



# PUBLIC ANNUAL ENVIRONMENTAL STATEMENT 2020

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1. INTRODUCTION	3
2. ENVIRONMENTAL STRATEGY	7
3. ENVIRONMENTAL OBJECTIVES	11
- 2020 OBJECTIVES	
- 2021 OBJECTIVES	
4. ENVIRONMENTAL PERFORMANCE	14
- ATMOSPHERIC EMISSIONS	
- CHEMICAL USE AND DISCHARGE	
- WASTE	
- OIL IN WATER	
- UNPLANNED RELEASES	
5. ENVIRONMENTAL CERTIFICATION	20
- ISO14001:2015	
- ISO50001:2018	

1

# INTRODUCTION

# 1

## WELCOME

Welcome to Neptune Energy's Public Annual Environmental Statement.

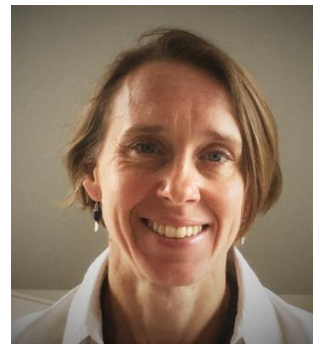
Neptune E&P UK Limited is committed to responsible and sustainable exploration and production operations in the UK North Sea. We are part of the wider Neptune Energy group and our main activities are focused on our flagship asset, Cygnus, which is located 150 kilometres off the coast of Lincolnshire. Cygnus is the largest gas basin discovery in the Southern North Sea for over 30 years and at plateau contributes 6% of UK gas production; enough gas to heat the equivalent of 1.5 million homes.

We are focused on energy efficient operations and the transition to a lower carbon future. Reducing emissions, water use and waste are three of the ways we seek to minimise our impact on the environment. We comply with environmental regulations in force both internationally and in the individual regions in which we operate, and are structured in such a way that we can anticipate changes. The company is committed to ongoing improvements to achieve best environmental practice.

Our environmental performance data for 2020 is discussed within this report.

Transparency and open communication are key elements of our Environmental Strategy which underpins our Environment Policy. The strategy has been developed to help ensure the company operates in a safe, sustainable and responsible manner, and defines our top 10 environmental issues.

As a company, we are actively pursuing opportunities created by the energy transition, while working to reduce our operational emissions. We support the goals of the Paris Agreement and the net zero emission targets set by the UK government and the European Commission. Achieving these targets will require collective action from industry, government, consumers and from everyone at Neptune Energy.



Alexandra Thomas  
Managing Director  
Neptune E&P UK Limited

*Neptune Energy's goal is to conduct our business activities with no harm to people, no damage to the environment and no accidents, today and in the future.*



# OVERVIEW OF UK OFFSHORE OPERATIONS IN 2020

# 1

Our production operations are, like the rest of our business, driven by a commitment to quality - above all to health, safety and the environment - but also to performance, expertise and technology. In 2020, we had one operated field in production and one field that experienced the first phase of commissioning (Seagull).

## Cygnus

Cygnus, the UK's largest single producing gas field, contributes 6% of UK gas production; enough gas to heat the equivalent of 1.5 million homes. Cygnus Alpha began producing in December 2016 and in August 2017 Cygnus Bravo produced its first gas.

Cygnus is a gas field located in blocks 44/11a and 44/12a of the Southern North Sea. Some minor environmental challenges (see 2019 Public Annual Environmental Statement release) were experienced, but first gas was achieved successfully and in a timely manner.

In addition to the successful and safe first gas delivery at Bravo, the Cygnus team carried out a debottlenecking scope of works on the Cygnus facilities which increased the maximum rate of production to 300 million cubic feet per day.

Further works previously carried out at the Bacton Gas Terminal allow production capacity at 320 million cubic feet per day.

We started a modification project to commission compressor turbines in the second half of 2019. Due to the excellent performance of the existing reservoir and reserves, we have now pushed this back to the second half of 2021. Compression will help to ensure the best rate of production from the Cygnus field.



