# Asphalt Recycling Facility - Coxhoe Quarry

# Bespoke Environmental Permit Application

# Appendix 8 - Environmental Risk Assessment

## Document Control

| Version | Date | Report Reference | Author |
|---|---|---|---|
| Version 1 | May 2025 | TM.CH.0064.R01-A8 ERA Draftv1.0 | Swift Environmental Compliance Limited |
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# Contents

# 1 INTRODUCTION

## 1.1 Report Scope

1.1.1 Swift Environmental Compliance Limited (Swift) have been instructed by Tarmac Trading Limited (Tarmac) to prepare an application for a bespoke environmental permit for an Recycling at Coxhoe Quarry, Coxhoe, County Durham DH6 4BB (the Site).

1.1.2 Environment Agency Application Form Part B2, Section 6 requests '*provide an assessment of the risks each of your proposed regulated facilities poses to the environment. The risk assessment must follow the methodology set out in 'Risk assessments for your environmental permit'*. This document provides the Environmental Risk Assessment (ERA) for Asphalt Recycling Facility.

1.1.3 This ERA is a qualitative assessment of the potential risks to the environment and human health from the site. This ERA has been completed in accordance with Environment Agency's Risk assessment for your environmental permit guidance[1] (ERA Guidance). The ERA Guidance provides an overview of when an ERA is required and how to complete an ERA.

1.1.4 In accordance with the ERA Guidance, this ERA includes the following:

- Identify and consider risks from the proposed activity, and the sources of the risks;
- Identify the receptors at risk from the proposed activity;
- Identify the possible pathways from the sources of the risks to the receptors;
- Assess risks relevant to the proposed activity and check they are acceptable and can be screened out;
- State what control measures are proposed if the risk is too high; and
- Submission of this ERA as part of the permit application.

## 1.2 Site Setting

1.2.1 The Site is situated in the northwestern section of the wider Coxhoe Quarry complex and is centred at National Grid Reference NZ 33979 35521, as illustrated at Appendix 1, Site Plans. The Site is located approximately 9km southeast of Durham and approximately 500m south of the village of Kelloe in County Durham.

1.2.2 The area surrounding the Site comprises predominately of agricultural and open land with pockets of dwellings and industrial activities beyond. The nearest residential properties are located at approximately 350m northeast of the proposed permit boundary at its closest point.

1.2.3 Access to the Site is via the west, off Brdyll Street and then through a network of internal haul roads within the wider Coxhoe Quarry complex. Brdyll Street connects to the A177 approximately 1km west from Coxhoe Quarry site entrance.

1.2.4 A Site Condition Report (SCR), presented at Appendix 6 of the bespoke permit application report provides

[1] *Available at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit*

details on the geology, hydrogeology and hydrology of the Site and this is taken into consideration as part of this ERA. As documented in the SCR the Site is not located in an Air Quality Management Area and is in a Flood Risk Zone 1, lowest risk of flooding.

## 1.3 Proposed Activity

1.3.1 Tarmac currently hold a Part B Permit Reference DCC/P221/12, issued on 5 December 2001, with Durham County Council allowing up to 50,000 tonnes of road plannings to be treated over any 3 year period with a directly associated activity at the Site. Due to the increased volume of wastes proposed to be treated, an application for a bespoke environmental permit is required to increase the annual throughput to 250,000 tonnes per annum. This application relates to Tarmac's proposal to continue to operate an Asphalt Recycling Facility at the Site with a greater capacity.

1.3.2 The Site's location is provided on the Site Location Plan and the proposed permit boundary and site layout are illustrated on the Site Location Plan presented at Appendix 1 of the bespoke permit application report. Local receptors within a 1 kilometre radius of the Site are shown on the Receptor Plan also presented at Appendix 1 of this permit application.

# 2 ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY

2.1.1 This site-specific qualitative ERA has been prepared following the ERA Guidance. The ERA methodology aims to consider the source-pathway-receptor linkages for the risks posed by the proposed activity and proposed control measures to manage risks.

2.1.2 This section of the ERA considers the potential source of risks from the proposed activity, pathways, the Site setting and identifies receptors in the vicinity of the Site.

## 2.2 Source

2.2.1 The ERA Guidance identifies risks requiring consideration from proposed activities and these have been considered and tabulated below.

