Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Wastefront Sunderland Limited

Sunderland UTR Facility
Extension Road
East End
Port of Sunderland
SR1 2NR

Permit number

EPR/NP3900MP

Sunderland UTR Facility
Permit number EPR/NP3900MP

Introductory note

This introductory note does not form a part of the permit

This permit controls the operation of a waste facility to convert waste tyres into hydrocarbon fuels and carbon black. This process falls under the following primary activity listed in Schedule 1, Part 2 of the Environmental Permitting Regulations (EPR):

Section 1.2 Part A(1)(f)(iv): Activities involving the pyrolysis, carbonisation, distillation, partial oxidation or other heat treatment of other carbonaceous material (otherwise than with a view to making charcoal).

The main features of the permit are as follows:

The facility is located on a brownfield site within the Port of Sunderland centred on National Grid Reference (NGR) NZ 41364 56893.

The site is bordered to the north and the south by industrial premises. The main north-south access road within the docks lies to the west of the site, and to the east there is an area of open flat land before the sea wall. The enclosed area of the docks is located further to the west, and on their western side the former Hendon Railway sidings. The nearest residential properties are approximately 500m to the west, and further properties lie 690m to the north west and 750m to the south west.

The permit is to authorise the operation of a used tyre recycling (UTR) facility to process up to 77,000 tonnes per annum (tpa) of end-of-life tyres (European Waste Code (EWC) 16 01 03) by pyrolysis. The installation will include three pyrolysis lines and will produce approximately 24,000 tpa of recovered carbon black (rCB) and 30,000 tpa of hydrocarbon fuels. Steel will be recovered as a by-product.

The key process steps are as follows:

- Shredding of used tyres and removal of steel wire;
- Treatment of the shredded tyres within pyrolysis reactors to produce a gaseous phase, liquid phase and carbon-rich solid residues;
- Distillation of the liquid phase to produce hydrocarbon fuels (Naphtha, light distillate and “bunker oil” (i.e. a mix of heavy distillate and fuel oil components) from the pyrolysis oil; and heavy distillate and fuel oil cuts);
- Combustion of the cleaned gaseous phase and distillation of off-gas to provide fuel gas to heat the pyrolysis reactors;
- Combustion of the light distillate fraction in low-speed diesel engines to generate power on-site;
- Separation of fine steel wire from the char followed by milling, pelletising and drying of the solid residues to produce rCB;
- Treatment of all combustion gases, residual pyrolysis fuel gas and residual pyrolysis distillate in a regenerative thermal oxidiser (RTO); and
- Storage of conversion products, feedstocks and wastes pending transfer off-site.

The pyrolysis fuel gas burned within the process does not meet end of waste and emissions will be greater than those from the combustion of natural gas. On this basis, the requirements of Chapter IV and Annex VI (waste incineration and co-incineration plants) of the Industrial Emissions Directive (IED) are applicable. We have also applied the relevant Best Available Technique (BAT) Associated Emission Levels (AELs) from the waste incineration BAT Conclusions.

The permit implements the requirements of the EU Directives on Industrial Emissions and Waste.

All combustion emissions are ultimately released from the facility via the RTO. The emissions from the RTO are cooled in a water quench tower followed by removal of oxides of sulphur and any remaining traces of hydrogen chloride (HCl) in a caustic wet scrubber tower, before the cleaned gases are released to atmosphere via the 30m high stack at emission point A1. The emission point will be continuously monitored for oxides of nitrogen (NOx), sulphur dioxide (SO_2), particulate matter, carbon monoxide (CO), carbon dioxide (CO_2), total organic carbon (TOC) and HCl.

An assessment of emissions to air from emission point A1 concludes that there are no predicted exceedances of air quality standards for the protection of human health at the point of maximum ground level impact for any of the scenarios assessed. The predicted impact on designated sensitive habitats within the relevant screening distance are screened out as insignificant.

The plant is equipped with an emergency flare (emission point A2) for safety purposes, restricted to use only in extreme emergencies. It is anticipated that the flare will be used for less than 100 hours per annum.

There are a number of other emissions to air (A3 to A19) associated with product loading systems, dust from milling and tyre shredding and product storage tank vents.

Only uncontaminated surface rainwater will be released to surface water. Process effluent will be tankered off-site for treatment at an appropriately regulated facility.

The facility will also be regulated under the UK Control of Major Accident Hazards (COMAH) regulations, as a result of the storage capacities for the liquid products.

