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ENERGY AND CLIMATE CHANGE
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EUROPEAN METAL RECYCLING LTD

UNITS 2 - 10, DUDDESTON MILL TRADING ESTATE

ENVIRONMENTAL RISK ASSESSMENT

MARCH 2023

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TABLES

1 INTRODUCTION

1.1 European Metal Recycling Ltd (EMR) are seeking to start operation of an electric vehicle (EV) battery recycling operation. The facility is located within the Duddeston Mill Trading Estate, off Duddeston Mill Road, at grid reference SP 09308 87462, approximately 2.38km to the east of Birmingham city centre.

1.2 The facility will comprise 2 main activities:

- A research facility providing trials for size reduction and sorting of non-hazardous waste for recycling operations; and
- Disassembly and treatment of electric vehicle batteries into 'black mass', recovered electrolyte and non-hazardous recyclable material.

1.3 Small quantities of hazardous waste may also be accepted in the research facility.

1.4 The recycling facility will operate within an industrial unit on the Duddeston Mill Trading Estate with all waste storage (other than ELVs) and treatment taking place inside the site buildings. Site operations will be undertaken in accordance with an Environmental Management System with an intention to bring the site within the wider EMR ISO14001 accredited system.

1.5 This report describes the site setting, identifying nearby sensitive receptors and shows how the measures set out in the Operating Techniques will be used to minimise the risk of accidents and prevent pollution. Section 4 of the report provides further detail regarding accident prevention and Section 5 gives an appraisal of the potential impact on local habitats.

2 RECEPTORS

2.1 The facility is located on an industrial estate. Industrial operations are conducted both north and south of the site, with a railway to the west between the Site and the River Rea.

2.2 Approximately 40m to the east is the Grand Union Canal. The River Rea is located approximately 220m to the west, and has been highlighted as a Local Wildlife Site by the Environment Agency (EA).

2.3 The closest residential receptors are located on Adderley Road, approximately 90m east of the Site.

2.4 There are areas of Priority Habitat (deciduous woodland) approximately 300m east of Site on Ash Road, approximately 400m northwest of the Site along the east bank of the River Rea and around 350m south of site.

2.5 There are no SSSIs or European Sites within 2km of the site.

2.6 In terms of geology the site overlies superficial Glaciofluvial deposits of sand and gravel, classed as a Secondary A aquifer. The bedrock for the area consists of the Sidmouth Mudstone Formation, with a Secondary B aquifer designation.

3 RISK ASSESSMENT

3.1 Table 3.1 identifies the environmental risks associated with the site and describes the measures in place to mitigate those risks and protect the environment.

3.2 An Environmental Management System will be implemented at the site to ensure that appropriate measures are in place to prevent pollution and the standards set out in Table 3.1 are achieved.

Table 3.1: Risks to the Environment and Mitigation Measures					
Hazard	**Receptor**	**Pathway**	**Risk management techniques**	**Probability of exposure with risk management in place**	**Consequence**
Litter	Local wildlife and local residents	Windblown	Vehicles carrying light or dusty wastes enclosed or sheeted where necessary. Dusty wastes to be transported in containers. Light wastes placed in containers and stored inside building. Daily inspections with any litter around the site collected.	Low	Detriment to the amenity of the local area. Potential harm to wildlife. Nuisance
Dust	Local residents and local businesses	Windblown	Shredding carried out inside a building with local air extraction to bag filter. Site roads swept as necessary. Waste stored in appropriate containers and inside building (other than ELVs stored on the site yard). Regular maintenance and inspection of baghouse filters. Dust Management Plan in place.	Low	Nuisance. Potential harm to health
Noise	Local residents and local businesses	Airborne	Shredding and screening carried out inside building. Machinery properly maintained and serviced. Good traffic management around the site to minimise reversing and idling. Strict adherence to permitted operating hours.	Low	Disturbance
Odour	Local residents and local businesses	Airborne	Waste storage types accepted have little/no associated odours. Waste stored and treated inside buildings. Waste treatment has extraction to suitable abatement equipment.	Low	Nuisance

Table 3.1: Risks to the Environment and Mitigation Measures					
Hazard	**Receptor**	**Pathway**	**Risk management techniques**	**Probability of exposure with risk management in place**	**Consequence**
Emissions to groundwater	Groundwater beneath the site	Infiltration through the ground	Waste storage areas fitted with impermeable surfacing and sealed drainage to prevent fugitive emissions. Waste is primarily stored and treated inside the site buildings (only ELVs are stored outdoors). External areas of the site drain to foul sewer. No planned emissions to groundwater from site activities.	Low	Pollution of groundwater
Emissions to surface water	Grand Union Canal and River Rea.	Infiltration through the ground or run-off direct to surface water / drains from leakages	Waste storage areas are primarily indoors and provided with impermeable surfacing and sealed drainage. ELVs are stored outdoors only. External areas of the site drain to foul sewer. Regular inspections of storage containers to ensure no leakages. Spillages cleaned promptly using appropriate absorbents and material placed in lidded container pending disposal. Liquids stored in appropriate containers with secondary containment.	Low	Pollution of surface water
Emission of VOCs to air	Local residents and workers	Airborne	Regular checks of equipment associated with electrolytes. Monitoring and control of temperature in evaporator and condenser. Implementation of a wet scrubber and activated carbon filter system to reduce VOC emissions. Spillages cleaned promptly using appropriate absorbents and material placed in lidded container pending disposal Solvents stored in appropriate containers with sealed lids.	Low	Harm to human health