# 1

# OVERVIEW OF UK OFFSHORE OPERATIONS IN 2020 CONTINUED

## Seagull

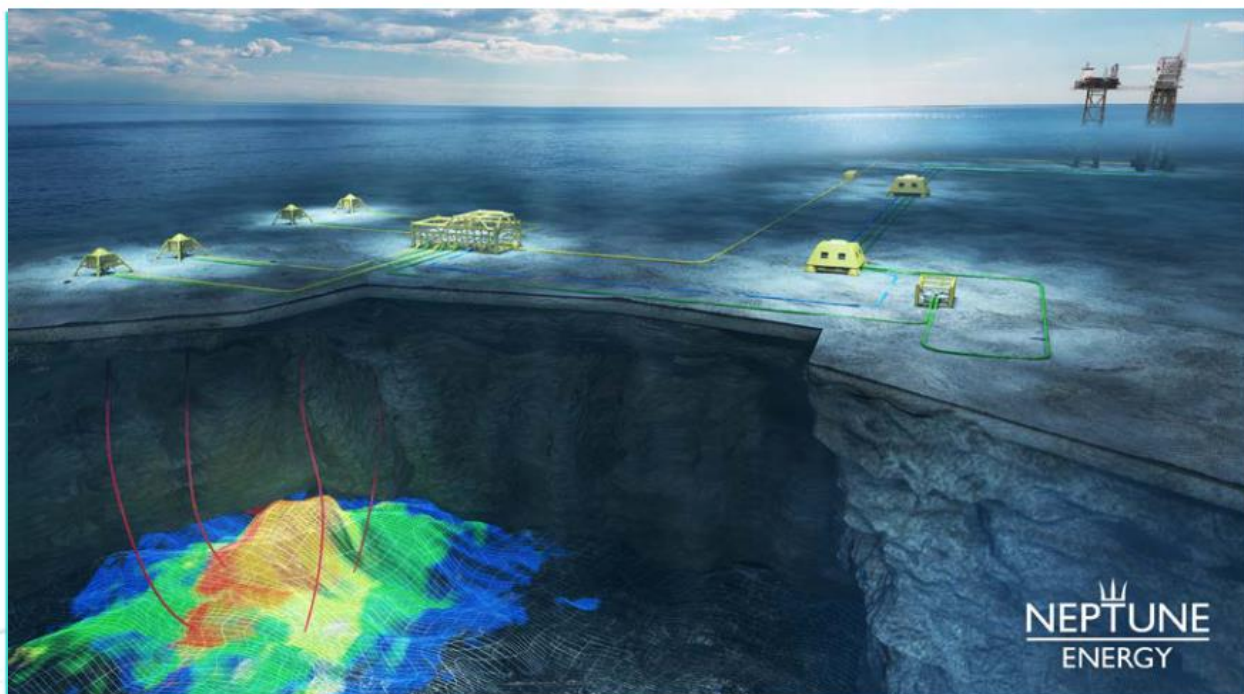
The Seagull field will be developed with up to four subsea wells drilled from a new four-slot manifold 17 km south of the BP-operated ETAP Central Processing Facility (CPF). Production will be evacuated via a new 5 km subsea pipeline, which will tie the Seagull manifold to the existing Heron pipeline system via a newly installed tie-in skid at the Egret manifold. Production will then utilise the Heron pipeline system and riser to evacuate fluids to the ETAP CPF. The planned development will require installation of a new 17 km control umbilical direct from ETAP.

From the ETAP CPF Seagull gas will be exported via the CATS pipeline system to shore at the CATS Processing Terminal. Seagull oil will be exported to shore through the GAEL and FPS pipeline systems to the Kinneil Terminal onshore.

Wash water will be provided to the Seagull drill centre via the existing Heron wash water riser and flowline, and a newly installed 5 km long wash water line between the existing Egret manifold and the Seagull manifold. A pre-investment will be made to facilitate future connectivity between the gas lift service and the manifold.

New infrastructure requirements have been minimised by reuse of the Egret manifold tie-in point on the Heron cluster pipeline system and wash water line. Topsides modifications at ETAP are minimised by reuse of the Heron field test separator and existing Heron risers for production and gas lift service.

The field is projected to hold 19.0 mmbœ net 2P reserves. Installation of the pipeline was carried out in 2020 along with further works at ETAP. Drilling has begun in 2021, with the remaining umbilical and tie-ins also scheduled for completion.





2 /

ENVIRONMENTAL  
STRATEGY

Neptune Energy's Environmental Strategy underpins the Environment Policy and sets the environmental commitment for the company. The strategy has been developed to help the company operate in a safe, sustainable and responsible manner. The strategy defines our top 10 environmental issues. These were identified through a rigorous materiality process based on their importance to both our internal and external stakeholders, and are aligned with the IPIECA sustainability reporting guidance.

Our Environmental Policy can be reviewed on the following page.