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 received EPR/NP3900MP/A001	Duly made 12/08/2022	Application for a UTR facility to process up to 77,000 tpa of end-of-life tyres by pyrolysis to produce carbon black and liquid products for use in tyre manufacture and synthetic fuels.
Request for information 1 sent 22/08/2022	27/02/2023	Information received Noise Impact Assessment (V3) Noise Management Plan (V2)
	08/03/2023	
	31/03/2023	
Request for information 2 sent 30/08/2022	01/09/2022	Information received Site Condition Report
Schedule 5 Notice request for information 3 sent 05/09/2022	17/01/2023	Information received Response to items 4 and 6 to 12 provided
	18/01/2023	
	20/01/2023	Information received Response to item 5, Fire Prevention Plan
	24/02/2023	Information received Response to items 1 and 2 provided
	03/04/2023	Information received Response to item 3
Schedule 5 Notice request for information 4 sent 13/09/2022	08/03/2023	Information received Air Quality Assessment
	03/04/2023	

Status log of the permit		
Description	**Date**	**Comments**
Further information provided	28/02/2023	Information received Assessment of abatement options (Appendix BAT-OT 01)
Request for information sent 06/06/2023	27/06/2023	Response to back-up continuous emissions monitor query and inclusion of an additional European Waste Code (EWC)
Permit determined EPR/NP3900MP/A001	03/07/2023	Permit issued to Wastefront Sunderland Limited

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/NP3900MP

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

Wastefront Sunderland Limited ("the operator"),

whose registered office is

Quadrant House
Floor 6
4 Thomas More Square
London
United Kingdom
E1W 1YW

company registration number **12839955**

to operate an installation at

Sunderland UTR Facility
Extension Road
East End
Port of Sunderland
SR1 2NR

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

Name	Date
Anne Lloyd	**03/07/2023**

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 The operator shall review the written management system at least every 3 years or otherwise as requested by the Environment Agency.

1.1.4 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 recovered with a high level of energy efficiency and 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;

(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").

2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

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

2.3.4 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2 table S2.2; and

(b) it conforms to the description in the documentation supplied by the producer or holder.

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.

2.3.7 Waste tyres shall not be charged or shall cease to be charged, if:

(a) the RTO combustion chamber temperature is below 850 ^{o}C;

(b) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded during abnormal operation; or

(c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than during abnormal operation; or

(d) continuous emission monitors to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than during abnormal operation; or

(e) there is a stoppage, disturbance or failure of the RTO and/or the wet scrubber system at emission point A1, other than during abnormal operation;

(f) continuous emission monitors to demonstrate compliance with the emission limit values for particulates, TOC or CO in schedule 3 are unavailable unless alternative techniques, as agreed in writing with the Environment Agency, are used to demonstrate compliance with those emission limit values.

2.3.8 The operator shall use natural gas at the furnace burner, to pre-heat the pyrolysis chambers at start-up, or shut-down, or whenever the operating temperature falls below that specified in condition 2.3.7 as long as incompletely pyrolysed waste is present in the pyrolysis chamber(s).

2.3.9 The operator shall record the beginning and end of each period of “abnormal operation”.

2.3.10 During a period of “abnormal operation”, the operator shall restore normal operation of the failed equipment or replace the failed equipment as soon as possible.

2.3.11 The operator shall interpret the start of the period of “abnormal operation” as the earliest of the following:

(a) a technically unavoidable stoppage, disturbance, or failure of continuous emission monitors;

(b) a technically unavoidable stoppage, disturbance, or failure of the RTO and/or wet scrubber system at emission point A1;

(c) any other technically unavoidable stoppage, disturbance, or failure of the plant which is causing or could lead to an exceedance of an emission limit value in table S3.1.

2.3.12 The operator shall interpret the end of the period of “abnormal operation” as the earliest of the following:

(a) when the failed equipment is repaired and brought back into normal operation;

(b) when the operator initiates a shut-down of the waste pyrolysis activity, as described in the application or as agreed in writing with the Environment Agency;

(c) The failed equipment has not been repaired and brought back into normal operation and a single period of abnormal operation reaches a duration of 4 hours after the start of abnormal operation on a pyrolysis line.

(d) Abnormal operation occurs on a pyrolysis line and the cumulative duration of abnormal operation periods over 1 calendar year has reached 60 hours on that pyrolysis line.

2.3.13 The operator shall have at least one auxiliary burner in each pyrolysis line which shall be operated at start-up, shut-down and as required during operation to ensure that the operating temperature specified in condition 2.3.7 is maintained as long as pyrolysis waste gas is present in the RTO combustion chamber. Unless the temperature specified in condition 2.3.7 is maintained in the combustion chamber, such burner(s) shall be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.

2.1 Improvement programme

2.1.1 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.

2.1.2 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.

2.2 Pre-operational conditions

2.2.1 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 The limits given in schedule 3, subject to condition 3.2.1, shall not be exceeded.

3.2 Emissions limits and monitoring for emission to air for pyrolysis/RTO plant

3.2.1 The limits for emissions to air apply as follows:

(a) The limits in table S3.1 shall not be exceeded except during periods of abnormal operation.

(b) The limits in table S3.1 (a) shall not be exceeded.

3.2.2 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1 and S3.1(a); the Continuous Emission Monitors shall be used such that;

(a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages of the emission limit values:

- Carbon monoxide 10%
- Sulphur dioxide 20%
- Oxides of nitrogen (NO & NO_2 expressed as NO_2) 20%
- Particulate matter 30%
- Total organic carbon (TOC) 30%
- Hydrogen chloride 40%

(b) valid half-hourly average values or 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.2.2 (a).

