

Risk assessment for the recycling of Incinerator Bottom Ash at Finedon Road Industrial Estate, Wellingborough

Document Reference: 629A/ERA

| | |
|--|---|
| Standard Facility: | Installation: Treatment of Incinerator Bottom Ash - up to 200,000 tonnes per annum |
| Location: | Wellingborough IBA Recycling Facility, Finedon Road Industrial Estate, Wellingborough |
| Location of environmentally sensitive sites (km / m): | >2.5km |
| Risk assessment carried out by: | Land & Mineral Management |
| Date: | 24 02 2023 |

The scope of the permit and associated rules is defined by the following risk criteria:

| | |
|-------------|---|
| Parameter 1 | Permitted activities - The storage of waste prior to treatment (R13), treatment of Incinerator Bottom Ash only (R5), the recycling/reclamation of metals and metal compounds (R4); |
| Parameter 2 | Permitted waste types - Permitted wastes shall include those mentioned in waste code 19 01 12 (bottom ash and slag other than those mentioned in waste code 19 01 11) and 19-12-12 - IBA which may have been subject to treatment before arriving at site |
| Parameter 3 | Quantity of waste accepted at the facility: up to 200,000 tonnes per annum. |
| Parameter 4 | The activities shall not be carried out within an Air Quality Management Area (AQMA) designated for particulate matter in the form of PM10. |
| Parameter 5 | The ash separation process shall take place inside a building |
| Parameter 5 | Specified waste shall be stored on an impermeable surface with sealed drainage system. |
| Parameter 6 | There will be no point source discharges to controlled waters or groundwater. |
| Parameter 7 | The site is not within 500 metres of a European Site (candidate or Special Area of Conservation, proposed or Special Protection Area or Ramsar site) or a Site of Special Scientific Interest (SSSI). |
| Parameter 8 | The site and activities are not within 10 metres of any watercourse; a groundwater source protection zone 2, or within 250 metres of a well, spring or borehole used for the supply of water for human consumption, including private water supplies. |
| Parameter 9 | One residence has been identified (~365m to north west) within 500m, but it is well screened by intervening trees. |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|--|--|---|---|-----------------------------|---|--|----------------------------------|---|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|--|--|---|-----------------------------|---|--|--|---|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |
| Local human population. | Releases of particulate matter (dusts). | Harm to human health - respiratory irritation and illness. | Air transport then inhalation. | High | Medium | Medium | Permitted waste types are non hazardous but the treatment activities will produce particulate matter so a high magnitude risk is estimated. The permitted level of throughput and potential size of the facility means there is potential for exposure if anyone is living or working close to the site (apart from the operator and employees). There is potential for increased dust generation from permitted activities during prolonged dry periods e.g. summer months. | All ash separation and screening processes shall be carried out inside a building. All ash storage will be undercover - stockpiles will be moistened using a dust suppression system to minimise dust and particulate generation. The bottom ash received at the site has been subject to incineration, it does not include organic material that would support any micro-organisms (bioaerosols) post incineration. Emissions of substances not controlled by emission limits (excluding odour and noise) shall not cause pollution. Within the Environmental Management System's Dust Management Plan provisions are made to deal with dust to ensure that no limits are breached. Visual monitoring of dust, fibres and particulate will be carried out daily and as set out in DMP. | Low |
| Local human population. | As above. | Nuisance - dust on cars, clothing etc. | Air transport then deposition. | High | Low | Medium | As above. Local residents often sensitive to dust. | As above . | Low |
| Local human population, livestock and wildlife. | Litter | Nuisance, loss of amenity and harm to animal health. | Air transport then deposition. | Low | Low | Low | Local residents often sensitive to litter, however permitted waste types have low litter potential. | The facility supervisor and operatives will inspect the facility and surrounding area on a daily basis and collect any litter. Should litter be found outside of the facility arising from the facility's activities, the facility supervisor will arrange litter picking for the affected area within the same working day. Any spillage of materials at the facility or on the highway will be dealt with by sweeping the surface with a mechanical sweeper unit and / or litter picking if required. Such a spillage and the action taken will be recorded in the Site Diary. | Very low |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|--|--|---|---|-----------------------------|---|--|--|--|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |
| Local human population. | Waste, litter and mud on local roads. | Nuisance, loss of amenity, road traffic accidents. | Vehicles entering and leaving site. | Medium | Medium | Medium | Road safety, local residents often sensitive to mud on roads. | As above. Appropriate measures will include clearing waste, litter and mud arising from the activities from affected areas outside the site. | Low |
| Local human population. | Odour | Nuisance, loss of amenity. | Air transport then inhalation. | Low | Low | Low | Local residents often sensitive to odour, however permitted waste types have low odour potential and residents are distant and not in prevailing wind direction. . | The nature of the IBA and IBAA handled at the facility means that they will be agreed not to be malodorous. Waste likely to be odour producing will not be accepted at the facility, however if wastes are found to be malodorous on inspection then these will be removed immediately. The malodorous waste will be removed by re-loading the waste into the delivery vehicle or loading into a sealable container. If the site receives sustained odour complaints, an Odour Management Plan will be agreed with the EA. Previous discussion with the EA at a comparable IBA recovery facility agreed that odour is not an issue associated with IBA recovery. This has been the information included on many Decision documents from the EA in relation to Permits for IBA Recovery facilities. | Very low |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|--|--|---|---|-----------------------------|---|--|--|---|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |
