

# ANNUAL PUBLIC STATEMENT ENVIRONMENTAL MANAGEMENT SYSTEM 2017

**Petrofac Facilities  
Management Limited**

# INTRODUCTION

**This report is Petrofac Facilities Management Limited's 2017 annual public statement for environmental management, covering our UK Operations.**

**Prepared in line with the reporting requirements of the UK's Department for Business, Energy and Industrial Strategy, it meets the requirements of the Oslo Paris (OSPAR) Convention Recommendation 2003/5. This report outlines our Environmental Management System (EMS) and focuses on our 2017 environmental performance.**

## WORKING RESPONSIBLY

Our EMS was developed alongside our Health, Safety, Security and Environment framework and the ISO 14001 standard for environmental management. It enables us to manage the environmental impacts arising from our activities and is based on the internationally approved 'Plan-Do-Check-Act' process. This ensures we have the philosophy, procedures and methods in place to manage significant environmental risks throughout the life cycle of our projects.

As a provider of managed solutions to our clients in the UKCS we fulfil the role of 'Operator' on behalf of the asset owner. As a result, our EMS has been designed to support our operating responsibilities:

- The environmental goals for the prevention and elimination of pollution from offshore sources and the protection and conservation of the maritime area against other adverse effects of offshore activities
- Provision of trained emergency and oil spill responders and specialist emergency response facilities
- Continual improvement in environmental performance

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**Our vision is to reach  
Horizon Zero; a future  
with no accidents or incidents**

# THINKING DIFFERENTLY ABOUT DELIVERY

As a leading service provider to the oil and gas production and processing industry, we design, build, operate and maintain oil and gas facilities.

We think differently about delivery. By providing standalone or integrated services we align our approach to meet our clients' operating strategies and project objectives, unlocking significant value.

One example of this is our innovative Operator models, which have evolved from the Duty Holder model we pioneered in 1997, whereby we take responsibility for the Safety Case on behalf of a client.



# OUR OPERATOR MODELS

Following the introduction of the 2015, Safety Case Regulations, our outsourced Duty Holder model evolved to incorporate Installation Operator (including Duty Holder) responsibility; to manage the environmental aspects of an installation.

Responsibility for wells and pipelines (Well Operator and Pipeline Operator) can be combined within one outsourced model called Service Operator.

## SERVICE OPERATOR

**ANASURIA OPERATING COMPANY (AOC), ANASURIA CLUSTER AND FPSO, UKCS**

During 2017, as Service Operator for AOC we managed the Anasuria FPSO, its wells and associated pipelines. We have focused on providing an integrated and aligned approach to the operation and development of the cluster to support our client in its objective to extend the life of the field.

## WELL OPERATOR

**HURRICANE ENERGY, WEST OF SHETLAND, UKCS**

In 2017, as Hurricane Energy's appointed Well Operator, we completed drilling and testing operations at both the Lincoln and Halifax prospects in the Greater Lancaster Area, west of Shetland, utilising the Transocean Spitsbergen semi-submersible mobile offshore drilling unit.

We have worked with Hurricane Energy since 2013, demonstrating our ability to deliver and manage wells in line with health, safety and environmental policies.

## INSTALLATION OPERATOR

**KITTIWAKE, MILLER, SCHOONER AND KETCH PLATFORMS AND IRISH SEA PIONEER**

Throughout 2017 our Installation Operator portfolio included the Kittiwake platform, Irish Sea Pioneer and Schooner and Ketch platforms. As Installation Operator we develop and maintain Safety Cases for assets and infrastructure facilities. We maintain the necessary organisational and technical competence, capacity and management systems to support the commitments made in each Safety Case, to ensure the on-going safety of operations.

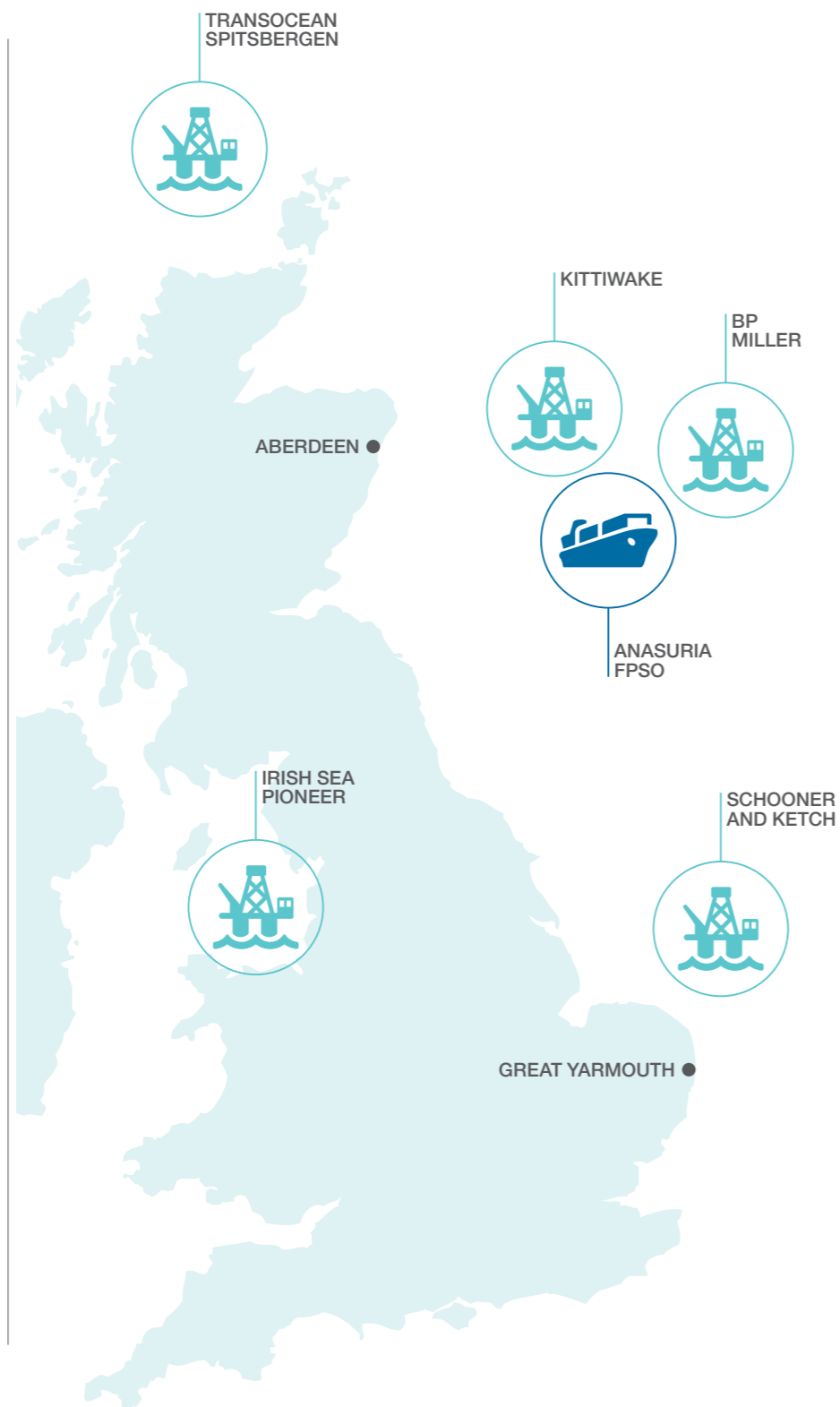
# OUR OFFSHORE OPERATIONS

On behalf of their owners we currently operate a range of platforms and undertake offshore oil and gas production activities including:

- Non-producing intervention vessel operation
- Oil and gas production platform operation
- Late-life/decommissioning platform operations
- Drilling activities with third-party rig provision

Under the requirements of this disclosure, the UKCS Operator responsibilities and UKCS assets highlighted within this statement include:

- **Service Operator (including Installation Operator) – The Anasuria FPSO, Irish Sea Pioneer, BP Miller, Schooner and Ketch, Kittiwake**
- **Well Operator – Transocean Spitsbergen**



## Anasuria FPSO

The Anasuria FPSO is owned by Anasuria Operating Company, a joint venture between Hibiscus Petroleum Berhad and Ping Petroleum Limited. It is located 175km east of Aberdeen.

