CNOOC Petroleum Europe Limited

Environmental Statement 2020

Foreword

Energy for All

It is my pleasure to present to you CNOOC Petroleum Europe Limited's (CNOOC) 2020 Environmental Statement.

We are committed to minimising our impact on the environment and recognise that protecting the environment is integral to the company's sustainable growth.

Included in this Environmental Statement is:

- A description of the facilities operated by CNOOC and the activities carried out in 2020
- A summary of our Environmental Management System
- Environmental emissions and discharges figures from our 2020 operations
- CNOOC's 2020 objectives and their progress
- A brief overview of our key 2021 objectives

Despite the challenges faced due to the global pandemic, 2020 has been a busy year with a continued emphasis on developing initiatives that focus on improving our impact on the environment:

- A gap analysis against the requirements of the Energy Management System Standard ISO 50001 was completed.
- Standards and plans for the management of flaring and venting were produced.
- Process and procedure reviews completed in preparation for the transition to UK Emissions Trading Scheme (UK ETS).
- ASCO's Zero Waste to Landfill trial commenced.
- Asset HSE KPI scorecards developed and updated to include emissions intensity targets, which will be used to create asset-based emissions improvement plans.
- Awareness campaigns based on permit compliance requirements were rolled out in Q2.
- Successful review, update and production of 51 environmental documents/procedures.
- Implementation of improvements to drilling operations assurance processes.

These achievements were only possible due to the hard work, commitment and engagement of our workforce at CNOOC, who consistently strive to Be the Best and Win Together.

2020 has been a successful year with many milestones being achieved:

- The Buzzard Phase II (BPII) project celebrated reaching 2 million hours without a Lost Time Injury (LTI).
- Golden Eagle celebrated two years PON1 free and 6 years LTI free (its full operational life).
- The Golden Eagle infill campaign's first well, G16, was safely brought online in November. The well was delivered on time and under budget.
- A significant subsea inspection programme at the Scott, Telford and Rochelle (STaR) asset was carried out in September 2020, during 46,000 hours of incident free activity on the vessel.
- The Glengorm drilling appraisal campaign commenced with the Glengorm South appraisal well spud in late November.

CNOOC strives to be a leading force for best in class energy development and recognises the importance of caring for the environment. Looking forward into 2021, CNOOC is committed to progressing towards our Net Zero ambitions, further reducing the number and volume of spills, and achieving challenging environmental targets in key performance indicators.

I hope that you will find this Environmental Statement both informative and indicative of the continued commitment that CNOOC has to minimising our footprint on the UK Continental Shelf.

Jiang Qing
Managing Director, UK

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Introduction

Energy for All

CNOOC Petroleum Europe Limited, which is referred to as 'CNOOC' in this document, is a wholly-owned subsidiary of CNOOC Limited.

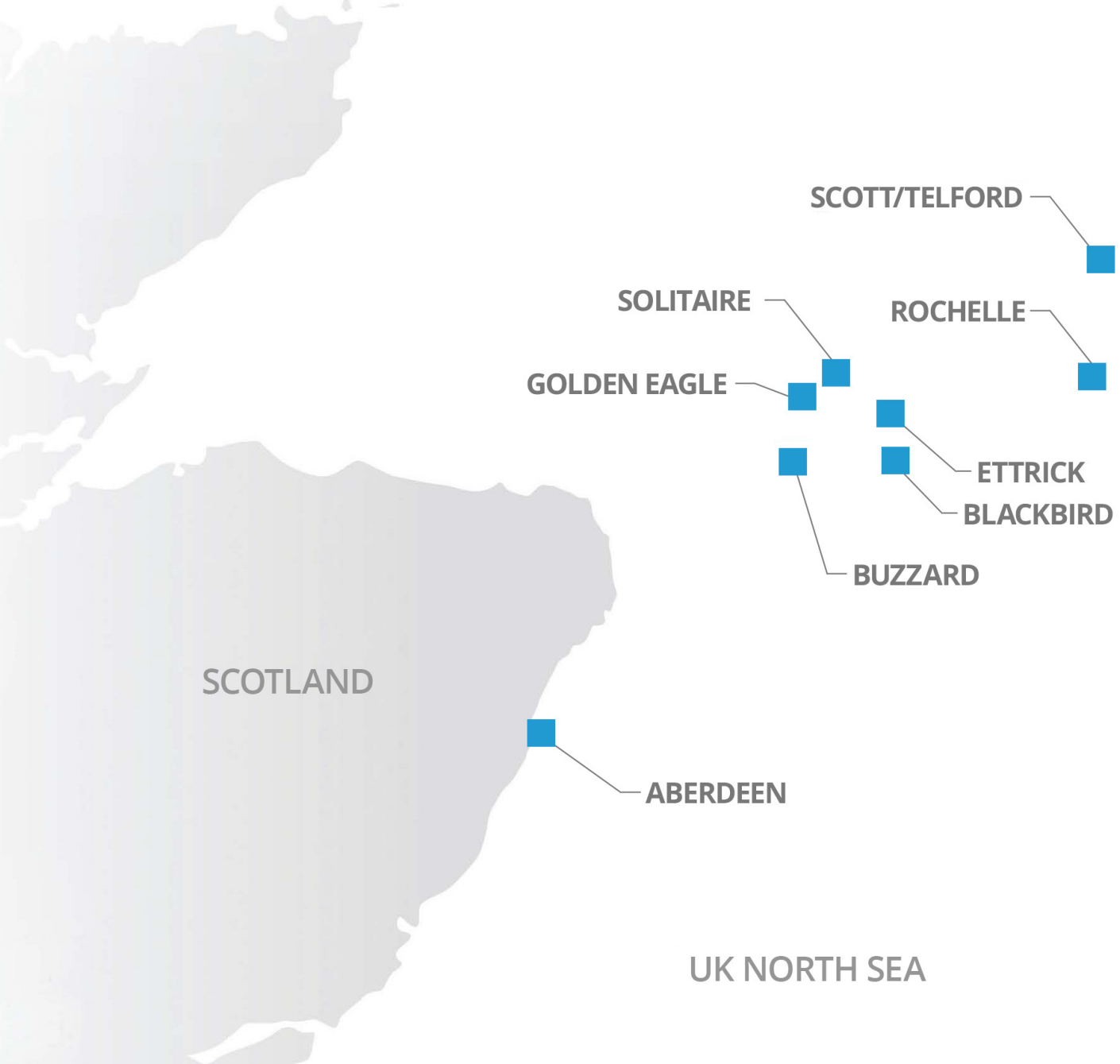
CNOOC Limited (together with its subsidiaries, referred to in this document as the "Group" or "we"), incorporated in the Hong Kong Special Administration Region in August 1999, was listed on the New York Stock Exchange (code: CEO) and The Stock Exchange of Hong Kong Limited (code: 00883) on 27 and 28 February 2001, respectively. CNOOC Limited was admitted as a constituent stock of the Hang Seng Index in July 2001 and its American Depositary Receipts ("ADRs") were listed on the Toronto Stock Exchange (code: CNU) on 18 September 2013.

The Group is the largest producer of offshore crude oil and natural gas in China and one of the largest independent oil and gas exploration and production companies in the world. The Group mainly engages in exploration, development, production and sale of crude oil and natural gas.

The Group's core operation areas are Bohai, the Western South China Sea, the Eastern South China Sea and the East China Sea. The Group has oil and gas assets in Asia, Africa, North America, South America, Oceania and Europe.

Throughout this statement CNOOC refers to UK operations only.

CNOOC is one of the largest producers of oil and gas in the UK North Sea, contributing more than 25% of the UK's oil production, and 10% of the country's energy needs. CNOOC is the operator of three producing assets, including Buzzard, Golden Eagle and Scott and is actively exploring in the Central North Sea and West of Shetland. Our UK operations also support exploration activity in Africa.



Environmental Management System

CNOOC has implemented an Environmental Management System (EMS) aligned with requirements of ISO 14001:2015. The EMS is independently verified in line with the requirements of the Oslo/Paris Convention (OSPAR) Recommendation 2003/5, to promote the use and implementation of Environmental Management Systems on the UKCS.