## THE 10 TOPICS ARE:



Climate change and energy transition



CO<sub>2</sub>e emissions



Energy use



Other air emissions



Spills



Waste



Discharges to water



Water use



Biodiversity



Decommissioning



# ENVIRONMENTAL STRATEGY

# 2

ENVIRONMENTAL POLICY

## ENVIRONMENTAL POLICY



### Our commitment

Environmental excellence is an integral part of our journey of being a leading international independent E&P company. Neptune Energy is committed to minimising the impact of our operations on the environment as set out by this policy. Our goal is to empower our employees and contractors to achieve environmentally responsible operations, including the authority and responsibility to stop work for a situation regarded as potentially harmful to the environment.

Our impact on the environment is one of the operational matters discussed regularly by everybody as part of health, safety and environment (HSE).

We will ensure that the necessary resources are provided to fully support this policy and will ensure that it is subject to audit and review as part of the company's Management System.

Neptune Energy relies on the commitment and responsibility of everyone associated with our business to achieve environmental excellence.

### Our environmental management

Our environmental strategy prioritises ten topics. These were defined through a robust process that included direct engagement with our key stakeholders, including employees, investors, industry bodies and NGOs.

For the **ten environmental topics** below, we consider regulatory requirements as a minimum. We are committed to monitoring the impact of our activities and mitigating their impacts on the environment and will use Best Available Techniques (BAT) in accordance with industry practices. For some, we have further ambitions and will apply our own, more stringent, standards.

### Together, we will:

1. Conduct our operations with minimal impact on the environment, focus on improving energy efficiency and reduce our emissions, recognising **climate change** is a global challenge.
2. Ensure zero operational **spills**.
3. Reduce our **CO2e emissions** and achieve an ambitious long-term intensity measure.
4. Improve our **energy** efficiency performance through ambitious target setting.
5. Reduce our **other air emissions**, e.g. NOx, SOx and nmVOCs.
6. Reduce our volume of **waste**. Our first priority is waste prevention, then recycle and reuse.
7. Monitor and reduce hazardous contaminants in **discharges to water**.
8. Manage impact of **water use** in water scarce areas.
9. Minimise our impact on **biodiversity**.
10. Achieve environmentally responsible **decommissioning**.

All personnel working on behalf of Neptune Energy must comply with this policy and be proactive in the pursuit of environmental excellence.

James L. House  
Chief Executive Officer Neptune Energy



# ENVIRONMENTAL STRATEGY



We assess and minimise impact on the environment from our activities through an Integrated Management System (IMS) certified against ISO 14001 and ISO 50001 and underpinned by the same commitment to quality that we bring to all areas of our performance.

Neptune E&P UK Limited has developed an effective approach for the management of environmental issues. The company has developed Environmental Cases (E-cases) for our offshore operations and onshore assets.

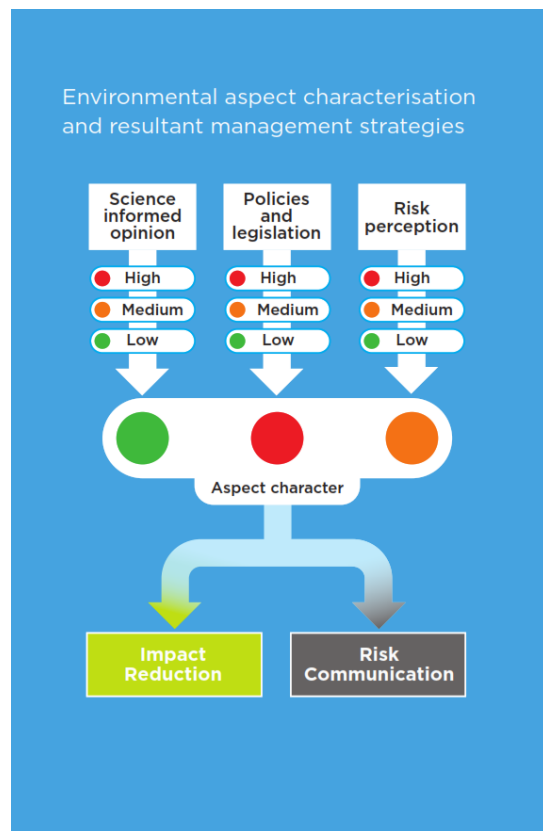
The E-cases are central to the environmental aspects of the IMS and are designed to bridge the gap between operational objectives and stakeholder expectations. They provide an audit trail between high level objectives and individual tasks and responsibilities.