Beginning in 2016 and throughout 2017, Petrofac was Service Operator for the FPSO and associated cluster, with responsibility for the installation, wells and pipelines.



## BP Miller

Petrofac became Installation Operator for the Miller Platform, a non-producing asset in the Central North Sea, in August 2016. The last day of production on Miller took place in July 2007. Since then BP has undertaken well abandonment and topsides clean up on the asset. Petrofac managed the first heavy lift removal of the Helideck and accommodation modules.

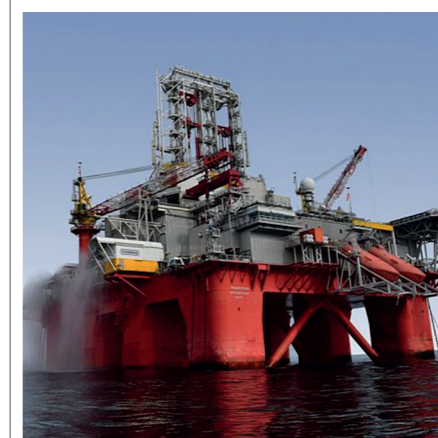
The remainder of the topside and jacket removal is planned for 2018.



## Schooner and Ketch

Schooner and Ketch, located in the fields of the same name in the Southern North Sea, are normally unmanned gas platforms. Petrofac has been Duty Holder for the Schooner and Ketch assets since 2005 on behalf of current and previous owners Faroe Petroleum and Tullow Oil respectively.

In March 2017 Petrofac became Installation Operator and assumed responsibility for the environmental performance for assets.

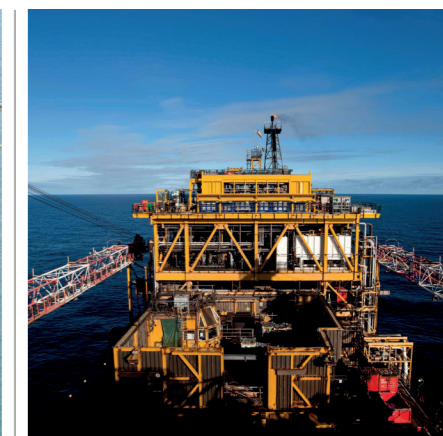


## Transocean Spitsbergen

Petrofac was appointed Well Operator by Hurricane Energy in 2016 to support wells located in the Greater Lancaster Area, West of Shetland.

As Well Operator, we manage all well engineering and project management support services for Hurricane Energy's well activities.

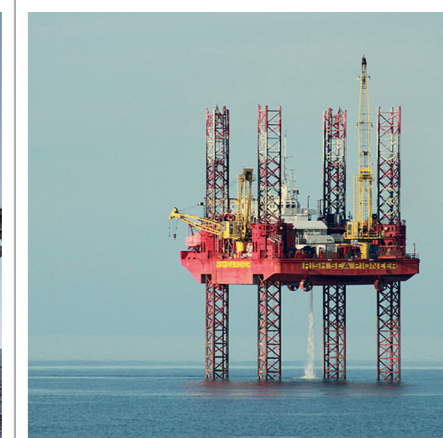
These were conducted from the Transocean Spitsbergen, a semi-submersible drilling rig, contracted to continue development of the naturally fractured granite basement oil producing reservoir.



## Kittiwake

Petrofac has been the Duty Holder for the Kittiwake, a fixed steel jacket platform in the Central North Sea, since 2004, on behalf of current and previous owners, EnQuest, Centrica and Venture Production respectively.

In June 2017 Petrofac became Installation Operator and assumed responsibility for the environmental performance for the asset.



## Irish Sea Pioneer

Petrofac has been Installation Operator of the Irish Sea Pioneer since 2015, prior to which Petrofac had been Duty Holder of the asset since 2006.

The non-producing mobile platform is owned by ENI, Liverpool Bay and provides intervention services to the ENI operations in the Liverpool Bay area of operations.

PETROFAC LIMITED  
ENVIRONMENTAL POLICY

**Vision**

Petrofac will be recognised as a company that maximizes energy efficiency and conducts business in an environmentally responsible manner.

**Commitment**

The Petrofac Board of Directors has ultimate responsibility for environmental performance and is committed to the achievement of environmental excellence. Petrofac and its business units are therefore committed to:

- Conducting its business in an environmentally responsible manner, consistent with its 'Horizon Zero' initiative which aims to eliminate all incidents within the company
- Promoting a strong culture of leadership in environmental matters
- Encouraging all employees to share our environmental commitments and take personal responsibility for protecting the environment
- Complying with all applicable environmental laws, regulations, relevant standards, and compliance obligations
- Minimising our impact on the environment through pollution prevention, minimising waste and emissions and the efficient use of energy and other resources
- Transparency in the reporting of the Company's environmental performance and sharing of knowledge
- Setting objectives and targets for continual improvement with auditing and monitoring of performance

**Objectives**

To meet this commitment at Group level Petrofac will:

- Develop and maintain Petrofac minimum standards and expectations
- Publish regular performance reports and openly discuss our environmental performance with internal and external stakeholders
- Periodically review the suitability and effectiveness of this policy, our management systems, targets and objectives

Each Petrofac business unit will:

- Provide suitable resources for the protection of the environment
- Develop and maintain environmental management systems that comply with ISO 14001, the International Standard for Environmental Management Systems
- Provide appropriate training to all employees to enable them to carry out their work with due respect and care for the environment
- Engage with clients, contractors and suppliers to deliver a high standard of environmental performance

**Responsibility and implementation**

Environmental protection is a line responsibility that starts with the Group Chief Executive and flows down through the line management structure to front line employees performing work. Every leader at Petrofac is responsible for proactively leading the management of risks to the environment with their teams. Every Petrofac employee is responsible for making themselves aware of the risks to the environment in their work area and to proactively play their part in reducing these risks. All employees are empowered to speak up if they have any environmental concerns.

