



Non-Technical Summary

Stoke Tyre Pyrolysis Facility

Murfitts Industries Limited

CRM.0180.001.PE.R.003



Contact Details:

Enzygo Ltd. (Bristol Office)
The Byre
Woodend Lane
Cromhall
Gloucestershire
GL12 8AA

tel: 01454 269237
email: steph.charnaud@enzygo.com
www: enzygo.com

Non-Technical Summary

CRM 0180 001 PE R 003 V3

Project:	Stoke Tyre Pyrolysis Facility
For:	Murfitts Industries Limited
Status:	FINAL
Date:	September 2025
Author:	Steph Charnaud, Director of Permitting
Reviewer:	Peter Cumberlidge, Director

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Registered Office: Gresham House, 5-7 St. Pauls Street, Leeds, England, LS1 2JG

Contents

1.0 Non-Technical Summary	1
1.1 Introduction.....	1
1.2 Operator Details	1
1.3 Existing Permit or Consents.....	1
1.4 Environmental Setting	2
1.5 Sensitive Receptors	2
1.6 Proposed Activities.....	5
1.7 Proposed Operational Hours.....	7
1.8 Management and Control	7
1.9 Point Source Emissions from the Facility.....	8
1.10 Fugitive Emissions to Land and Water.....	8
1.11 Noise Assessment.....	9
1.12 Environmental Risk Assessments.....	9
1.13 Operational Techniques and Monitoring Plan.....	9
1.14 Monitoring.....	9
1.15 Closure & Decommissioning.....	9

Tables and Figures

Figure 1.4.1: Site Location	2
Table 1.5.1: Sensitive Receptors.....	2
Table 1.6.4: Regulated Activities	6
Table 1.9.1: Point Source Emissions	8

1.0 Non-Technical Summary

1.1 Introduction

- 1.1.1 This non-technical summary relates to an application submitted to the Local Authority (City of Stoke-on-Trent Council) for a Small Waste Incineration Plant (SWIP) Permit under Schedule 13 of the Environmental Permitting Regulations 2016 (as amended).
- 1.1.2 A SWIP application document has been prepared to provide supporting information in completion of the local authority's Schedule 13 Small Waste Incineration Plant (SWIP) Permit application form; to assess the risks posed by the activity; and to fully consider them against applicable legislation.
- 1.1.3 The facility will be operated by Murfitts Industries Limited. Murfitts Industries Limited is a private limited company, whose registered office address is Etel House, Avenue One, Letchworth Garden City, England, SG6 2HU. The Company Number as registered on Company's House is: 04012599 and was incorporated on 12th June 2000.
- 1.1.4 The proposed development will accept up to 11 388 tonnes per annum (tpa) of tyre crumb. It is proposed that the tyre crumb be sourced from end-of-life tyre (ELT) processing facilities operated by Murfitts Industries Limited.
- 1.1.5 A planning application for the SWIP has recently been submitted to City of Stoke-on-Trent Council.
- 1.1.6 The tyre crumb will be treated within a pyrolysis plant to produce steam, for use in the adjacent Michelin manufacturing facility, along with valuable usable end products. The pyrolysis plant will operate 24 hours a day 7 days a week, excluding downtime for planned maintenance, with a maximum throughput of 1.5 tonnes per hour.
- 1.1.7 The site is located in the predominately industrial area of Campbell Road, adjacent to the Michelin Tyre Site in Stoke-on-Trent.

1.2 Operator Details

- 1.2.1 The Facility's full address will be:

Stoke Tyre Pyrolysis Facility
Campbell Road,
Oakhill,
Stoke
Stoke-on-Trent
ST4 4EW

- 1.2.2 The primary contact for the application is Steph Charnaud, Director of Permitting for Enzygo Limited who are retained to provide technical support to Murfitts Industries Ltd as part of the Permit application process.

1.3 Existing Permit or Consents

- 1.3.1 There are no existing environmental permits on the land to be included in this application.
- 1.3.2 Planning application for the Facility as described was submitted to City of Stoke-on-Trent Council on 8th July 2025, and determination is awaited.

1.4 Environmental Setting

1.4.1 The location of the site is illustrated in the document CRM 0180 001 PE D 001 as well as below in figure 1.4.1. The site is centred at Grid Reference SJ 86964 43232 and the site will cover an area of 0.617Ha.