### Benefit of E-Cases

*E-cases offer a structured approach to better alignment in the management of environmental issues.*

*They also offer a path towards unlocking the benefits of goal setting regulation and away from prescriptive regulation.*

*Our side-by-side assessments provide an interpretation of different environmental expectations in society. It looks to science for an objective assessment of impacts while being conscious of its limitations. On the more subjective side it looks at the expectations of stakeholders while considering their motivations and influence. Finally, it reviews legislation and company standards.*



## Embedding environmental risk management into our operations



3

ENVIRONMENTAL  
OBJECTIVES

# 3

## ENVIRONMENTAL OBJECTIVES

### Environmental Objectives 2020 and Progress

1. **Establish new suite of environmental standards to support Neptune's environmental strategy**

New Environmental Standards finalised and issued. Progress- objective achieved and closed.

2. **Develop net zero and energy transition implementation plan**

New net zero plan formulated and already being followed.

3. **Implement enhanced environmental KPI reporting with particular focus on carbon intensity performance**

Enhanced KPI reporting via powerbi dashboard, additional corporate reporting requirements and regular updates to management provided on a monthly basis

4. **Conduct further energy survey of Aberdeen office to identify potential improvements**

Objective deferred due to COVID for safety purposes. This was agreed with management and external ISO auditors.



# 3

## ENVIRONMENTAL OBJECTIVES

### Environmental Objectives 2021

Neptune E&P UK Limited have a number of objectives and methods to improve the environmental performance and/or data capture. The list below is not an exhaustive but confirms those most relevant and in line with the purpose of this document:

- **Support the electrification of Cygnus high level study through to completion and issue findings to all relevant personnel.**
- **Carry out a gap analysis against the new OGA Stewardship 11 expectations to ensure compliance.**
- **Support and facilitate the new enhanced methane workscope at the Cygnus asset - this includes delivery/completion of the methane drone/fixed wing survey, investigating new methodologies & measuring techniques and enhanced OGMP 2.0 reporting.**





4

**ENVIRONMENTAL  
PERFORMANCE  
2020**

# 4

# ENVIRONMENTAL PERFORMANCE 2020

## Atmospheric Emissions

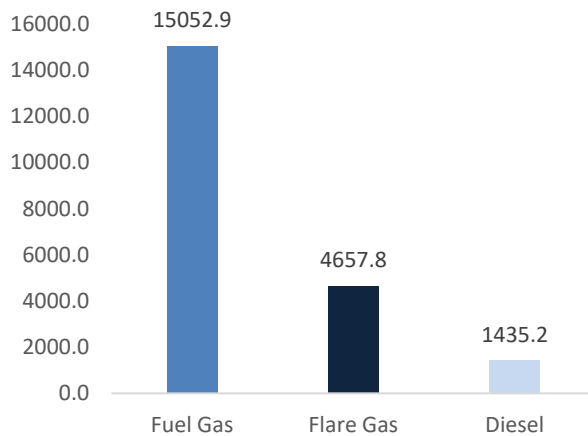
Atmospheric emissions occur in our operations mainly as a result of the combustion of diesel fuel and fuel gas to generate power and through flaring. Emissions in the North Sea are controlled by UK, European and international regulations.

We report greenhouse gas emissions on a CO<sub>2</sub> equivalent basis, including CO<sub>2</sub> and CH<sub>4</sub>, as well as other air emissions including the oxides of nitrogen (NOx) and sulphur (SOx).

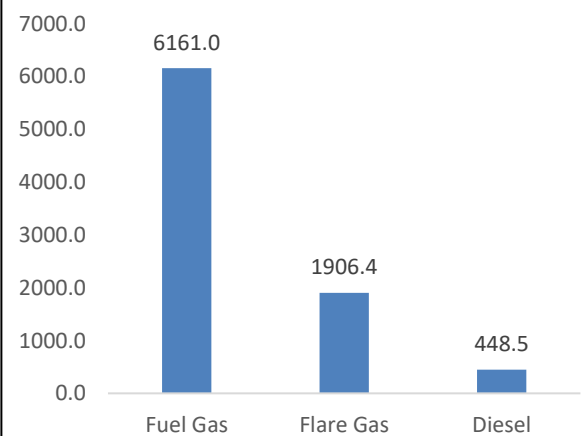
Our total greenhouse gas emissions for our Cygnus operations was approximately 21,415 tonnes of CO<sub>2</sub>.

To drive improvements in the energy efficiency of our operations, we are targeting a carbon intensity of 6kg CO<sub>2</sub>/boe for our managed production across the entire portfolio by 2030.

