

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

VDC LHR11 Limited

LHR11/12

Chandos Park Industrial Estate

Chandos Road

Park Royal

London

NW10 6NF

Permit number

EPR/YP3329SB

LHR11/12

Permit number EPR/YP3329SB

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

The site comprises two data centres which consist of an Environmental Permitting Regulations (EPR) 2016 Schedule 1 listed activity:

Section 1.1 Part A(1) (a) for the burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

The combustion plant comprises 37 x 6.1 MWth gas oil/ HVO fuelled standby generators (new Medium Combustion Plant (MCP)), with an aggregated total combustion capacity on-site of approximately 225.7 MWth. The gas oil/ HVO generators are solely used to provide standby electricity generation capacity to power the data centres in the event of a grid power failure. The data centres are operational 24 hours/day, 7 days/week and the electricity supply arrangements for the site include two diverse routes and associated infrastructure (e.g., transformers) providing a 2N level of resilience, where N is the power demand of the Installation.

The default generator specification as a minimum for new plant to minimise the impacts of emissions to air (NOx) is 2g-TA Luft or US EPA Tier 2 or an equivalent standard. The 37 generators to be used at the data centres are emissions optimised to meet the US EPA Tier 2 standard at 75% load. The generators also include a Selective Catalytic Reduction (SCR) NOx abatement system within the design. The SCR NOx abatement system on the generators will be used to limit the NOx emissions to a maximum of 190 mg/Nm³ per generator at 15% oxygen, which is the Medium Combustion Plant Directive (MCPD) 2015 limit for new gas oil engines.

The site comprises of two data centres which operate independently. Data centre LHR11 includes 17 generators and data centre LHR12 includes 20 generators. The generator sets are present inside a generator building for LHR11 and within dedicated acoustic enclosures on a gantry for LHR12. These are being permitted as one Installation because both data centres will be located on a single site wholly owned and operated by the same legal operator, they will share a common site boundary, drainage network, electrical supply infrastructure, fuel supply systems as well as internal road network.

During the normal operations of the site, the generators are only run for maintenance and testing, according to a specified testing schedule incorporated into table S1.2 of the permit. No electricity is exported from the Installation.

The gas oil/ HVO fuel is stored in day (belly) tanks which are located adjacent to the individual generators they serve and have been designed in line with current standards and are bunded (110% capacity) to meet The Control of Pollution (Oil Storage) (England) Regulations 2001 and British Standard BS799 Part 5 2010 (Oil Burning Equipment Carbon Steel Oil Storage Tanks). The day tanks are filled directly from 4 below ground bulk tanks located externally to the generator buildings, via the fuel pump located within a dedicated pump room within each generator building.

The 37-day tanks store approximately 1,000 litres of fuel each. The 4 bulk fuel storage tanks store approximately 90,000 litres of fuel each. The total capacity for gas oil storage on this site is 397,000 litres.

The below ground bulk fuel storage tanks are designed in line with current standards, they have a secondary containment capacity of at least 110% of the primary container to meet the Control of Pollution (Oil Storage) (England) Regulations 2001. Alarms, level and leak detection and overfill protection devices are also installed on the tanks. Gas oil/ HVO fuel is pumped from the underground tanks to the day tanks via a double-walled HDPE piping system with leak detection and monitoring.

The below ground bulk fuel storage tanks are replenished from deliveries of gas oil/ HVO from tankers to the site. The tanker unloading bay is an impermeable concrete hardstanding area bound by slot drainage leading to a below ground 45 litre capacity bypass interceptor with alarm in case of spillages or loss of containment from the road tanker, this then connects into the site foul drainage system.

There are three alarmed oil/ water interceptors on site, serving the generator locations and the fuel delivery point. There are two 10,000 litre full retention interceptors serving the LHR11 generator building and LHR12 generator gantry area drainage, and a 45 litre capacity bypass interceptor serving the fuel offloading area.

Uncontaminated surface water from the site, drains to a soakaway, the foul public sewer and the surface water public sewer before combining in Victoria Road into one combined foul and surface water public sewer. The combined sewer discharges to Beckton Wastewater Treatment Works and ultimately the River Thames. The site is covered in hardstanding to reduce the likelihood of potential leaks contaminating the underlying soils.