Figure 1.4.1: Site Location



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1.4.2 The proposed Facility is located within a flood zone 1, which has a low probability of flooding from rivers and the sea.

1.5 Sensitive Receptors

1.5.1 The key receptors that have been identified, which have the potential to be impacted by emissions from the site are considered in the Environmental Risk Assessment which accompanies this application (Document Ref: CRM 0180 001 PE R 005) and summarised in Table 1.5.1 below.

Table 1.5.1: Sensitive Receptors

Receptor	Type	Distance from site boundary (m)	Direction
Superficial geology secondary A aquifer	Hydrological	Onsite	-
Bedrock geology secondary A aquifer	Hydrological	Onsite	-
Murfitts Industries End-of-Life Tyre Processing Facility	Industrial	Adjacent	East and South
Michelin Hanford Warehouse	Industrial	Adjacent	West and South West

Receptor	Type	Distance from site boundary (m)	Direction
Eon Facilities Compound	Industrial	Adjacent	South East
Michelin	Industrial	14	North East, North and North West
River Trent	Ecological	134	East
River Trent Path	Recreational	151	East
St Joseph's Preparatory School	Educational	240	North West
Marks and Spencer's Distribution Centre	Industrial	263	North East
St Joseph College	Educational	274	North West
Sainsburys Stoke	Commercial	276	South East
Oakhill Primary School	Educational	296	North West
Waters Edge Business Park	Commercial	310	North East
Residential property off Kensington Road	Residential	311	North
Lookers BMW Stoke-on-Trent	Commercial	383	East
Riverside Park Business park	Commercial	391	North East
Stone Road Business Park	Commercial	398	South West
Michelin Training and Information Centre	Commercial	438	West
Residential property off Clermont Ave	Residential	467	South East
St Teresa of the Child Jesus Catholic Church	Non-residential	480	South West
Residential off Stone Road	Residential	522	South West
High Street off London Road	Commercial	533	North
St Teresa's RC Primary School	Educational	545	South West
Dunelm warehouse	Industrial	548	North East
Warehouse off Birmingham Road	Industrial	580	North East
Oakhill Bowling & Recreation Club	Recreational	645	North
St Johns Centre	Non-residential	687	West
Industrial Park off Campell Road	Industrial	737	North East
St John's Church Trent Vale	Non-residential	781	North West
GXO distribution centre	Industrial	811	East
Michelin Sports and Conference Facility	Commercial	872	South West
North Midlands Operations Incinerator	Industrial	878	East
Residential property off Fletcher Road	Residential	881	North East
Dougie Mac Hanford Charity Shop	Commercial	886	South
Residential property off Campell Road	Residential	906	North East
Queensbury Hub	Non-residential	918	North West
Well Pharmacy	Commercial	1081	South
Commercial Complex off Campell Road	Commercial	1095	North East
DSV office	Commercial	1100	South East

Receptor	Type	Distance from site boundary (m)	Direction
Trentham Barbers	Commercial	1128	South
Co-op Food Hanford	Commercial	1153	South
Hanford Dental and Implant Centre	Commercial	1159	South
Trentham Rugby Union Football Club	Recreational	1182	South
Trainyard off Whieldon Road	Industrial	1210	North East
Hanford Care Home	Residential	1214	South
bet365 Stadium	Recreational	1247	East
Springfield Retail Park	Commercial	1277	North West
Industrial Complex Campbell Road	Industrial	1298	North East
London Road Sports and Social Club	Recreational	1310	North
Car Dealers off Stanley Matthews Way	Commercial	1322	East
Priory C of E Academy	Education	1330	South
Farm off Cambridge Drive	Agricultural	1345	West
Residential property off Cambridge Drive	Residential	1384	West
Premier Foods Stoke-on-Trent, food factory	Commercial	1458	North West
Residential property off Grove Road	Residential	1468	North East
Thistley Hough Academy	Educational	1512	North
Northwood Garden Centre	Commercial	1514	West
Penkhull Village Hall	Recreational	1514	North
Residential property off Northwood Lane	Residential	1536	West
Clayton Hall Academy	Educational	1539	West
Trentham Academy	Educational	1558	South
St Thomas' Church	Non-residential	1561	North
Shops off Cambridge Drive	Commercial	1562	North West
Wing Lee Supermarket	Commercial	1589	East
Holiday Inn	Commercial	1593	East
Residential House on Stanley Matthews Way	Residential	1605	South East
Yellow Power office	Commercial	1629	South East
Farm off Northwood Lane	Agricultural	1630	South West
Poultry Paddock farm	Agricultural	1652	South West
Morphy Richards warehouse	Industrial	1662	East
Stoke City FC Academy Dome	Recreational	1663	East
Industrial Park off Grove Road	Industrial	1672	East
Clayton Sports Centre	Recreational	1691	North West
Light Church	Non-residential	1694	North
Amazon Warehouse	Industrial	1705	South East
Residential property off Northwood Lane	Residential	1717	South West
EFM Europe	Commercial	1738	East

