

# H1 Environmental Risk Assessment – Dunmow, Chelmsford (EPR/KB3036RR)

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| Source                                                                                                                                                                                                                                                                                                                                                                                                     | Receptors                                                                                                                                                                                                                                                                                                                                                                                  | Harm                                                       | Pathway                                                   | Probability of exposure     | Consequence                                         | Magnitude of risk                          | Justification for magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Risk management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Residual Risk                                       |
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| What is the agent of process with potential to cause harm?                                                                                                                                                                                                                                                                                                                                                 | What is at risk? What do I need to protect?                                                                                                                                                                                                                                                                                                                                                | What are the harmful consequences of things go wrong?      | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | What is the overall magnitude of the risk? | On what did I base my judgement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | How can I best manage the risk to reduce the magnitude?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | What is the magnitude of the risk after management? |
| <p>Releases of particulate matter (dusts) from site activities including:</p> <ul style="list-style-type: none"> <li>Vehicle movements along haul routes</li> <li>Physical processing of waste under cover or within a building;</li> <li>Storage of waste and material in a building or under cover externally; and</li> <li>Unloading and loading activities externally or within a building.</li> </ul> | <ul style="list-style-type: none"> <li>Workers within the wider commercial estate</li> <li>Residents along Essex Regiment way (100 m west), Lakeview Crescent and beyond (500 m south), Channels Drive and beyond (600 m east);</li> <li>Channels play and skate park (420 m south), various lakes circa 300 m east and beyond; and</li> <li>Belstead school (520 m northwest).</li> </ul> | Harm to human health – respiratory irritation and illness. | Air transport then inhalation.                            | Medium                      | Medium                                              | Medium                                     | <p>The permitted waste streams have the potential to generate dust during transport, unloading, loading, storage and physical treatment.</p> <p>There is outdoor storage of soil, hardcore, fines and street sweepings which have the potential to generate dust.</p> <p>There is no outdoor treatment of waste; all treatment activities are within the enclosed building. The only exception to this is wood chipping which is undertaken under cover externally.</p> <p>All storage of waste externally are within concrete bays with a minimum 1 m clearance from the top of the bay to minimise wind whipping.</p> <p>The predominant wind direction is from the south west – the wind generally blows towards the north east.</p> | <p>The site will be managed in line with the management listed in the Environmental Management System and the Emissions Management Plan.</p> <p>Abatement measures are discussed in the Source-Pathway-Receptor Table of the Emissions Management Plan.</p> <p>Wastes of solely loose fibres, dust or powders, will not be accepted under the permit.</p> <p>The wood chipping will be undertaken within 3-sided concrete bays with a cover which will minimise wind whipping.</p> <p>Plant to be operated in accordance with operators' instructions and good practice of dust minimisation (e.g. reducing drop heights).</p> <p>Site speed limit to be enforced.</p> | Low                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                            | Property of neighboring lands and public highways.                                                                                                                                                                                                                                                                                                                                         | Nuisance – deposit on cars, homes, clothing etc.           | Air transport then deposition.                            | Low                         | Medium                                              | Medium                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Priority habitats (&lt;50 m west and beyond);</li> <li>Ponds c.300m southeast, c.400 m northeast; and</li> <li>The River Chelmer (250 m west).</li> </ul>                                                                                                                                                                                           | Potential irritant, loss of habitat and damage to species. | Air transport then deposition in habitats.                | Low                         | Medium                                              | Medium                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                     |