The Installation is located within a predominately mixed industrial and commercial area, known as Park Royal, within the London Borough of Ealing at national grid reference TQ 21147 82397.

There are also 2 protected European sites within 10km, 31 local sites within 2km and 1 protected species within 500m. The data centre is situated in an Air Quality Management Area (AQMA) (Ealing AQMA) declared by the London Borough of Ealing in 2000 for annual mean NO2 and 24-hour PM10.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application EPR/YP3329SB/A001	Duly made 29/02/24	Application for a combustion facility consisting of 2 data centres.
Further Information received, responses to Schedule 5 notice dated 19/04/24	24/05/24	Further information on containment protection, drainage and revised site plans.
Further Information received, responses to Request for Further Information dated 05/06/24	19/06/24 20/06/24 26/06/24 27/06/24	Further information on HVO use, containment protection and revised site plans.
Permit determined EPR/ YP3329SB (Billing reference: YP3329SB)	14/08/24	Permit issued to VDC LHR11 Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/YP3329SB

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

VDC LHR11 Limited (“the operator”),

whose registered office is

44 Esplanade

St Helier

Jersey

JE4 9WG

company registration number OE003126

to operate an installation at

LHR11/12

Chandos Park Industrial Estate

Chandos Road

Park Royal

London

NW10 6NF

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Eleanor Blackeby	14/08/2024

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.3 For the following activities referenced in schedule 1, table S1.1: AR1. The activities shall not operate for more than 500 hours in emergency use per annum.

2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.5 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

- (a) the nature of the process producing the waste;
- (b) the composition of the waste;
- (c) the handling requirements of the waste;
- (d) the hazardous property associated with the waste, if applicable; and
- (e) the waste code of the waste.

2.3.6 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
 - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in table S3.1.
 - (b) process monitoring specified in table S3.4.
- 3.5.2 The first monitoring measurements shall be carried out within four months of the issue date of the permit or the date when the MCP is first put into operation, whichever is later.
- 3.5.3 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2, S3.3 and S3.4 unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
 - (b) be made as soon as reasonably practicable;
 - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
 - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
 - (b) the performance parameters set out in schedule 4 table S4.2 using the forms specified in table S4.3 of that schedule.
 - (c) where conditions 2.3.3 applies, the hours of operation in any year.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
 - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.3; and

- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and

- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days' notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.1 Part A(1) (a) Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.	<p>Operation of 37 emergency standby generators with a total thermal input of approximately 225.7 MWth.</p> <p>LHR11: 17 x 6.1 MWth engines (New medium combustion plant (MCP))</p> <p>LHR12: 20 x 6.1 MWth engines (New medium combustion plant (MCP))</p> <p>The generators will burn gas oil fuel or equivalent substitute solely for the purpose of providing electricity to the Installation in the event of a failure of supply from the National Grid and during maintenance testing.</p>	<p>From receipt of raw materials and generation of electricity to despatch of waste.</p> <p>Including selective catalytic reduction (SCR) systems.</p> <p>Electricity produced at the Installation cannot be exported to the National Grid.</p> <p>The emergency operational hours of the Installation shall not exceed the specifications set out in condition 2.3.3 of this permit.</p>
Directly Associated Activity			
AR2	Storage of raw materials	From receipt of raw materials to use within the facility.	
AR3	Surface water drainage	<p>From the input to the site drainage system until discharge to soakaway (emission point SL1), public foul sewer (Thames Water) (emission point S1) and public surface water sewer (Thames Water) (emission point SW1).</p> <p>Drainage system covering fuel storage and refuelling bays drains via oil interceptors, then to soakaway (emission point SL1), public foul sewer (Thames Water) (emission point S1) and public surface water sewer (Thames Water) (emission point SW1).</p>	

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/YP3329SB/A001	Application Forms B2 and B3 and all referenced supporting information.	Duly Made 29/02/24
Application EPR/YP3329SB/A001 Generators maintenance testing schedule	Generators maintenance testing schedule detailed in application documents Chandos Road – LHR11 and LHR12 EPR/YP3329SB/A001 Air Quality dated November 2023, supplemented by 'Technical Note' dated 28/03/2024.	Duly Made 29/02/24