An OSPAR verification statement with zero comments was reported to the Department for Business, Energy and Industrial Strategy (BEIS) in May 2019. The next EMS OSPAR verification is scheduled for Q2 2021.

Environment Representatives (E-REP)

CNOOC E-Reps continue to provide valuable support in offshore workforce engagement during various activities and initiatives, including;

- Roll out of procedures and environmental initiatives
- Reduction of waste, including the 'Zero Waste to Landfill' Initiative
- Spill reduction, Oil Pollution Emergency Plans (OPEP) awareness drills and environmental hazard identification programs
- Area inspections
- Supporting environmental audits and inspections
- Identification and trialling of new environmental training options

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Health, Safety, Environment & Social Responsibility

The HSE&SR Policy shown below, details the beliefs, values and principles governing the management of HSE&SR within CNOOC.

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Our commitment to

Health, Environment, Safety & Social Responsibility

This Policy Commitment underpins the requirements outlined in the Corporate Policy Framework and applies to all activities carried out by and under the control of CNOOC Petroleum Europe Limited, its branches and subsidiaries (CPEL).

Within CPEL, the Board of Directors owns and takes responsibility for our overall HSE&SR performance working with our executive leadership and functional teams. We believe that management and staff commitment to HSE&SR is essential to ensuring a healthy, safe and environmentally acceptable operating environment.

We see our people are our most important asset and we will not compromise our HSE&SR standards to achieve other corporate goals, in so far as it is reasonably practicable. As such, we value the experience, professionalism and integrity of our workforce, and the commitment, leadership and accountability of all personnel for our HSE&SR performance.

We integrate HSE&SR planning and management into our day-to-day activities, defining individual responsibilities, authority and accountability. By providing adequate control of HS&E risks arising from our work activities, we strive to prevent accidents, injuries and cases of work-related ill health, damage to equipment and the environment.

We meet all applicable regulatory requirements, as well as other compliance requirements to which we subscribe, and strive to deliver continuous improvement in our HSE&SR performance.

Occupational Health and Personal Safety

CPEL consult with our people on matters affecting their health and safety working conditions, plant and equipment, and provide appropriate HSE&SR information, instruction, training and supervision to employees and contractors.

We strive to optimise the safety of all our worksites by contracting those contractors who can demonstrate that they have suitable HS&E performance and management systems in place. In addition, we ensure that emergency response capability is in place and periodically test for all our operations and facilities.

We ensure all workers are competent to carry out their tasks, in so far as they can impact on the health and safety of themselves and those around them, or the environment.

CPEL maintains safe and healthy working conditions, by providing and maintaining safe plant and equipment, and ensuring that the use and handling of substances is carried out safely.

Process Safety

CPEL applies the principles of Process Safety Management to maintain the integrity of our operations.

We ensure that risks associated with major accident hazards, arising out of our offshore operations, are identified and controlled.

Environmental Management

CPEL is committed to integrating responsible environmental management into all aspects of its operations.

Our EMS provides the framework for setting and reviewing environmental targets and objectives, and the process by which the EMS is documented, implemented and maintained. Our actions will support the prevention of pollution and the reduction of waste generation.

Energy and Emissions Management

CPEL measures, monitors and controls our energy consuming and emissions producing practices with the aim of creating a net reduction in greenhouse gas emissions in contribution to a lower carbon economy.

Our Net Zero business plan aligns with CNOOCs principles of green development to enable a low carbon energy future and achieve emissions neutrality by 2050.

Social Responsibility

We are committed to behaving ethically and contributing to economic development while improving the quality of life of the workforce and their families as well as the local community within the sphere of our activities.

At regular intervals the Board of Directors reviews and revises this policy, as necessary. The Directors of the company each individually and collectively share the commitment and will seek to act as Directors in accordance with the above principles.

Jiang Qing
Managing Director UK

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Asset Information

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Production Operations

Scott

FACT Scott is the only CNOOC UK asset to have a fixed drilling package.

Location	141 kilometres North East of Rattray Head, Peterhead
Block Number	Block 15/22
Discovery Date	The Scott field was discovered in 1987 and came on stream in 1993.
Water Depth	142 Metres
Tie Backs	Telford and Rochelle fields
Infrastructure	The Scott installation consists of two steel jackets, the Drilling/Production (DP) platform and the Utilities/ Quarters (UQ) platform linked by two bridges
Export	Oil is exported via a subsea pipeline into the Ineos operated Forties Pipeline System (FPS) to the Kinneil reception terminal on the Firth of Forth. Gas is exported via the Wood operated Scottish Area Gas Evacuation (SAGE) system to St Fergus in north-east Scotland.

Buzzard

FACT Buzzard reached the milestone of 750 million barrels of oil equivalent produced mid 2020.

Location	55 kilometres North East of Rattray Head, Peterhead
Block Number	Block 20/06a
Discovery Date	The Buzzard field was discovered in May 2001 and came on stream in January 2007
Water Depth	96 Metres
Tie Backs	N/A
Infrastructure	The Buzzard installation consists of four platforms (Wellhead, Production, H2S sweetening and UQ) supported by steel jackets which are interconnected by three bridges
Export	Oil is exported from the Buzzard installation via a subsea pipeline into the Ineos operated FPS to the Kinneil reception terminal on the Firth of Forth. Gas is exported via the Frigg system to St Fergus in north-east Scotland.

Golden Eagle

FACT Golden Eagle hit 2 years PON 1 free in 2020.

Location	65 kilometres North East of Rattray Head, Peterhead
Block Number	Block 20/1S
Discovery Date	The Golden Eagle and Peregrine fields were discovered 2007-2009. First oil was produced in late October 2014
Water Depth	104 Metres
Tie Backs	Solitaire and Peregrine
Infrastructure	The Golden Eagle field consists of two subsea drilling centre manifolds (Northern and Southern), tied-back to two installed bridge-linked platforms (GEAD platform complex)
Export	Oil and gas from the development is processed at the GEAD platform complex, with gas exported to the SAGE export line via the Ettrick pipeline end manifold (PLEM), and oil exported to the Flotta Terminal via a tie-in at the Claymore field.

Drilling Operations

COSL Pioneer

Rig Name	COSL Pioneer
Type	Semi-Submersible
Wells Drilled in 2020	■ N1, N2, N3z, N4z, N5, N6

Maersk Innovator

Rig Name	Maersk Innovator
Type	Jack-Up
Wells Drilled in 2020	■ Buzzard Infill Well 20/06a-B9

Noble Sam Hartley

Rig Name	Noble Sam Hartley
Type	Jack-Up
Wells Drilled in 2020	■ Golden Eagle Infill Well 20/01-G16 ■ Golden Eagle Infill Well 20/01-G17

Borr Prospector 5

Rig Name	Borr Prospector 5
Type	Jack-Up
Wells Drilled in 2020	■ Glengorm South Appraisal Well 22/26d- 3

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Atmospheric Emissions

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Production Greenhouse Gas (GHG) Emissions as CO_2 Equivalent (CO_2e)

