City of
Stoke-on-Trent

Stoke-on-Trent City Council

Formal record of an Environmental Permit Decision for a Facility subject to Chapter IV of the Industrial Emissions Directive; and Schedule 13 of the Environmental Permitting (England & Wales) Regulations 2016 (as amended 2019)

The Permit number is:	**SOT 189**
The Operator is:	**Murfitts Industries Ltd**
The Facility is:	Stoke Tyre Pyrolysis Facility Campbell Road Oakhill Stoke-on-Trent ST4 4EW

Introduction

The Environmental Permitting Regulations (2016) (as amended) requires Stoke-on-Trent City Council (The Regulator) to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards.

It is important to recognise that a pyrolysis process relies on the thermal treatment (gasification of waste) to release the volatile materials that are then combusted. The waste itself is heated in the absence of oxygen and is not directly combusted. The volatile gases produced by gasification are then combusted leaving behind the inert char materials. This is different from an incineration process where the waste itself is combusted resulting in products of combustion and ash. Small scale pyrolysis is regulated as an incineration process within English law but is actually a gasification process where the combustion element comprises only the emitted volatile gas. Small scale waste incineration processes are regulated in England as SWIPs in accordance with Schedule 13 EPR.

The permit is therefore based on the provisions specified by Schedule 13 of the EPR that reference provisions contained in Chapter IV and Annex VI of the Industrial Emissions Directive (IED) to provide the basis for permitting, the Regulator has had to have regard to the draft Environmental Permitting Technical Guidance PG13/1(21).

The Regulator has referred to elements of the BAT Conclusions but only in reference to issues referenced in Schedule 13 paragraph 4 (reference to specific IED articles) in respect of waste and incineration. These provisions are referenced *only* where they help inform a method or means of demonstrating compliance. It is stressed that BAT does not apply to a Schedule 13 process in England as such the BAT Conclusions do not apply. Reference to them is solely made on the basis of illustrating advising on good compliance.

This document summarises the decision making process in how the Regulator has taken into account the main and relevant factors of the application and the administrative and technical decision making process which followed. The decision should be read in conjunction with the permit.

During the decision making process the application was reviewed and all relevant information considered, which included the techniques used by the Operator in the

operation and control of the plant and activities of the facility. The Regulator has reviewed the application for this facility against materials identified above.

This document is the Regulator's formal record of the decision-making process and shows how the Regulator has taken into account all relevant factors in reaching the position.

As the Regulator reviewed the operating techniques proposed by the Operator for the operation of the plant and activities of the facility, the permit as issued takes into account and brings together in a single permit document all relevant standards and requirements.

In issuing this document, the Regulator outlines the decision as accurately, comprehensively and plainly as possible. The Regulator would welcome any feedback as to how it might improve the decision documents in future.

How this document is structured

1	The decision
2	How the Regulator reached its decision
2.1	Information requested to demonstrate compliance with Schedule 13 of the EPR
2.2	Review of information in respect to the capability of the facility to meet standards identified in the IED Chapter IV and Annex VI
3	The legal framework
4	Annex 1 – Review of operating techniques within the Facility against compliance requirements
5	Annex 2 – Review and assessment of conditions and improvement conditions

City of Stoke-on-Trent

Glossary of acronyms used in this document

APC	Air Pollution Control
BAT	Best Available Technique(s)
BAT-AEEL	BAT Associated Energy Efficiency Level
BAT-AEL	BAT Associated Emission Level
BAT-AEPL	BAT associated environmental performance levels.
BATC	BAT Conclusions for Waste Incineration (BATC WI) and Waste Treatment (BATC W) published on 9th November 2019 and 10th August 2018
BREF	Best available techniques reference document
CEM	Continuous emissions monitor
DLN	Dry Low NOx burners
ELV	Emission limit value derived under BAT or an emission limit value set out in IED
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No. 1154) (as amended)
HCl	Hydrogen Chloride
HF	Hydrogen Fluoride
IC	Improvement Condition
IED	Industrial Emissions Directive (2010/75/EU)
IPPCD	Integrated Pollution Prevention and Control Directive (2008/1/EC) – now superseded by IED
Nox	Oxides of nitrogen (NO plus NO_2 expressed as NO_2)
PC	Pre-operational Condition
PCCD/F	Dioxins and Furans (normally part of Total Dust)
Sox	Oxides of Sulphur (SO, SO_2 expressed as SO_2)
SWIP	Small Waste Incineration Plant
TGN	Technical guidance note
TOC	Total Organic Carbon
Total Dust	Dust or particulate matter arising from combustion or processing of waste. May contain metals

1 The Regulator decision

Stoke-on-Trent City Council (The Regulator) has decided to issue the permit to the Operator. This will allow the Operator to operate the facility, subject to the conditions in the permit an in line with the operating procedures outlined in the application and the Environmental Management System developed for this facility.