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/YP3329SB/A001 SCR Abatement	NOx abatement efficiency for the selective catalytic reduction systems (SCR) detailed in application documents Chandos Road – LHR11 and LHR12 EPR/YP3329SB/A001 Air Quality dated November 2023, supplemented by 'Technical Note' dated 28/03/2024.	Duly Made 29/02/24
Application EPR/YP3329SB/A001	Noise management plan in response to Form B3, Section 3b General requirements (Table 4) of the application form.	Duly Made 29/02/24
Response to Schedule 5 Notice dated 19/04/2024	Response to questions 2-6 detailing containment control and questions 7-8 detailing drainage.	24/05/24
Response to Request for Further Information dated 05/06/24	Detailing tanker unloading bay containment.	19/06/24 27/06/24

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	<p>Air Quality Management Plan (AQMP)</p> <p>The operator shall produce an AQMP in conjunction with the Local Authority outlining response measures to be taken in the event of a grid failure. This should include but not be limited to the following considerations:</p> <ul style="list-style-type: none"> • The response should be tailored to reflect the predicted potential impact indicated by the air dispersion modelling at individual receptors; • Preventative and reactive actions to be implemented to limit the duration of an outage event to less than 50 hours as far as possible; • Specific timescales for response measures; • How local conditions during a grid failure might influence the response required, for example meteorological conditions or time of day; • Contingency for how the response will be carried out in the event scenario i.e. loss of power; • Timescales for continued review of the management plan; and • Addition of indicative air quality monitoring stations around the site to inform on air quality during extended periods of standby generator running including prolonged grid outages. <p>The agreed Air Quality Management Plan shall be submitted to the Environment Agency for approval.</p>	Within 6 months from the date of issue of the permit EPR/YP3329SB

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC2	<p>Monitoring plan - flue gas monitoring requirements</p> <p>The operator shall submit a monitoring plan for approval by the Environment Agency detailing their proposal for the implementation of the flue gas monitoring requirements specified in table S3.1, in line with web guide ‘Monitoring stack emissions: low risk MCPs and specified generators’ Published 20 March 2024 (formerly known as TGN M5). The plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> • When the generators are not fitted with sampling ports, a proposal to install them within the shortest practical timeline; • Details of any relevant safety, cost and operational constraints affecting the monitoring regime, in support of any proposed deviation from the testing regime specified in permit table S3.1. 	Within 3 months from the date of issue of the permit EPR/YP3329SB
IC3	<p>Tanker Unloading Bay - Proposal</p> <p>The operator shall submit a written report to the Environment Agency for assessment and written approval</p> <p>The report must contain:</p> <ul style="list-style-type: none"> • Proposal for providing permanent containment for the tanker unloading bay. • Demonstration that proposals meet appropriate CIRIA C736 standard. • Timescale of implementation of proposals. <p>You must implement the proposals in the report in line with the timescales agreed with the Environment Agency.</p>	Within 2 months from the date of issue of the permit EPR/YP3329SB
IC4	<p>Tanker Unloading Bay - Installation</p> <p>The operator shall submit a written report to the Environment Agency for assessment and written approval</p> <p>The report must contain:</p> <ul style="list-style-type: none"> • Evidence of the permanent engineered installation providing containment for the tanker unloading bay. • Demonstration that the permanent engineered installation meets appropriate CIRIA C736 standard. 	Within 6 months from the date of issue of the permit EPR/YP3329SB

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC5	<p>Performance of SCR systems</p> <p>The operator shall submit a written report to the Environment Agency for assessment and written approval. The report must contain:</p> <ul style="list-style-type: none"> • Detailed information on the specification of the suitability of the NOx sensors and urea solution dosing to the SCR systems. • Evidence of the initial calibration of the NOx sensors and verification of the levels of unabated and abated NOx emissions upstream and downstream of the SCR system according to a methodology consistent with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 20 March 2024 (formerly known as TGN M5). • Confirmation that the SCR systems achieve the NOx abatement performance stated in the application documents referred to in table S1.2, or a proposal for remedial actions when this is not achieved. • A plan to periodically calibrate the NOx sensors and verify the performance of the SCR systems, including the proposed frequencies. <p>The operator must implement the proposals in the report in line with the timescales agreed within the Environment Agency's written approval.</p>	<p>Within 3 months from the date of issue of the permit EPR/YP3329SB or as agreed in writing with the Environment Agency</p>