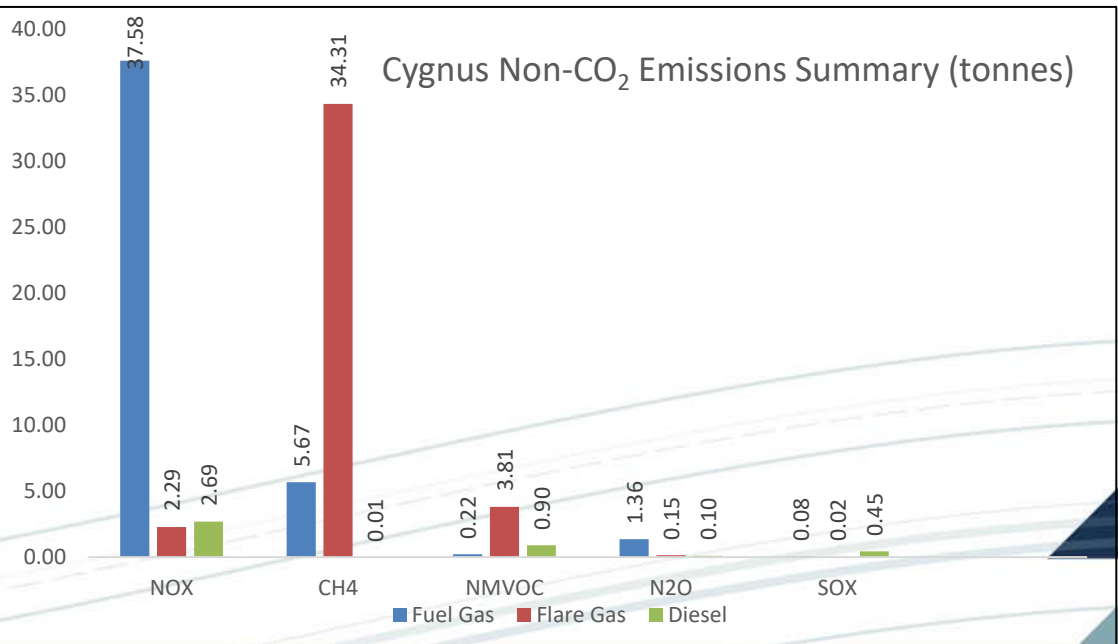
Cygnus CO<sub>2</sub> Emissions (tonnes)- Fuel, Flare and Diesel



Cygnus Fuel Gas, Flare Gas and Diesel Use (tonnes)



Cygnus Non-CO<sub>2</sub> Emissions Summary (tonnes)



ATMOSPHERIC EMISSIONS

# 4

# ENVIRONMENTAL PERFORMANCE 2020

## Chemical Usage and Discharge

The use of chemicals in the offshore industry is an essential part of any production activity and the subsequent processes involved in the production of hydrocarbons from an installation, including drilling mud chemicals, corrosion inhibitors, scale inhibitors, biocides, demulsifiers, antifoams and detergents.

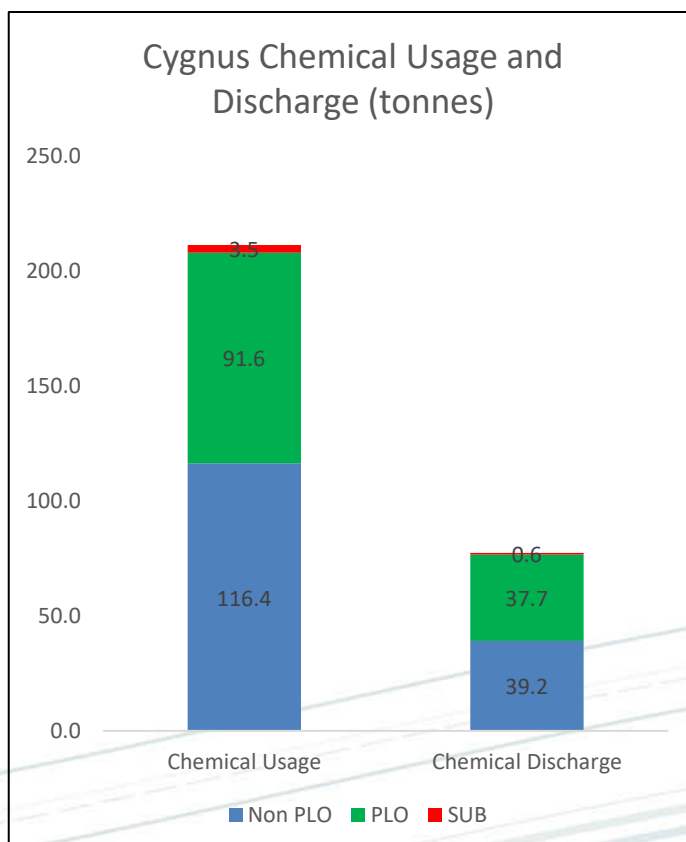
Due to the hazards associated with the use of chemicals offshore to the marine environment, any activity within the North Sea is controlled and regulated using the OSPAR requirements.