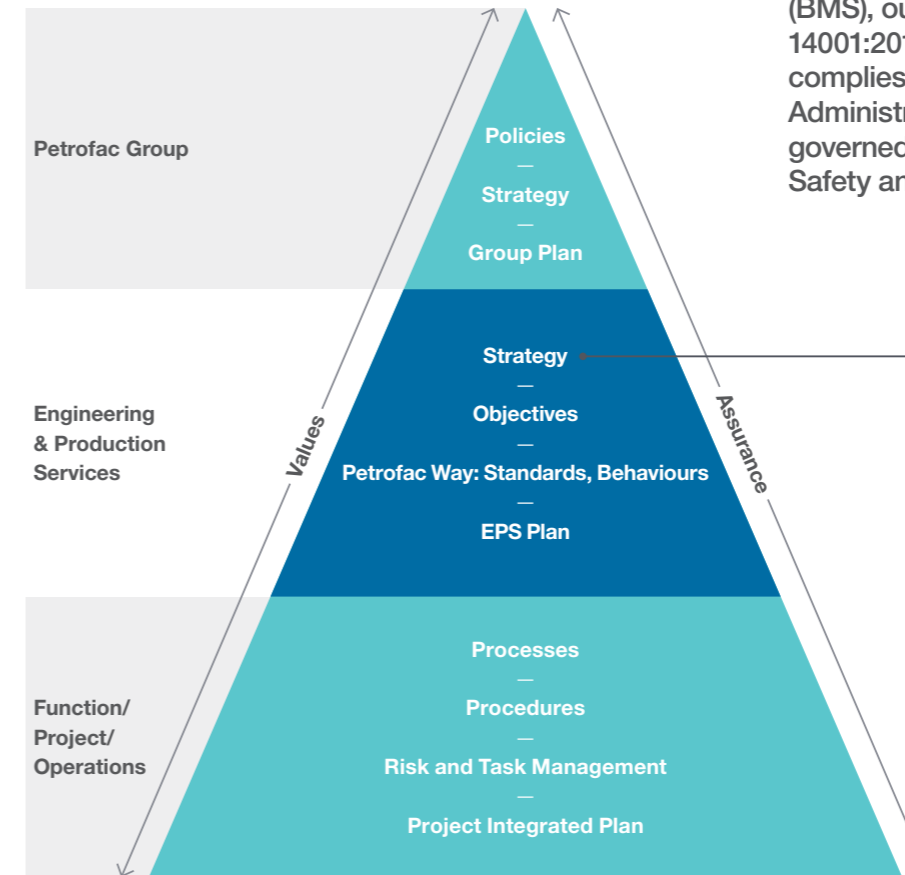
Ayman Asfari, Group Chief Executive

March 2017



# ENVIRONMENTAL MANAGEMENT SYSTEM

**HSE MANAGEMENT STRATEGY**



As part of our Business Management System (BMS), our EMS is certified to the ISO 14001:2015 International Standard, and complies with the Oil Spill Prevention, Administration and Response Fund. It is governed by the Petrofac Group Health Safety and Environment Management Strategy.

**HSE MANAGEMENT STRATEGY ELEMENTS**

1. Leadership and accountability
2. People and competence
3. Subcontractors, suppliers and partners
4. Customers, products and services
5. Community and stakeholders
6. Risk assessment and management
7. Design and construction
8. Operations and maintenance
9. Management of change
10. Information and documentation
11. Incident investigation and analysis
12. Crisis and emergency management
13. Assessing and improving effectiveness

Our EMS is flexible enough to maintain continuity with existing practices during the transfer of platforms to the Petrofac system, whilst taking on board best practice where identified which is then shared across other assets.

# MANAGING OUR IMPACT ON THE ENVIRONMENT

Specific areas of our offshore operations require daily focus to ensure their impact on the environment is managed effectively. These include:

## DISCHARGES TO SEA

### OIL IN WATER

Water is extracted from wells, along with oil and gas. The water, known as produced water, is then separated from the oil and treated. Although treatment removes most of the oil from the water, residual traces are still discharged. These traces are regulated and released under permitted conditions.

### DRILL CUTTINGS DISCHARGE

Drill cuttings and fluids discharged from drilling operations can also contain residual oil associated with the formation.

### CHEMICAL DISCHARGES

Prior to approval and discharge for use offshore, chemicals are subjected to a risk assessment. The potential impact from chemical discharges is graded using the ranking system below:

COLOUR BANDING		Initial grouping
GOLD	Lowest hazard	
SILVER		B
WHITE		C
BLUE		D
ORANGE		E
PURPLE	Highest hazard	

## ATMOSPHERIC EMISSIONS

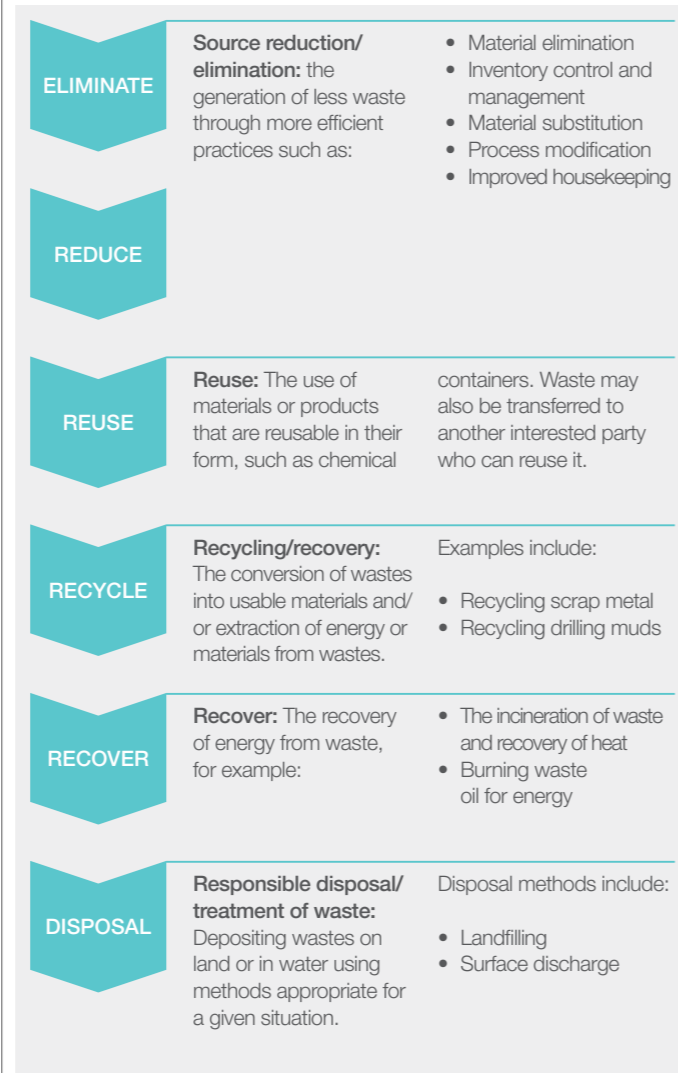
The combustion of diesel and gas to generate power and the burning of flare gas creates atmospheric emissions of Carbon Dioxide (CO<sub>2</sub>) and other combustion products including:

- Nitrous oxides
- Sulphurous oxides
- Carbon Monoxide (CO)
- Methane (CH<sub>4</sub>)
- Other Volatile Organic Compounds (VOCs)

During activities on the FPSO, refrigerant gases are used offshore, primarily to support living conditions and equipment cooling. This activity is regulated and reported on annually.

## WASTE MANAGEMENT

Waste generated offshore is managed to allow maximum reuse or recycling of materials before being treated, incinerated or disposed to landfill. Petrofac follows the waste management hierarchy below:



## PETROLEUM OPERATIONS NOTICE AND NON-COMPLIANCE REPORTING

All notices and non-compliance are recorded within Petrofac's incident management system, detailing the circumstances, investigation, outcomes and actions. The system is also used for lesson sharing and incident trending to assist with continuous improvement.

### PETROLEUM OPERATIONS NOTICE

Any spill to sea of oil or chemical is reported to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) using the Petroleum Operations Notice (PON 1).

The loss of any objects to sea which may have an impact on the environment or sea users are reported to OPRED using a PON 2 Notice.

### NON-COMPLIANCE

A non-compliance against any of the permit conditions is reported using the appropriate format to OPRED.

# ENVIRONMENTAL OBJECTIVES AND TARGETS

## 2017 OBJECTIVES

## 2017 ACHIEVEMENTS

Continue transition of permits for operated installations and wells as OSDR transition dates are rolled out	Transition of environmental permits for the Kittiwake and Schooner and Ketch assets were completed in 2017
Implement Standardised Chemical Management system across operated assets	Work continuing into 2018 with chemical management training
Certification of operations to ISO 14001:2015 standard	The Petrofac Environmental Management System achieved transition to the ISO 14001: 2015 standard
Maintain and share improvements register and share across the business	Assets improvement registers in place

## CONTINUOUS IMPROVEMENT

In 2017, the Petrofac Environmental Management System was successfully transitioned to meet the new 2015 Standard. All operated assets met the requirement of the standard in 2017. The role out will continue across new assets and projects during 2018.