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
1	<p>Commissioning</p> <p>At least one month before operation the operator shall submit a commissioning plan to the Environment Agency for approval. The plan shall provide timescales for the commissioning of the gas oil/ HVO generators and shall demonstrate that the commissioning of the gas oil/ HVO generators is covered within the site's permitted regular testing regime, thereby minimising durations and impacts.</p> <p>When the commissioning is not covered within the site's permitted regular testing regime, the operator shall submit an environmental risk assessment for approval by the Environment Agency, demonstrating that the environmental risks during the commissioning are minimised and remain not significant. The commissioning of the engines shall not begin prior to receiving written approval to the plan and associated environmental risk assessment by the Environment Agency.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>
2	<p>Containment</p> <p>At least one month before operation the operator shall undertake a review of all bunds and secondary containment at the site and submit a written report to the Environment Agency for assessment and written approval.</p> <p>The review shall be carried out by a qualified structural engineer and compare all bunds and secondary containment against the standards set out in CIRIA guidance: Containment systems for the prevention of pollution (C736).</p>

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
	<p>The report must contain the findings and recommendations of the review including timescales for implementation of any improvements identified, and a maintenance and inspection regime.</p> <p>No permitted operations to commence until agreed in writing with the Environment Agency.</p>

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Gas oil or equivalent substitute to be agreed in writing with the Environment Agency.	Sulphur content 0.001% (w/w) max

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency [Note 2]	Monitoring standard or method
LHR11: A1-A17 LHR12: A18-A37 Emission points from generators as shown on site plan in schedule 7	Gas oil or equivalent fuelled generator exhausts LHR11: 17 x 6.1 MWth engines (New medium combustion plant (MCP))	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	No limit set	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 20 March 2024 (formerly known as TGN M5)	Every 1500 hours of operation or once every five years (whichever comes first). [Note 1]	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 20 March 2024 (formerly known as TGN M5)
		LHR12: 20 x 6.1 MWth engines (New medium combustion plant (MCP))	Carbon monoxide	No limit set	In line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 20 March 2024 (formerly known as TGN M5)	Every 1500 hours of operation or once every five years (whichever comes first). [Note 1]
		Sulphur dioxide	No limit set	-	-	-
		Particulate Matter	No limit set	-	-	-
		Ammonia	No limit set	-	-	-
Vents associated with underground bulk fuel storage tanks	Vents from storage tanks 1 to 4	No parameters set	No limit set	-	-	-
<p>Note 1: Unless otherwise agreed in writing with the Environment Agency as a result of approval of Improvement Condition IC2 of this permit.</p> <p>Note 2: In accordance with condition 3.5.2 of this permit.</p>						

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
SL1 Emission point as shown on site plan in schedule 7 [Note 1]	Clean and uncontaminated surface water via oil/ water interceptor	No parameter set	No limit set	-	-	-
SW1 Emission point as shown on site plan in schedule 7 [Note 2]	Clean and uncontaminated surface water via oil/ water interceptor	No parameter set	No limit set	-	-	-

Note 1: Emission to soakaway.
Note 2: Emission to Thames Water Surface Water Sewer, combining with Thames Water Combined Sewer, discharging to Beckton Wastewater Treatment Works and ultimately the River Thames.

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 Emission point as shown on site plan in schedule 7 [Note 1]	Clean and uncontaminated surface water via oil/ water interceptor	No parameter set	No limit set	-	-	-

Note 1: Emission to Thames Water Foul Sewer, combining with Thames Water Combined Sewer, discharging to Beckton Wastewater Treatment Works and ultimately the River Thames.