Receptor	Type	Distance from site boundary (m)	Direction
M Club Spa and Fitness	Recreational	1771	North West
Trentham Mews Surgery	Commercial	1786	South
Industrial Park off Whieldon Road	Industrial	1789	North East
Office off Queens Road	Commercial	1819	North
St James The Great C of E Church	Non-residential	1821	West
Fast Lane Service Centre Garage	Commercial	1821	South
Harplands Hospital	Commercial	1833	North West
Sainsbury's	Commercial	1848	North
Longton Rugby Club	Recreational	1863	South East
Nuffield Health North Staffordshire Hospital	Commercial	1865	West
Bupa Dental Care Clayton	Commercial	1867	West
Shops on Lonsdale Street	Commercial	1875	North East
BP fuel station	Commercial	1901	West
The Darwin Centre Hospital	Commercial	1918	North
Esso fuel	Commercial	1920	West
Screwfix Direct Warehouse	Industrial	1932	South East
Keele University Clinical Education Centre	Educational	1941	North West
Commercial Complex off Woodhouse Street	Commercial	1983	North East

1.6 Proposed Activities

1.6.1 Murfitts Industries Ltd proposes to operate a Part (A)2 Environmental Permit for the operation of a Small Waste Incineration Plant (SWIP) consisting of a pyrolysis unit with a maximum nominal capacity of 1.5 tonnes of material per hour. The facility will have an annual intake of no more than 11 388 tonnes of tyre crumb per annum.

1.6.2 The processed tyre crumb will be delivered to the site from end-of-life tyre processing facilities operated by Murfitts Industries. The crumb will be delivered in big bags which are emptied into a conveyor system which transfers the crumb to the first stage of the pyrolysis process.

1.6.3 The pyrolysis process will produce syngas, tyre pyrolysis oil and raw recovered carbon black:

- The syngas will be cooled before being combusted on-site to provide heat to the boiler. The steam produced by the boiler will be utilised in the neighbouring Michelin site in the tyre re-treading facility.
- The tyre pyrolysis oil produced by the pyrolysis process will be sold as a product.
- The raw recovered carbon black will either:
 - be cooled and bagged at the Facility then sent off-site for further processing at Murfitts Industries site in Lakenheath; or;
 - milled on-site to form pellets.

1.6.4 The scale of operations proposed is as follows:

Murfitts Industries SWIP Facility	
Parameter	Limit
Proposed Operator	Murfitts Industries Ltd
Maximum total tonnes for the year	11 388
Hourly Throughput (tph)	1.5t/hr
Feedstock types	Tyre Crumb
Feedstock Type Classification	Shredded or granulated rubber from end-of-life tyres / EWC: 19 12 04

1.6.5 As the plant will process less than 3 tonnes per hour of crumb, the proposed facility is defined as a small waste incineration plant (SWIP), as the capacity falls below the relevant threshold in Section 5.1 of Part 2 of Schedule 1 to the Environmental Permitting (England & Wales) Regulations 2016 (as amended) (EPR). As such, SWIP Facilities require an environmental permit issued by the local authority under a Part A(2) regulated activity. The permit must be issued in line with schedule 13A of the Environmental Permitting Regulations and must reflect the requirements of Article 44 of the Industrial Emissions Directive.

