Environmental Permit Application

EMR Middlesbrough Granulation
Main Supporting Document

European Metal Recycling Limited

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Quality information

Prepared by	Checked by	Verified by	Approved by
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Revision History

Revision	Revision date	Details	Authorized	Name	Position
1	9 May 2023	Final	Helen Watson	Project Manager	1
2	7 June 2023	Update to EWC	Angela Graham	Associate Director	2
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1. Non-Technical Summary

This document presents the supporting information for an Environmental Permit application under the Environmental Permitting (England and Wales) Regulations 2016 (as amended) ('the EP Regulations'), submitted on behalf of European Metal Recycling Limited ('EMR') to apply for an Environmental Permit for the operation of a Waste Cable and Metal Processing Facility (the 'Installation'). The Installation's location and Installation Site Boundary are provided in Figures 1 and 2 (**Error! Reference source not found.**).

The Installation covers an area of approximately 0.8 hectares and is situated within the Tees Advance Manufacturing Park (AMP), a mixed-use industrial area approximately 1.5km west of Middlesbrough town centre.

The Environmental Permit would enable the Installation to process mainly waste cables and other metal waste through a series of shredders, magnets and granulators to separate the copper (and other metals) in the cables from the plastic outer casing/ insulation. The separated component parts are then transferred off site for onward recovery or treatment at a suitably licenced facility.

The waste cable and metal processing facility consists of a main building, in which the majority of the waste processing takes place. External to the main building is a loading bay and super chopper (for initially chopping up the waste feed materials), waste feed storage bays, a weighbridge and a Portacabin gatehouse.

In addition to the main activity, the Installation currently has a diesel-fired generator for the provision of electricity to power site operations, due to a short-fall in the electricity supply to the site. The diesel-fired generator has a thermal input of approximately 1.4MWth, and therefore comprises a Medium Combustion Plant and Specified Generator as defined in Schedules 25A and 25B of the EP Regulations. This is temporary measure and EMR will upgrade the mains electricity supply to eliminate the requirement for a diesel generator. The supply upgrade requires an infrastructure upgrade which will be carried out by PowerOn. EMR will facilitate a new substation and internal electrical equipment to complete the installation. Replacement of the temporary diesel generator should be completed by April 2024, before the permit will be issued and as explained in sections 4.9 and 5.1 no environmental risk has been completed at this time.

The waste treatment process carried out within the main building has a localised dust extraction system with cyclones and bag filter to prevent dust emissions to air. The release from the extraction system vents to air from the roof of the main building via Emission Point A1. Extractive monitoring of the emission point has been carried out and demonstrated that the dust emissions are within the BAT-AEL for fabric filters of 5mg/Nm^3. An Air Impact Assessment of the emissions from Emission Point A1 has been carried out and demonstrated that the impacts were "insignificant".

Rainwater falling on building roofs is collected and directed to the AMP Business Park's local surface water drainage network, which discharges clean water into the River Tees (Emission Point W1). As this comprises rainwater only, from areas where there is no risk of contamination (building roofs), it is considered that this surface water run-off is uncontaminated, and therefore no controls on this emission are required.

The weighbridge area drains to the foul sewer, via oil / fuel separators. All other surface water drainage from the yard area currently goes to surface water drains (Emission Point W1), discharging into the River Tees. EMR have scheduled works to redirect all yard area surface water (which may have come into contact with stored waste) to storage tanks. The stored water will then be removed from site for testing and treatment (as required).

The Installation has a Noise and Vibration Management Plan in place, which details the potential sources of noise (the supper chopper, vibratory discharge feeds, tumble back feeder, conveyors, rasper and granulators) along with the mitigation measures that are in place e.g., the fact that most of the processing occurs within the main building. EMR also have a procedure for dealing with and responding to complaints on noise and vibration (and any other matter). A Noise Impact Assessment has been carried out and concluded that there is limited potential for an adverse impact from the site.

The Installation has an Environmental Management System in place, which can be made available to the Environment Agency (EA) upon request.

2. Introduction

This document presents the supporting information for an Environmental Permit application under the Environmental Permitting (England and Wales) Regulations 2016 (as amended) ('the EP Regulations'), submitted on behalf of European Metal Recycling Limited ('EMR') for the operation of a Waste Cable and Metal Processing Facility (the 'Installation'). The Installation is located at:

1 Gould Avenue
Tees Advanced Manufacturing Park (Tees AMP)
Riverside Park West
Middlesbrough
TS2 1EQ

National Grid Reference: NZ 48006 20273

The Installation's location and Installation Site Boundary are provided in Figures 1 and 2 (**Error! Reference source not found.**).