## 2018 OBJECTIVES

Roll out new compliance management system across operated assets	Roll out computer-based chemical management training
Roll out Environmental Management System awareness	

# ENVIRONMENTAL PERFORMANCE

## ANASURIA FPSO

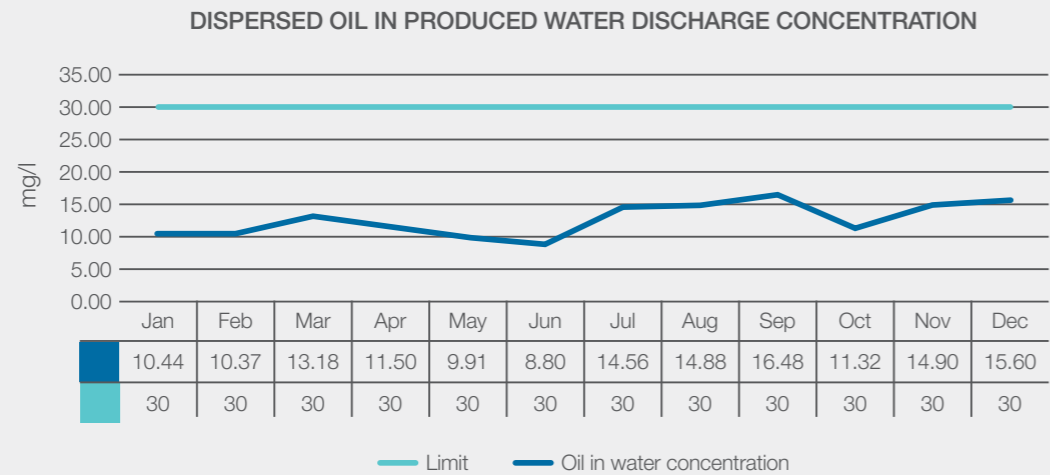
The environmental permits in place for the Anasuria FPSO are associated with oily water discharges to sea, offshore chemical use and discharge and atmospheric emissions from power generation and flaring.

### DISCHARGES TO SEA

#### OIL IN PRODUCED WATER

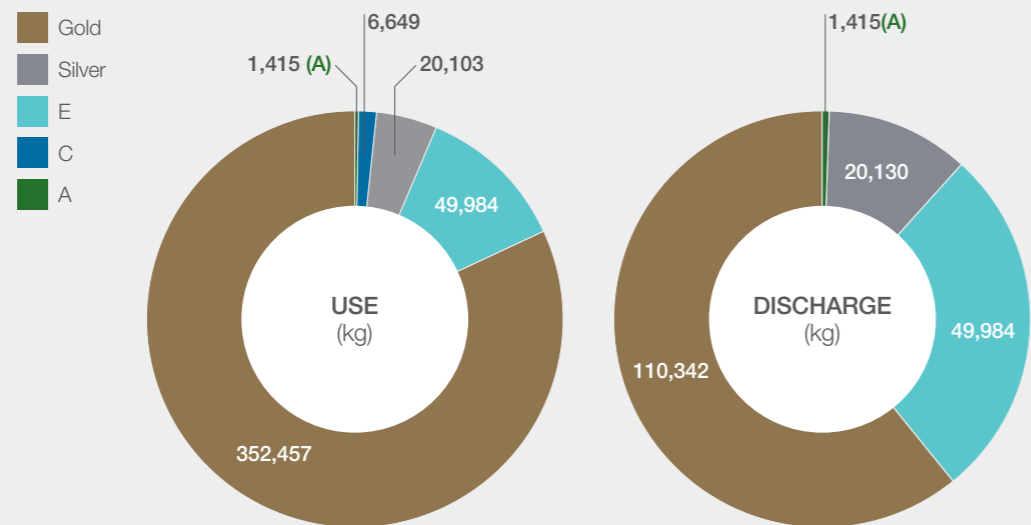
Water discharges are monitored and reported in accordance with the Oil Pollution, Prevention and Control Permit. The average oil in water concentrations over both discharges for the period was 12.8 mg/l.

The total volume of water and mass of oil discharged over the period of operation was 1,623,025 m<sup>3</sup> and 18,406 kg of oil.



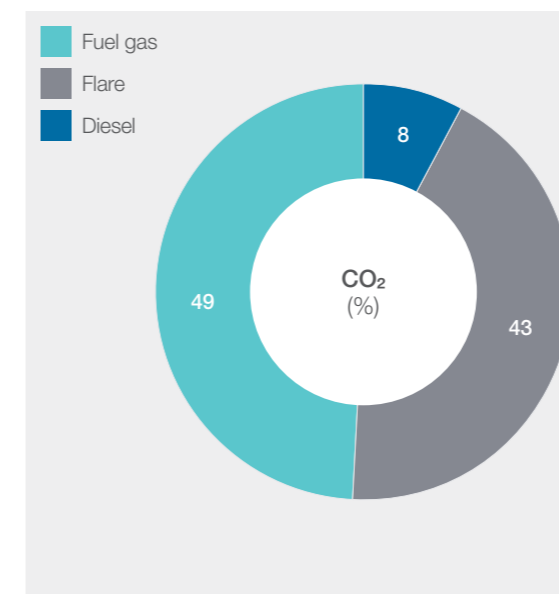
#### CHEMICAL USE AND DISCHARGE

The majority of chemicals in use on the Anasuria FPSO are in the least harmful Gold and E categories. Ongoing chemical management aims to continue to minimise the impact of chemicals on the environment.

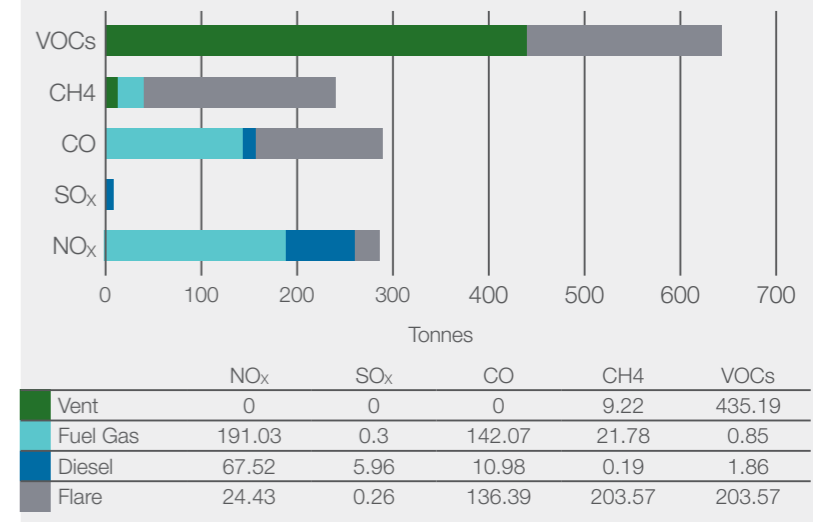


### DISCHARGES TO ATMOSPHERE

Power generation is the main source of atmospheric emissions. Other sources are flaring and venting gas. 130,358 tonnes of CO<sub>2</sub> emissions were verified for greenhouse gas reporting purposes. Other emissions were reported through the Environmental Emissions Monitoring System.



