WasteCare Ltd

Battery Treatment Facility, Halifax

Amenity and Accident Risk Assessment

May 2023

Ref:AARA.v2
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CONTENTS

TABLES

DRAWINGS

Drawing Number	Drawing Title	Scale
ST16653-002	Permit Boundary	1:2,500

1 INTRODUCTION

1.1 Wastecare Limited are applying for a variation to the bespoke installation permit at Units 1-6 North Dean Business Park, Stainland Road, Halifax, HX4 8LR. The site permit boundary of the facility is shown on drawing ST16653-002.

1.2 This application seeks to increase the tonnage of hazardous and non-hazardous batteries that can be stored on site both pre and post sorting into chemistry, pending either further mechanical treatment of non-hazardous portable batteries into components for recycling and recovery on site or despatch to a third party treatment site.

The facility will accept 25,000 tonnes per annum of hazardous and non-hazardous batteries will be accepted at the site for sorting

1.3 Treatment of batteries will be carried out in accordance with Best Available Techniques.

1.4 The site is operated in accordance with an Environmental Management System (EMS), which meets the requirements of the Environment Agency's Guidance.

1.5 Waste acceptance procedures will be employed at the site to ensure that only permitted wastes are accepted at the site.

1.6 All waste storage and treatment activities will be undertaken to ensure that environmental protection is ensured at all times.

1.7 Environmental monitoring and record keeping will be undertaken and completed in accordance with the conditions included in the environmental permit when issued.

2 SENSITIVE RECEPTORS

2.1 The facility is located at NGR (National Grid Reference) SE 09469 22056, approximately 2.9km south of the centre of Halifax and 1.8km north west of the centre of Elland.

2.2 The site is located within the North Dean Business Park which is an industrial estate. The site is bound to the north by MJB Excavations and Plant Hire, to the south by a railway line (Calder Valley Line), to the west by an oil supply business and to the east by the River Calder, beyond which is the Stainland Road.

2.3 The nearest residential receptors are 300m away to the north east.

2.4 There are two surface water bodies nearby. The closest is the River Calder which runs to the east and north of the site. At its closest it is 25m from the permit boundary. The River Calder connects to the Calder and Hebble Canal which also runs to the east and north of the site. At its closest it is 200m from the permit boundary.

3 RISK ASSESSMENT

3.1 The potential environmental risks associated with the site have been identified and measures are in place to minimise these risks.

3.2 All identified hazards that could cause harm will be subject to strict preventative or control measures managed in accordance with the site's Environmental Management System (EMS). The EMS will include procedures for the inspection, servicing and maintenance of site plant and infrastructure so that all pollution control measures remain fit for purpose.

3.3 As received the batteries do not emit any significant odour. Battery treatment will take place within an enclosed system preventing emissions to atmosphere.

3.4 Staff will be trained to understand the potential environmental risks associated with the site and their role in managing those risks in accordance with the EMS. An induction will also be provided for contractors, so that they are aware of any environmental requirements.

3.5 Table 3:1 below identifies the potential amenity risks that may arise from operations at the battery treatment facility and considers the possible pathways and receptors that may be impacted. It shows how these risks are minimised; by preventing the hazard at source or by providing measures to break the pathway and prevent pollution migrating towards receptors.

Table 3:1 Risk Assessment						
Hazard	**Receptor**	**Pathway**	**Consequence**	**Probability of exposure without measures**	**Mitigation Measures**	**Overall risk**
ODOUR						
Odour from receipt of wastes	Local residents and local businesses	Airborne	Annoyance	Low	Permitted wastes present a very low risk of odour. Incoming wastes are unloaded and stored in well-ventilated area. The reception area is inspected daily, and any noticeable odour is investigated and, where appropriate, remedial action is put in place.	Very Low
Odour from waste treatment	Local residents and local businesses	Airborne	Annoyance	Medium	Wastes are mechanically treated in a dutch barn within an enclosed system. The vibro-screen is covered. The black mass is removed by an enclosed screw conveyor and loaded directly into bags.	Low
Odour from storage of waste pending removal from site	Local residents and local businesses	Airborne	Annoyance	Low	Permitted wastes present a very low risk of odour. The waste despatch area is inspected daily, and any noticeable odour is investigated and, where appropriate, remedial action is put in place. Black mass is stored in sealed bags	Very Low
LITTER						
Fugitive emissions from waste	Local residents, local businesses	Wind blown	Annoyance, potential hazard to wildlife	Low	Permitted wastes are very unlikely to include a light fraction that could be transported by wind. The treatment process is enclosed and is located within a three-sided building, which provides shelter from the wind, minimising any opportunity for paper or plastic to become windblown. As some light items, such as paper, can be present as an accidental admixture to the battery loads, the site is inspected daily, and any loose material noted will be collected and placed in a bin or returned to the process.	Very Low