The waste cable and metal processing facility consists of a main building in which the majority of the waste processing takes place. External to the main building is a loading bay and super chopper, waste storage bays, a weighbridge and a Portacabin gatehouse.

The site is currently operating under a registered T9 waste exemption, for the handling or recovery by sorting, grading, shearing by manual feed, baling, crushing or cutting with handheld equipment of scrap metal), however EMR are now seeking a Bespoke Installation Environmental Permit to operate as a non-hazardous waste treatment installation.

The Environmental Permit would enable the Installation to process waste cables and other metal waste through a series of shredders, magnets and granulators to separate the copper (and other metals) in the cables from the plastic. The separated component parts are then transferred off site for onward recovery or treatment at a suitably licenced facility.

2.1 Proposed Operations

2.1.1 Listed Activities under Schedule 1 Listed Activities

The main activities carried out at the Installation, which falls under Schedule 1 of the EP Regulations, is covered under:

- Section 5.4 Part A (1) – Disposal, recovery or a mix of disposal and recovery of non-hazardous waste:

  b) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities:

  (iv) treatment in shredders of metal waste including electrical and electronic equipment and end-of-life vehicles and their components.

- Section 5.3 Part A (1) (a) – Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving:
  (ii) physio-chemical treatment.

  We understand that if you store and treat non-WEEE waste electrical and electrical telecommunications cable and accept wastes under 16 01 22 and 17 04 11 that codes 16 01 21* and 17 04 10* may also be accepted under RPS 276 in the interim.

In addition to the main activity, the Installation currently has a diesel-fired generator for the provision of electricity to power operations, due to a short-fall in the site's electricity supply. The diesel-fired generator has a net rated thermal input of approximately 1.4MWth, and therefore comprises a Medium Combustion Plant and Specified Generator as defined in Schedules 25A and 25B of the EP Regulations.

Although we have included the generator in the list of activities below, it should be noted that use of the generator is a temporary measure and EMR will upgrade the mains electricity supply, including a new sub-station and internal electrical equipment, to eliminate the requirement for a diesel generator.

The listed activities to be carried under the Environmental Permit are shown in Table 2.1, which can be copied into an Environmental Permit as Table S1.1.

Table 2.1: Schedule 1 Listed Activities (Table S1.1)

Activity listed in the EP Regulations	Description of Specified Activity	Limits of Specified Activity
Schedule 1 Section 5.4 Part A(1)(b)(iv)	Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day	Treatment of metal waste and cables in shredders, including electrical and electronic equipment and end-of-life vehicles and their components.
Schedule 1 Section 5.3 Part A(1)(a)(ii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day.	Treatment of metal waste and cables in shredders, including electrical and electronic equipment and end-of-life vehicles and their components.
Schedule 25A	A Combustion plant with a rated thermal input equal or greater than 1MW and less than 50MW	Combustion in a Medium Combustion Plant and Specified Generator with a rated thermal input <50MWth to produce electrical output.
Schedule 25B	A Specified Generator with a rated thermal input equal or greater than 1MW and less than 50MW	
Directly Associated Activity	Receipt and storage of waste materials	Receipt and storage of waste materials

2.2 Environmental Setting

The Installation covers an area of approximately 0.8 hectares and is situated within a mixed-use industrial area approximately 1.5km west of Middlesbrough town centre. Immediately north and east of the Installation are industrial units. The nearest commercial/ industrial sensitive receptor to the Installation is located at plot 8 and 9 of the Tees AMP business park, which is approximately 65m north of the Installation.

To the immediate west of the Installation is the River Tees and to the south is a small patch of green land with bushes, a railway line and a residential area beyond. The nearest residential properties are approximately 530m to the south and southeast of the Installation site boundary on Newport Road.

The River Tees adjacent to the Installation is part of the Teesmouth and Cleveland Coast Special Protection Area (SPA) and a Site of Special Scientific Interest (SSSI). Portrack Marsh SPA and SSSI is approximately 1.1km to the southwest and North Bottoms SPA approximately 1.3km northwest. In addition, there are a number of Local Wildlife Sites (LWS) within 2km of the Installation.

The location of the Installation is shown in Figure 1 (**Error! Reference source not found.**).

Further detail on the environmental setting and local receptors is presented in Section 7.

3. Site Condition Report

A Site Condition Report has been prepared to support this Environmental Permit application for the Installation, which details the environmental sensitivity of the Installation and surrounding area.