(c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour or 10-minute period, the half-hourly average or 10-minute average shall in any case be considered valid if measurements are available for a minimum of 20 minutes or 7 minutes during the half-hour or 10-minute period respectively. The number of half-hourly or 10-minute averages so validated shall not exceed 5 or 15 respectively per day;

(d) daily average values shall be calculated as follows:

(i) the average of valid half hourly averages or 10-minute averages over calendar day excluding half hourly averages or 10-minute averages during periods of abnormal operation. The daily average value shall be considered valid if no more than five half-hourly average or fifteen 10-minute average values in any day have been determined not to be valid;

(e) no more than ten daily average values per year shall be determined not to be valid.

3.3 Emissions of substances not controlled by emission limits

3.3.1 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.

3.3.2 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.

3.3.3 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.

3.3.4 Periodic monitoring shall be carried out at least once every 2 years for groundwater and 4 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.4 Odour

3.4.1 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.

3.4.2 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.

3.5 Noise and vibration

3.5.1 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.

3.5.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring

3.6.1 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 tables S3.1 and S3.1(a); and

(b) process monitoring specified in table S3.3.

3.6.2 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.

3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and unless otherwise agreed in writing by the Environment Agency have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges. Newly installed Data handling and acquisition systems (DAHS), or DAHS replacing existing DAHS, shall have MCERTS certification.

3.6.4 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 and S3.1(a) unless otherwise agreed in writing by the Environment Agency.

3.7 Fire prevention

3.7.1 The operator shall take all appropriate measures to prevent fires on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.

3.7.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;

(b) implement the fire prevention plan, from the date of approval, 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 using the annual report form specified in schedule 4, table S4.4 or otherwise in a format agreed with the Environment Agency. 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 annual production /treatment data set out in schedule 4 table S4.2;

(c) the performance parameters set out in schedule 4 table S4.3; and

(d) the functioning and monitoring of the pyrolysis/RTO plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive (IED)) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

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 S4.4; 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.

4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

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.

(d) of activation of the emergency flare at air emission point A2 the operator must inform the Environment Agency immediately.

4.3.2 Any information provided under condition 4.3.1 (a), (b) or (c), 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 Any information provided under condition 4.3.1 (d) shall be confirmed by sending the information listed in part (a), and part (d) if required, of schedule 5 to this permit within the time period specified in that schedule.

4.3.4 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.

4.3.5 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.

4.3.6 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.

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

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 1.2 Part A(1)(f)(iv)	Activities involving the pyrolysis, carbonisation, distillation, partial oxidation or other heat treatment of other carbonaceous material (otherwise than with a view to making charcoal).	From receipt of waste tyres and other raw materials to conversion to carbon black, fuel oil and steel wire by pyrolysis, waste production and emission of exhaust gas from RTO discharged via a quench and wet scrubber at emission point A1. Condensed hydrocarbon vapours (tyre pyrolysis oil) are collected and stored in storage tanks for further refining on-site. Alternatively, tyre pyrolysis oil will be transported off-site for further processing. Pyrolysis gas and light distillate pyrolysis fuel oil are used to fuel combustion units as defined by activity AR7 in this table. Waste type and quantity as specified in table S2.2 of this permit.
Directly Associated Activities			
AR2	Shredding	Shredding and sorting of non-hazardous waste.	From the receipt of waste tyres to processing for pyrolysis.
AR3	Char processing	Char processing by separation, milling and drying.	From the separation of fine wire to the grinding and pelletising of the solid carbon black residues.
AR4	Flaring of gases	Combustion of gases in a conventional flare in extreme emergency situations only.	From receipt of gases to the flare during an emergency situation, to the release of combustion products at emission point A2. Operation of the flare is limited to usage for safety reasons and non-routine operation for no more than 100 hours/year and in accordance with the approved submission for PO11 in table S1.4 of this permit.
AR5	Waste and raw materials	Receipt, storage and handling of waste and raw materials.	From receipt of waste and raw materials, to storage, processing and handling of wastes produced.
AR6	Surface water	Collection and drainage of uncontaminated surface water.	From collection and handling of surface waters within the site drainage, to discharge from the site via oil interceptor at emission point W1.