***Table 1 Risks from the proposed activities***

| Potential Risk | Risk from Proposed Activity | Potential for significant risk |
|---|---|---|
| Any discharge (for example sewage or trade effluent to surface or groundwater) | The Site is engineered with a permeable, compacted aggregate hardstanding to minimise the risk of pluvial water flooding accumulating within the operational areas.<br>No point source emissions to water are permitted as part of this activity. | Very low potential. |
| Accidents | All waste activities have the potential for accidents to occur. The ERA Guidance suggests that *'assume that operator error will occur at least once every 100 times you carry out an operation'*. The Environment Management System has measures to mitigate accidents occurring. The Site is overseen by a suitably trained Technically Competent Manager, actively managing the Site to reduce the likelihood of accidents occurring.<br>Accidents have the potential to occur from the proposed activity and this is assessed further in Section 4 of this ERA. | Low potential. Refer to Section 4 of this ERA. |
| Odour | Minimal organic or degradable wastes are to be transferred as part of the proposed activity. No organic or degradable wastes are to be treated as part of the proposed activity. It is not considered that there is a potential for a significant risk of odour from the proposed activity. | Very low potential. |
| Noise and vibration | An asphalt plant and associated activities have the potential to generate noise and vibration and this is assessed further in Section 4 of this ERA.<br>A Noise Impact Assessment has been completed in line with the BS 4142:2014 and is presented at Appendix 10 to this permit application. | Low potential. Refer Section 4 of this ERA. |
| Uncontrolled or unintended ('fugitive') emissions, for which risks include dust, litter, pests and pollutants that should not be in the discharge | An asphalt plant and associated activities have the potential to generate dust. Dust have the potential to occur from the proposed activity and this is assessed further in Section 4 of this ERA.<br><br>The types of waste proposed to be accepted are unlikely to generate fugitive emissions of litter, pests or pollutants. | Low potential. Refer Section 4 of this ERA<br><br>Very low potential for generating litter, pests or pollutants. |
| Visible emissions, for example smoke or visible plumes | The proposed activity will not have visible emissions and as such, it is not considered that there is a potential for a significant risk. | Very low potential. |
| Release of bioaerosols, for | The proposed activity will not include wastes releasing bioaerosols. | Very low potential. |

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| example from shredding, screening and turning, or from stack or open point source release such as a biofilter | | |

## 2.3 Pathway

2.3.1 For a potential risk from the proposed activity to result in an impact a pathway linkage is required. Possible pathways from the risks from the proposed activity have been identified and tabulated below.

***Table 2 Pathways***

| Potential Risk | Pathway |
|---|---|
| Noise and Vibration | Atmosphere |
| | Vibrations through the ground |
| Fugitive emissions | Atmosphere |
| Accidents | Atmosphere |
| | Surface water run-off |
| | Infiltration |

2.3.2 The main pathway identified for the identified potential sources are from the atmosphere.

## 2.4 Receptor

2.4.1 Receptors within 1,000metres of the Site have been identified and tabulated below. The locations of these Receptors in relation to the Site and identification number are illustrated on the Receptor Plan, presented at Appendix 1 of this bespoke permit application report.

***Table 3 Receptors***

| ID | Receptor | Description | Distance from site (rounded to the nearest 5m) | Direction from site |
|---|---|---|---|---|
| 1 | Raisby Hill Quarry | Industrial | 0 | E, SE, S |
| 2 | Raisby Hill Grassland - SSSI | Conservation site | 60 | W |
| 3 | Raisby Hill Quarry - SSSI | Conservation site | 65 | NE |
| 4 | Agricultural land | Agriculture | 80 | W, NW, N, NE, S |
| 5 | Hill Top View | Residential | 149 | NE |
| 6 | Coxhoe medieval settlement | Scheduled Monument | 170 | NW |
| 7 | Bradyll Street | Residential | 240 | NE |
| 8 | WWTW | Industrial | 270 | N |
| 9 | Coxhoe Beck | Water Body | 300 | N |
| 10 | Garmondsway | Scheduled Monument | 400 | S |
| 11 | Depot | Industrial | 425 | SW |
| 12 | Kelloe | Residential | 495 | N |
| 13 | Coxhoe East Farm | Residential and Industrial | 535 | NW |
| 14 | Kelloe Community Primary School | School | 725 | NNE |