The Regulator considers that, in reaching its decision, it has taken into account all relevant considerations and legal requirements and that the permit will ensure that a high level of protection is provided for the environment and human health. The Regulator has considered all representations made and believes that the permit addresses those representations and that the facility can comply with the required environmental standards.

Where the compliance requirements change, or the Operator seeks to update or vary the conditions of operation, the Regulator may review the proposal and issue updated controls and variations as required.

In receiving an environmental permit, the Operator is required to comply with the requirements stated in the application, and meet the requirements of any emission limits, operational controls, and plans or procedures relevant to demonstration of compliance. The Regulator is legally required to carry out inspections to determine compliance.

2 How Stoke-on-Trent City Council reached its decision

2.1 Review of information held by Stoke-on-Trent City Council in respect to the capability of the Facility to meet required environmental compliance standards

The review is based on the submitted materials in the original application, extensive discussions with the Operator and consultation with statutory and public consultees. The Regulator considers that the Operator will be able to comply with the techniques and standards described in the IED.

The Operator provided information demonstrating how the operation of their installation will meet the required standards described in the incineration IED Chapter IV and Annex VI, and draft PG13/1(21). The Operator provided information that describes the techniques that will be implemented upon the commissioning of the facility, which will then ensure that operations meet the required standards.

The Regulator considered that the application contained sufficient information for us to permit the activity. Informal clarification of some aspects were made but there was no requirement to serve a formal Schedule 5(4) notice. No claim for commercial or industrial confidentiality has not been made in respect of the application submitted materials.

The permit is based on the Environment Agency preferred template. That template uses a management plan, Operator focussed approach. The permitting style requires the Operator to describe the methods, operational controls and management techniques used to manage their facility and ensure compliance requirements are met on a site-specific basis. The permit has been written in the EA style consistent with other Schedule 13 pyrolysis processes.

To comply with the permit, the Operator will, following a period of commissioning, require a robust Environmental Management System so that they adequately demonstrate compliance with the required standards.

Based on the review of the submitted materials the Regulator considers that there is no reason to consider that the Operator will not be able to comply with the conditions in the permit. Further, the Regulator considers that full compliance with the standards required by the techniques identified and requirements can be demonstrated following the period of commissioning. The regulator would expect to formally verify compliance by means of a site audit and inspection within a period not exceeding 3 months from the date of commissioning.

The Regulator has decided to issue the permit and deemed it appropriate to include a schedule of Pre Operational and Improvement Conditions (see Table S1.3 and S1.4 Schedule 1). The requirements of the Pre-operational conditions are to be met either before any commissioning of the plant starts or during a period following commissioning (but before formal operation of the plant). The requirements of the improvement conditions are to be achieved by the date stated in Schedule 1, and full compliance to be demonstrably delivered within 6 months of commissioning.

3 The legal framework

The permit is issued in accordance with Regulation 13 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- A pyrolysis process incorporating some waste incineration as described by Annex VI Part 1 the IED, as implemented by Schedule 13 EPR 2016 (as amended);
- A waste storage facility storing raw feedstock material and output waste residues (products) that are directly associated with the pyrolysis process.
- The milling, pelletising, cooling and bagging of recovered Carbon Black materials

The Regulator considers that, in issuing the permit, it will ensure that the operation of the facility complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

The specific statutory requirements have been comprehensively evaluated by the Regulator and are set out below.

4 Key Issues

During the consultation process a number of key issues were identified members of the public as follows:

- Comments in respect of whether the facility is regulated correctly (*under a Schedule 13 SWIP)
- Adverse impacts on air quality
    - Concerns over Benzene emissions
    - Concerns over heavy metal impacts, dioxins and furans
    - Potential for cumulative effects

- Potential for impacts on health
- Potential for adverse impacts on ecology/environment
- Potential for 'nuisance' from noise, dust, and odour.
- Polluted runoff (water pollution)
- Fire Safety
- Sustainability issues
- Traffic
- Light pollution
- Health and Safety
- Local Economy
- House Prices
- Publicity issues

4.1 Regulation of the facility

Regulation of the facility is based on the proposed rate of processing the waste tyre crumb. The Environmental Permitting (England and Wales) Regulations 2016 (as amended) Schedule 13 applies to plants with a waste input <3 tonnes/hour. The proposed facility has a net input rate of ~ 1.3 tonnes/hr. The Environment Agency independently confirmed the facility needs to be regulated as a Schedule 13 SWIP.