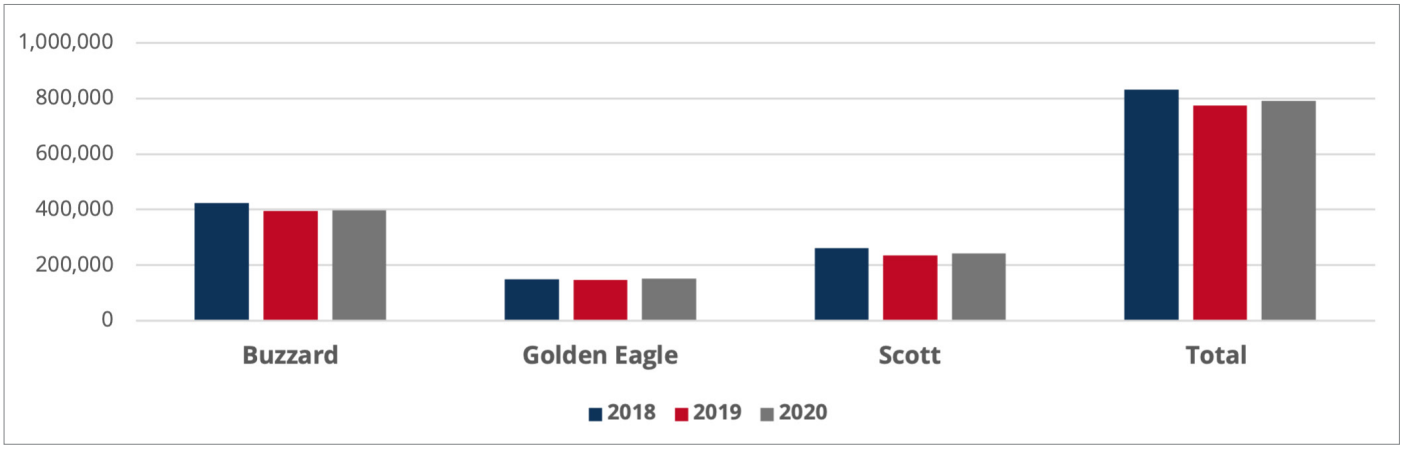
The chart below shows an increase in combined CO_2e emissions from 774,918 tonnes in 2019 to 791,370 tonnes in 2020.

These figures are predominantly the CO_2 emissions from combustion reported under EU Emissions Trading System (EU ETS), but also include the non-combustion GHG emissions from turbines, flaring, venting, fugitives and hydrofluorocarbons. These non-combustion and non-CO_2 gases are converted to their CO_2 equivalents using their global warming potentials.

During the platform turnarounds (TARs) there is a reduction in power demand and, therefore, CO_2 emissions. This increase in CO_2 in 2020 is predominately due to there being short outages rather than full TARs. This is contrary to the anticipated extended TARs planned to align with the pipeline operator outage that was cancelled due to the restrictions associated with the coronavirus pandemic. Despite power generation related emissions increasing, flaring related emissions were lower than previous years. Emissions associated with diesel use have also reduced.

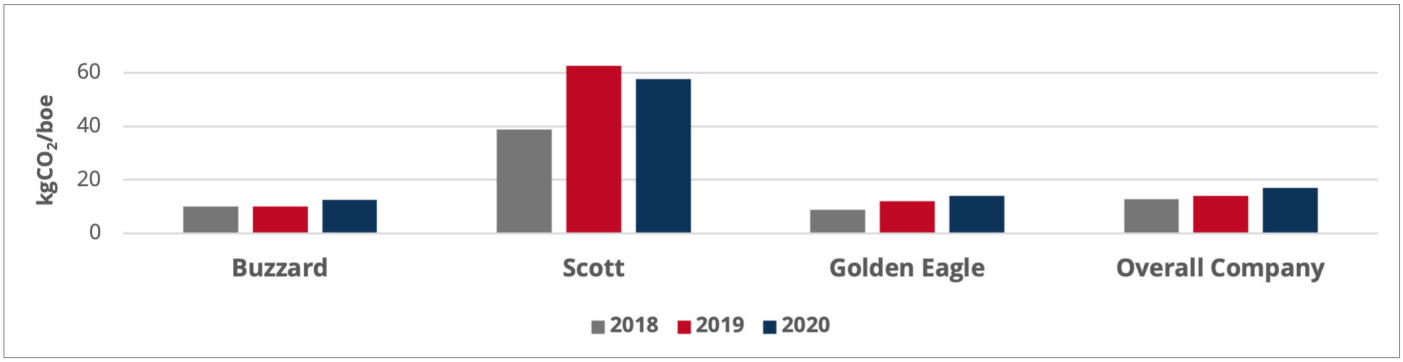
CO_2e Emissions from Production Activities

Offshore CO_2e Emissions 2018 - 2020



GHG emissions from CNOOC's offshore installations by tonnes CO_2 equivalent, between 2018 and 2020

CO_2 Intensity 2018 to 2020 Comparison



Carbon Dioxide intensity in kgCO_2 per barrel of oil equivalent, CNOOC Offshore Assets

Individual Installation CO_2 Emissions

The chart above shows individual installation performance on CO_2 emissions 2018 - 2020. Each asset showed a very slight increase in CO_2 emissions in 2020, which is summarised below.

Scott's gross emission rates in 2019 were slightly lower than in 2020 due to several extended outages which resulted in a reduction in power demand and therefore CO_2 emissions. In 2020 however, there were fewer outages.

Buzzard and Golden Eagle had a number of outages in 2019, but not to the extent of Scott. The slight rise in Buzzard and Golden Eagle CO_2 emissions is associated with there being no 2020 TAR.

Increased power demand is a feature of production platforms later in their lives as more energy is required to bring hydrocarbons to the surface.

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Oil in Produced Water Discharge (Permitted Discharges)

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The mass of oil discharged increased from 56 tonnes in 2019 to 115 tonnes in 2020. This is due to a combination of factors including:

- Lower produced water re-injection (PWRI) system uptime on Buzzard coupled with increased produced water volumes;
- More frequent process upsets/loss of plant stability on Buzzard resulting in a higher average oil in water (OIW) value;
- Improved production uptime on Scott led to increased produced water rates and therefore increased over boarding of associated oil in produced water

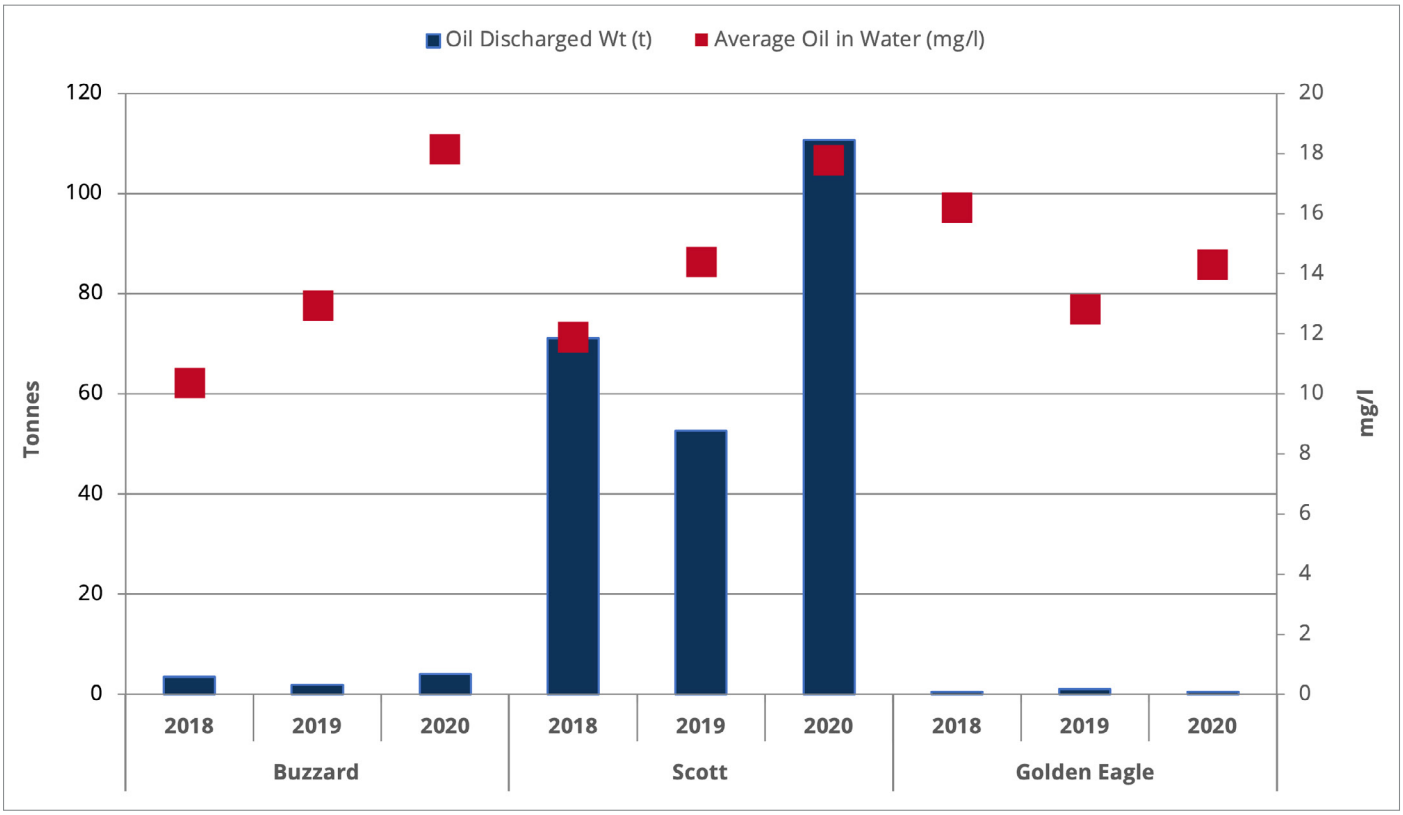
Total water volume discharged increased on Buzzard and Scott for the same reasons. Golden Eagle saw a decrease due to improved PWRI system uptime.