AR7	Combustion units	Combustion of diesel and light distillate pyrolysis oil in 3 x 2.08 MWth diesel generators. Combustion of natural gas and pyrolysis fuel gas in the 8.725 MWth pyrolysis fired heater.	From receipt of natural gas, diesel, pyrolysis fuel gas and light distillate pyrolysis oil, to fuel storage and fuel supply systems to combustion units and any associated activities necessary to maintain the operation of the plant and fuel supplies, through to the discharge of exhaust gases from the RTO via a quench and wet scrubber at emission point A1.
AR8	Regenerative thermal oxidiser (RTO)	Treatment of all combustion gases, residual pyrolysis fuel gas and residual pyrolysis oil distillate in a 10.126 MWth RTO.	From receipt of natural gas, pyrolysis fuel gas and pyrolysis oil distillate, to fuel storage and fuel supply systems and any associated activities necessary to maintain the operation of the RTO and fuel supplies, through to the discharge of exhaust gases from the RTO via a quench and wet scrubber at emission point A1.
AR9	Product Storage and Shipment	Collection of refined oils in storage tanks.	From collection of refined fractions of tyre pyrolysis oil to subsequent shipment to customers via road tankers or marine vessels.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/NP3900MP/A001	Best Available Techniques & Operating techniques, version 2 dated January 2023.	17/01/2023
Application EPR/NP3900MP/A001	Noise Impact Assessment, version 3, dated February 2023.	31/03/2023
Application EPR/NP3900MP/A001	Air Quality Assessment, version 1.1, dated March 2023.	03/04/2023
Application EPR/NP3900MP/A001 Pre-operational condition	Flare specification and operation Flare specification and operation, provided in response to pre-operational condition PO11 in table S1.4 of this permit.	On approval of PO11
Application EPR/NP3900MP/A001 Pre-operational condition	Fire Prevention Plan Updated Fire Prevention Plan, provided in response to pre-operational condition PO12 in table S1.4 of this permit.	On approval of PO12
Application EPR/NP3900MP/A001 Pre-operational condition	Refining of Mineral Oil and Gas BAT Conclusion 6 Approved diffuse volatile organic compounds (VOCs) monitoring plan provided to comply with BAT Conclusion 6. Plan provided in response to pre-operational condition PO7 in table S1.4 of this permit. The operator shall produce and submit an annual report on the results of the VOC monitoring undertaken under the approved plan.	On approval of PO7
Application EPR/NP3900MP/A001 Pre-operational condition	Refining of Mineral Oil and Gas BAT Conclusion 18 Approved leak detection and repair (LDAR) plan provided to comply with BAT Conclusion 18. Plan provided in response to pre-operational condition PO8 in table S1.4 of this permit.	On approval of PO8

Table S1.3 Improvement programme requirements		
Ref.	**Requirement**	**Date**
IC1	EMS certification The operator shall submit a written report to the Environment Agency on the implementation of its Environmental Management System (EMS) and the progress made in the certification of the system by an external body or if appropriate submit a schedule by which the EMS will be certified.	Within 12 months of the completion of commissioning
IC2	Commissioning The operator shall submit a written report to the Environment Agency on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions and confirm that the EMS has been updated accordingly.	Within 4 months of the completion of commissioning

Table S1.3 Improvement programme requirements		
Ref.	**Requirement**	**Date**
IC3	Validation testing The operator shall notify the Environment Agency of the proposed date(s) that validation testing is planned for.	Notification at least 3 weeks prior to validation testing
	During commissioning the operator shall carry out validation testing to validate the residence time, minimum temperature and oxygen content of the gases in the combustion chamber whilst operating under normal load and most unfavourable operating conditions. The validation shall be to the methodology as approved through pre-operational condition PO6.	Validation tests completed before the end of commissioning
	The operator shall submit a written report to the Environment Agency on the validation of residence time, oxygen and temperature whilst operating under normal load, minimum turn down and overload conditions. The report shall identify the process controls used to ensure residence time and temperature requirements are complied with during operation of the RTO.	Report submitted within 2 months of the completion of commissioning
IC4	Impact of metal emissions to air The operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values: Cd, As, Pb and Ni. A report on the assessment shall be made to the Environment Agency. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant Environmental Standard (ES). In the event that the assessment shows that an ES can be exceeded, the report shall include proposals for further investigative work.	15 months from the completion of commissioning
IC5	CEMs performance The operator shall submit a written summary report to the Environment Agency to confirm that the performance of Continuous Emission Monitors (CEMs) for parameters as specified in tables S3.1 and S3.1(a) of this permit comply with the requirements of EN 14181, specifically the requirements of QAL1, QAL2 and QAL3. The report shall include the results of calibration and verification testing,	Initial calibration report to be submitted within 3 months from the completion of commissioning Full summary evidence compliance report to be submitted within 18 months from the completion of commissioning

Table S1.3 Improvement programme requirements		
Ref.	**Requirement**	**Date**
IC6	Monitoring location compliance During commissioning, the operator shall carry out tests to assess whether the air monitoring location at emission point A1 meets the requirements of BS EN 15259 and supporting Method Implementation Document (MID). A written report shall be submitted for approval setting out the results and conclusions of the assessment including where necessary proposals for improvements to meet the requirements. The report shall specify the design of the ports for particulate sampling. Where notified in writing by the Environment Agency that the requirements are not met, the operator shall submit proposals or further proposals for rectifying this in accordance with the time scale in the notification. The proposals shall be implemented in accordance with the Environment Agency's written approval.	Report to be submitted within 3 months from the completion of commissioning
IC7	Refining of Mineral Oil and Gas BAT Conclusion 52 The operator shall develop a monitoring programme for measuring point source emissions of non-methane volatile organic compounds (NMVOCs) and benzene from the loading and unloading of liquid hydrocarbons at emission point A4, as specified in BAT Conclusion 52. The monitoring programme and associated methodologies shall be approved in writing with the Environment Agency having regard to the requirements set out in the Refining of Mineral Oil and Gas BAT Conclusions and the Environment Agency web guide on Monitoring stack emissions for environmental permits (formerly part of M2) (found on www.gov.uk).	Monitoring programme to be submitted within 3 months from the completion of commissioning
IC8	Dioxin and dioxin like PCB monitoring The operator shall carry out a programme of dioxin and dioxin like PCB monitoring over a period and frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether dioxin emissions can be considered to be stable.	Within 6 months of completion of commissioning or as agreed in writing with the Environment Agency