4.2 Adverse impacts on air quality

The Regulator has reviewed the Air Quality Impact Assessment produced by Enzygo (ref: CRM.0180.001.AQ.R.001.P06). The assessment has been further reviewed by Enviroconsult Limited to provide commentary on suitability of the assessment to address concerns raised in respect of air quality impacts, impacts on health and impacts of the installation on ecology and the environment. The health aspects have also been reviewed by the UK HSA.

The assessment included predictions for potential emissions of particulate matter, nitrogen oxides, sulphur oxides, heavy metals, Benzene, dioxins and furans, and the potential for cumulative effects with other sources within the city.

Based on the information available and the advice received from an independent reviewer the Regulator concluded that there is no significant impact on air quality. There is also no reason to believe that the operator cannot comply with permit conditions, it is therefore likely that there will be no adverse air quality impacts.

4.3 Adverse impacts on health

The Regulator has reviewed the Air Quality Impact Assessment produced by Enzygo and the assessment has been further reviewed by the UK Health Security Agency (UKHSA) who in their consultation responses raised no concerns in respect of adverse health impacts.

Based on the information available and the advice received from the national organisation responsible for public health, the Regulator concluded that there is no reason to consider that the Operator will not be able to comply with the conditions included in the permit. The conditions ensure that the potential for health impact is minimised and mitigated effectively, and the Operator has demonstrated their ability to comply with the conditions.

Accordingly, there are no health-based grounds to prevent issue of the environmental permit.

4.4 Adverse impacts on ecology/environment

The Regulator has reviewed the Air Quality Impact Assessment produced by Enzygo. The assessment has been further reviewed by Enviroconsult Limited. No concerns were raised about the method used for ecological assessment or the results provided.

Whilst Natural England did not provide specific comments, it was evident, based on the information available and the advice received from an independent reviewer, that the conclusions of the report did not indicate adverse impacts on local ecology providing appropriate conditions are applied to limit emissions to air. There are no uncontained emissions to water or direct to water courses.

The Regulator has no reason to consider that the Operator will not be able to comply with the conditions detailed in the permit and that will ensure that the potential for environmental and ecological impact is minimised and mitigated effectively by the conditions and measures that are in place. The are no habitats based grounds to prevent issue of the environmental permit.

4.5 Potential for Nuisance from noise, dust, odour

The Regulator has reviewed the Environmental Risk Assessment (ERA) (ref: CRM.0180.001.PE.R.004. ERA DRAFT V2 FINAL) produced by Enzygo. The report has also been reviewed by Enviroconsult Limited (an independent reviewer).

The ERA advises that noise was assessed and modelled based on predicted noise levels for key plant and equipment. The noise impact assessment indicates that, as a worst case, likely levels of noise at sensitive receptor locations are consistently well below the existing background sound levels for the area. The report concludes that noise will have no significant impacts receptor locations and would be unlikely to be observed. The separation distances between the facility and sensitive receptors make it unlikely that noise will be an audible.

The ERA advises that no odour impact assessment was required as the materials processed have no inherent odour and the enclosed nature of the facility would prevent process odours from arising. The Regulator notes that whilst the raw materials may have no odour, processing rubber may give rise to volatile gases that, if they escape, would be odorous. However, the regulator is satisfied that the enclosed nature of the plant is an inherent barrier to release of odours and, as with noise above, the separation distances between the facility and sensitive receptors make it unlikely that odour will be a significant issue.

The ERA provides screening assessments relating to potential dust emissions associated with road vehicles, and sources associated with the main processing plant. Potential for dust emissions is contained within the main process buildings and dusty activities such as the milling of carbon char are kept under negative pressure to ensure extraction of any potential dust to filtration equipment. The Regulator is satisfied that potential impacts of dust emissions have been dust screened appropriately, and the contained nature of the process is sufficient to ensure fugitive dust is minimised, and dust extracted to abatement

systems is controlled by the emissions requirements of the environmental permit. The potential for dust or odour is therefore minimised and mitigated effectively.

The permit has conditions related to noise and odour, and dust is inherently controlled via the emission limits for key plant and the requirements to contain, manage and properly handle wastes within the facility.

Based on the information available and the advice received from an independent reviewer the Regulator has no reason to consider that the Operator will not be able to comply with the conditions that would control 'nuisances' as stated within the permit. We believe that this will ensure that the potential for nuisance is negligible.

4.6 Polluted runoff

The facility has no process releases of water to the environment. The only effluent emitted is blowdown water from the boiler which is directed to existing drainage systems connected to the neighbouring site. This water is treated by the neighbouring site along with other effluent waste and is then discharged via an appropriate discharge consent to foul sewer.

Surface water is connected to existing surface water drainage systems. The new facility has contained areas for storage of waste. Containment of wastes is key and preventing spillage sis key to preventing polluted runoff. As most storage is inside buildings of areas designed to contain the wastes therein, it is unlikely that surface contamination of yard areas will lead to surface runoff.