PESTS						
Presence of pests and vermin	Local residents, local businesses	Overground	Potential harm to human health resulting from spread of disease, annoyance	Low	Permitted wastes present a very low risk of attracting pests and vermin. Waste storage areas are kept clean. The site is inspected daily by site staff and any signs of infestation is noted. A pest system is in place and bait boxes are regularly maintained. Should pests be observed at significant levels, a pest control contactor will be required to attend the site as soon as possible.	Very Low
NOISE						
Noise from plant or machinery	Local residents are 300m from the site	Airborne	Disturbance for local residents	Medium	Initial battery sorting activities is undertaken within an enclosed building. The treatment equipment for non-hazardous waste is an enclosed system, which will provide a degree of noise attenuation. All plant and equipment will be maintained in accordance with the manufacturer's recommendations. Noise levels will be taken into consideration during the selection of site equipment, with quieter models being utilised where this is practical and economically viable.	Low
Noise from vehicles	Local residents are 300m from the site	Airborne	Disturbance for local residents	Low	Engines are turned off when not in use. Deliveries are timed to avoid queuing wherever possible. On site vehicles are fitted with broadband reversing alarms to reduce noise levels.	Very Low
DUST						
Dusty waste or dust around site	Local residents and businesses	Airborne	Annoyance for local residents	Low	Permitted wastes present a very low risk of generating dust as delivered. The site is provided with concrete surfacing. Black mass is removed within an enclosed system and is collected via an enclosed Archimedes screw directly into bags, limiting the opportunity for emissions of dust.	Very Low

					If emissions of dust are observed that originate from waste stockpiles or the treatment process, activities will be halted while the source of the dust is determined. Appropriate measures will be taken if emissions of dust are observed. These include the dampening of areas of dust, and cleaning using brushes (after damping down), vacuum cleaner or the mechanical sweeper or temporary cessation of processing whilst repairs are made to maintain the enclosure around the process	
AMMONIA						
Production and release of ammonia gas	Site operatives	Airborne	Respiratory irritation, potential harm to human health. Possible toxic or eutrophication impact if deposited on sensitive habitats	Low	The hammer mill is within an enclosed unit. Areas of the system that are not fully sealed (e.g. drop out points for ferrous and non-ferrous metals, paper and plastic) are covered with a hood to prevent ammonia from being released. The hoods are attached to containers, ensuring that an airtight seal is created. Black mass is transferred via an enclosed screw mechanism and unloaded directly into bags. The bags are clamped to the filling point forming an airtight seal during filling. Once filled the bags are closed and sealed before being transferred to the storage area awaiting collection. Monitoring for ammonia is undertaken upon commissioning at various points within the system (drop out points for ferrous and non-ferrous metals, paper and plastic and black mass) to determine the rate of ammonia production and whether any significant emissions are occurring. Should emissions of ammonia be detected during initial monitoring then appropriate abatement will be fitted. The production of ammonia is minimised by controlling the temperature within the hammermill. The mix of batteries that are treated (primarily alkaline, with some zinc-chloride) result in low ammonia production. In addition, ammonia is naturally diluted in air, meaning that levels will naturally decrease within the system over time.	

MUD						
Mud or debris on local roads	Road users	Tracked out of site by vehicles	Road traffic accidents	Very low	Permitted wastes present a very low risk of generating mud. The site is provided with concrete surfacing so is unlikely to generate mud.	Very low
LEAKS AND SPILLS						
Fluid Leak or spillage	Nearby Surface water bodies, Groundwater	Via drains or infiltration through soils or direct contact	Pollution of surface water and impact on aquatic ecosystem; pollution of groundwater	Medium	The site has impermeable surfacing with sealed drainage. Waste containers and site infrastructure will be inspected weekly and maintained as required. Fuel storage will be provided with an integral bund.	Very Low
FIRE						
Smoke	Local residents, local businesses	Airborne	Odour, respiratory irritation.	Low	Full details are provided in the Fire Prevention Plan, in accordance with Environment Agency Guidance.	Very low
Firewater run-off	Great Committee Drain, Groundwater	Via site drains or infiltration through soil	Contamination of surface water	Low	Full details are provided in the Fire Prevention Plan, in accordance with Environment Agency Guidance.	Low
OVERFILLING OF VESSELS						
Spillage of black mass and liquids	Site operatives	Potential to run into drains or soil Dusty or light wastes may become windblown	Potential respiratory irritation from dusty wastes, contact with hazardous batteries resulting in burns Potential contamination of soils	Medium	Batteries are processed in an enclosed environment which will prevent emissions to atmosphere. Black mass is contained within the enclosed treatment system. The bagging system is automated, ensuring that black mass is passed directly into the UN bags, which are sealed. All UN bags are clearly signed as to their contents and capacity and have a unique identifier. The SCADA system ensures that overfilling does not occur. Two UN bags are provided at the bagging plant. Upon the filling of one bag, the system	Very Low