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
LHR11: A1-A17 LHR12: A18-A37 Emission points from generators as shown on site plan in schedule 7	SCR abatement efficiency	Continuous	Continuous reading of NOx sensors fitted to SCR system to manufacturer's specification. Periodic validation according to the plan approved by the Environment Agency in	Minimum abatement of NOx, in accordance with operating techniques in application documents listed in table S1.2

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
			response to Improvement Condition IC5	

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Point source emissions to air Parameters as required by condition 3.5.1	LHR11: A1-A17 LHR12: A18-A37	Every 1500 hours of operation or once every five years (whichever comes first).	Within 4 months of the issue date of the permit or the date when the engine is first put into operation, whichever is later. [Note 1]
Process monitoring Parameters as required by condition 3.5.1	LHR11: A1-A17 LHR12: A18-A37	Annually	January

Note 1: Unless otherwise agreed in writing with the Environment Agency as a result of approval of Improvement Condition IC2.

Table S4.2 Performance parameters		
Parameter	Frequency of assessment	Units
Usage of gas oil (or equivalent substitute agreed in writing with the Environment Agency)	Annually	Tonnes
Generator operation for testing and maintenance	Report to be submitted annually	<ul style="list-style-type: none"> - Total hours for the site (hours) - Total hours per generator (hours) - Total number of runs per generator (quantity and dates) - Number of minutes per run (minutes)
Generator operation during emergency scenario	Within 24 hours if operation commences	<ul style="list-style-type: none"> - Date and time of national grid failure - Number of generators operating immediately after the failure - Number of generators operating two hours after failure - Anticipated duration of the mains supply failure (hours)
Generator operation during emergency scenario	Annually	<ul style="list-style-type: none"> - Total number of runs (quantity) - Duration of runs (hours)
Operation of SCR systems	Annually	<ul style="list-style-type: none"> - Gas oil usage in each generator fitted with SCR - Readings of NOx sensors - NOx abatement efficiency - Evidence of periodic calibration with frequency specified according to Environment Agency's approval of pre-operational condition IC5

Table S4.3 Reporting forms		
Parameter	Reporting form	Form version number and date
Air	Emissions to Air Reporting Form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Performance Parameters	Performance Parameters Reporting Form 'Performance 1' or other form as agreed in writing by the Environment Agency	As agreed with the Environment Agency
Generator operation during emergency scenario	Generator Emergency Scenario Reporting Form 'Emergency Scenario' or other form as agreed in writing by the Environment Agency	As agreed with the Environment Agency
Process monitoring Parameters	Process Monitoring Form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	

The dates of any unauthorised emissions from the facility in the preceding 24 months.	
---	--

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“Accident” means an accident that may result in pollution.

“Application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“Authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“Compliance date” means 01/01/2025 for existing MCPs with net rated thermal input of greater than 5MW or 01/01/2030 for existing MCPs with a net rated thermal input of less than or equal to 5MW.

“Emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“Emissions to land” includes emissions to groundwater.

“Energy efficiency” means the annual net plant energy efficiency, the value for which is calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“Existing MCP” means an MCP first put into operation before 20/12/2018.

“Gas oil” includes diesel and is defined in Article 3(19) of the MCPD.

“Groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“Medium Combustion Plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“New MCP” means an MCP first put into operation on or after 20/12/2018.

“Operating hours” means the time, expressed in hours, during which a combustion plant is operating and discharging emissions into the air, excluding start-up and shut-down periods.

“Shut-down” is any period where the plant is being returned to a non-operational state.

“Start-up” is any period where the plant has been non-operational, until fuel has been fed to the plant to initiate steady-state conditions.