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| What is the agent of process with potential to cause harm? | What is at risk? What do I need to protect?                                                                                                                                                                                                                                                                                                                                | What are the harmful consequences of things go wrong? | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | What is the overall magnitude of the risk? | On what did I base my judgement?                                                                                                                                                                                                                                                                                                                                                                                                                        | How can I best manage the risk to reduce the magnitude?                                                                                                                                                                                                                                                                                                               | What is the magnitude of the risk after management? |
| Litter                                                     | <ul style="list-style-type: none"> <li>Workers within the wider commercial estate;</li> </ul>                                                                                                                                                                                                                                                                              | Nuisance, loss of amenity and harm to animal health.  | Air transport then deposition                             | Medium                      | Low                                                 | Medium                                     | Road safety, local residents often sensitive to mud on roads.                                                                                                                                                                                                                                                                                                                                                                                           | Litter and mud will be managed in line with the controls set out in the Environmental Management System.                                                                                                                                                                                                                                                              | Low                                                 |
| Waste, litter and mud on local roads                       | <ul style="list-style-type: none"> <li>Residents along Essex Regiment way (100 m west), Lakeview Crescent and beyond (500 m south) Channels Drive and beyond (600 m east); and</li> <li>Essex Regiment Way (A130).</li> </ul>                                                                                                                                              | Nuisance, loss of amenity, road traffic accidents.    | Vehicles entering and leaving site.                       | Medium                      | High                                                | Medium                                     | <p>Local business and residents likely sensitive to increase in litter.</p> <p>Municipal and mixed waste is accepted which has the potential to release litter.</p> <p>The site is accessed from a hard standing haul road. All vehicle deliveries and dispatch, and site operations, will be undertaken on hard standing.</p>                                                                                                                          | <p>All incoming mixed waste streams will be deposited within the building. There is no outdoor storage or treatment of mixed waste streams.</p> <p>External storage bays for segregated non-hazardous waste are covered by a canopy which minimizes the risk of wind-blown litter.</p>                                                                                | Low                                                 |
| Odour from storage of non-hazardous waste streams.         | <p>Local human population:</p> <ul style="list-style-type: none"> <li>Workers within the wider commercial estate;</li> <li>Residents along Essex Regiment way (100 m west), Lakeview Crescent and beyond (500 m south), Channels Drive and beyond (600 m east);</li> <li>Channels play and skate park (420 m south), various lakes circa 300 m east and beyond;</li> </ul> | Nuisance, loss of amenity.                            | Air transport then inhalation.                            | Medium                      | Medium                                              | Medium                                     | <p>Local residents often sensitive to odour.</p> <p>The waste received most likely to have an odour is mixed wastes (17 09 04) and (20 03 01). Both of these codes are tipped and treated internally.</p> <p><b>Plasterboard/gypsum is stored externally under cover in Bay 14.</b></p> <p>The majority of waste is treated indoors – there is only one exception. The exception is segregated wood chipping which is done under cover in the yard.</p> | <p>Odour will be managed in line with the controls set out in the Emissions Management Plan.</p> <p>Wastes stored outdoors are segregated waste streams – there is no outdoor storage of mixed waste.</p> <p>There is no processing of waste outdoors with the exception of wood chipping. The wood chipping is undertaken within concrete bays that are covered.</p> | Low                                                 |

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| What is the agent of process with potential to cause harm? | What is at risk? What do I need to protect?                                                 | What are the harmful consequences of things go wrong? | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | What is the overall magnitude of the risk? | On what did I base my judgement?                                                                                                                                                                                                                                                                                                                                                                  | How can I best manage the risk to reduce the magnitude?                                                                                                                                                                                                                                                                                                                                                                                                                                | What is the magnitude of the risk after management? |
|                                                            | and<br><ul style="list-style-type: none"> <li>Belstead school (520 m northwest).</li> </ul> |                                                       |                                                           |                             |                                                     |                                            |                                                                                                                                                                                                                                                                                                                                                                                                   | <p>The covered bays prevent the ingress of rainwater which will reduce the potential for decomposition and odours.</p> <p>The storage times for all waste streams, within the building and outdoors, are provided in the Environmental Management System. The maximum storage time for many waste streams is one month. The site also operates a 'First-in, First-out' principle. Together, this reduces the buildup of waste streams and reduces the potential for decomposition.</p> |                                                     |
| Noise and vibration                                        | Local human population (As above)                                                           | Nuisance, loss of amenity, loss of sleep.             | Noise through the air and vibration through the ground.   | Medium                      | Medium                                              | Medium                                     | <p>Local residents often sensitive to noise and vibration.</p> <p>The activity type is in keeping with the neighboring land activities to the south.</p> <p>The nearest residential receptor is c.100m west of the site, with Essex Regiment Way (A130) between the site and receptor.</p> <p>The variation is connected with outdoor during normal working hours only. There is no change to</p> | <p>Noise and vibration will be managed in line with the controls set out in the Emissions Management Plan.</p> <p>The site will adhere to the operational hours outlined in the Environmental Management System.</p> <p>All plant and vehicles will meet current guidance and will be maintained in line with</p>                                                                                                                                                                      | Low                                                 |

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| What is the agent of process with potential to cause harm? | What is at risk? What do I need to protect?                                                          | What are the harmful consequences of things go wrong?                                       | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | What is the overall magnitude of the risk? | On what did I base my judgement?                                                                                                                                                                                                                                                                                             | How can I best manage the risk to reduce the magnitude?                                                         | What is the magnitude of the risk after management? |
|                                                            |                                                                                                      |                                                                                             |                                                           |                             |                                                     |                                            | the noise profile or overall activities.<br><br>The mixed waste streams are deposited in the building, with all treatment activities for mixed waste streams within the enclosed building.                                                                                                                                   | manufacturer's requirements.<br><br>All equipment and vehicles, when not in regular use, shall be switched off. |                                                     |
| Scavenging animals and scavenging birds                    | Local human population (Same as odours)                                                              | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity | Air transport and over land                               | Low                         | Medium                                              | Low                                        |                                                                                                                                                                                                                                                                                                                              | Only the permitted waste stream will be accepted for the permitted operations.                                  | Low                                                 |
| Pests (e.g. flies)                                         | Local human population:<br>• Workers within the wider commercial estate<br>• Residents as per odour. | Harm to human health, nuisance, loss of amenity                                             | Air transport and over land                               | Low                         | Medium                                              | Low                                        | Permitted waste types are unlikely to attract pests.                                                                                                                                                                                                                                                                         | Pests will be managed in line with the Environmental Management System.                                         | Low                                                 |
| Flooding of site                                           | Local human population:<br>• Workers within the wider commercial estate; and<br>• Public highways.   | If waste is washed off site it may contaminate soil, groundwater or surface waters.         | Flood waters                                              | Very Low                    | High                                                | Medium                                     | The site is at a very low risk of flooding by rivers and sea, very low risk of flooding by surface water, and is not within a groundwater flood alert area.<br><br>The site is within 250 m of the River Chelmer.<br><br>The site operations are undertaken on impermeable concrete surfacing with a sealed drainage system. | The site is unlikely to flood due to the site location.                                                         | Very low.                                           |
| All on-site hazards: wastes; machinery and vehicles.       | Local human population:<br>• Workers within                                                          | Bodily injury                                                                               | Direct physical contact                                   | Medium                      | Low                                                 | Low                                        | The site is fully fenced with a single access point to prevent unauthorised access.                                                                                                                                                                                                                                          | The security of the site will be managed in line with the Environmental                                         | Low                                                 |