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO1	EMS summary At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency), the operator shall send a summary of the site Environment Management System (EMS) to the Environment Agency and obtain the Environment Agency's written approval to it. The operator shall make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Environment Agency web guide on developing a management system for environmental permits (found on www.gov.uk). The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.
PO2	Commissioning plan At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency), the operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
PO3	Noise management plan (NMP) At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency), the operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, an updated NMP in accordance with our guidance on noise and vibration management for environmental permits (found on www.gov.uk). The plan shall include the construction parameters of the acoustic barrier and the inspection and maintenance plan.
PO4	Product storage tank inventory At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency), the operator shall submit updated documents and plans as necessary to the Environment Agency, and obtain the Environment Agency's written approval to them, detailing the tank inventory and product storage arrangements at the facility.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO5	Monitoring At least three months before (or other date agreed in writing with the Environment Agency) the commencement of commissioning, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, specifying arrangements for continuous and periodic monitoring of emissions to air to comply with Environment Agency guidance found on www.gov.uk: • Monitoring stack emissions: measurement locations (formerly M1); • Monitoring stack emissions: guidance for selecting a monitoring approach (formerly part of M2); • Monitoring stack emissions: environmental permits (formerly part of M2); and • M20 quality assurance of continuous emission monitoring systems. The report shall include the following: • Plant and equipment details, including accreditation to MCERTS; • Methods and standards for sampling and analysis; and • Details of monitoring locations, access and working platforms.
PO6	Validation of combustion conditions At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall submit, for approval by the Environment Agency, a methodology (having regard to Technical Report P4-100/TR Part 2 Validation of Combustion Conditions) to verify the residence time, minimum temperature and oxygen content of the gases in the RTO whilst operating under normal load, minimum turn down and overload conditions.
PO7	Refining of Mineral Oil and Gas BAT Conclusion 6 At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall submit a diffuse VOC monitoring plan to the Environment Agency for written approval. This shall include but not necessarily be limited to: • The nature of the material handled; • The sources of emissions; • Justification of the monitoring techniques selected; and • How the monitoring data will be recorded and reviewed. The plan shall take into account the appropriate techniques for VOC monitoring specified in BAT conclusion 6. The operator shall implement the approved plan and produce and submit an annual report on the results of the monitoring undertaken under the plan in accordance with permit condition 4.2.2.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO8	Refining of Mineral Oil and Gas BAT Conclusion 18 At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall submit a leak detection and repair (LDAR) programme to the Environment Agency for written approval. This shall include the following: • Identification of process equipment and pipework from which leaks of hydrocarbons or other chemicals, with the potential for environmental harm, may occur; • The techniques that will be applied for leak detection; • A programme of leak detection for the equipment and pipework identified in the first bullet above; and • A register of leaks identified, and repairs undertaken (LDAR register).
PO9	Refining of Mineral Oil and Gas BAT Conclusion 52 At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall submit a report to the Environment Agency for written approval detailing the vapour recovery measures in place to comply with this BAT Conclusion and the limits specified for emission point A4 in table S3.1 of this permit.
PO10	Drainage and containment plans At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall submit site plan(s) to the Environment Agency for written approval, which include the following: • Drainage systems; • Flood defences; and • Bunds and kerbing.
PO11	Emergency flare (emission point A2) At least three months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the operator shall provide details of the flare design, operation and monitoring to the Environment Agency for written approval. This shall be in accordance with our Onshore oil and gas sector guidance (8. Flares at onshore oil and gas sites) found on www.gov.uk.
PO12	Fire Prevention Plan (FPP) Prior to the commencement of commissioning (or other date agreed in writing with the Environment Agency), the operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a written FPP. The FPP shall be in accordance with our guidance on fire prevention plans: environmental permits found on www.gov.uk. The FPP shall be implemented in accordance with the plan as approved.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
-	-

Table S2.2 Permitted waste types and quantities for pyrolysis plant	
Maximum quantity	**77,000 tonnes per year** **1,000 tonnes total storage capacity**
Waste code	**Description**
16 01	**end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)**
16 01 03	end-of-life tyres
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 04	plastic and rubber