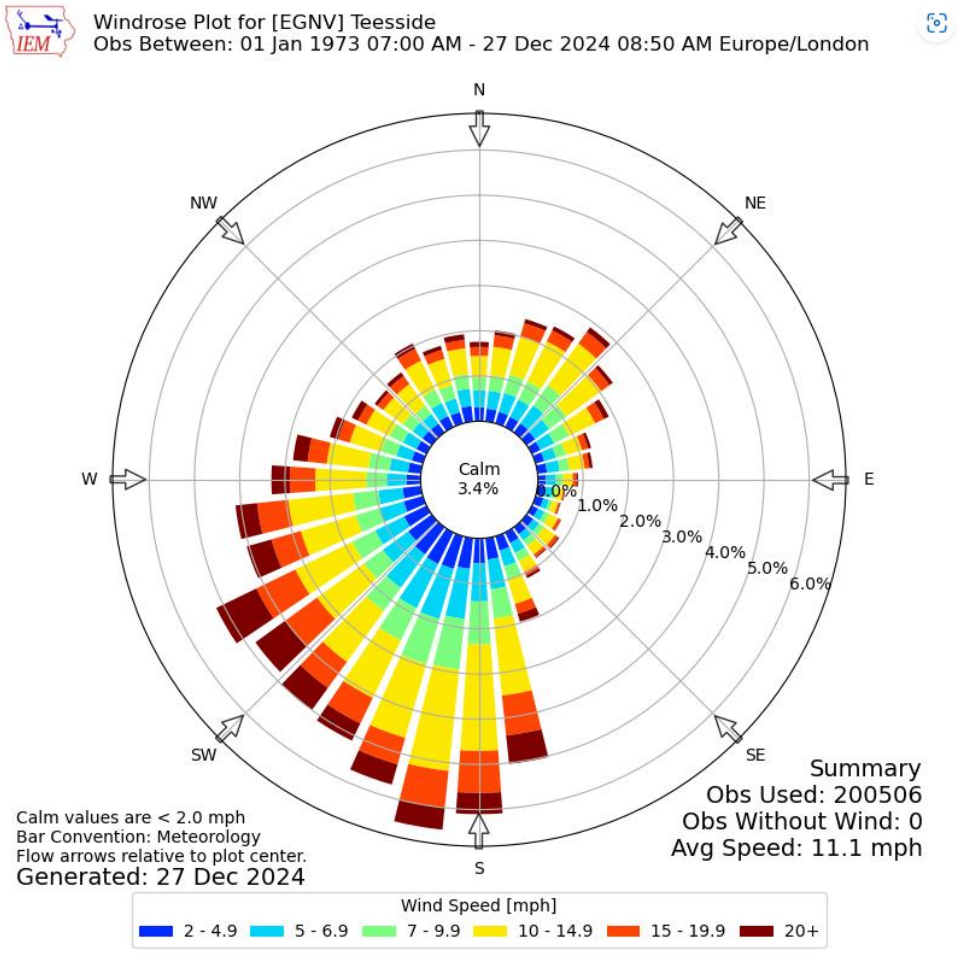
| | | | | |
|---|---|---|---|---|
| 15 | Garmondsway Village | Residential | 755 | SE |
| 16 | Playground | Recreational | 800 | NW |
| 17 | Low Raisby | Residential | 870 | NE |

## 2.5 Meteorological Conditions

2.5.1 A Windrose dated December 2024 from the Site's nearest meteorological station at Teesside Airport[2] is presented at Diagram 1.

2.5.2 The Windrose indicates that the predominant wind direction in the vicinity of the Site is towards the north and north-east.

***Diagram 1 Teesside Windrose, Observations between July 1973 - December 2024[3]***




## 2.6 Environmental Risk Assessment

2.6.1 The ERA (Appendix A) assesses each potential source identified in Section 2.2, assesses the likelihood of those hazards impacting on receptors taking into consideration the pathways and control measures being implemented.

[2] *Available at IEM :: Site Wind Roses (iastate.edu)*

2.6.2 The ERA identified potential risks from the proposed activity in relation to noise and vibration, habitats and dust. In response to these findings, a site-specific Noise Impact Assessment, Habitat Risk Assessment and Dust and Emissions Management Plan have been completed to support this bespoke environmental permit application. The results of these assessments all conclude that there is **'low'** risk of pollution from the proposed activity.

## 2.7 Summary of Environmental Risk Assessment

2.7.1 This ERA indicates that the proposed activity will have no significant impact with regards to odour, dust, fire, noise and fugitive emissions and the likelihood of accidents creating a significant environmental impact is considered 'low'.