| Local human population. | Noise and vibration. | Nuisance, loss of amenity, loss of sleep. | Noise through the air and vibration through the ground. | Medium | Medium | Medium | Local residents often sensitive to noise and vibration however residents are distance and not in prevailing wind direction. . | Mitigation measures to deal with noise and vibration are addressed in a Noise Management Plan. Noise limits for the site operations will be constrained by Planning Conditions. Any complaint received will be logged in the Site Diary. The facility supervisor will investigate the complaint and will take action to identify the source of the noise and implement remedial measures where appropriate. | Low |
| Local human population. | Scavenging animals and scavenging birds. | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity. | Air transport and over land. | Low | Medium | Low | Permitted wastes unlikely to attract scavenging animals and birds. | The proposed wastes do not have the potential to attract scavenging birds or vermin. In the event of an infestation of scavengers or pests, a nominated sub-contractor for the control and monitoring of pests will be appointed if necessary. A contractor for rodent control will be employed to manage bait boxes around the site. | Very low |
| Local human population. | Pests (e.g. flies). | Harm to human health, nuisance, loss of amenity. | Air transport and over land. | Low | Medium | Low | Permitted waste types unlikely to attract pests. | As above | Very low |
| Local human population and local environment. | Flooding of site. | If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream. | Flood waters. | Low | Low | Low | Permitted waste types are non hazardous so any waste washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard. | A Flood Risk Assessment has been completed for the site for planning permission to be obtained, indicating a low flood risk as the site is in Flood Zone 1 | Very low |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|--|--|-----------------------------|---|--|---|---|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |
| Local human population and / or livestock after gaining unauthorised access to the waste operation. | All on-site hazards: wastes; machinery and vehicles. | Bodily injury. | Direct physical contact. | Medium | Low | Low | Permitted waste types are non hazardous therefore only a low magnitude risk is estimated. | Activities will be managed and operated in accordance with a management system which includes site security measures to prevent unauthorised access. | Low |
| Local human population and local environment. | Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters 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 | High | Permitted waste types unlikely to include flammable materials | Details of security & vandalism protection, loss of containment and fire management are included within the EMS, identifying and minimising risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, including fire and spillages. | Very Low |
| Local human population and local environment | Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff or fire fighters. Pollution of water or land. | As above. | Medium | High | High | As above. | As above. | Low |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|--|---|---|--|-----------------------------|---|--|--|---|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |
| All surface waters close to and downstream of site. | Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids. | Acute effects: oxygen depletion, fish kill and algal blooms. | Direct run-off from site across ground surface, via surface water drains, ditches etc. | Low | Low | Low | Permitted waste types do not include sludges or liquids so only a medium magnitude risk is estimated. No point source emissions to water are permitted, but there is potential for contaminated rainwater and dust-suppression run-off from wastes stored outside buildings. | The facility will be constructed so that there are no point source emissions from areas dealing with waste to controlled waters. The drainage arrangement for the site fall into three types, the IBA maturation building drains to a single contained point within the building, which will be emptied and disposed of as required. The IBAA storage are drained to a settlement pit and associated buffer tanks, that will be used as dust management on the site. Experience at comparable sites indicates a balance of approach in this system, i.e. the amount used for dust manages that collected. The remainder of the site, will discharge to foul or surface water sewers as appropriate. A drainage drawing accompanies the application for clarity. | Very low |
| All surface waters close to and downstream of site. | As above. | Chronic effects: deterioration of water quality | As above. Indirect run-off via the soil layer | Low | Low | Low | Waste types are non-hazardous so harm is likely to be temporary and reversible. | As above | Very low |
| Abstraction from watercourse downstream of facility (for agricultural or potable use). | As above. | Acute effects, closure of abstraction intakes. | Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction. | Low | Low | Low | Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off. | As above | Very low |
| Groundwater | As above. | Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole. | Transport through soil/groundwater then extraction at borehole. | Low | Low | Low | Permitted wastes unlikely to contaminate groundwater. | As above | Very low |