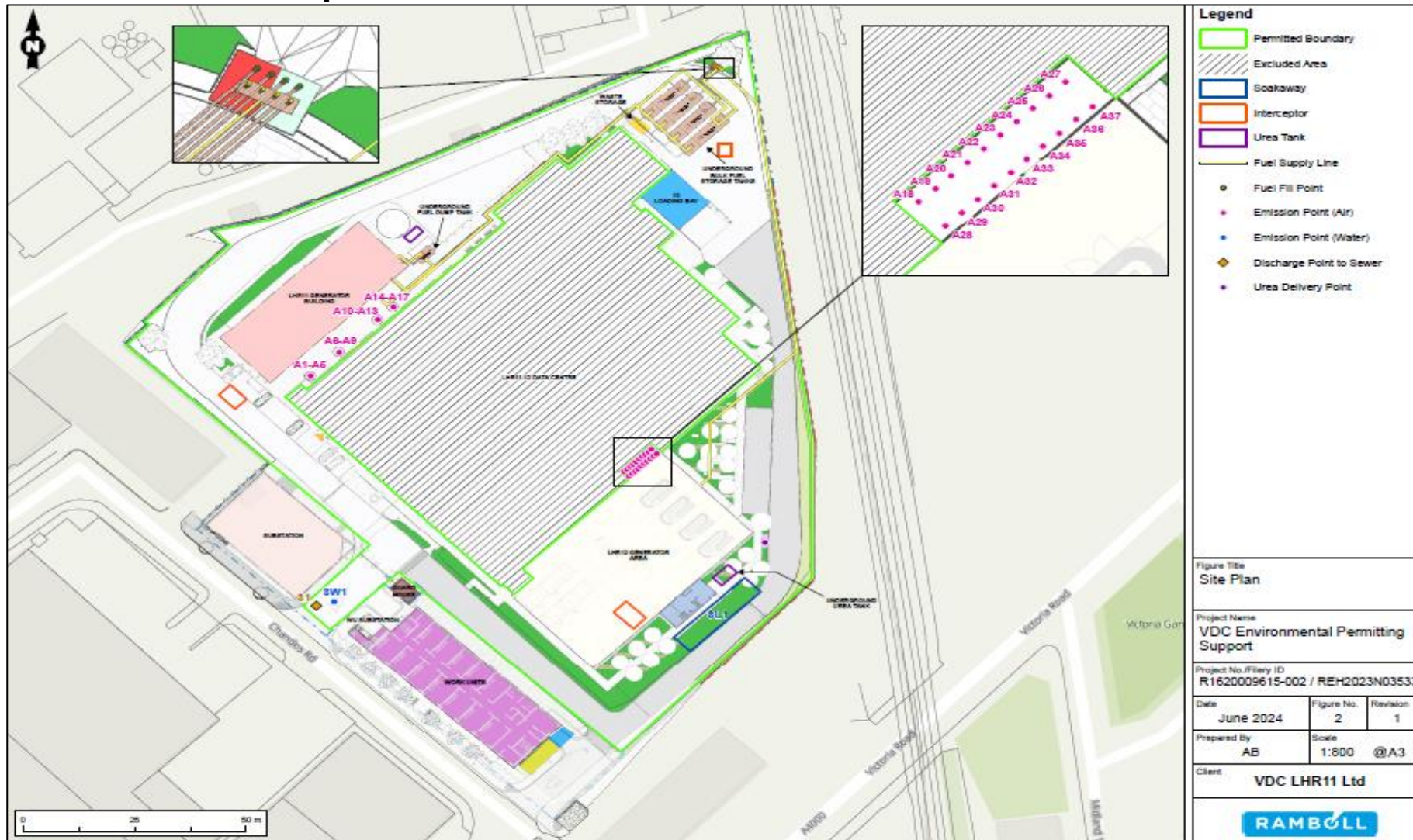
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels other than gas engines or gas turbines, 6% dry for solid fuels.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

“Year” means calendar year ending 31 December.

Schedule 7 – Site plan



Legend		
	Permitted Boundary	
	Excluded Area	
	Soakaway	
	Interceptor	
	Urea Tank	
	Fuel Supply Line	
	Fuel Fill Point	
	Emission Point (Air)	
	Emission Point (Water)	
	Discharge Point to Sewer	
	Urea Delivery Point	

Figure Title		
Site Plan		
Project Name		
VDC Environmental Permitting Support		
Project No./File ID		
R1620009615-002 / REH2023N03533		
Date	Figure No.	Revision
June 2024	2	1
Prepared By	Scale	@A3
AB	1:800	
Client		
VDC LHR11 Ltd		

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END OF PERMIT

Permit number
EPR/YP3329SB

Reporting Forms

Emissions to Air Reporting Form

Permit number: [EPR/AB1234CB]

Operator: [A Company Name Limited]

Facility name: [Unit A, Anytown]

Emissions to Air Reporting Form: version 1, 08/03/2021

Reporting of emissions to air for the period from [DD/MM/YY] to [DD/MM/YY]

Emission point	Substance / parameter	Emission Limit Value	Reference period	Test method ¹	Result ²	Sample dates and times ³	Uncertainty ⁴
[e.g. A1]	[e.g. Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)]	[e.g. 200 mg/m ³]	[e.g. daily average]	[e.g. BS EN 14181]	[State result]	[State relevant dates and time periods]	[State uncertainty if not 95% confidence interval]

Signed: [Name]

Date: [DD/MM/YY]

(Authorised to sign as representative of the operator)

Guidance for use: Use this form to report your monitoring results.