					automatically switches to the next bag, ensuring that overfilling does not occur. This allows bags to be suitably sealed. If a bag is at risk of being overfilled, an alarm sounds, and site operatives change the bag. The UN bags that are used are weatherproof and double lined with a draw string top, ensuring that there will be no emissions of dust and material cannot escape via the double weave. Fuel for site plant is stored in a double skinned tank, and equipped with relevant signage. Lead acid batteries are stored in acid resistant plastic boxes. If a spillage occurs it is cleaned as soon as possible. Operations within the vicinity of the spill will halt if there is a risk identified. The Environment Agency will be informed if the spillage has the potential to cause contamination.	
FAILURE OF CONTAINMENT						
Failure of storage containers / bags for batteries, black mass, and treated materials (ferrous and non-ferrous metal, paper and plastic)	Site operatives	Potential to run into drains or soil Dusty or light wastes may become windblown	Potential respiratory irritation from dusty wastes, contact with batteries resulting in burns Potential contamination of soil	Low	There is no bulk storage of liquid wastes. Surface water run-off falls to the sealed sump. The condition of the sump is checked daily for signs of wear, blockage, damage or malfunction. Water from the sump is removed via tanker, and taken to a permitted facility for treatment. Wastes are held in containers. Secondary containment is provided by the concrete surfacing and sealed drainage system. Containers are inspected on a regular basis to ensure that they remain fit for purpose. Containers are repaired or replaced as necessary to ensure that they do not leak or fail.	Very low

					Waste containers and site infrastructure is inspected daily and maintained as required. In the event that a container holding batteries fails, staff wearing suitable PPE will manually remove any batteries that have escaped containment and transfer them to a suitable container. In the event that a UN bag holding black mass fails, staff wearing suitable PPE will use a vacuum cleaner to remove the black mass. The black mass can be transferred to another UN bag for storage. If a container holding ferrous or non-ferrous metal fails, site staff wearing suitable PPE will remove the material manually and transfer it to a suitable container. If a container holding cardboard, paper and / or plastic fails, site staff wearing suitable PPE will remove the material manually and transfer it to a suitable container.	
FAILURE OF MAIN SERVICES						
Power failure	Site operatives	Not applicable	Site activities stop, potential risk to site operatives	Very Low	Treatment activities will stop in the event of a failure of power. Wastes will remain in containers or bunkers. If the failure of power impacts upon the fire detection system, combustible waste piles will be monitored at an increased frequency. Emissions are controlled by containment, there are no critical pollution abatement systems that may fail in the event of a loss of power.	Very low
OPERATER ERROR						
Error in site operations	Site operatives, local residents, Nearby Surface water bodies, Groundwater	Airborne, surface and / or water	Potential harm to site operatives and the local environment, disturbance for local residents	Low	The site will be operated in accordance with written Standard Operating Procedures that form part of the Environmental Management System for the site. Staff will be suitably trained for their role. An induction will also be provided for contractors.	Very Low

					All staff will be trained with regards to the Environmental Permit and Environmental Management System ensuring that they have an understanding commensurate with their post. A record is kept of the skills necessary for each role and training needs are assessed on an annual basis with additional training being provided where needed. Site operations are audited internally and externally on an annual basis to confirm compliance with the written procedures. In the event of an emergency, the Incident and Emergency Procedure (Appendix 2 of the Fire Prevention Plan) may be followed.	
VANDALISM						
Intruders accessing and vandalizing the site	Site operatives. Potential to impact local residents and the environment	Overground or airborne dependent on nature of incident.	Damage to site infrastructure and plant potentially leading to pollution. Plant or equipment stolen	Low	Intruders are not be allowed to access the site. Site security includes security fencing and lockable gates. The site has 24-hour CCTV and intruder / fire alarms in operation; these are monitored by an external company. In the event of an emergency / alarm activation out of operational hours, the CCTV monitoring company notifies the key holders and emergency services. The site operates a site-specific Incident and Emergency procedure which forms part of the EMS. All site personnel are trained on the incident and emergency procedures.	Very Low

4 CONSERVATION RISK ASSESSMENT

General

4.1 This section outlines the potentially sensitive ecological receptors in proximity to the facility. Each of the potential risks to these receptors will be considered and where the Operator will employ management techniques, infrastructure or other mitigation are employed to reduce the risk.

