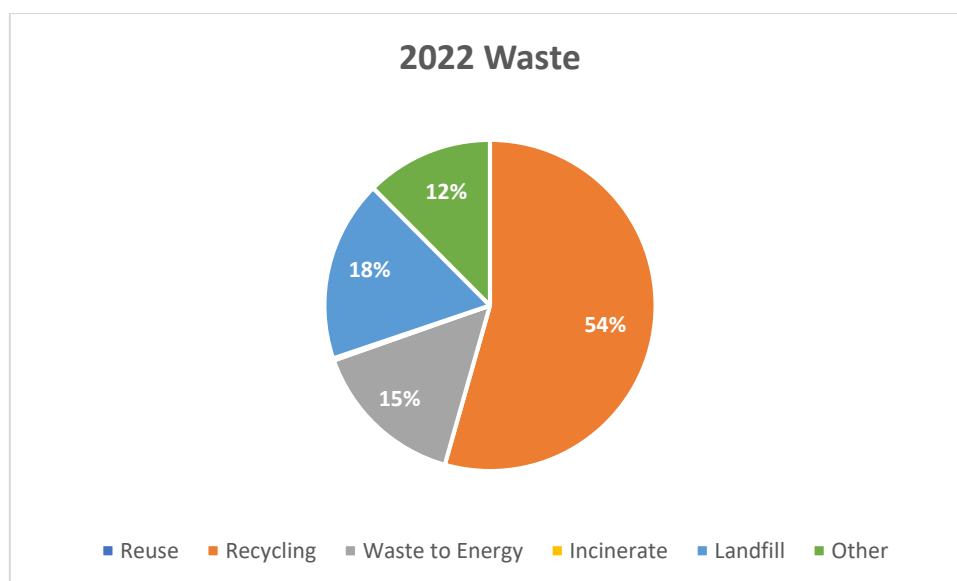


Figure 4-8 Aoka Mizu 2022 breakdown of generated waste

2023 Key Activities

The main offshore aims and objectives for the Aoka Mizu FPSO during 2023 are:

- ✓ Ongoing maintenance and implementation of the EMS, including
 - Maintenance of 14001:2015 Standard;
 - Environmental data monitoring & reporting schedules;
 - Environmental KPIs;
 - Environmental Aspects Registers and Controls; and
 - HSE Management System Interface documentation.
- ✓ Audit and review of Permits and Consents management and compliance associated with Environmental Management Systems and Processes;
- ✓ Increasing fuel gas use on the power generation turbines, providing high availability and reliability of power supply, thus reducing the volume of gas flared.
- ✓ Maintaining normal and steady production.
- ✓ Continued management of asset integrity and process safety to minimise the risk of spills; and
- ✓ Duty of Care audit of waste management processes and contractor.

5. INCIDENTS

Under UK legislation, any unplanned / unpermitted releases of oil and chemicals discharged to the marine environment are required to be reported to OPRED via the Petroleum Operations Notice No.1 [PON 1] reporting system. These, as well as other reportable incidents / operations notices that occurred during 2022 for the assets are detailed in Table 5-1 (3 in total).

Table 5-1 2022 reportable incidents

Date	Asset	Non-Conformance Type	Description
12 th September 2022	Hæwene Brim	OCR Non-Compliance	160 litres Transaqua discharged to sea via subsea HP hydraulics system outwith operational requirements of the Chemical Permit. NOTE: Shell UK Operates the subsea systems however use and discharge is recorded against the Bluewater Chemical Permit.
9 th October 2022	Hæwene Brim	Reportable Incident	Loss of 204.9kg R453A F-Gas from accommodation air conditioning unit. Enforcement Notice received from OPRED requiring Bluewater to 'ensure that all equipment containing F-Gas installed on the Haewene Brim FPSO is operated and maintained in such a manner as to prevent leakage of F-Gas, in compliance with Article 3(2) of EUR 517/2014.'
29 th November 2022	Hæwene Brim	PON 1	Diesel spill of < 1 litre. Spill to deck whilst changing diesel hose resulting in spill to sea via passing scupper.

6. APPENDICES

List of figures

Figure 2-1 The Hæwene Brim FPSO	4
Figure 2-2 The Aoka Mizu FPSO	5
Figure 3-1 Bluewater HSEQ Policy	7
Figure 3-2 Copy of ISO14001:2015 Certificate.....	8
Figure 3-3 High Level Structure of the CMS.....	9
Figure 4-1 Hæwene Brim 2022 Chemical Use vs Permitted Quantities	12
Figure 4-2 Hæwene Brim 2022 Chemical Discharge vs Permitted Quantities.....	13
Figure 4-3 Hæwene Brim 2022 breakdown of generated waste	15
Figure 4-4 Hydrocyclones: Oil in Water Average Concentration	18
Figure 4-5 Slops Tanks: Oil in Water Average Concentration	18
Figure 4-6 Aoka Mizu 2022 Chemical Use vs Permitted Quantities	19
Figure 4-7 Aoka Mizu 2022 Chemical Discharge vs Permitted Quantities.....	20
Figure 4-8 Aoka Mizu 2022 breakdown of generated waste.....	22

List of tables

Table 4-1 Hæwene Brim Atmospheric Emissions (1 st January 2022 to 31 st December 2022)	10
Table 4-2 Hæwene Brim Waste Arising and Disposal Routes during 2022	14
Table 4-3 Aoka Mizu Atmospheric Emissions (1 st January 2022 to 31 st December 2022)	16
Table 4-4 Aoka Mizu Produced Water Discharge Data (1 st January 2022 to 31 st December 2022)	17
Table 4-5 Aoka Mizu Waste Arising and Disposal Routes during 2022	21
Table 5-1 2022 reportable incidents.....	23

Abbreviations

CH₄	Methane
CMS	Corporate Management System
CNS	Central North Sea
CO	Carbon Monoxide
CO₂	Carbon Dioxide
EEMS	Environmental Emissions Monitoring System
EMS	Environmental Management System
FPSO	Floating Production Storage and Offloading
HQ	Hazard Quotient
HSE	Health Safety & Environmental
HSEQ	Health, Safety, Environmental and Quality
KPI	Key Performance Indicators
mg/l	Milligrams per Litre
NO_x	Nitrous Oxides
OCR	Offshore Chemical Regulations
OIW	Oil in Water
OPPC	Oil Pollution Prevention and Control
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OSPAR	Oslo Paris Convention for the Protection of the Marine Environment of the North-East Atlantic
PPC	Production Prevention and Control
PPCL	Pierce Production Company Limited
SEMS	Safety and Environmental Management System
SO_x	Sulphur Oxides
SUB	Chemicals Rated for Substitution
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
VOCs	Volatile Organic Compounds