#### EMISSIONS BY SOURCE

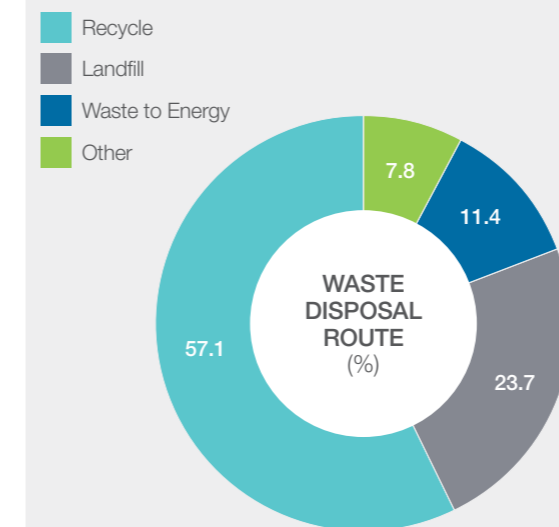


There are three hydrochlorofluorocarbon (HCFC) refrigerant compounds in use on the Anasuria FPSO. The inventory and emission details are monitored and reported on the right:

Compound	On Facility (kg)	Emitted (kg)	CO <sub>2</sub> Equivalent Factor (kg)	CO <sub>2</sub> Equivalent (t)
HFC-134a	2	0	1,430	0
HFC-404a	36	7	3,922	27
HFC-422d	39	82	2,729	222
<b>TOTAL</b>	<b>77</b>	<b>89</b>		<b>249</b>

### WASTE MANAGEMENT

163 tonnes of waste was managed onshore. The disposal routes are charted below:



### REPORTS AND NOTIFICATION

During 2017 there were no releases of hydrocarbon reported. There was one unpermitted discharge of chemical reported and closed out through the PON 1 reporting system and one reported a permitted discharge notification:

#### PON 1 Notification details

Activity	Oil/Chemical type	Discharge (t)
Radiator leak on fire pump	Engine coolant	0.06
Sheen beyond 500m Zone	Permitted discharge	0.56

A total of four non-compliances with permit conditions were submitted to OPRED during 2017:

Permit	Non-Compliance	No.
Oil discharge permit	Oily water discharged overboard not quantified as a result of a passing valve	1
Chemical permit	Unpermitted use of diesel as a spacer prior to a chemical treatment on a blocked injection quill	1
Consent to Locate	Failure of navigation aid light	1
Greenhouse gas permit	Flare meter operating incorrectly	2



# ENVIRONMENTAL PERFORMANCE

## KITTIWAKE

Data for the Kittiwake platform is included for the period June to December 2017.

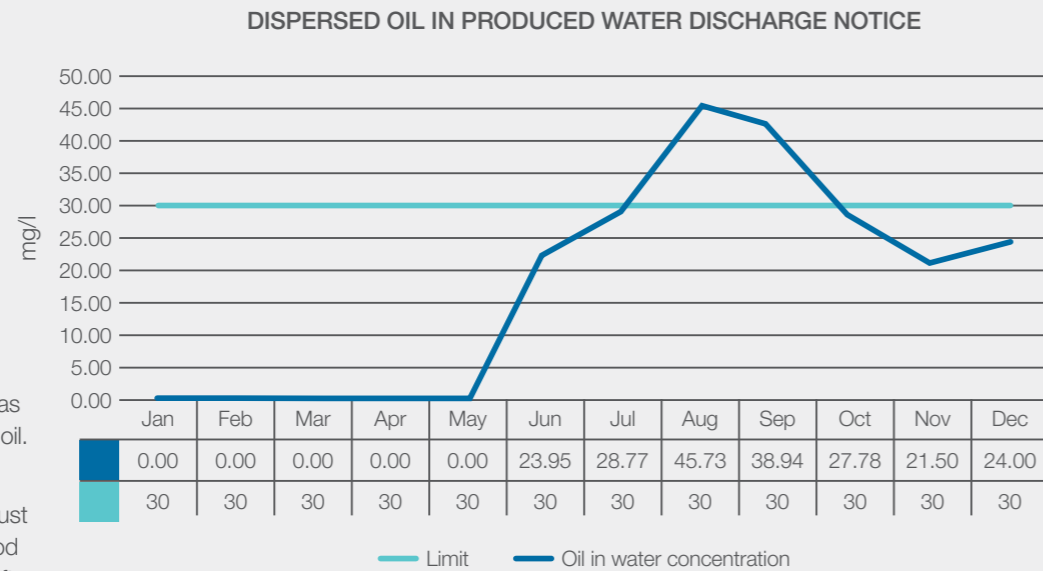
### DISCHARGES TO SEA

#### OIL IN PRODUCED WATER

Water discharges are monitored and reported in accordance with the Oil Pollution, Prevention and Control Permit. The average oil in water concentration for the period was 28.16 mg/l.

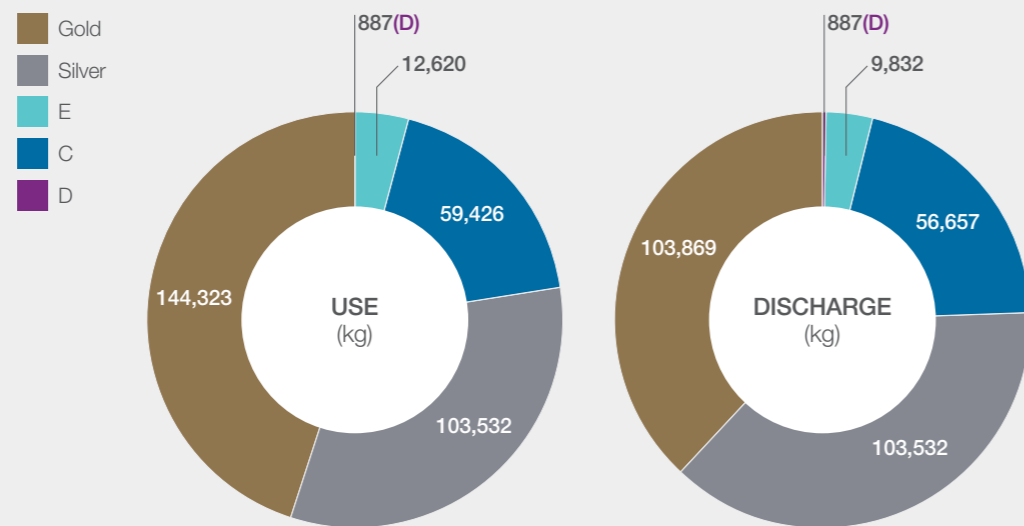
The total volume of water and mass of oil discharged over the period of operation was 620,558 m<sup>3</sup> and 17,559 kg of oil.

Elevated oil in water results were experienced during August and September due to a period of instability following restart after the summer shutdown.



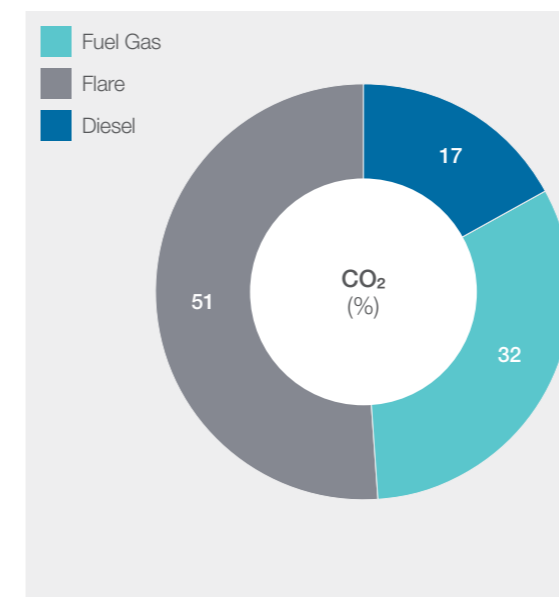
#### CHEMICAL USE AND DISCHARGE

The majority of chemicals in use on the Kittiwake are in the least harmful gold and silver categories. Ongoing chemical management aims to continue to minimise the impact of chemicals on the environment.