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|--|--|--|---|-----------------------------|---|--|--|--|--|
| Receptor | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management | Residual risk |
| What is at risk? What do I wish to protect? | What is the agent or process with potential to cause harm? | What are the harmful consequences if 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? (This residual risk will be controlled by Compliance Assessment). |
| Local human population. | Contaminated waters used for recreational purposes. | Harm to human health - skin damage or gastrointestinal illness. | Direct contact or ingestion | Low | Medium | Low | Unlikely to occur, but might restrict recreational use. | As above. | Very low |
| Protected sites - European sites and SSSIs. Geological SSSI 2750m to the south east *(Findon Quarry) and a SPA SSSI Ramsar 3120m to south east (Upper Nene Valley Gravel Pits SSSI / SPA / RAMSAR) | Any | Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc. | Any | Low | Medium | Low | Waste operations may cause harm to and deterioration of nature conservation sites. | The Management System & Operating Techniques details how the site and surrounding areas will be protected from any emission of substances and, in the unlikely event that pollution should occur, how it will be dealt with. Consultation with the local biological record centre and the Multi-Agency Geographic Information for the Countryside (MAGIC) dataset has confirmed that there are no statutory designations within a 1km radius of site. The potential hazards from the permitted activities therefore pose a low risk to the broad sensitivity of species and habitats groups. | Very Low |



Upper Nene Valley Gravel Pits SSSI / SPA / RAMSAR 3120m to south east

Upper Nene Valley Gravel Pits. 07/04/11; England; 1,358 ha;. Site of Special Scientific Interest (SSSI), Natura 2000 (SPA). A chain of both active and disused sand and gravel pits including open water, reed swamps, marshes, pastures and grasslands. The range of habitats and the varied topography of the lagoons regularly provide valuable resting and feeding conditions for more than 20,000 wintering waterbirds, especially ducks and waders. The site is important for flood control, and human activities include recreation (bird-watching, walking, fishing, sailing, canoeing, waterskiing, cycling), research and environmental education.

Finedon Top Lodge Quarry SSSI 2750m to south east

Pond feature at base of exposures still present but does not obscure features. Naomi Stevenson confirmed that the key features (Middle Jurassic Rutland Formation, including the type section of the Wellingborough Member and overlying White Limestone) are generally visible .

Glamis Meadow and Wood Urban LNR 2115m to south west

Habitats include grassland and woodland and streams.

Southfield Farm Marsh SSSI 5100m to north

The largest known area of long-established tall grass washland in Northamptonshire, a vegetation type of alluvial soils in river valleys subject to regular winter flooding. The site includes base-rich and floristically diverse mire developed on silty peats and watered by calcareous spring-flows. This locally rare community supports a specialised and uncommon invertebrate fauna. Degenerating wet meadow and sedge-marsh (*Carex* species) provides a complementary area for wetland plants and animals north of the abandoned railway. The thickly scrubbed embankments are an additional habitat and their

ising the flood plain.