Table 3.1: Risks to the Environment and Mitigation Measures					
Hazard	**Receptor**	**Pathway**	**Risk management techniques**	**Probability of exposure with risk management in place**	**Consequence**
Fire	Local residents or workers	Through the air	Waste to be stored in appropriate containers with waste storage times limited to one month. Smoke detectors installed in buildings with additional heat detectors in high risk areas to give early warning of a fire. Daily inspections to ensure no issues on site. Training of staff to ensure waste EV batteries are fully discharged before size reduction. All plant properly maintained. Fire prevention plan in place.	Low	Smoke poses a potential health risk
Fire water	Groundwater beneath the site, the Grand Union Canal and River Rea	Infiltration through soil or surface water run-off	The site is provided with impermeable surfacing and sealed drainage. Due to the small scale of site operations, relatively small quantities of water will be used. The external area drains to foul sewer.	Low	Pollution of groundwater or surface water

4 ACCIDENT PREVENTION

4.1 In order to prevent emissions arising as a result of an accident the following precautions will be in place.

4.2 There will be clear routing of traffic around the site with suitable signage.

4.3 All plant and infrastructure will be subject to regular inspection and maintenance so that it remains in a good state of repair and fit for purpose.

4.4 The site is kept secure with security fencing and lockable gates, the buildings will be locked outside of working hours.

4.5 Coolant and electrolyte are to be stored in bunded areas, to ensure that any accidental spillage does not pose any risk to the environment. Fuel is only required in small quantities and is stored in a fireproof cupboard. Suitable absorbents will be available to clean up any spillage.

4.6 Gas bottles are stored in an appropriate cage away from the buildings and waste storage areas. The cage will be kept free of weeds, litter or other potential combustible materials.

4.7 Waste storage areas will be inspected daily to ensure there are no issues.

4.8 Waste storage times on site will be minimised.

4.9 Waste quantities will be monitored so that storage capacities are not exceeded. Waste will not be accepted on site unless there is sufficient capacity to store it safely.

4.10 The Recycling Facility will have CCTV, heat detection and smoke detection installed to ensure an early warning in the event of a fire.

5 PROTECTED HABITATS

5.1 In order to assess whether there are protected habitats close to the site a search was carried out on MAGIC.gov.uk and the Environment Agency were asked for a habitats screen.

5.2 These searches confirmed that there are no European Sites, Sites of Special Scientific Interest or National Nature Reserves within 2km of the site. However, the search did highlight pockets of BAP priority habitat, deciduous woodland within 2km of the site. There are small pockets of woodland approximately 400m northwest of the site, 300m

east of the site and 350m south of the site. The River Rea was highlighted as a Local Wildlife Site. The River Rea runs to the west of the site and at its closest point is approximately 220m from the site boundary.

5.3 The site does not impinge directly on any of these protected areas and there will be no habitat loss as a result of this development.

5.4 The habitats could be impacted by high levels of dust or litter, which can cause smothering of vegetation or injury to animals. However, there is unlikely to be any significant litter or dust because of the restricted waste types and as wastes are accepted in relatively small quantities and stored and treated inside the site buildings. Light or dusty wastes will be stored in containers.

5.5 Some dust may arise from size reduction and screening of the batteries and other wastes, however all waste storage and treatment will take place inside a building. Air extraction is provided over the shredding and screening equipment, vented via a bag filter to ensure that emissions of particulate are restricted to <5mg/m3. All abatement systems will be inspected and maintained to minimise emissions.

5.6 Flora and fauna within the river could be impacted by toxic emissions from the site if these are not controlled. However, all activities take place inside buildings with impermeable concrete flooring. Finer waste will be stored in stillages and liquid waste arising from the dismantling activity will be stored in sealed containers with appropriate bunding or drip trays. There are no pathways by which spillages could enter local soils and migrate towards the river.

5.7 Riverine environments can be vulnerable to eutrophication, i.e. excessive nutrients entering the water and causing bacterial or algal blooms which deplete the available oxygen, damaging other wildlife. Due to the nature of the waste accepted and the processes undertaken there will be no emissions from the site that may contribute to eutrophication. No biodegradable waste will be stored and there are no combustion activities on site that might contribute to nitrogen deposition, other than from movements of mobile plant.

5.8 No degradable waste is to be received on site and therefore the site will not attract rats, corvids, foxes or similar predators, which may take eggs or prey on local wildlife.

5.9 The site is in an inner city, industrial area and equipment will be operated inside the site buildings. It is unlikely that noise will be such as to disturb local wildlife, which

must already be adapted to the background levels from the neighbouring industrial sites.

5.10 Overall the new activity is deemed unlikely to have a noticeable impact on the nearby Local Wildlife Sites.

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