There was also an increase in average oil in produced water across all assets compared with the previous year, more notably on Buzzard and Scott. This is due to the plant instability issues on Buzzard and the Scott plant being oversized for the current production rates and, therefore, less efficient.

Water re-injection increased on Buzzard and Golden Eagle in line with increase of produced water. Produced water re-injection is an important process as it maintains reservoir pressure and therefore helps improve production and reduces overboard discharge of oil and chemicals in produced water. This is especially noticeable on Buzzard and Golden Eagle where produced water re-injection uptime is high, resulting in very low produced water discharges. The Scott platform does not have produced water re-injection capability, so injects treated seawater only.

These trends will be further analysed in 2021 when produced water management plans are published for Buzzard and Scott.

Oil in Produced Water



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Chemicals

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Production Chemicals

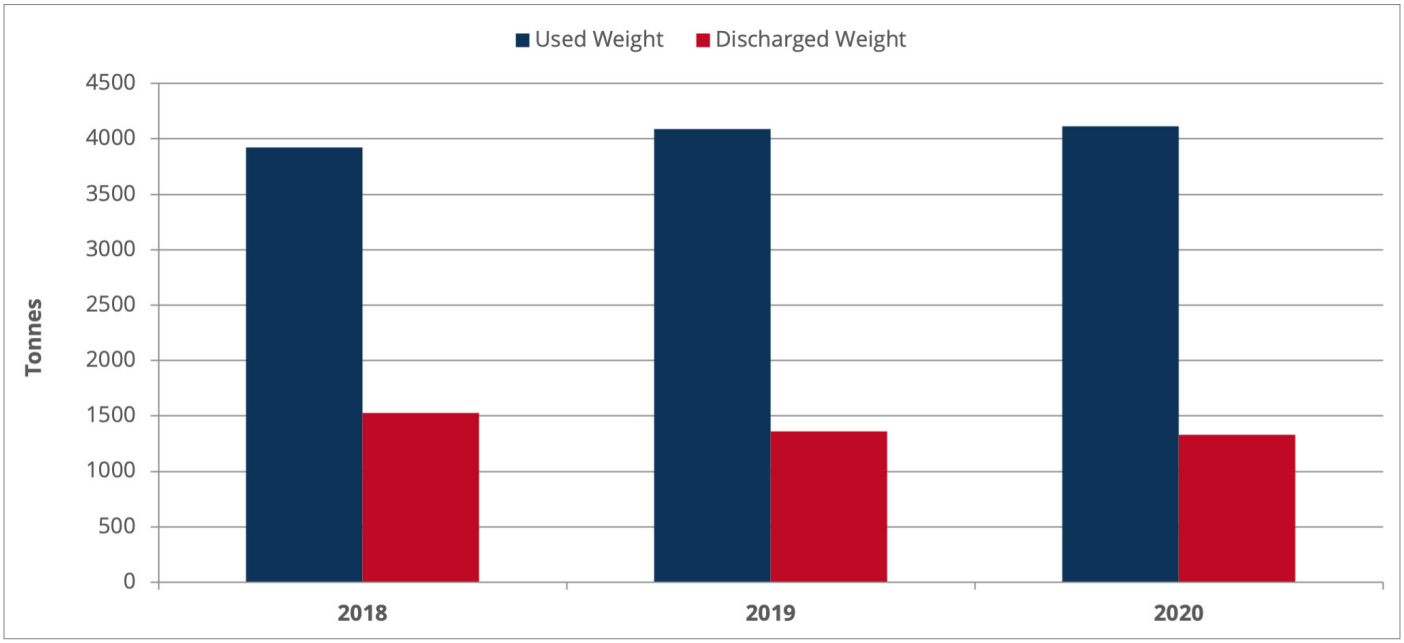
The increasing volume of produced water on all assets means more chemicals are required. Due to a strategy introduced on Buzzard in 2015/16, 2020 was the 'peak year' for scale squeeze treatments on the asset. Volume of this chemical alone increased by 265 tonnes compared to the previous year. However, due to the PWRI system, only 10% is reported as over boarded. This volume will now reduce moving forward.

The decrease in discharge is due to the fact a high percentage of chemicals on Buzzard and Golden Eagle are reinjected, whereas on Scott the majority are disposed of overboard. The injection of chemicals directly into the export lines, with no associated discharge, also increased in 2020.

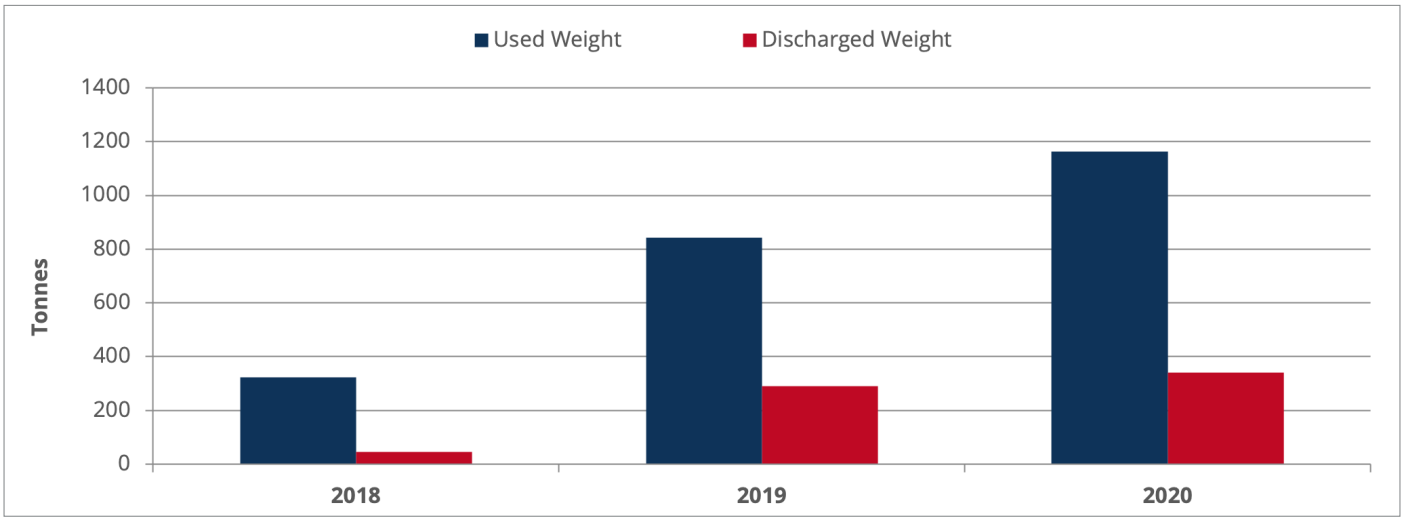
Chemicals which are hazardous to the marine environment are subject to substitution (SUB) warnings under the Harmonised Mandatory Control Scheme (HMCS). Usage of production chemicals with SUB warnings has increased from 842 Tonnes in 2019 to 1,163 tonnes in 2020. However, the proportion of the chemicals discharged to the environment has only increased slightly from the previous year.