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 1	**Parameter**	**Source**	**Limit (including unit)** Note 3	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1	Particulate matter	Release from RTO discharged via quench and wet scrubber	30 mg/m^3	½-hr average	Continuous	EN 14181
A1	Particulate matter		5 mg/m^3	daily average	Continuous	EN 14181
A1	Total organic carbon (TOC)	Release from RTO discharged via quench and wet scrubber	20 mg/m^3	½-hr average	Continuous	EN 14181
A1	Total organic carbon (TOC)		10 mg/m^3	daily average	Continuous	EN 14181
A1	Hydrogen chloride	Release from RTO discharged via quench and wet scrubber	60 mg/m^3	½-hr average	Continuous	EN 14181
A1	Hydrogen chloride		6 mg/m^3	daily average	Continuous	EN 14181
A1	Hydrogen fluoride	Release from RTO discharged via quench and wet scrubber	1 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year, then bi-annually	CEN TS 17340
A1	Carbon monoxide	Release from RTO discharged via quench and wet scrubber	100 mg/m^3	½-hr average	Continuous	EN 14181
A1	Carbon monoxide		50 mg/m^3	daily average	Continuous	EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 1	**Parameter**	**Source**	**Limit (including unit)** Note 3	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1	Sulphur dioxide	Release from RTO discharged via quench and wet scrubber	200 mg/m^3	½-hr average	Continuous	EN 14181
A1	Sulphur dioxide		30 mg/m^3	daily average	Continuous	EN 14181
A1	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Release from RTO discharged via quench and wet scrubber	400 mg/m^3	½-hr average	Continuous	EN 14181
A1	Oxides of nitrogen (NO and NO_2 expressed as NO_2)		100 mg/m^3	daily average	Continuous	EN 14181
A1	Cadmium & thallium and their compounds (total)	Release from RTO discharged via quench and wet scrubber	0.02 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year, then bi-annually Note 2	EN 14385
A1	Mercury and its compounds	Release from RTO discharged via quench and wet scrubber	0.02 mg/m^3	periodic over minimum 30 minute, maximum 8-hour period	Quarterly in first year, then bi-annually Note 2	BS EN 13211
A1	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Release from RTO discharged via quench and wet scrubber	0.3 mg/m^3	Average of three consecutive measurements of at least 30 minutes each	Quarterly in first year, then bi-annually Note 2	EN 14385
A1	Exhaust gas temperature	Release from RTO discharged via quench and wet scrubber	No limit set	-	Continuous	Traceable to national standards
A1	Exhaust gas pressure		No limit set	-	Continuous	Traceable to national standards

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 1	**Parameter**	**Source**	**Limit (including unit)** Note 3	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1	Exhaust gas flow	Release from RTO discharged via quench and wet scrubber	No limit set	-	Continuous	BS EN 16911-2
A1	Exhaust gas oxygen content		No limit set	-	Continuous	EN 14181
A1	Exhaust gas water vapour content	Release from RTO discharged via quench and wet scrubber	No limit set	-	Continuous	EN 14181
A1	Carbon dioxide	Release from RTO discharged via quench and wet scrubber	No limit set	Continuous	Continuous	EN 14181
A1	Dioxins / furans (I-TEQ)	Release from RTO discharged via quench and wet scrubber	0.04 ng/m^3	periodic over minimum 6 hours, maximum 8-hour period	Monthly for the first 6 months and accelerated monitoring as agreed through IC8 Quarterly for the following 6 months and then Bi-annually	BS EN 1948 Parts 1, 2 and 3
A1	Dioxins / furans (I-TEQ)	Release from RTO discharged via quench and wet scrubber	0.06 ng/m^3	value over sampling period of 2 to 4 weeks for long term sampling	Long term monitoring if specified by the Environment Agency after completion of IC8 or specified by the Environment Agency in line with sampling protocol	CEN TS 1948-5 if specified by the Environment Agency after completion of IC8 or specified by the Environment Agency in line with sampling protocol
A1	Dioxins and Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)	Release from RTO discharged via quench and wet scrubber	No limit set	periodic over minimum 6 hours, maximum 8-hour period	Quarterly in first year, then bi-annually	EN 1948 Parts 1, 2 and 3

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 1	**Parameter**	**Source**	**Limit (including unit)** Note 3	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A1	Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)	Release from RTO discharged via quench and wet scrubber	No limit set	periodic over minimum 6 hours, maximum 8-hour period	Quarterly in first year, then bi-annually	EN 1948 Parts 1, 2 and 3
A1	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	Release from RTO discharged via quench and wet scrubber	No limit set	periodic over minimum 6 hours, maximum 8-hour period	Quarterly in first year, then bi-annually	BS ISO 11338 Parts 1 and 2.
A2	No parameters set, refer to table S4.3 of this permit	Emergency flare	No limits set	-	-	-
A3	No parameters set	Barge loading system	No limits set	-	-	-
A4	Non-methane volatile organic compounds (NMVOCs) Note 7	Road tanker loading system during loading/unloading operations of volatile liquid hydrocarbon compounds	150 – 10,000 mg/Nm^3 Note 5	Hourly average Note 4	At least every 6 months	As agreed in writing with the Environment Agency. Note 8
	Benzene		<1 mg/Nm^3 Note 6			
A5	No parameters set	Jet mill dust filter discharge	No limits set	-	-	-
A6 & A7	No parameters set	Tyre shredding dust filter discharge	No limits set	-	-	-

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location Note 1	**Parameter**	**Source**	**Limit (including unit)** Note 3	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A8 to A19	No parameters set	Product storage tank vents	No limits set	-	-	-

Note 1: Emission points on site plan in schedule 7 of this permit.