The permit contains conditions to address containment of waste and requires spillage containment processes are prepared as part of the operational controls.

Moreover, the operator will prepare a Fire Prevention Plan as part of the commissioning process that will ensure, in the unlikely event of a fire, that water used in firefighting is contained onsite.

Based on the information available the Regulator considers that the Operator has sufficient capability to comply with the permit conditions in respect of preventing site runoff.

4.7 Fire Safety

Fire safety is regulated separately by the Fire and Rescue Authority. The operator is required to prepare a Fire Prevention Plan prior to commissioning of the facility. There is an overlap with permit requirements in that the Fire Prevention Plan will likely address location for storage of wastes, quantities of materials onsite and means of both managing fire risk as well as preventing runoff of firewater.

The permit application specifically advises that incoming waste is limited to 4 tonnes of tyre crumb at any one time, with the exception where the adjoining factory cannot provide the material and 24 tonnes will be brought in as a standby.

Other materials such as processed carbon char are contained within buildings and subject to standard fire suppression infrastructure common to most modern buildings.

The FPP will also provide details of how firewater will be managed to prevent runoff in the event of a fire.

Based on the information available the Regulator considers that the Operator has sufficient capability to prepare such a plan and that the permit conditions in respect of preventing site runoff are sufficient to manage the potential risk.

5 Consultee comments

The following provides a summary of the consultation responses from each consultee

5.1 Natural England

Natural England (NE) provided initial comments on 10 October in respect of a planning application and referred the Regulator to their extant online guidance.
Further consultation with NE did not receive any response.
The Air Quality Emissions Assessment produced by Enzygo (ref:CRM.0180.001.AQ.R.001.P06) addresses ecological impacts within the report.

It identifies high levels of background pollutants extant in the area (not unusual for a town centre location) and that the impact of residual pollution from the proposed pyrolysis plant is negligible despite using worst case emission limits. Enzygo concluded that:

> *"At all ecological designations, predicted impacts on nitrogen, acid gas concentrations and deposition rates could be screened out as insignificant in accordance with the initial EA screening criteria."*

It is considered that, based on the modelling exercise carried out, the process controls on emissions and the recommendations of the Environment Agency (see below), there is no reason to believe that operation of the plant will cause adverse impacts on sensitive ecological receptors.

5.2 Environment Agency

The Environment Agency has provided no objections to the proposed permit application.

The Environment Agency has confirmed that the plant is a Schedule 13 SWIP.

The Environment Agency made the following comments in respect of the submitted application:

1. "Operational Techniques and Monitoring Plan (OTMP) – CRM 0180 001 PE R 006", has provided a plug-flow calculation indicating a residence time greater than 2 seconds at a minimum temperature above 850°C. In line with Section 4.3.4 of the SWIP guidance, you should include a pre-operational condition (PO) in the permit to verify the residence time and minimum temperature at commissioning and ensure continued compliance with all relevant emission limit values.
2. Under Section 5.3.2 of the same OTMP document, the operator requests a relaxation of the continuous monitoring requirements for HCl, HF and SO_2. The justification provided does not meet the conditions in the SWIP guidance for omitting continuous monitoring. The guidance requires the operator to demonstrate that emissions of these pollutants cannot exceed the ELVs under any circumstances due to the

composition of the waste. End-of-life tyres contain sulphur and chlorine and may contain fluorine, so the waste clearly contains precursors for acid gases. Furthermore, the installation or provision of sodium bicarbonate abatement indicates that uncontrolled emissions could exceed ELVs, which the guidance identifies as a clear indicator that continuous monitoring is required. Continuous monitoring requirements put into Permit

3. Dispersion modelling showing “insignificant impact” does not demonstrate the absence of precursors in the waste. Therefore, the request to rely solely on periodic monitoring is not supported. Continuous monitoring of at least HCl and SO_2 remains appropriate.

Based on the information available and the advice received from the Environment Agency, the Regulator has no reason to consider that the Operator will not be able to comply with the conditions that would control emissions below the emission limit levels that are included in the permit, moreover the Regulator has no reason to believe that the site Operator would fail to meet the relevant competence test following commissioning of the plant. Inclusion of conditions related to residence time and temperature verification and continuous monitoring of Sulphur Dioxide and Hydrogen Chloride have been included in the permit.