This increase can be largely attributed to the scale squeeze inhibitor chemical used on Buzzard gaining a SUB warning during re-registration in 2019. This was the highest use single product for CNOOC in 2020. The vast majority of SUB warning chemicals used on CNOOC installations are dosed downstream of the last stage of separation (e.g. export corrosion inhibitors), meaning there is no associated discharge of chemical.

Production Chemical Usage



Production Chemical Usage with Substitution Warnings



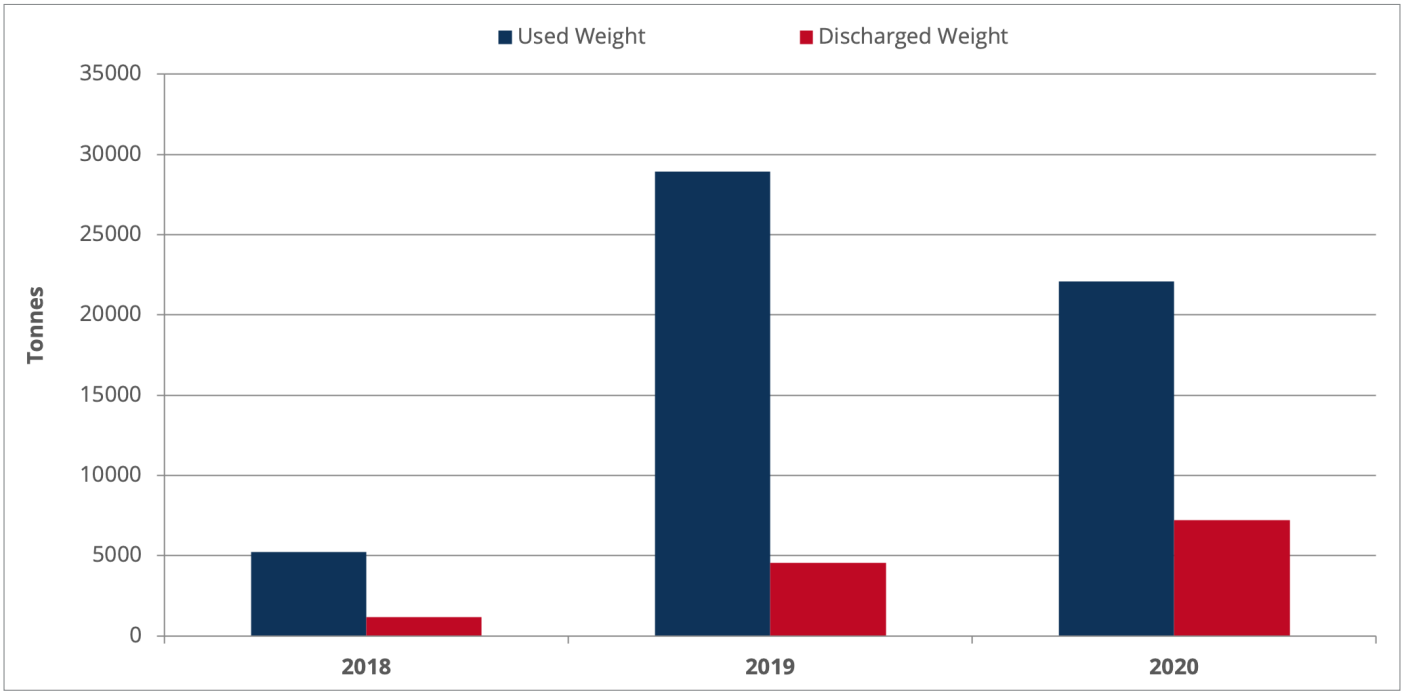
Drilling Including Well Intervention and Pipeline Chemicals

Chemical usage decreased from 28,938 tonnes in 2019 to 22,103 tonnes in 2020. This is due to a decrease in drilling, well intervention and pipeline activities in 2020.

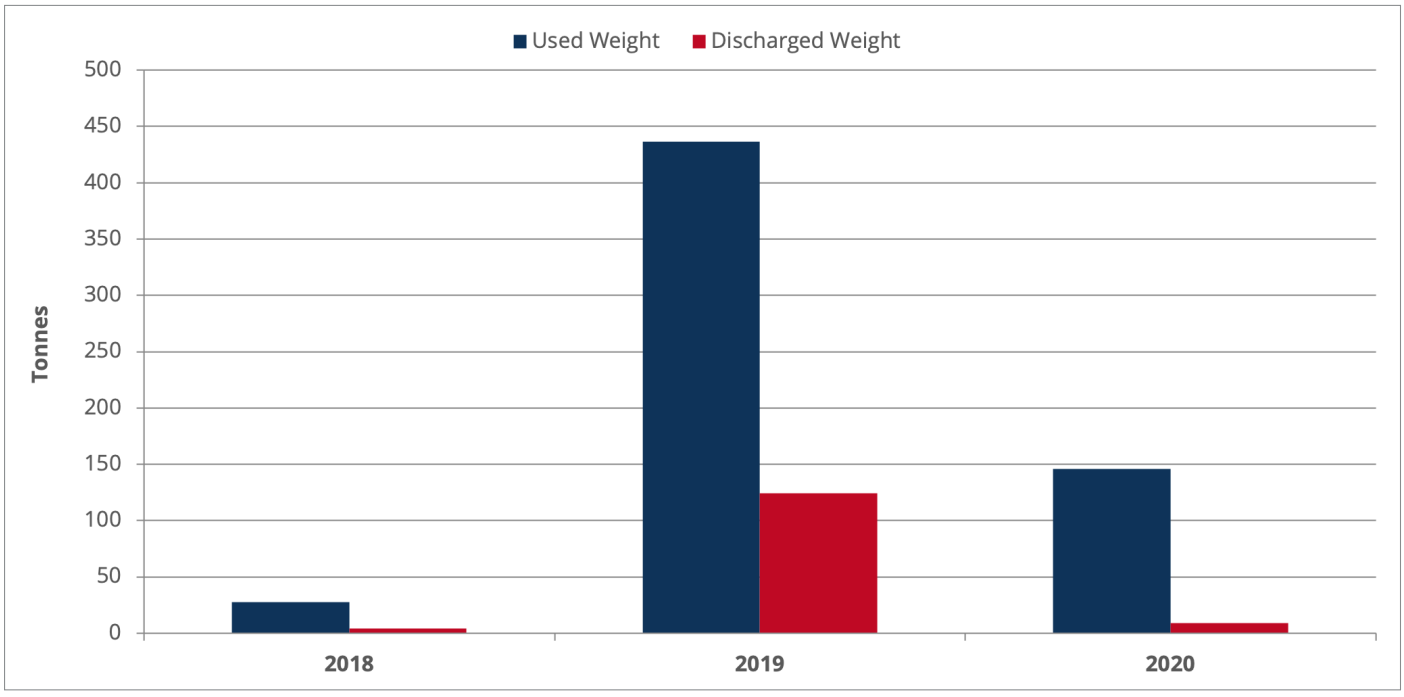
However, discharged weight increased in 2020 due to use of better technologies offshore which allow the drill fluids to be treated prior to being discharged. All of the water-based mud (WBM) from COSL Pioneer was also discharged to sea which would contribute to this increase.

The use of SUB labelled chemicals for drilling decreased substantially from 436 tonnes in 2019 to 146 tonnes in 2020. Overall discharge of chemicals with SUB warnings also decreased from 124 tonnes in 2019 to 9 tonnes in 2020. This correlates with the lower drilling activity in 2020 in comparison to the year before.