Example text is shown in bracketed grey italics. Replace the example text by entering your own site specific information. Complete columns 1 to 5 using the information from schedule 3 of your permit. Complete columns 6 to 8 with your monitoring data. Add additional rows as necessary.

- ¹ Where an internationally recognised standard test method is used, give the reference number. Where another method that has been formally agreed with the Environment Agency, give the appropriate identifier. In other cases state the principal technique, for example gas chromatography.
- ² Give the result as the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, give the result as the 'minimum to maximum' of the measured values.
- ³ For non-continuous measurements give the date and time of the sample that produced the result. For continuous measurements give the percentage of the process operating time covered by the result.
- ⁴ Complete if the uncertainty associated with the result is not a 95% confidence interval. Leave blank for 95% confidence intervals.

Performance parameters

Permit number:

Operator:

Facility name:

Form Number: Performance 1, DD/MM/YYYY

Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY

Parameter	Value	Units
Gas oil usage		Tonnes
Generator annual operation in emergency scenario	Number of runs	
	Run	Duration of run
	1	
	2	
Generator annual operation for testing and maintenance [Note 1]	Number of runs	
	Run	Duration of run
	1	
	2	

Note 1: Provide details of each testing and maintenance test in the following template:

Generator operation for testing and maintenance Repeat for each test	Date of test	DD/MM/YY
	Test type	Description such as: 'Off load / On load / Load Bank'
	Start / End time	XX:XX / XX:XX
	Generators testing sequence and duration	<ul style="list-style-type: none"> - Data Hall xxx – number of generators – 0.5 hours (time start xx:xx; time end xx:xx) Followed by <ul style="list-style-type: none"> - Data Hall xxx – number of generators – 0.5 hours (time start xx:xx; time end xx:xx)
	Comments / Additional information on the test	

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)

Generator emergency scenario – to be provided within 24 hours of grid failure

Permit number:

Operator:

Facility name:

Form Number: Emergency Scenario, DD/MM/YYYY

Reporting of generator emergency scenario operation

Parameter	
Date of grid failure	DD/MM/YY
Time of grid failure	XX:XX
Number of generators operating immediately after the failure	
Number of generators operating 2 hours after failure	
Anticipated duration of the mains supply failure	(hours)

Operator's comments:

Signed

Date.....

(Authorised to sign as representative of Operator)

Process Monitoring Form

Permit number: [EPR/AB1234CB]

Operator: [A Company Name Limited]

Facility name: [Unit A, Anytown]

Process Monitoring Form: version 1, 08/03/2021

Reporting of process monitoring for the period from [DD/MM/YY] to [DD/MM/YY]

Monitoring point description or source	Parameter	Reference period	Test method ¹	Result ²	Sample dates and times ³	Uncertainty ⁴
[e.g. Condenser V 2345]	[e.g. cooling water outlet temperature]	[e.g. instantaneous]	[if applicable]	[State result]	[State relevant dates and time periods]	[if applicable]

Operator's comments

Signed: [Name]

Date: [DD/MM/YY]

(Authorised to sign as representative of the operator)

Guidance for use: Use this form to report your monitoring results.

Example text is shown in bracketed grey italics. Replace the example text by entering your own site specific information. Complete columns 1 to 5 using the information from schedule 3 of your permit. Complete columns 6 to 8 with your monitoring data. Add additional rows as necessary.

- ¹ Where an internationally recognised standard test method is used, give the reference number. Where another method that has been formally agreed with the Environment Agency, give the appropriate identifier. In other cases state the principal technique, for example gas chromatography.
- ² Give the result as the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, give the result as the 'minimum to maximum' of the measured values.
- ³ For non-continuous measurements give the date and time of the sample that produced the result. For continuous measurements give the percentage of the process operating time covered by the result.

Complete if the uncertainty associated with the result is not a 95% confidence interval. Leave blank for 95% confidence intervals.