5.3 UK Health Security Agency

The UKHSA were consulted on the application and made the following comments in respect of the submitted application:

1. The location of receptors used in the Air Quality Assessment (AQA) prepared by Enzygo required clarification. *Details were clarified and observed to make no material difference to modelling.*
2. The number and position of emission stacks required clarification. *Detailed were clarified.*
3. The potential air emissions of Chrome VI and Copper were queried as the data used in modelling reflected a large waste incinerator rather than a small pyrolysis plant. *Explanation of the method and impacts for air quality modelling provided*.
4. Expected flare operation was confirmed as emergency and startup use only. *Startup procedure provided to UKHSA*.
5. Hours of operation of standby generator required confirmation. *Confirmed as estimate of 13hours/year.*
6. Passive releases from oil storage tanks were queried. *Details of fugitive prediction using guidance API2000 were provided and carbon filters abatement specified.*

The UKHSA final response advised:

> *“The main emissions of potential concern are abated exhaust emissions from the standby generator and unabated emissions from the flare which will only operate under emergency conditions. The applicant has mitigation measures in place to effectively control these emissions, thereby not posing an increased risk to public health.*
>
> *Based on the information in the application and the clarifications submitted to us, UKHSA has no significant concerns regarding the health risks to the local population from the installation.”*

Annex 1: Decision checklist regarding Compliance Conclusions

The IED identifies specific technical provisions for waste incinerators (including pyrolysis processes.

The requirements of Schedule 13 EPR lists the articles of the IED that are relevant to small waste incinerators in England as a bespoke regulated facility. As specified facilities, only the provisions listed apply to small waste incineration plant, generic BAT does not apply. There are 16 Articles of the directive that are directly applicable, however, BAT Conclusions for Waste Incineration that relate specifically to those provisions may help inform compliance but are not directly applicable.

This annex provides a record of decisions made in relation to each relevant compliance requirement applicable to the facility. This annex should be read in conjunction with the draft permit.

The conditions in the draft permit through which the relevant compliance requirements are implemented include but are not limited to the following:

Schedule 13 EPR 2016

Reference Article	**Permit condition(s)**	**Permit Table(s)/ Reference**	**Status**
(a) Article 5(1) and (3); *Compliance with directive articles 6,7,8,9*	All	All	FC
(b) Article 7; Incidents and Accidents	4.3.1, 4.3.2		FC
(c) Article 8(2); Breach of condition	3.2.1, 3.4.1, 4.3.1		FC
(d) Article 9; Greenhouse Gases	3.1	S3.1	FC
(e) Article 42(1) Waste Incineration applicability	Confirmed as applicable	Confirmed as applicable	Confirmed as applicable
(f) Article 43; Definition of residue	Confirmed as applicable	Confirmed as applicable	Confirmed as applicable
(g) Article 45(1), (2) and (4); List of wastes Capacity Emission limits air and water	 3.1, 3.2	 S2.1 S1.1 S3.1, S3.2	 FC CC FC
(h) Article 46; Emission limit values: Air Water Surface water runoff	 3.1, 3.2, 3.2	 S3.1 S3.2 S3.2	 FC FC FC
(i) Article 47; Breakdown Abnormal conditions	2.3.7 – 2.3.11	S1.2	FC

Reference Article	Permit condition(s)	Permit Table(s)/ Reference	Status
(j) Article 48(1) to (4); Monitoring of emissions	3.3.1, 3.3.2, 3.3.3, 3.4.1, 3.5.1	S3.1, S3.2	FC
(k) Article 49; Compliance with ELV	3.3.1, 3.3.2	S3.1, S3.2	FC
(l) Article 50; Operating conditions 850°C / 2 seconds	IP2	S1.4	FC
(m) Article 51(1) to (3); Change to operating conditions		S1.2	NA
(n) Article 52; Delivery and reception of waste	1.4.1, 2.3.4, 2.3.5, 3.5.1, 3.5.2	S1.1	FC
(o) Article 53; Residues Recycling, storage and disposal	2.3.5	S1.2	FC
(p) Article 54; Substantial change	Not applicable, relates only to processing of hazardous waste		

The overall status of compliance with the compliance is indicated in the table as:
NA Not Applicable
CC Currently Compliant
FC Compliant in the future subject to verification after commissioning
NC Not Compliant

Where the Operator is not *currently compliant* documents have submitted that indicate details of how compliance will be achieved, it is expected that compliance will be secured during commissioning and then verified during routine compliance monitoring. Table S1.3, and S1.4 Pre-commencement, and Improvement Conditions will be reviewed during commissioning.