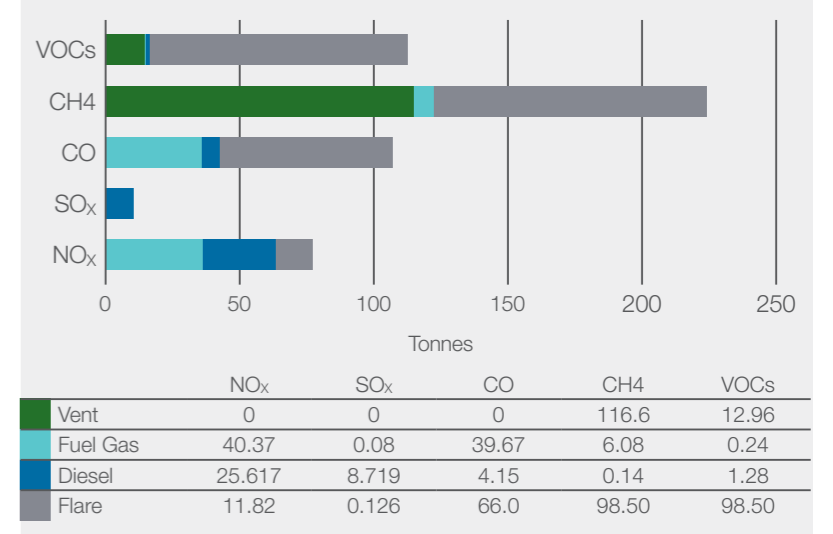


### DISCHARGES TO ATMOSPHERE

Power generation is the main source of atmospheric emissions. Other sources are flaring and venting gas. 112,108 tonnes of CO<sub>2</sub> emissions were verified for greenhouse gas reporting purposes. Other emissions were reported through the Environmental Emissions Monitoring System.



#### EMISSIONS BY SOURCE

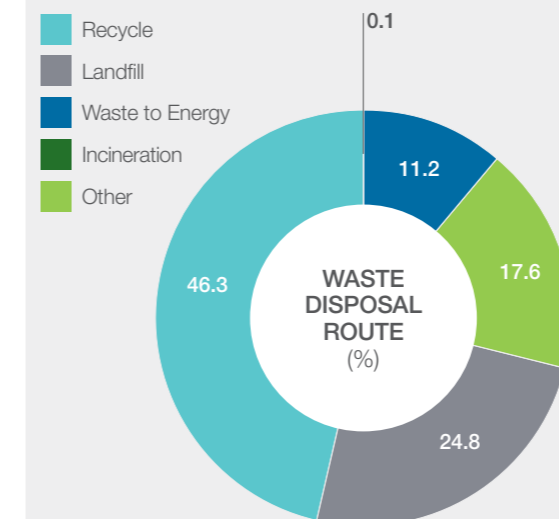


There are five hydrochlorofluorocarbon (HCFC) refrigerant compounds in use on Kittiwake Alpha. The inventory and emission details are monitored and reported on the right:

Compound	On Facility (kg)	Emitted (kg)	CO <sub>2</sub> Equivalent Factor (kg)	CO <sub>2</sub> Equivalent (t)
HFC-134	10	0	1,100	0
HFC-134a	2	0	1,430	0
HFC-404a	36	7	3,922	254
HFC-422d	39	82	2,729	3,179
HC-600a (Isobutane)	0.03	0	3	0

### WASTE MANAGEMENT

287 tonnes of waste generated on the platform was segregated and managed onshore. The disposal routes are charted below:



### REPORTS AND NOTIFICATION

During the reporting period, there were four PON 1 submitted. There was one diesel loss during bunkering and three oil-related PON 1s:

#### PON 1 Notification details

Activity	Oil/Chemical type	Discharge (t)
Bunkering	Diesel	0.0001
Produced water system	Oil	0.07488
PDN – produced water system	Oil sheen	0.013
PDN – drains system	Emulsion spotting	0.015

A total of six non-compliances with permit conditions were submitted to OPRED during the reporting period:

Permit	Non-Compliance	No.
Oil discharge permit	Monthly discharge limit exceeded	2
Oil discharge permit	Hazardous Drain pump failure	1
Oil discharge permit	Produced water meter fault	1
Chemical Permit	Chemical overuse	1
Consent to locate	Naming boards not fully illuminated	1

## ENVIRONMENTAL PERFORMANCE

# SCHOONER AND KETCH

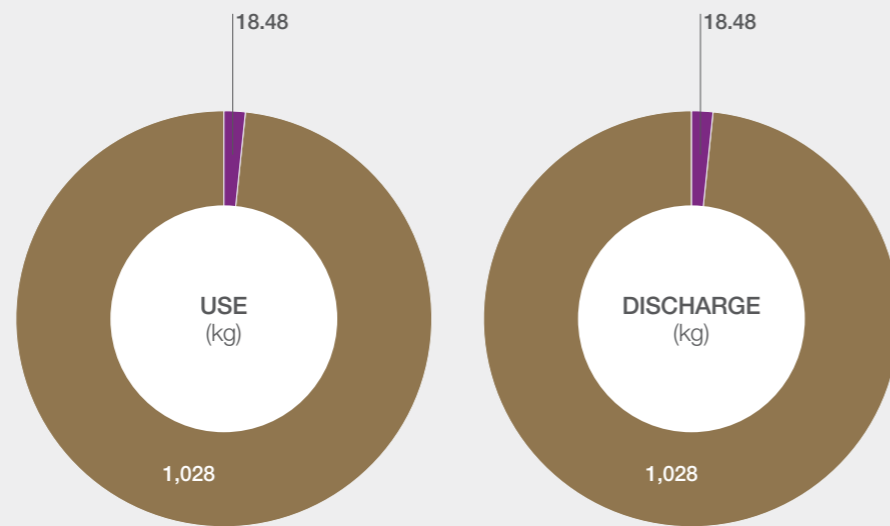
Schooner and Ketch are normally unmanned gas platforms in the Southern North Sea. They have no produced water discharges and minimal chemical use. Power for the assets is provided by diesel generators. There is no fuel gas or flare combustion.

### DISCHARGES TO SEA

#### CHEMICAL USE AND DISCHARGE

There were two chemicals in use on Schooner and Ketch; hydraulic fluid and a cleaning agent. 98% of the chemicals used were in the least harmful Gold band.

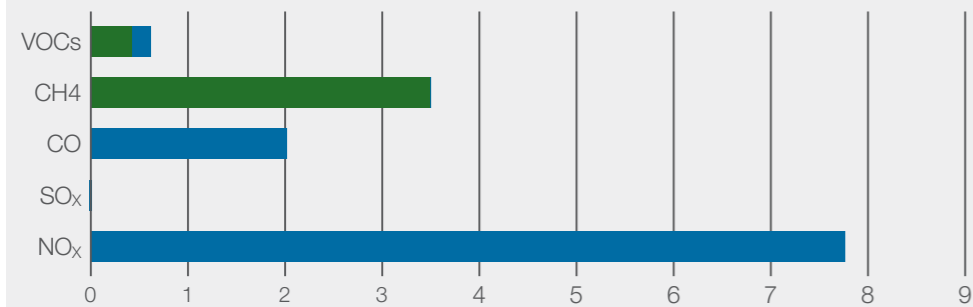
Gold  
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### DISCHARGES TO ATMOSPHERE

Power generation is the only source of atmospheric emissions.