1.6.6 The proposed SWIP and Directly Associated Activities (DAAs) are summarised in Table 1.6.4 below.

Table 1.6.4: Regulated Activities

Listed Activity	Description of Specified Activity	R & D Codes
Schedule 13A - A waste incineration plant or waste co-incineration plant with a capacity less than or equal to 10 tonnes per day for hazardous waste or 3 tonnes per hour for non-hazardous wastes	The receipt of tyre crumb from ELT's. Gas conditioning, involving the separation of liquids from the gas The thermal treatment (by pyrolysis) of granulated tyres to produce a gas, which is condensed, removing the tyre pyrolysis oil. The remaining non-condensable gas is combusted for use in a boiler to produce steam and then cleaned Flue gas cooling and conditioning.	<ul style="list-style-type: none"> • D10: Incineration on Land (Burning Waste in Combustion Unit) • D15: Temporary storage of wastes pending D10 activities • D9: Physico-chemical treatment resulting in final compounds or mixtures which are discarded by any of the operations numbered D1 to D12.
Directly Associated Activities		
Receipt and storage of granulated tyres	From receipt of tyre crumb to entry into the pyrolysis facility	R13 Storage of waste pending any of the operations numbered R1 to R12.
Raw material reception and storage	Storage of liquids in bunded areas And solids in dedicated buildings.	D15 temporary storage of wastes pending any of the operations

		numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)
Product storage and handling	Storage of tyre pyrolysis oil (TPO). Storage of carbon black.	
rCB cooling and bagging	Cooling, bagging and storage of rCB for transfer off-site for further processing.	
Raw rCB milling and pelletising	Milling, pelletising and cooling raw rCB,	
Cooling system	Various cooling processes	
Flare	Combustion of gas in a flare in an emergency or as a result of abnormal operation	
Combustion	Combustion of diesel in a generator. Utilised for <50 hours per annum and in the case of an emergency/abnormal operations.	
Dust extraction and abatement	Treatment of waste gases	
Storage and handling of wastes generated by the process	From generation of waste to dispatch off-site	

1.7 Proposed Operational Hours

1.7.1 The proposed operational hours will be as follows:

Waste Deliveries

24 hours per day 7 days per week

Operating Hours

The plant will operate continuously 24 hours a day 7 days a week, with the exception of downtime for maintenance.

1.8 Management and Control

1.8.1 The approach to permitting and regulation relies heavily upon the use of Environmental Management Systems (EMS) as a driver for environmental compliance and improvement. In England and Wales, under the Environmental Permitting Regime, modern regulation is fundamentally driven by applying a risk-based approach to activities, where operators are encouraged to implement suitable management systems with which to operate, and to implement self-regulation and reporting. If you hold a permit under the Environmental Permitting (England & Wales) Regulations 2016 (as amended) the enforcing regulating body requires you to have an appropriate Environmental Management System in place.

1.8.2 Prior to operations commencing, Murfitts Industries Ltd will update their current management system to take into account operation of the SWIP. This update will include the relevant legal

requirements, quality and safety standards, and environmental elements that the SWIP needs to identify and comply with, in order to carry out safe and environmentally sound operations.

1.9 Point Source Emissions from the Facility

1.9.1 There will be no point source emissions to land, groundwater or surface water aside from clean surface water run-off and clean roof water.

1.9.2 There will be three main emission points to air from the proposed facility during normal operations. In the case of abnormal operations emissions points A2 Emergency Flare and A3 flue stack from an Emergency Generator may be in operation. All proposed emissions are listed in table 1.9.1 below.

Table 1.9.1: Point Source Emissions

Air Emission Point Reference	Source of Emission	Basis for release	Emissions
A1	rCB pneumatic transport	Normal operation	Particulates
A2	Exhausts from Boiler 1	Normal operation	CO, CO ₂ , PM, NO _x , SO _x , TOC, HCL, HF, PAHs
A3	rCB drying exhaust	Normal operation	Particulates
A4	Emergency Flare	Abnormal operation	CO, NO _x , SO _x , TOC, HCL, HF, PAHs
A5	Emergency Generator	Abnormal operation	NO _x , SO _x , particulates
Pressure Relief Valves (PRVs)	Steam system boiler	Periodic Release	Steam
Vents	TPO tanks	Periodic release	VOCs

1.9.3 An air quality assessment has been carried out to determine the risk posed by the release of gaseous emissions from the proposed combustion plant on site that will combust RDF.