Annex 2: Review of conditions and improvement conditions

Conditions	Expected compliance documents
1.1 EMS	A full EMS linking corporate policy to procedures and procedures to work instructions for demonstrating process, operational, and management control is in place as required by paragraph 4.2.1 PG13/1(21). It is expected that the EMS would be updated to reflect any necessary changes arising from commissioning.
1.2 Energy 1.3 Raw Materials 1.4 Waste	A full process flow has been submitted. The raw material is restricted to tyre crumb of a known specification and moisture content. No other wastes are to be processed. The assessment of use of raw materials, mass and energy flow through the process is therefore predicted with some precision and should be verified by commissioning. The purpose of conditions 1.2, 1.3 and 1.4 is to reference compliance requirements for optimisation of the process and covers the selection and use of a single defined raw material. This means the Operator has guarantees as to the suitability of the process as it is has been optimised for one specific waste source (tyre crumb). Energy requirements are noted in IED Article 50(5) Any heat generated by waste incineration plants or waste co-incineration plants shall be recovered as far as practicable. Article 50(5) specifically notes “5. Any heat generated by waste incineration plants or waste co-incineration plants shall be recovered as far as practicable.” This also replicated by paragraph 2.8.2/4.3.9 PG13/1(21). Raw material and waste controls and reporting are required by paragraphs 4.5.3, 4.5.5, 4.6.1 – 4.6.6 of PG13/1(21). Alternative materials cannot be used without review of plant operation or optimisation for the new waste. Any such change would require formal application to be made. The benefits of a single waste stream of known composition and specification are that the process has been optimised to produce specified outputs which

Conditions	Expected compliance documents
	can be delivered consistently and with known environmental impact. This leads to ensuring that the correct process plant is in place to efficiently use the raw materials, optimising both raw material use (thereby reducing wastes) and energy use. A Raw Materials, Waste and Energy Management plan (or plans) might be appropriate to demonstrate compliance after commissioning. The outcome of any changes as a result of commissioning should be included as an operating technique, condition 2.3.1 and Table S1.2.
2.1 Permitted activities	The Schedule 13 permit includes the storage, handling and processing of wastes for treatment in the plant as well as products produced by the plant that may still be designated as wastes. Where a new operation is required, the Operator should notify the Regulator as soon as practicable about any intended change. The actual operation of the process should be carried out in accordance with the processes and procedures and using such control measures as are identified in condition 1.1. The condition is required to ensure compliance with the legislative requirements in the EPR Regulation 14(1). It is noted that the process is directly adjacent to another Murfitts site and shares some infrastructure with that site (specifically drainage infrastructure. The extent of the installation has been assessed accordingly.
2.2.1 Site plans	The extent of the regulated facility has implications for a number of key conditions (in particular designated waste areas, designated product storage areas and surface water runoff). As noted above the Pyrolysis process is directly adjacent to another Murfitts site with some shared infrastructure but this permit does not extend beyond the designated site boundary. Suitable plans have been submitted by the Operator and should be updated as necessary if the nature or extent of the facility changes.

Conditions	Expected compliance documents
	The condition is required to ensure compliance with the legislative requirements in the EPR Regulation 14(4).
2.3 Operating techniques	Relevant techniques identified are listed in table S1.2. Particular attention has been paid to procedures/plans deemed necessary to prevent pollution, particularly those associated with 'Other Than Normal Operating conditions' (OTNOC) or 'Abnormal Operation'. Details of the HAZOP study for the plant have been reviewed, and the proposed SCADA control system has been linked to the outcomes of the HAZOP. Permit Conditions 2.3.7 – 2.3.11 implementing Paragraph 5.4 of PG13/1(21) Operation other than normal operating conditions (OTNOC) have been included. These are standard conditions used in the template Environment Agency waste incineration permit. The operating techniques required by conditions in section 2.3 include a robust assessment of key plant and equipment and failure points that will need to be verified and updated as necessary following commissioning. The specifications section for raw materials in Schedule 1.2 is restricted to tyre crumb by design, and the plant has been optimised accordingly to ensure operating techniques can be relied upon to exercise good control.
2.4 Improvement programmes	The improvement programmes require the Operator to prepare a list of improvements needed to demonstrate the compliance requirements. These improvements should address the requirements included in table S1.3 prior to commencement of operations Table S1.4 contains requirements to verify compliance with operational parameters of residence time and temperature as recommended by the Environment Agency consultation response. All improvements should be implemented by the specified date in line with PG13/1(21) requirements. If the Operator cannot implement the requirements for a 2 second residence time required by Article 50(2) of the IED. In accordance with Article 51 of the IED alternate compliance can be provided. Paragraph 4.3.3 and 4.3.4 of PG13/1(21), advises that the Regulator may set different operational conditions for certain processes, which includes pyrolysis plants