#### EMISSIONS BY SOURCE

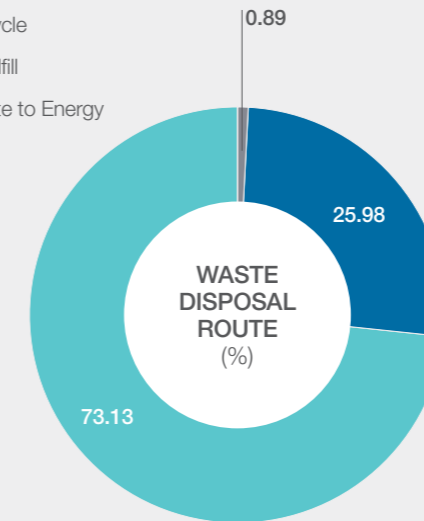


	NO <sub>x</sub>	SO <sub>x</sub>	CO	CH <sub>4</sub>	VOCs
Vent	0	0	0	3.468	0.409
Diesel	7.71	0.02	2.04	0.02	0.26

### WASTE MANAGEMENT

22.48 tonnes of waste was managed onshore. The disposal routes are charted below:

Recycle  
Landfill  
Waste to Energy



### REPORTS AND NOTIFICATION

There were no reported PONs or non-compliances reported for Schooner or Ketch in 2017.

## ENVIRONMENTAL PERFORMANCE

# TRANSOCEAN SPITSBERGEN

The Transocean Spitsbergen completed a four well campaign in the Greater Lancaster Area in March 2017.

### DISCHARGES TO SEA

#### OIL IN PRODUCED WATER

Water discharges are monitored and reported in accordance with the Oil Pollution Prevention Permit and Conditions. The average oil in water discharge was 6.33 mg/l.

Produced water discharged m <sup>3</sup>	312.27
Average oil in water concentration (mg/l)	6.33
Total Oil Discharged (t)	0.002

#### DRILL CUTTINGS AND FLUIDS DISCHARGE

A total of 29.6 tonnes of water based drill cuttings were discharged to sea during drilling activities. The total oil discharged associated with cuttings was 0.066 tonnes.

Total Quantity of Cuttings Discharged (t)	29.645
Total Quantity of Oil Discharged (t)	0.0664
Average Oil on Oil Bearing Reservoir Cuttings Discharged (%)	0.67

#### DRILLING CUTTINGS DISCHARGES

Total Quantity of Cuttings Discharged (t)	29.645
Total Quantity of Oil Discharged (t)	0.0664
Average Oil on Oil Bearing Reservoir Cuttings Discharged (%)	0.67

#### DRILLING FLUIDS DISCHARGE

Total Quantity of Fluids Discharged (t)	1149.5
Total Quantity of Oil Discharged (t)	0.0585
Average Oil on Oil Bearing Reservoir Fluids Discharged (%)	0.005

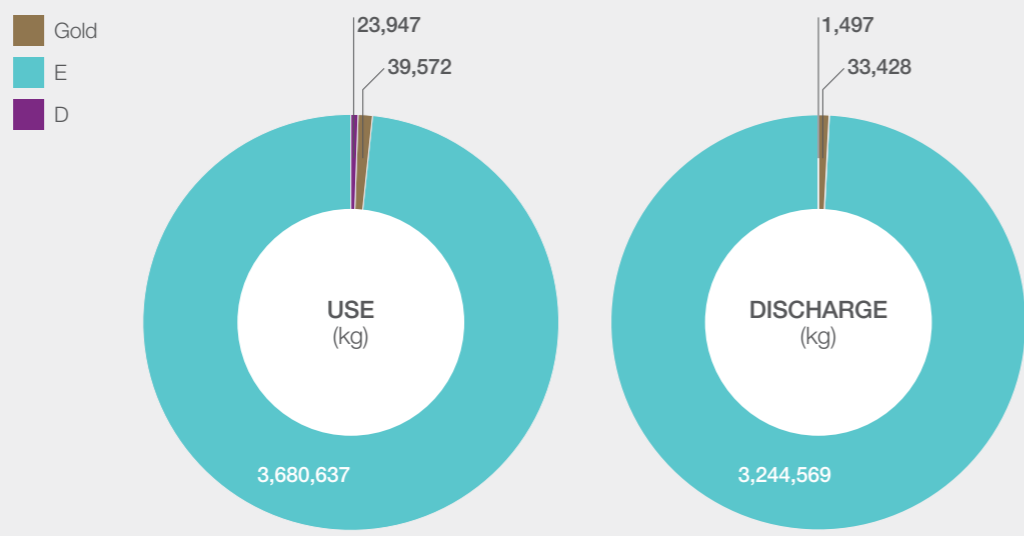
#### BASE OIL DISCHARGE

The volume of base oil discharged associated with the well test and suspension activities is reported in the table on the right:

Waste Stream Nature	Volume of discharged (m <sup>3</sup> )	Maximum concentration of base oil discharged (mg/l)	Weight of base oil discharged (kg)
Base oil discharge	54.7	28.92	1.58

#### CHEMICAL USE AND DISCHARGE

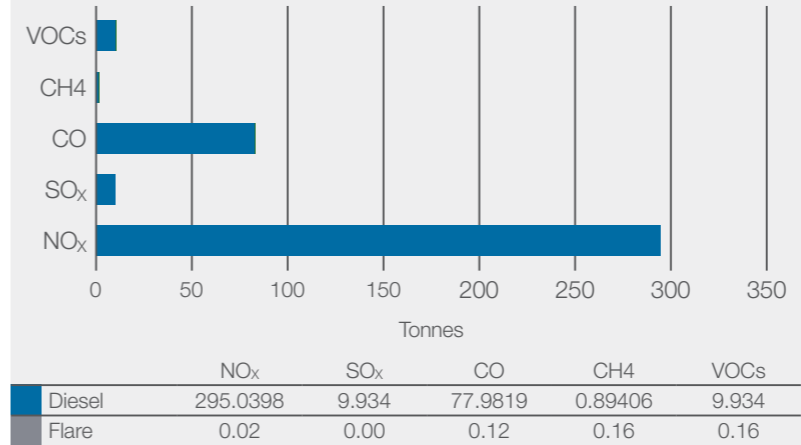
The majority of chemicals in use on the Transocean Spitsbergen are in the least harmful Gold and E categories. Ongoing chemical management aims to continue to minimise the impact of chemicals on the environment.



### DISCHARGES TO ATMOSPHERE

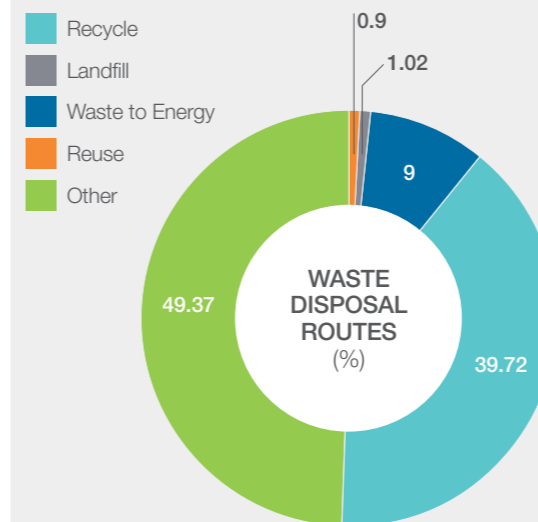
Emissions to atmosphere generated from drilling activities are associated with power generation using diesel fuelled engines and gas flaring gas drilling operations. The main combustion product is Carbon Dioxide (CO<sub>2</sub>). A total of 15,915 tonnes of CO<sub>2</sub> were emitted from the sources described below:

#### EMISSIONS BY SOURCE



### WASTE MANAGEMENT

A total of 322 tonnes of waste was brought onshore for disposal from the Transocean Spitsbergen during its activities. A large proportion of this waste was tank washings which include special wastes and require further treatment prior to disposal under licence.