4.2 A search on MAGIC.gov.uk confirms that are no SSSIs within 2.5km of the facility. There are no RAMSAR or other European designated sites within 5km of the facility. MAGIC identifies that there are a number of areas of deciduous woodland in the area, the closest of which are immediately adjacent to the site, around the site boundary. The site lies within a designated are of green belt and the area for Community Forests for England.

4.3 The Long Wood Local Nature Reserve lies approximately 1.2km to the northwest of the facility, comprising mainly deciduous woodland.

4.4 MAGIC also identified that there may be a number of priority bird species in the area, including curlew and lapwing. The site also lies within a Farm Wildlife Package Area.

Table [4:1] Potentially Sensitive Habitats		
Receptor	**Distance**	**Direction**
River Calder	<100m	North and east
Calder Hebble Navigation	<150m	North and East
Priority Woodland habitats	Within 500m	Various points around the site
Scarr and Long Woods (National Nature Reserve)	1.2km	North west

Assessment of Risk

4.5 The Environment Agency guidance identifies the following potential impacts which may be caused by activities:

- Eutrophication/nutrient enrichment of water courses;
- toxic contamination;
- habitat loss;
- smothering;
- disturbance; and
- physical damage.

4.6 Eutrophication may occur when nutrients are washed into nearby water bodies causing a rapid increase in the number of bacteria and other simple organisms. This in turn leads to rapid depletion of oxygen levels, which can adversely impact fish and other flora/fauna present. The control measures in place at the site and nature of the tasks undertaken mean there is a very low risk of an eutrophication event of the River Calder or to the Calder Hebble Navigation.

4.7 There will be no discharge to water from the site and the operations are all carried out on an impermeable concrete apron with water management and drainage installed. These measures in combination with good materials reception procedures, regular site inspections and clean-up operations mean we consider that there is a low risk to any underlying strata and groundwater beneath the site.

4.8 There will be no habitat loss as a result of the activities carried out at the facility. The areas of woodland and River Calder around the site will be unaffected by operations at the existing installation, which will not increase its area footprint. Other protected habitats are some distance from the site and will not be impacted.

4.9 Smothering can occur where there are large scale emissions of dust, which can have an adverse impact on local vegetation. As part of the environmental controls to be in place at the site dust management procedures have been developed. These will include:

- vehicles delivering materials to the site are to be sheeted or enclosed;
- The materials delivered to site are highly unlikely to generate significant quantities of dust due to their solid state;
- a speed limit will be in place to minimise disturbance of dust;
- the site roads will be properly maintained and will be made up with hardcore where required to minimise the formation of dust and mud;
- metalled roads will be swept on a regular basis to minimise dust and debris that may be present;
- a bowser will be available on site and where necessary site roads and working areas will be damped down with water.

4.10 These control measures will ensure that emissions of dust are minimised and it is not considered that dust will cause any significant impact on protected habitats or species.

4.11 It is not considered that the facility will cause undue disturbance to the local bird population as the site is in an industrial area.

4.12 To demonstrate that this is the case regular noise monitoring will be carried out and the following control measures will be in place to minimise emissions of noise:

- majority of site operations take place within an enclosed building and will be screened by the walls;
- plant will be properly maintained in accordance with the manufacturer's recommendations;
- noise will be a consideration in purchasing equipment and quieter models will be used where practicable;
- idling and reversing will be minimised by good traffic management on site;
- reversing alarms will be selected with due regard to minimising noise nuisance;
- all site plant must comply with the on-site speed limit; and
- drop heights will be minimised.

4.13 The operations and activities at the site will not cause any physical damage to protected species or habitats.

4.14 Because only solid state batteries will be accepted on site, no litter will be generated and therefore there is no risk of harm to local wildlife from items of litter.

5 CONCLUSION

5.1 The design and operational measures at the facility will ensure that activities do not present an unacceptable risk to the environment.

In practice, all identified hazards that could cause harm, are subject to preventative measures as a result of the site infrastructure that will be provided and the management systems in place.