Conditions	Expected compliance documents
	The improvement programme requires verification that the installed plant has similar performance and meets relevant emission limits, and that continuous monitoring also proves compliance. If emissions are exceeded the Operator should submit a *formal application for derogation* and provide a plan for achieving compliance within a defined time period to be agreed with the Regulator. Any application for derogation should be made before the final compliance date, ideally shortly after the reviews required by the upgrading programmes and completion of commissioning.
3.1 Emissions monitoring	The emissions monitoring is a statutory requirement for waste incineration plants in accordance with Article 48 of the IED. The specific emissions standards, monitoring requirements, and frequencies of monitoring are based on *Annex VI IED* requirements. The monitoring requirements are separated into tables for each environmental media, air, water, and general. The relevant tables are listed as S3.1, S3.2, S3.3, S3.4 and S3.5. The Operator is required to produce a monitoring programme to address these requirements and in particular where there is an intention to vary from them, full justification should be provided (see condition 3.3 below). The provisional programmes identified in the submitted application may need to be updated following any changes brought about by commissioning. A request to derogate requirements for continuous monitoring of HF, HCl and SO2 has been reviewed with the Environment Agency. They recommend that *"The justification provided does not meet the conditions in the SWIP guidance for omitting continuous monitoring. The guidance requires the operator to demonstrate that emissions of these pollutants cannot exceed the ELVs under any circumstances due to the composition of the waste… the installation or provision of sodium bicarbonate abatement indicates that uncontrolled emissions could exceed ELV's."*

Conditions	Expected compliance documents
	Note: HF continuous monitoring may be omitted if the operator can demonstrate that treatment stages / abatement for HCl in the waste gas are used which ensure that the emission limit value for HCl is not being exceeded. Provisionally, monitoring of emissions to water and sewer are excluded from the permit as there are no process discharges of water. Any changes need to be formally agreed with the Regulator.
3.2 Continuous emissions monitoring and Non emission limit controls	Continuous monitors are required to meet specified performance within 95% of confidence for the pollutants sampled. Paragraph 5.3 of PG13/1(21) specifies the requirement for each pollutant. This condition is required to ensure that non emission limit controls identified as part of the review of process operation have been implemented following commissioning. Both visual and olfactory assessments are likely to be implemented alongside other process controls for dust, noise, and odour, and monitored to ensure ongoing compliance. Where no emissions limits are applied directly, pollution is expected to be eliminated or minimised with amenity and nuisance standards (as BAT does not directly apply). Non emission limit controls e.g. bunding of tanks or containers, collection and delivery procedures minimising dust, drainage integrity tests etc. will be expected to be identified and the controls clearly stated following commissioning. The intent would be that the Operator will identify the pollution potential and provide a suitable means of preventing or reducing pollution and clearly evidencing ongoing implementation as part of monitoring and compliance programmes.
3.3 Monitoring	Articles 14(1)(c) and 48 (and Annex VI Part 6) of the IED requires monitoring to verify compliance where emission limits are applied. The monitoring section provides the basis for requiring compliance. Monitoring conditions reference tables in Schedule 3 and require formal submissions of

Conditions	Expected compliance documents
	compliance to be made on a periodic basis, (varies by table). Monitoring against emission limit should be carried out using MCERTS accredited systems (where available) Where continuous monitoring is required, the monitoring device should normally be MCERTs accredited but should be agreed with the Regulator prior to completion of commissioning.
3.4 Odour Management Plan	Paragraph 4.2.4 of PG13/1(21) in respect of waste acceptance procedures, and though paragraph 4.5.6 specifically advises that odour should not be managed for the pyrolysis process itself. As storage wastes is covered (specifically the TPO which may have potential for odour), an odour condition has been applied. The nature and extent and detail required for condition 3.4 will only be necessary where odour issues arise following commissioning. Any submitted odour management plan anticipates low odour potential with few release points and limited odorous material due to carbon filter abatement. Verification during commissioning is expected, and an update or preparation of an odour management plan may be required if odour emissions are detected.
3.5 Noise and vibration	Article 52(1) requires that for delivery and reception of waste that a noise (including vibration) is managed. The applicant submitted a Noise and Vibration impact assessment for the site based on assumed levels of noise from plant and equipment. The noise impact assessment submitted by the applicant advises that there is a low potential for impact due to the separation distance, screening of plant by site buildings. The Regulator considers that the remote proximity of the site to sensitive receptors does not require a full re-assessment following commissioning but some verification that the plant (or elements of the plant) align with modelled assumptions may be useful in validating the noise impacts. The assessment to calculate predicted site noise levels at the nearest sensitive receptors made assumptions that may be inaccurate.