Drilling Chemical Usage



Drilling Chemicals Usage with Substitution Warning



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Waste

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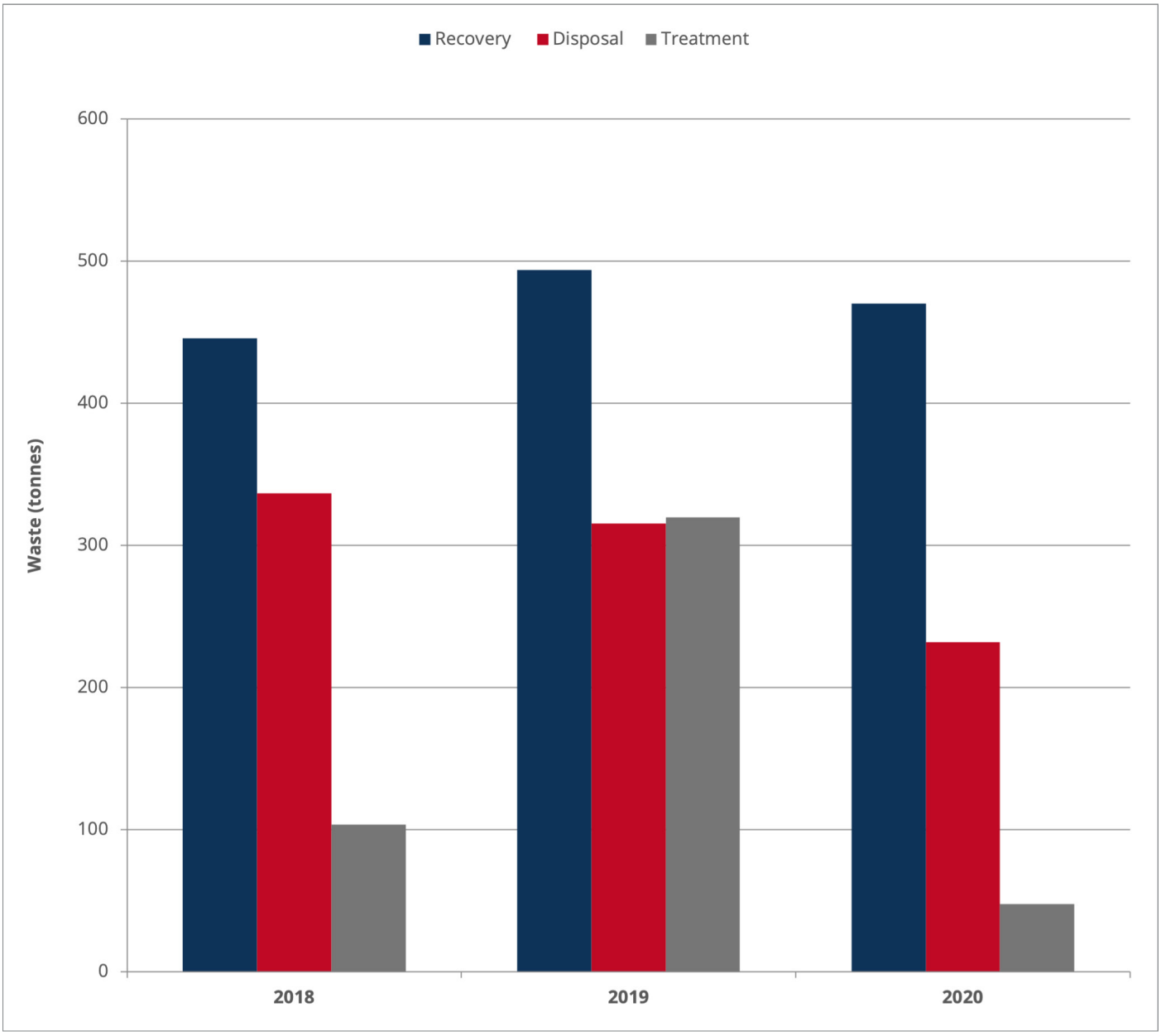
Production Waste

In 2020 circa. 749 tonnes of waste was generated across all installations, which is a decrease from the 1,129 tonnes of waste generated in 2019. This is due to decreased activity with no waste generated from TARs, as well as Scott drilling being offline (as these are included in the production waste statistics).

There was a decrease in waste being sent for disposal and treatment, largely due to the same reasons – slops from Scott drilling and chemicals from the TARs would have usually been sent onshore for treatment. There have also been further initiatives put in place to increase recycling and better awareness offshore overall.

Production Waste Disposal Routes – By Year



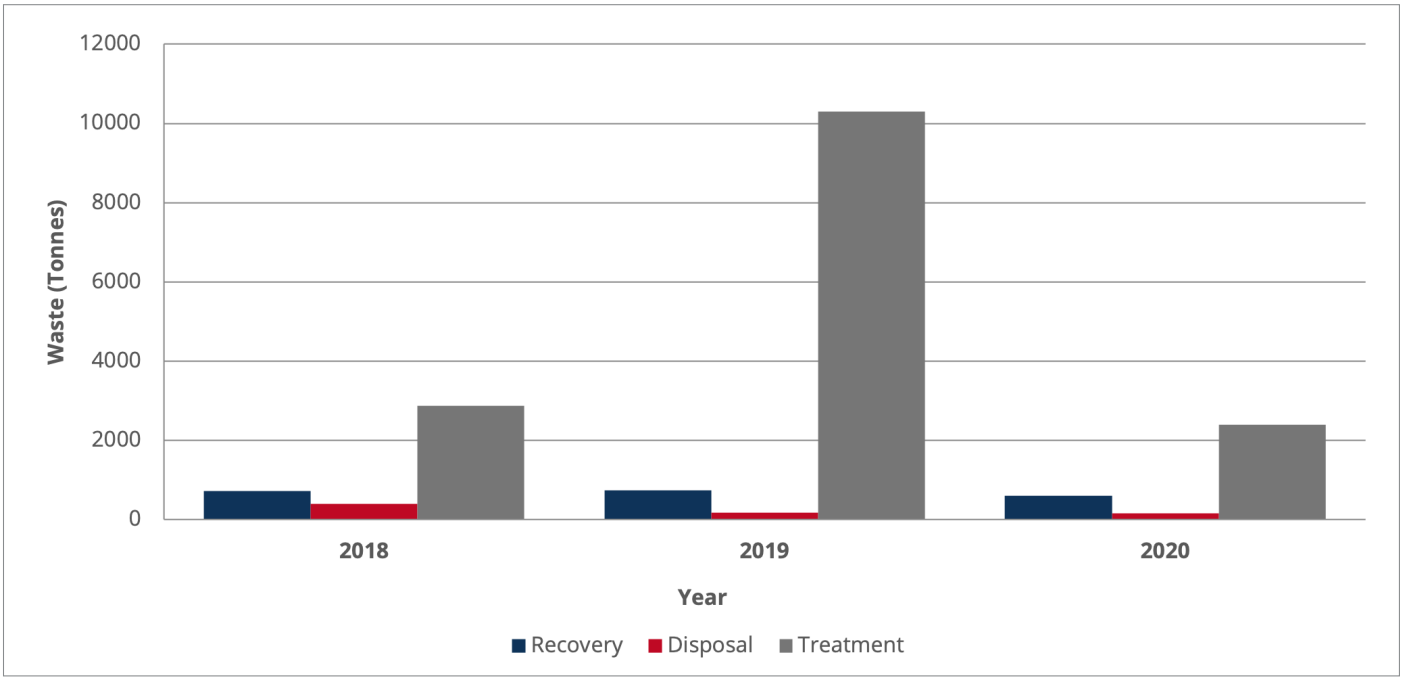
Drilling Waste

Drilling waste generated (excluding cuttings) in 2020 decreased to circa. 3,171 tonnes from circa. 11,220 tonnes in 2019. This 8,049 tonne decrease is due to new technologies allowing for treatment and disposal of drilling slops offshore, as well as less drilling activity overall.