# APPENDIX 1 – ENVIRONMENTAL RISK ASSESSMENT

### *Table 4 Hazard identification and risk assessment*

| Hazard | Receptor | Potential Impact | Pathway | Probability of potential impact | Consequence of risk | Risk Management | Residual risk (following mitigation) |
|---|---|---|---|---|---|---|---|
| Releases of particulate matter (dusts) | Local human population | Harm to human health - respiratory irritation and illness.<br><br>Nuisance - dust on cars, clothing etc. | Air transport then inhalation | Medium | Medium | The Site will be operated in accordance with the Dust and Emissions Management Plan. The Dust and Emissions Management Plan concludes that the risk of noise at the Site is considered 'low'.<br>Permitted waste types do not include dusts, powders or loose fibres.<br>The site is not located in an Air Quality Management Area.<br>Mitigation methods include dampening down of internal access roads and waste piles in dry conditions.<br>Vehicles delivering and exporting materials will be sheeted and contents enclosed. | Low |
| Odour | Local human population | Nuisance, loss of amenity | Air transport then inhalation | Low | Low | Permitted waste types for storage and transfer are not degradable and have a low potential to produce odour. Strict waste storage timescales are adhered to in accordance with the Environmental Management System and Permit conditions. | Very Low |
| Litter | Local human population, livestock and wildlife. | Nuisance, loss of amenity and harm to animal health | Air transport then deposition | Low | Low | Permitted waste types are unlikely to generate litter.<br>Regular inspections of the site will be undertaken in accordance with the Environmental Management System. In the event of litter being detected a litter picker will be deployed to reduce the potential for litter escaping outside of the Permit boundary. | Very Low |
| Waste, litter and mud on local roads | Local human population | Nuisance, loss of amenity, road traffic accidents. | Vehicles entering and leaving site. | Medium | Medium | Permitted waste types do not include dusts, powders or loose fibres.<br>Vehicles will be sheeted prior to entering or leaving the Site.<br>Dampening down of internal access roads and waste piles is proposed in dry conditions.<br>Vehicles will travel within speed limits.<br>Checks of the local highway will be regularly carried out to monitor any mud or debris on the roads tracking from the Site. In the event of mud and debris being detected Tarmac's mobile road sweeper will be deployed. | Low |
| Noise and vibration | Local human population | Nuisance and loss of amenity , loss of sleep. | Noise through the air and vibration through the | Medium | Medium | The waste operations will not result in any significant increased noise and vibrations beyond the existing operations.<br>Equipment on site is maintained and serviced in accordance with manufacturers recommendations. | Low |

| Hazard | Receptor | Potential Impact | Pathway | Probability of potential impact | Consequence of risk | Risk Management | Residual risk (following mitigation) |
|---|---|---|---|---|---|---|---|
| | | | ground. | | | Noise silencing is deployed on vehicles used on site.<br>A Noise Impact Assessment has been completed as part of the permit application. The Noise Impact Assessment completed in accordance with BS:4142 concludes that the risk of noise at the Site is considered 'not likely to result in adverse impacts' and 'are likely to have a low impact'. | |
| Scavenging animals and scavenging birds | Local human population | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity. | Air transport and over land | Low | Medium | Permitted waste types do not include food wastes and have a low potential to encourage scavenging animals and scavenging birds. | Very Low |
| Pests (e.g. flies) | Local human population | Harm to human health, nuisance, loss of amenity | Air transport and over land | Low | Medium | Permitted waste types do not include food wastes and have a low potential to encourage flies. | Very Low |
| Flooding | Local human population and local environment | If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream. | Flood water | Negligible | Medium | The Site is engineered with a permeable, compacted aggregate hardstanding to minimise the risk of pluvial water flooding accumulating within the operational areas.<br>The Site is located in a Flood Zone 1, low chance of flooding. | Low |
| Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Local human population and local environment. | Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land. | Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches. | Medium | Medium | The site has CCTV monitoring.<br>The Site is accessed only via a lockable gate through the main Quarry entrance and is secure.<br>Gates will be locked whenever the Site is closed.<br>Gates and fencing are inspected regularly by site operatives to identify deterioration, damage and the need for repair.<br>Fencing and gates are maintained and repaired to ensure their continued integrity. If damage is sustained, repair will be made within the same working day. If this is not possible, suitable measures will be taken to prevent unauthorised access to the site and permanent repairs will be affected as soon as is practicable.<br>All visitors to the site are required to sign in and sign out again on exit, thereby minimising the risk of unauthorised visitors on the Site. | Low |

| Hazard | Receptor | Potential Impact | Pathway | Probability of potential impact | Consequence of risk | Risk Management | Residual risk (following mitigation) |
|---|---|---|---|---|---|---|---|
| | | | | | | Operational procedures are in place including regular inspections, ensuring continual monitoring of security provision at the Site. | |
| Fire | Local human population and local environment.<br><br>All surface waters close to and downstream of site. | Chronic effects: deterioration of water quality | Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches. | Medium | Medium | Permitted waste types do not include combustible wastes and have a low potential to result in a fire. | Negligible |
| Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids. | All surface waters close to and downstream of site. | Chronic effects: deterioration of water quality.<br>Acute effects: oxygen depletion, fish kill and algal blooms | Direct run-off from site across ground surface, via surface water drains, ditches etc. | Medium | Medium | The Site is engineered with a permeable, compacted aggregate hardstanding to minimise the risk of pluvial water flooding accumulating within the operational areas.<br><br>The Site is located in a Flood Zone 1, low chance of flooding.<br><br>No point source emissions to water are permitted as part of this activity. | Negligible |

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