Conditions	Expected compliance documents
	However, if complaints arise, a full noise and vibration management plan will be required, and additional assessments might be necessary.
4.1 Records	Paragraph 4.7.2 of PG13/1(21) requires the keeping of records of compliance, it links record keeping with environmental performance and the EMS (see condition 1.1 above): The intention is that records should, as far as possible, match those already in place within the corporate EMS system. It should be noted that most records used to demonstrate compliance are matters of public record. Currently there are no requirements from the Operator to exclude any records from the public register. Records can be electronic or in hard copy.
4.2 Reporting	Paragraph 5.7 of PG13/1(21) requires reporting and notifications (see condition 4.3 below) of performance, particularly for ELV compliance. Certain reports (such as monitoring) are required to be submitted to the Regulator, should be provided in accordance with the conditions as stated. Note that the requirement is to submit records within 1 month of the end of the reporting period. i.e. annual submissions from January – December are therefore required by January 31st of the following year.
4.3 Notifications	Notifications of serious pollution incidents are defined in condition 4.3.1. The procedure for notifying the Regulator of serious incidents is laid out clearly. The requirement to notify is derived from Article 7 of the IED where an incident 'significantly affects the environment'. Significant is not specifically defined, however, the Operator is advised that any incident where offsite pollution is caused should be reported. In addition to the general requirement for notification of changes to the facility, Article 54 IED advises that a specific application is needed where hazardous waste is proposed to be incinerated. Changes to the permitted facility require the formal approval of the Regulator. Any change to the Operator shall be notified to the Regulator as soon as possible and preferably before any changes are made and in any case within 14 days of any necessary change.
4.4 Interpretation	Reference terms have been provided for clarity.

Conditions	Expected compliance documents
	Schedule 6 of the permit lists the terminology used within the permit and provides the legal definitions for interpreting the permit and its conditions. Please refer to Schedule 6 for any specific definition.
Schedules 1	Table S1.1 references the activities within the facility, please note that the Operators is only permitted to carry out the prescribed activities as identified in the table. Directly associated activities have also been identified. These activities are also included within the permit operation. Table S1.2 lists the operating techniques by which the facility is managed. Tables S1.3 and S1.4 provide a definitive list of the improvement programmes. **Pre-commencement** Following consultation on the permit, 4 pre-commencement conditions related to the implementation of the commissioning of the plant have been applied. A requirement for a commissioning plan to provide details of how and when the site will be made operational is required, along with any update of the EMS arising from commissioning. Details of the plan to verify of compliance with the residence time and temperature requirement is also needed to ensure compliance with those mandatory requirements. A fire prevention plan is also required before operations start. Following commissioning validation emissions testing of emissions and the minimum residence time/temperature verification will be required. The condition expects an outline of the intended commissioning process with timelines and expected outcomes. The process should identify the expected levels of waste to be processed and the define the outcomes for successful implementation including timeframes when commissioning elements will be complete. The programme should incorporate the improvement programme elements noted below as part of the ongoing commissioning process. It would be expected that the commissioning plan will be updated as necessary to help properly evidence the commissioning process.

Conditions	Expected compliance documents
Schedule 2 Raw Materials and waste	The schedule provides the list and specifications as necessary of raw materials and waste utilised within the facility. Where raw materials change or the designation of wastes are modified, the Operator should notify the Regulator at once. The current feedstock material is limited to one type of tyre crumb as requested in the permit application. The process is optimised for that waste source. The schedule is necessary to ensure that compliance option appraisals conducted have considered all the appropriate impacts. Where raw materials or waste designations change, the operational controls for the facility will need to be reviewed.
Schedule 3 Emissions and Monitoring	Tables S3.1 to S3.5 provide a list of emissions limits or compliance targets. Table S3.1 refers to emissions to air. Table S3.2 refers to emissions to water and sewer discharges there are no process emissions to water Table S3.3 refers to emissions to sewer. There is process emission (blowdown effluent) to sewer, but the discharge is via another site. Table S3.4 stipulates some (limited) process monitoring requirements. Table S3.5 has no groundwater or land contamination direct emissions but is included to relevant associated compliance related to control of spillages and designated waste areas.
Schedule 4 Reporting	Reporting frameworks have been simplified based on tabulated results. Standardised reporting forms are provided. All reporting forms to be standardised to help with alignment to the National pollutant emissions inventories only the forms related to the identified reporting requirements need be submitted.
Schedule 5 Notifications	Malfunction, breakdown or events likely to give rise to pollution or complaint is likely to be as a result of operation other than normal ('abnormal') operating conditions (OTNOC). The Operators is required to notify the Regulator of such events using the prescribed forms. The forms should be as completed as far as possible and provide all necessary information. Notification should be within 24 hours as a maximum, BUT, where a serious incident occurs (and this should

Conditions	Expected compliance documents
	be defined within the company EMS), the Regulator should be notified as soon as practicable.
Schedule 6 Interpretations	A list of interpretations. Other definitions may be added to the list if required to promote clarity, for example, local names identifying plant or equipment or particular activities or techniques that are unusual for the sector may need to be defined.

Based on the above assessment, the Regulator has determined that there is sufficient information submitted and evidence provided that compliance with the required standards can be achieved.

Subject to verification following commissioning of the plant, the Regulator has issued the permit on this day 15th of October 2026

Signed 

On behalf of Stoke-on-Trent City Council
Jayne Hawe – Environmental Health Manager