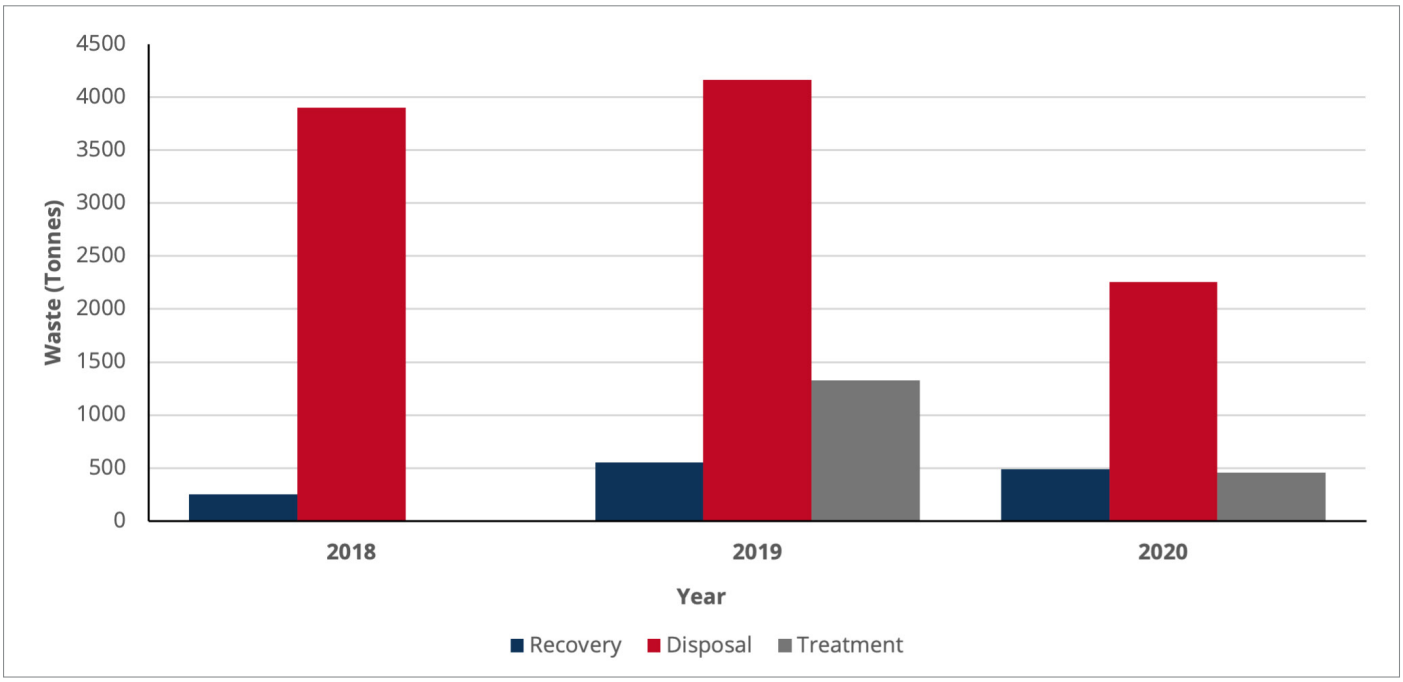
Noble Sam Hartley cuttings and slops were treated offshore, which would have accounted for two infill wells in 2020. The Prospector 5 cuttings and slops were sent onshore for treatment, however, as the Glengorm South Appraisal well was only spudded in late November, only December is accounted for in 2020. There were also fewer interventions/suspensions in 2020, as these were part of the Buzzard infill work scope in 2019.

The volume of cuttings has also decreased due to less drilling activity and treatment/disposal at source. In 2019 cuttings were predominantly skipped and shipped onshore.

Drilling Waste Generated (Excluding Cuttings)



Drill Cuttings Waste Generated



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Legal Compliance

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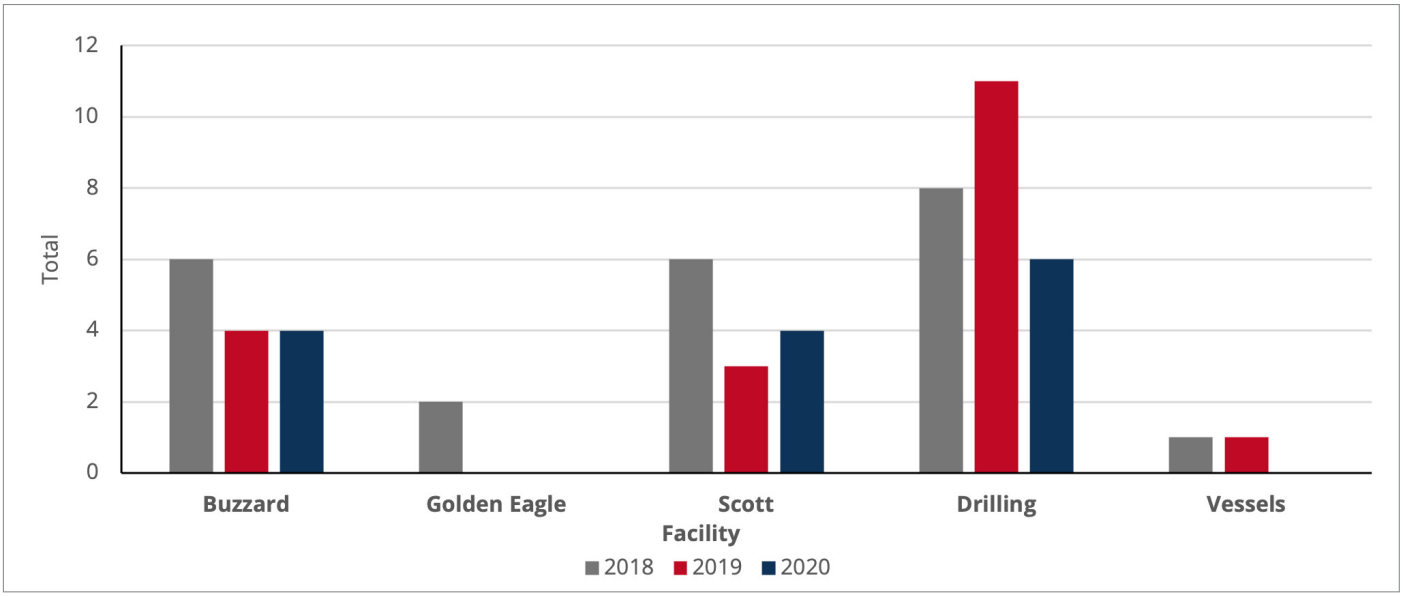
Unplanned Releases

During 2020, there were 14 unplanned releases, a decrease from 19 releases in 2019. Just under half of these releases were from drilling operations. Golden Eagle has not recorded any PON1 releases since 2018.