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|                                                                                                             | the wider commercial estate<br>• Unauthorised persons. |                                                                                                                                                   |                                                                                                                                    |                             |                                                     |                                            | Only trained staff will use plant and equipment. No unauthorised use of equipment or machinery.                                                                                 | Management System.<br><br>All staff will receive appropriate training on machinery and environmental permit requirements upon induction, and again annually through a toolbox talk.<br><br>All machinery is turned off when not in use.<br><br>The site is fully fenced, and locked outside of operational hours.  |                                                     |
| Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Same as odours.                                        | 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                      | High                                                | Medium                                     | No fire or burning on site is permitted.<br><br>In the event of a major incident there is a major health risk.<br><br>The site accepts combustible and flammable waste streams. | Fire and spillages are managed in line with the Environmental Management System and Fire Prevention Plan.<br><br>The operations are on impermeable surfacing with a sealed drainage system which prevents escape of polluting materials.<br><br>The site is fully fenced and gated to prevent unauthorized access. | Low                                                 |
| Spillage of liquids, leachate from waste, contaminated rainwater run-off                                    | Soils, surface waters and groundwater.                 | Acute effects: oxygen depletion, fish kill and algal blooms                                                                                       | Direct run-off from site across ground surfaces.                                                                                   | Medium                      | High                                                | Medium                                     | The site is not within a Groundwater Source Protection Zone. The bedrock aquifer is unproductive, and the superficial deposits are secondary                                    | The site operations are on impermeable concrete surfacing with a sealed drainage system. Surface water runoff from                                                                                                                                                                                                 | Low                                                 |

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| from waste e.g. containing suspended solids.               |                                                                                     | Chronic effects: deterioration of water quality<br><br>Acute effects, closure of abstraction intakes.            | Indirect run-off via the soil layer                       |                             |                                                     |                                            | (undifferentiated).<br><br>Permitted waste types include sludges and liquids. There is the potential for contaminated runoff from wastes stored outside, especially during heavy rainfall.<br><br>The site is not directly next to any surface water features. The site within 250 m of a main river (River Chelmer)                                                                                                                  | the activities will be retained on site.<br><br>Only small-scale storage/use of fuel and oils for plant and machinery.<br><br>Oils and greases are stored in drums in bund trays within a 20ft secure container. |                                                     |
| Contaminated waters used for recreational purposes         | Local human population.                                                             | Harm to human health - skin damage or gastro-intestinal illness.                                                 | Direct contact or ingestion                               | Low                         | Medium                                              | Low                                        | The site is not within a Groundwater Source Protection Zone. The bedrock aquifer is unproductive, and the superficial deposits are secondary (undifferentiated).<br><br>The immediate surrounding land use to the south is commercial land use, with the A130 to the west, and a former golf club to the north and east. The wider area is suburban.<br><br>There are recreational lakes and ponds to the east and south of the site. | The site operations are undertaken on impermeable surfacing on a sealed drainage system that prevents any surface water runoff leaving the activity area.                                                        | Low                                                 |
| All of the above.                                          | Priority Habitats, Local Wildlife Sites, Ponds and Lakes including the inhabitants. | Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc. | Any                                                       | Low                         | Medium                                              | Medium                                     | The waste operations may cause harm to and deterioration of nature conservation sites.<br><br>There are no statutory designated sites within 1 km of the permit boundary.<br>There are priority habitats within 1 km of the site boundary – the                                                                                                                                                                                       | There are no point source emissions.<br><br>The site operations are undertaken on impermeable surfacing on a sealed drainage system that prevents any surface water runoff                                       | Low                                                 |

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|                                                            |                                             |                                                       |                                                           |                             |                                                     |                                            | nearest being circa 13 m west of the site. | <p>leaving the activity area.</p> <p>The majority of waste treatment is within the building. Outdoor wood chipping is completed under canopy.</p> <p>The site operations will comply with the details of the Emissions Management Plan and Environmental Management Systems to manage the potential risk of dust, mud, spills, odour, fire and surface waters.</p> |                                                     |