These requirements, implemented in the UK through the Offshore Chemicals Regulations 2002, require operators such as Neptune E&P UK Limited to obtain a chemical permit from the Department of Business, Energy and Industrial Strategy (BEIS) in the application and discharge of any chemical used offshore.

As stated in these regulations, Neptune E&P UK Limited may only use chemicals which have been registered by the Centre for Environment, Fisheries & Aquaculture Science (Cefas) and continues to work to manage the risks posed to the environment from chemical use.

This has been achieved by actively aiming to use chemicals which are considered to pose little or no risk to the environment (PLONOR) where technically possible and limiting the amount of discharge to the marine environment.

Below you can observe the overall chemical usage and discharge volumes in tonnes, in addition to the proportion of productions that are PLONOR or possess a SUBSTITUTION warning.





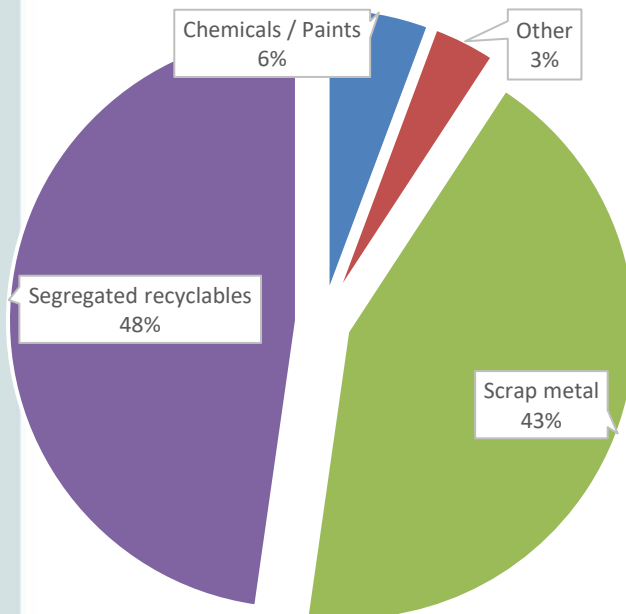
# 4

# ENVIRONMENTAL PERFORMANCE 2020

## Waste

Many aspects of offshore activities in the oil and gas industry generate operational waste and can provide a significant environmental challenge to operators in its safe disposal. As per statutory regulations, any produced waste must be categorised and should be managed accordingly using a waste management system.

This system ensures all waste is monitored and any hazardous operational waste produced is stored on the installation and shipped ashore for safe disposal. The graphs show the operational waste produced in tonnes during production operations in 2020.



## Total Waste Types

Overall, Cygnus asset produced 46.3 tonnes of waste in 2020.

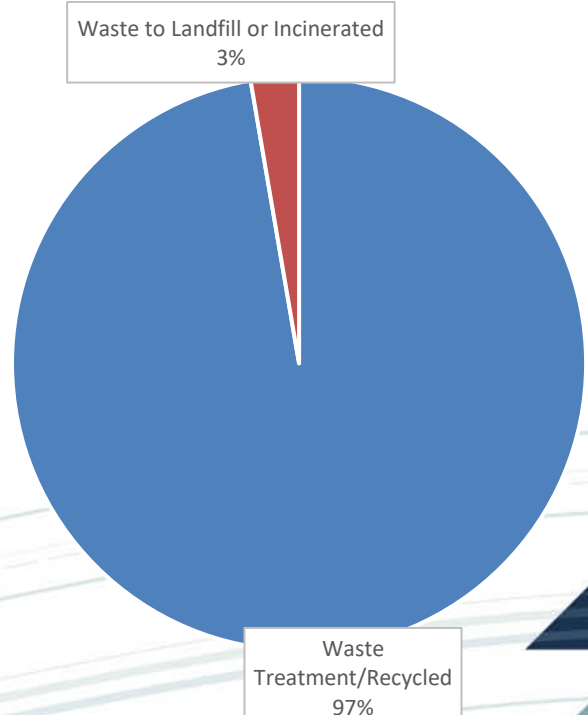
A breakdown can be viewed in the pie chart on the left.