1.9.4 The Air Quality Assessment (AQA) was undertaken in July 2025 using ADMS 6 (v6.0.2.1). Impacts at sensitive receptors were quantified and the results compared with the relevant Environmental Quality Standards (EQS) and significance criteria provided by the Environment Agency (EA) and the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT).

1.9.5 The AQA impacts were based on the maximum predicted concentrations over 5 assessment years to provide a robust assessment. In addition, a roadside background NO₂ concentration was applied at receptors close to major roads to take account of elevated concentrations at these locations.

1.9.6 The AQA states that the relevant EQSs are not exceeded at any location within the assessment extents. The AQA concludes by stating that *'based on the predictions and the use of robust assumptions, it is considered that the overall air quality impacts of the proposed operation would be not significant' and be acceptable in line with air quality guidance and policies.*

1.10 Fugitive Emissions to Land and Water

1.10.1 The Facility will use existing infrastructure which has been engineered to provide sealed impermeable surfacing to ensure that there will be no fugitive emissions released to surface water, ground or groundwater.

1.10.2 A sealed drainage system is installed on site to handle the clean surface water run-off from the roof and yard areas. Clean surface water run-off will be directed to an interceptor on site before being released into the River Trent.

1.10.3 Effluent and dirty water produced at the site shall be directed to the foul sewer which runs along Campbell Road.

1.11 Noise Assessment

1.11.1 A detailed noise assessment has been completed to assess the potential impact from noise on sensitive receptors. The assessment was carried out in accordance with guidance contained within British Standard 4142:2014+A1:2019 Method for rating and assessing industrial and commercial sound (BS4141). Sound levels generated by the proposed development have been predicted using CadnaA.

1.11.2 The BS4142:2014 assessment shows that the predicted sound rating levels are below the measured background noise levels at all receptors assessed during both the day and overnight which would indicate that the specific sound has a low impact and would fall into the NOEL effect level when assessed in accordance with the Planning Policy Guidance for noise.

1.11.3 The assessment further adds *'The cumulative assessment shows a none/not significant effect at all receptors assessed'*.

1.12 Environmental Risk Assessments

1.12.1 An Environmental Risk Assessment has been completed as part of the preparatory work undertaken to support this Permit Application.

1.12.2 The risk assessments have concluded that with the proposed abatement systems to be installed at the Facility for the proposed activities will not result in an unacceptable impact on nearby sensitive receptors. All risk assessments including modelling work are provided in the Environmental Risk Assessment (ERA) document CRM 0180 001 PE R 005 within this Permit Application.

1.13 Operational Techniques and Monitoring Plan

1.13.1 Details contained within the Operations Techniques and Monitoring Plan CRM 0180 001 PE R 006 describe the proposed operations and associated pollution prevention techniques.

1.14 Monitoring

1.14.1 The Permit will stipulate the required monitoring schedule for the proposed facility, however anticipated monitoring requirements for all point source emissions and process monitoring are provided within the Operations Techniques and Monitoring Plan CRM 0180 001 PE R 006

1.15 Closure & Decommissioning

1.15.1 The plant will operate until a time where it is decided by Murfitts Industries Ltd, to no longer continue operating the facility. Following cessation of operations and removal of the plant, the site will be returned to the same condition prior to operations commencing.

1.15.2A permit surrender application will then be submitted to the regulating authority to demonstrate that the site has been returned to a satisfactory state. The surrender application will include details of how the facility will be dismantled, and how wastes produced from dismantling will be either recycled/reused or where appropriate disposed of.



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BRISTOL

The Byre
Woodend Lane
Cromhall
Gloucestershire
GL12 8AA
Tel: 01454 269 237

SHEFFIELD

Samuel House
5 Fox Valley Way
Stocksbridge
Sheffield S36 2AA
Tel: 0114 321 5151

MANCHESTER

Ducie House
Ducie Street
Manchester
M1 2JW
Tel: 0161 413 6444

CARDIFF

Regus House
Malthouse Avenue
Cardiff Gate Buisness Park
CF23 8RU
Tel: 02920 023 700

Please visit our website for more information.

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