Note 2: The monitoring frequency may be reduced to once every two years where emissions are below 50% of the limit specified in this table. Any reduction in monitoring frequency shall be approved in writing by the Environment Agency.

Note 3: The Environment Agency may reduce the limits where emissions are proven to be consistently significantly below the limits set in this table.

Note 4: Hourly values in continuous operation expressed and measured according to European Parliament and Council Directive 94/63/EC (OJ L 365, 31.12.1994, p. 24).

Note 5: The lower value is achievable with two-stage hybrid systems. The upper value is achievable with single-stage adsorption or membrane system.

Note 6: Benzene monitoring may not be necessary where it can be demonstrated that emissions are consistently less than 1 mg/Nm^3. Any changes shall be approved in writing by the Environment Agency.

Note 7: Excluding benzene.

Note 8: In accordance with the approval of IC7 in table S1.3 of this permit.

Table S3.1(a) Point source emissions to air during abnormal operation of RTO plant – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Particulate matter	Release from RTO discharged via quench and wet scrubber	150 mg/m^3	½-hr average	Continuous	EN 14181 or alternative surrogate as agreed in writing with the Environment Agency during failure of the continuous emission monitor
A1	Total Organic Carbon (TOC)	Release from RTO discharged via quench and wet scrubber	20 mg/m^3	½-hr average	Continuous	EN 14181 or alternative surrogate as agreed in writing with the Environment Agency during failure of the continuous emission monitor
A1	Carbon monoxide	Release from RTO discharged via quench and wet scrubber	100 mg/m^3	½-hr average	Continuous	EN 14181 or alternative surrogate as agreed in writing with the Environment Agency during failure of the continuous emission monitor

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**
W1	Uncontaminated surface water	No parameters set	No limit set	-	-	-

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Location close to the pyrolysis chamber inner wall or as identified and justified in the Application.	Temperature (°C)	Continuous	Traceable to national standards	As agreed in writing with the Environment Agency

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**
Emissions to air Parameters as required by condition 3.6.1.	A1	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
		Bi-annually	1 Jan and 1 Jul
	A4	Annually	1 Jan

Table S4.2: Annual production/treatment	
Parameter	**Units**
Input/Treatment	
Total waste tyres pyrolysed	tonnes
Output/Production & recovery	
Naphtha	tonnes
Light distillate oil	tonnes
Heavy distillate oil	tonnes
Bunker oil	tonnes
Fuel oil	tonnes
Recovered carbon black (rCB)	tonnes
Recovered wire and fine steel	tonnes
Shredder dust	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Annual Report as required by condition 4.2.2	Annually	-
Natural gas used at the installation	Annually	Nm^3 / tonnes of tyres pyrolysed
Installation produced light distillate pyrolysis oil used at the installation for power generation	Annually	MWh / tonnes of tyres pyrolysed
Installation produced pyrolysis fuel gas used at the installation	Annually	Tonnes / tonnes of tyres pyrolysed
Waste produced	Annually	Route, tonnes and tonnes / tonne of tyres pyrolysed
Water consumption	Annually	m^3 / tonne of tyres pyrolysed
Periods of abnormal operation	Annually	No of occasions and cumulative hours for current calendar year for each pyrolysis line.

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Emergency flare usage (emission point A2)	Annually	Frequency of use of the flare, no. of occasions and cumulative hours for current calendar year
		The quantity of material flared on each occasion
		The reason the flare was required

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Annual report required by condition 4.2.2	Annual performance report template	2023
Air	Forms air 1-9 or other forms as agreed in writing by the Environment Agency	2023
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	2023

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

“abatement equipment” means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

“abnormal operation” means: any technically unavoidable stoppages, disturbances, or failures of the plant or the measurement devices. Abnormal operation starts as defined in condition 2.3.11 and ends as defined in condition 2.3.12. Abnormal operation is limited to 4 hours for a single occurrence and a total of 60 hours per year per line.

“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.

“BAT conclusions” means Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for Waste Incineration.

“CEM” Continuous emission monitor.

“CEN” means Commité Européen de Normalisation.

“bi-annually” means twice per year with at least five months between tests.

“Commissioning” means testing of the new pyrolysis plant that involves any operation of the RTO, or as agreed with the Environment Agency.

“Daily average” emissions value means ‘the average of at least 43 valid half hourly averages or for CO the average of at least 43 valid half hourly averages or 129 valid 10 min averages’.

“dioxin and furans” means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

“emissions to land” includes emissions to groundwater.

“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.

“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 limit.

“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.

“Pyrolysis line” means all of the incineration equipment related to a common discharge to air location.