*Other* includes a mix of waste types with very minimal contributions that have been added together. The waste types include sludges/liquids/tank washings, general waste, oils and clinical waste types.

## Fate of Wastes

Of the 46.3 tonnes of waste produced during 2020, 97% of the waste was either recycled, treated or recovered in some form.

3% of waste was either incinerated or sent to landfill.



# 4

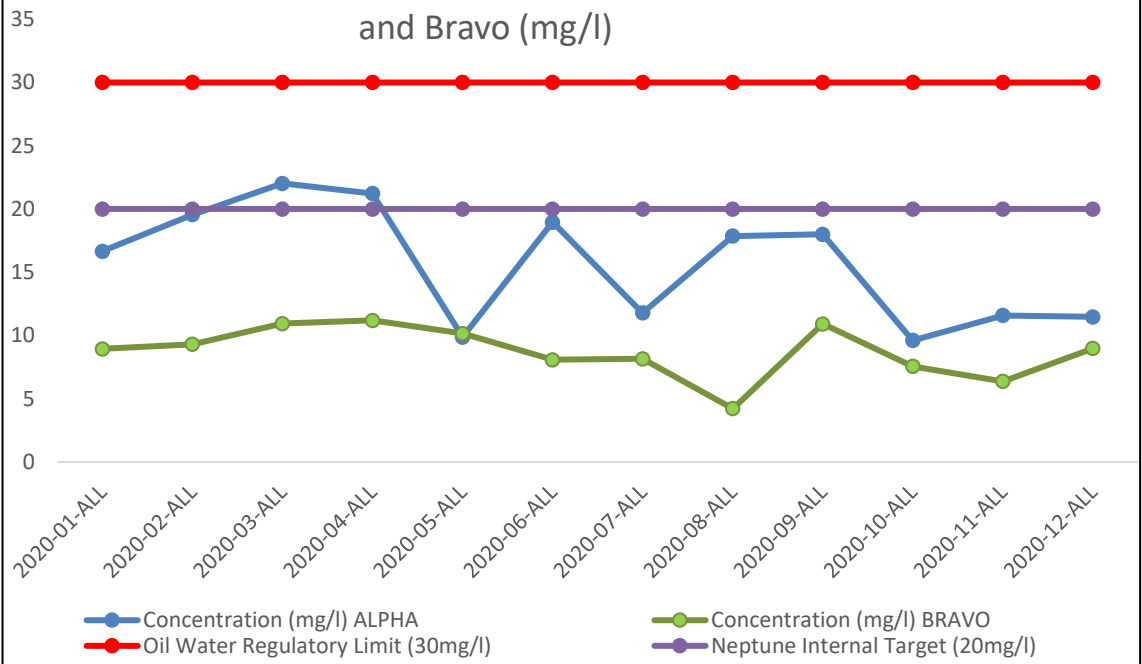
# ENVIRONMENTAL PERFORMANCE 2020

## Oil in Water (OIW)

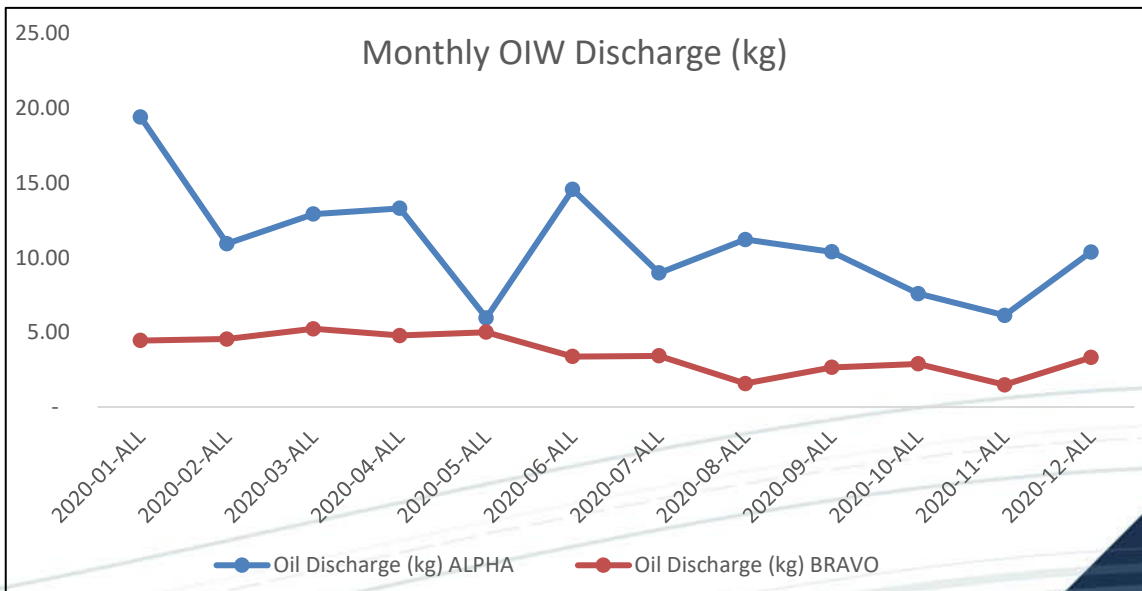
As part of the Cygnus gas process (specifically dehydration), produced water from the reservoir is separated and eventually discharged overboard. The produced water contains small amounts of oil in water (OIW).