Individual Installations – PON1 Summary

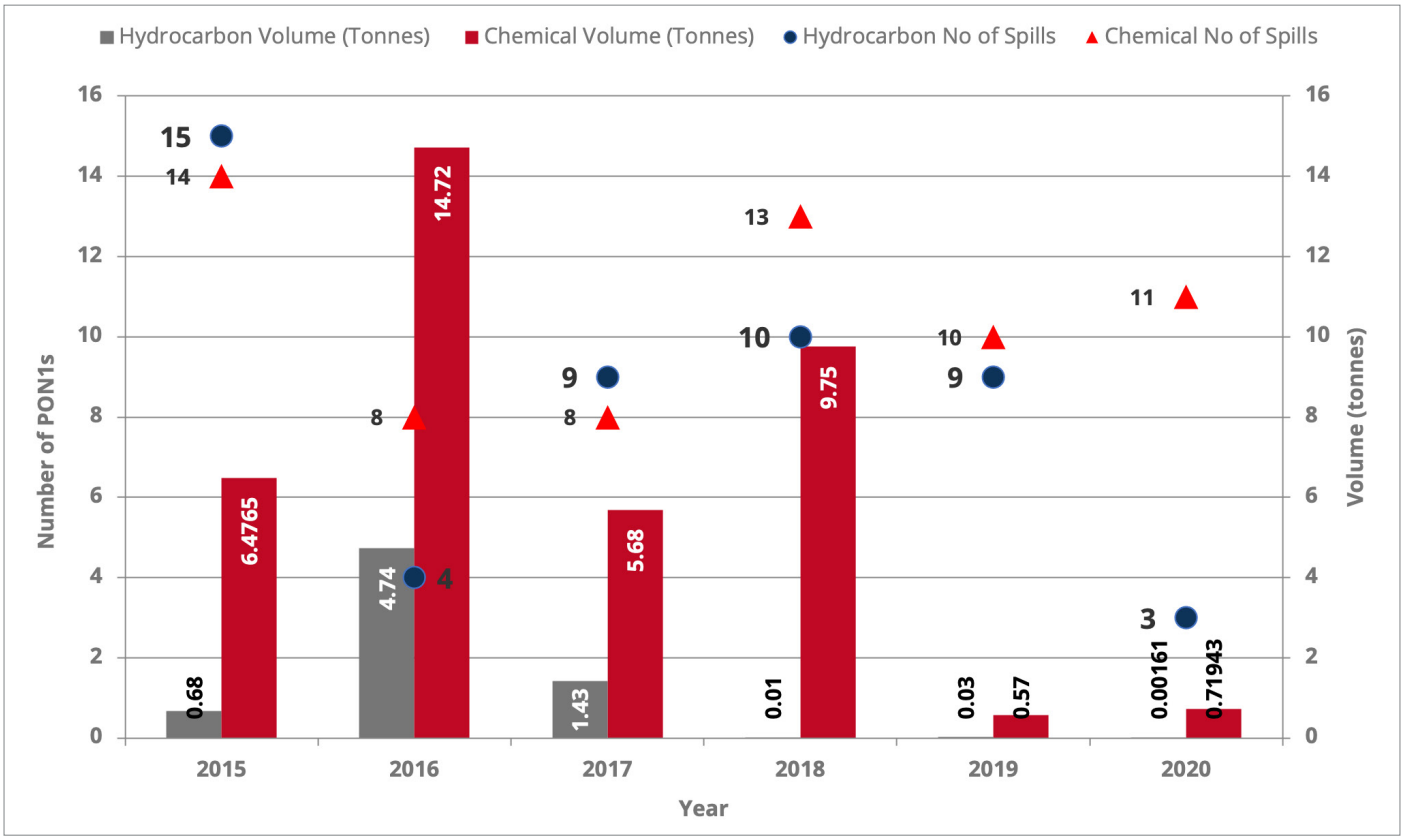


The majority of spills were chemical releases, resulting in 0.72 tonnes of chemicals being released to sea, a slight increase from 0.57 tonnes released in 2019.

The remainder were hydrocarbon releases, resulting in 0.0016 tonnes of oil being released to sea, a substantial decrease from 0.03 tonnes in 2019.

In addition to the above, there were also 5 Permitted Discharge Notifications submitted to the regulator in 2020. Three of these were on Golden Eagle and two were on Buzzard. This was due to recurring issues with the produced water/open drains caisson resulting in a sheen during routine pumping.

PON1 Summary 2015-2020



Regulatory Non-Compliance

In addition to CNOOC reporting unplanned oil and chemical spills associated with offshore activities, CNOOC are also required to submit notification to the Regulator in the event of non-compliance with the current legislative regime.

	OCR (Offshore Chemical Regulations) Non Compliance	OPPC (Oil Pollution Prevention and Control) Non Compliance	EIA (Environmental Impact Assessment) Non Compliance	Discharge Pending Analysis	EUETS	IPPC	PPC	Pending Reply from SEPA
Scott								
Buzzard	**1**	**2**						
Ettrick								
Golden Eagle								
Drilling Rigs	**1**	**1**						
Vessels								

Environmental Objectives

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Environmental Objectives 2020

2020 Objective Area	Programme	Performance
Manage and Minimise Emissions – Net Zero	• 2019 Carbon Footprint • Energy & Emissions Management Systems • Flare, vent & fugitive emissions scoping • Industry metrics embedding and reporting • UK ETS preparation	• The 2019 Carbon Footprint was published in Q1 2020 • A gap analysis against the requirements of the Energy Management System Standard ISO 50001 was completed. • Standards and Plans for the Management of Flaring and Venting were produced. • Carbon and flare intensity metrics were embedded in Asset Performance Monitoring • Process and procedure reviews completed in preparation for the transition to UK ETS • Despite direct Scope 1 emissions having increased in 2020 on 2019 levels, the full scope of emissions calculated decreased due to the impacts of COVID-19 on third party activity levels, the move to renewable electricity onshore and intended efficiencies.
Oil & Chemical Discharges – TAR Support	• Environmental considerations during planning and work pack development • Environmental permit variations • Environmental hazard identification, prevention and mitigations • Environmental awareness during on-boarding • Contractor Chemical Management	• Major TARs deferred from 2020 to 2021 • Roll over target to 2021
Oil & Chemical Discharges – Cross Operations	• Q2/3 awareness campaigns based on permit compliance requirements and lessons learned • Review of SUB chemicals and management of surplus chemicals • 5 yearly OPEP reviews including weather and dispersibility analysis	• Permit awareness campaigns were rolled out in Q2. • A SUB chemicals awareness campaign was rolled out to chemical suppliers. • Chemical greening and optimisation ongoing with chemical management vendor. • OPEP oil weathering and dispersibility completed for Golden Eagle as part of 5 yearly review.
Manage and Minimise Waste Generation – Zero Waste	• Working directly with waste contractors to identify new waste management options away from landfill • E-Rep led trials of new recycling, composting and source reduction options offshore • Continuation of waste management training to offshore operations	• E-reps identified crisp bag recycling route – preliminary plans put in place for when office re-opens • The Zero Waste to Landfill trial commenced in December • Waste management awareness training has continued to be rolled out to offshore production and drilling assets
E-Rep Engagement – Contributes to All Environmental Objectives and Targets	• E-Reps trials of online EMS internal auditor training • NEBOSH environmental training for E-Reps • E-Reps OPEP exercise awareness sessions offshore • Ongoing platform and cross asset meetings and E-Rep-led environmental improvement campaigns	• Online EMS internal auditor training trialled early 2020 • NEBOSH training delayed due to COVID-19 restrictions • Continued E-Reps involvement in OPEP exercises • **Note:** These numbers are lower than intended in some cases due to COVID-19 restrictions on face-to-face contact

Environmental Objectives 2021

The CNOOC Environmental Objectives are to:

- Manage and minimise emissions from power generation, flare and unburned hydrocarbons
- Manage and minimise discharges to sea of oil and hazardous chemicals
- Manage and minimise waste generation within the supply chain and zero waste to landfill
- Prevent and mitigate significant environmental unplanned/accidental discharges to sea & air

2021 Environmental Targets are:

- Zero increase in emissions against 2020 levels
- Reduction in platform specific GHG and flare intensity
- Zero waste to landfill
- Zero significant enforcement action level spills to sea

In line with these objectives the following improvement activities have been planned for 2021:

2021 Objective Area	Programme
Atmospheric Emissions Management Improvements	• Improved Energy & Emissions Management Systems and monitoring and reporting mechanisms • Publish Methane Strategy • Asset flare, vent & fugitive emissions management plans • Undertake Asset Environmental Stewardship workshops and publish plans • UK ETS transition ongoing
Discharges to Sea and EMS	• Environmental considerations during planning and risk assessment for major TARs • Awareness campaign focus on permit compliance and lessons learned • Work with chemical management vendor to promote the greening and optimisation of chemical use. • Chemical tank risk assessments. • Publish and implement Produced Water Management Plans – Buzzard and Scott. • 5 yearly OPEP reviews for Buzzard and Scott • ISO 14001 alignment improvements • Environmental Field evaluations – ops and drilling
Waste Management and Culture, including Offshore E-Reps	• Working directly with waste management and supply chain to identify new waste management options away from landfill and look at opportunities to support circular economy • E-Rep led trials of new recycling, composting and source reduction options offshore • Support E-Reps with engagement days, training and awareness presentations • Continuation of waste management training to offshore operations • Zero Waste to Landfill ongoing
Foundations – Every Year	• Engagement • Compliance • Continuous env improvement

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