“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.

“ISO” means International Standards Organisation.

“List of Wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time

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

“PAH” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenzo[ah]anthracene, Dibenzo[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene.

“PCB” means Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“start-up” is any period, where the plant has been non-operational, until waste has been fed to the plant in a sufficient quantity to initiate steady-state conditions as described in the application or agreed in writing with the Environment Agency.

“shut-down” is any period where the plant is being returned to a non-operational state as described in the application or agreed in writing with the Environment Agency.

“TOC” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC.

“Waste code” means the six-digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

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.

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

(a) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content; and

(b) in relation to gases from the RTO, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry.

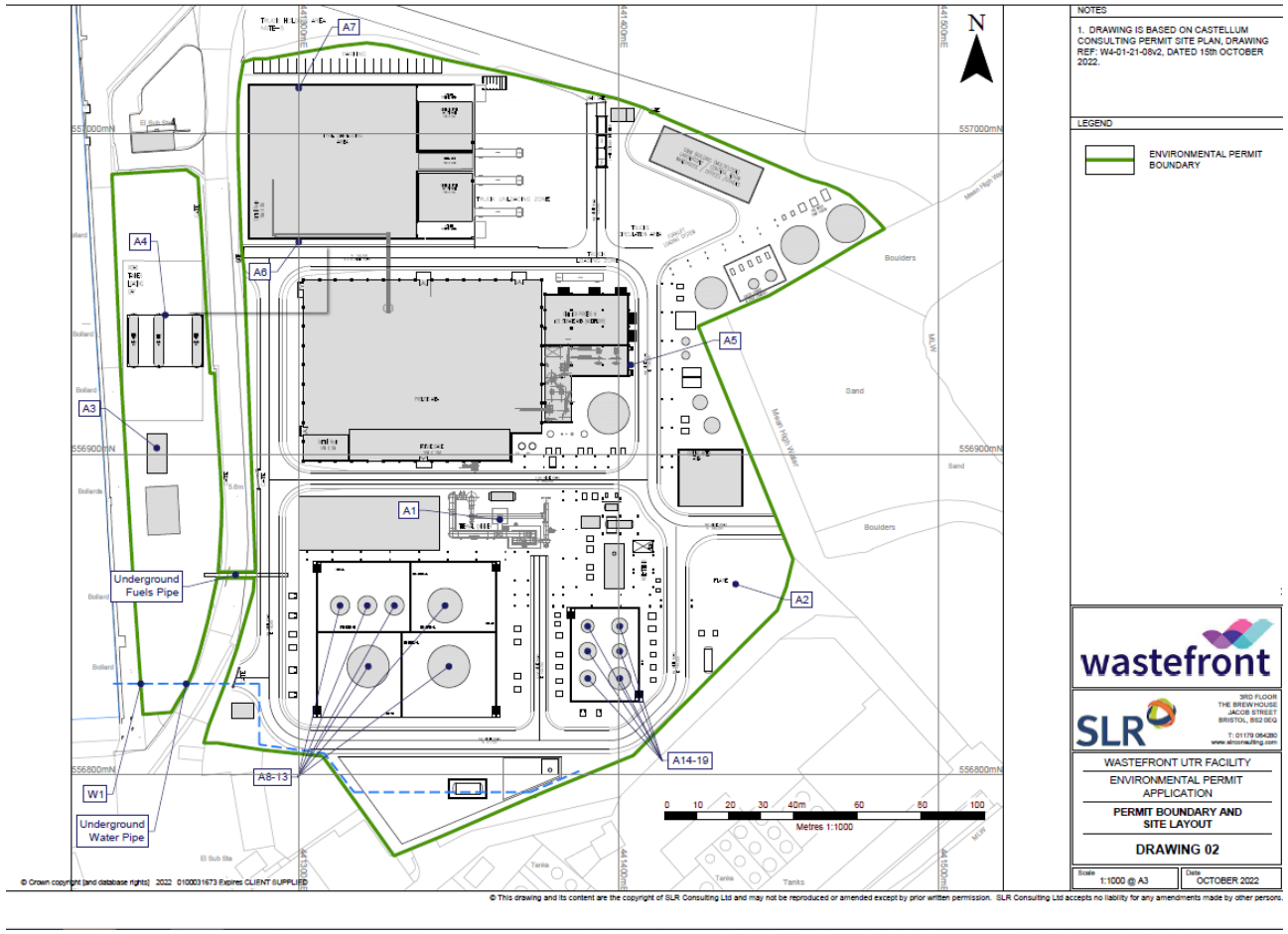
For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1.

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
		Humans / Mammals	**Fish**	**Birds**
Dioxins				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
Furans				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.3	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0003	0.0001	0.0001

TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
Non-ortho PCBs			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0003	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)	0.03	0.00005	0.001
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	0.00003	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.00003	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.00003	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.00003	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)	0.00003	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)	0.00003	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)	0.00003	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)	0.00003	<0.000005	0.00001

“year” means calendar year ending 31 December.

Schedule 7 – Site plan



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