Both Cygnus Alpha and Cygnus Bravo have produced water overboard streams. Both average monthly concentrations of OIW and overall discharge of oil performance figures are detailed in the graph below. Compliance was constant throughout the year.

Average Monthly OIW Concentrations for Cygnus Alpha and Bravo (mg/l)



Monthly OIW Discharge (kg)



OIL IN WATER

# 4

## ENVIRONMENTAL PERFORMANCE 2020

### Unplanned Releases

Throughout 2020, Cygnus only experienced one unplanned release event to sea.

Approximately 300kg of Castrol Transaqua HT2 (a water based hydraulic fluid) was discharged following a failure of a subsea hydraulically controlled line.

The release was instantaneous and Neptune mobilised a vessel within 10 days to repair.

UNPLANNED RELEASES



5

ENVIRONMENTAL  
CERTIFICATION

DNV·GL

# MANAGEMENT SYSTEM CERTIFICATE

Certificate No:  
20302-2008-AE-GBR-UKAS

Initial certification date:  
14 September 2009

Valid:  
06 August 2018 - 06 May 2021

This is to certify that the management system of

## Neptune E&P UK Ltd

16 North Esplanade West, Aberdeen, AB11 5RJ, United Kingdom

### Cygnus Alpha and Bravo Offshore Installations

Block 44/11 and 44/12, UKCS, United Kingdom

have been found to conform to the Environmental Management System standard:

## ISO 14001:2015

This certificate is valid for the following scope:

**The management of significant environmental aspects associated with exploration and production of oil and gas.**

Place and date:  
London, 21 August 2018



For the issuing office:  
DNV GL - Business Assurance  
4th Floor, Vivo Building, 30 Stamford  
Street, London, SE1 9LQ, United Kingdom

Doug Milne  
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV GL Business Assurance UK Limited, 4th Floor, Vivo Building, 30 Stamford Street, London, SE1 9LQ, United Kingdom.  
TEL: +44(0) 203 810 4000. [www.dnvgl.co.uk](http://www.dnvgl.co.uk)

**NOTE:** Neptune are aware of expiry date with this Certificate and wish to emphasise that we remain certified to ISO14001:2015 standards. DNV have issued a formal letter to extend the ISO14001 certificate following delays caused by the COVID19 situation. This formal letter is available upon request.

DNV·GL

# MANAGEMENT SYSTEM CERTIFICATE

Certificate No:  
10000309442-MS-C-RvA-GBR

Initial certification date:  
12 November 2019

Valid:  
12 November 2019 - 12 November 2022

This is to certify that the management system of

## Neptune E&P UK Limited

16 North Esplanade West, Aberdeen, AB11 5RJ, United Kingdom  
and the sites as mentioned in the appendix accompanying this certificate


has been found to conform to the Energy Management System standard:  
**ISO 50001:2018**

This certificate is valid for the following scope:  
**The exploration and production of oil and gas**

Place and date:  
Barendrecht, 14 November 2019



For the issuing office:  
DNV GL - Business Assurance  
Zwoiseweg 1, 2994 LB Barendrecht,  
Netherlands

  
Eric Koek  
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.  
ACCREDITED UNIT: DNV GL Business Assurance B.V., Zwoiseweg 1, 2994 LB, Barendrecht, Netherlands. TEL: +31(0)102022689. www.dnvgl.com/assurance