### REPORTS AND NOTIFICATION

During its activities for Petrofac, PON 1 Notifications were submitted by the Transocean Spitsbergen. The total discharge was less than one tonne of fluid – the details of which are indicated below:

#### PON 1 Notification details

Activity	Oil/Chemical type	Discharge (t)
BOP Control fluid	Control Fluid – V2 Pelagic Glycol	0.890

The permit non-compliances submitted during the drilling activities, as indicated below:

Activity	Non-compliance	Description
Anchor handling	PON 2	Loss of 200kg steel materials
Rough Seas	PON 2	Loss of ladder
Rough Seas	PON 2	Loss of Wind Sock fixture

Activity	Non-compliance	No.
Chemical Permit	Discharge 2.89 tonnes of cement	1
Consent to Locate	PON 10 Emergency Lighting Failure	1

## ENVIRONMENTAL PERFORMANCE

# BP MILLER

The BP Miller platform ceased operation in 2007. Current environmental risks are therefore greatly reduced compared to the risks whilst producing. During 2017 a chemical discharge permit and consent to locate were in place for the asset.

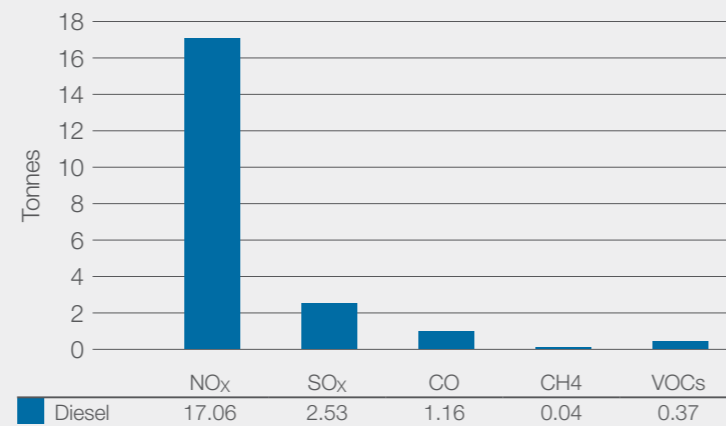
### DISCHARGES TO SEA DISCHARGES TO ATMOSPHERE

Permitted discharges to the sea were associated with legacy chemicals in pipelines, one of which is no longer on the CEFAS register.

Band	Kg
PLONOR	2
Previous Blue	20

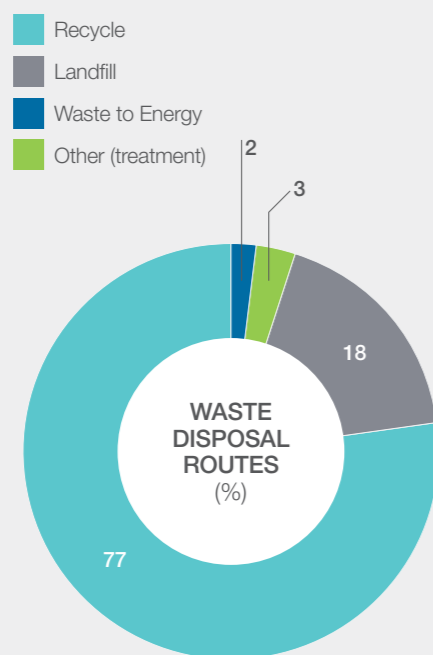
All discharges to atmosphere were associated with powering the accommodation and work sites. Power generation was achieved by diesel generators only. The production turbines have ceased operation.

The CO<sub>2</sub> produced by the power generation was 4,032 tonnes and the associated combustion emissions are shown on the right.



### WASTE MANAGEMENT

Waste generation in 2017 was associated with the accommodation of the persons on board and maintenance of the platform structure. The total waste generated during the period of Petrofac operation was 256 tonnes.



### REPORTS AND NOTIFICATION

During 2017 there was one spill to the marine environment.

#### PON 1 notification details

Activity	Oil/Chemical type	Discharge (t)
Fuel supply	Diesel	0.096

#### Permit non-compliances

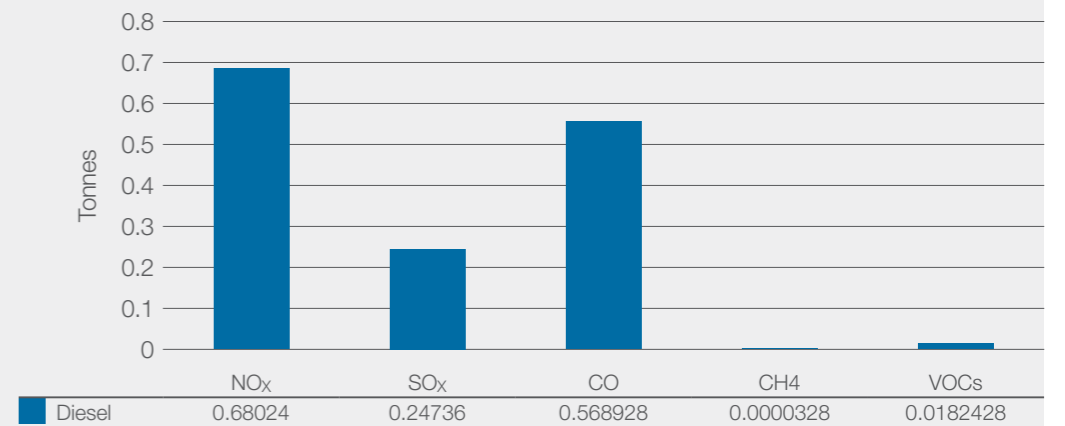
Permit	Issue	No.
Consent to locate	PON 2 – loss of platform signage to sea	1
Consent to locate	PON 10 – lighting failure	1

# IRISH SEA PIONEER

The Irish Sea Pioneer has no production capability and is powered by diesel generators. Emissions to the environment are related to the maintenance of the accommodation and movement of the vessel.

### DISCHARGES TO ATMOSPHERE

Discharges to atmosphere associated with powering the accommodation and work sites. Power generation diesel consumption was 61.84 tonnes and CO<sub>2</sub> emissions were 198 tonnes. Other associated emission are tabled on the right:

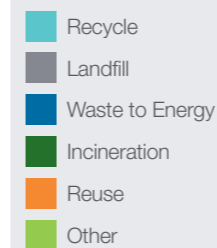


There are three HCFC refrigerant compounds in use. There were no releases from the ISP during 2017, the inventory details are monitored and reported.

Compound	On board (kg)	Emitted (kg)	CO <sub>2</sub> Equivalent Factor (kg)	CO <sub>2</sub> Equivalent (t)
HFC-134A	11.15	0	1430	0
HFC-404A	35.30	0	3922	0
HFC-422D	49.00	0	2729	0

### WASTE MANAGEMENT

74 tonnes of waste was managed onshore. The disposal routes are charted on the right.



### REPORTS AND NOTIFICATION

#### PON 1 notification details

Activity	Oil/Chemical type	Discharge (t)
Thruster Lube oil	Lube oil	0.0046

#### Other notification

Permit/ notification	Issue	No.
Consent to locate PON 10	Defective navigation light	1
PON 2	Loss of mannequin to sea	1



## **CONTACT**

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