A brief summary of the sensitivity of the Installation area is provided here:

- Groundwater - High sensitivity: The underlying Mercia Mudstone Group is classified as a Secondary B Aquifer. The superficial Tidal Flat Deposits are designated as a Secondary Undifferentiated Aquifer. The Installation is not situated within a Groundwater Source Protection Zone (SPZ).

  The groundwater vulnerability classification of the superficial aquifer is categorised as High Vulnerability. High vulnerability areas are classed as areas that can easily transmit pollution to groundwater. They are characterised by high-leaching soils and the absence of low-permeability superficial deposits.
- Surface water – Medium sensitivity: The River Tees SPA and SSSI is located immediately to the west of the Installation. The current (2019) classification of the Tees shows a ‘Moderate’ ecological status and a chemical status of ‘Fail’ due to priority hazardous substances i.e., mercury and its compounds and polybrominated diphenyl ethers (PBDE). The river is also designated as a heavily modified water body.
- Land use – Low sensitivity: The Installation is mainly surrounded by industrial land use to the north and east. The nearest areas of residential use are 530m to the south and southeast.

4. Operating Techniques

4.1 Technical Standards

The Installation will operate in accordance with the conditions of the applicable Best Available Techniques (BAT) Reference Document (BRef) and Environment Agency (EA) Sector Guidance, namely:

- Best Available Techniques (BAT) Reference (BRef) Document for Waste Treatment [1] and the associated BAT Conclusions (Waste Treatment BATc) [2];
- Develop a Management System: Environmental Permits [3];
- Non-hazardous and inert waste: appropriate measures for permitted facilities [4];
- Treating metal waste in shredders: appropriate measures for permitting facilities [5];
- Waste electrical and electronic equipment (WEEE): appropriate measures for permitted facilities [6];
- Specified Generator: Comply with Permit Conditions [7].

A review of the facility against the Waste Treatment BRef and BATc has been carried out.

The Installation has a CIWM (WAMITAB) Level 4 Certification in Waste and Resource Management certified member of staff, and the Site Manager is currently undergoing WAMITAB training and is awaiting final assessment and certification.

4.2 Process Overview and Waste Receipt

4.2.1 Introduction

EMR currently operate a waste cable and metal processing facility under a T9 waste exemption, however they are looking to increase the throughput of the site to accept and process up to 57,000 tonnes of non-hazardous waste per year.

The wastes received at the Installation mainly consist of redundant electrical cables from domestic and industrial sources e.g., non-hazardous cables from construction and demolition waste, including cables received from other waste management facilities. All waste received at the Installation will have been classified as non-hazardous.

Processing carried out at the Installation will consist of a combination of chopping, granulating and separation, involving magnets and screening, conveyors and pneumatic systems. The separated metals (mainly copper) and polymer insulation waste are removed from the Installation for onward use, recycling or disposal. Processing activities are carried out 24 hours per day, 7 days per week, however waste is only accepted at the Installation or transported off site during daytime working hours.

The Installation consists of a main building in which the majority of the waste processing takes place. External to the main building is a loading bay, waste storage bays, a weighbridge and a Portacabin gatehouse.

[1] Best Available Techniques (BAT) Reference Document for Waste Treatment, under Directive 2010/75/EU of the European Parliament and of the Council, European IPPC Bureau, 2018.

[2] Commission Implementing Decision of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council.

[3] Develop a management system: environmental permits - GOV.UK (www.gov.uk)

[4] Non-hazardous and inert waste: appropriate measures for permitted facilities - Guidance - GOV.UK (www.gov.uk)

[5] Treating metal waste in shredders: appropriate measures for permitted facilities - Guidance - GOV.UK (www.gov.uk)

[6] Waste electrical and electronic equipment (WEEE): appropriate measures for permitted facilities - Guidance - GOV.UK (www.gov.uk)

[7] Specified generator: comply with permit conditions, EA, Natural Resources Wales, Department for Environment, Food & Rural Affairs, and Welsh Government, Published: 15 July 2019, available at: https://www.gov.uk/guidance/specified-generator-comply-with-permit-conditions

4.2.2 Waste Receipt and Storage

The control of wastes arriving at the Installation, and the prevention of unsuitable material being bought and accepted at the Installation, is a key management requirement to ensure quality control of the processes at the EMR facility.

EMR has taken measures to communicate with suppliers what wastes are accepted at the Installation, and what would not be accepted. Suppliers have been provided with a list of the European Waste Codes (EWC) that can be processed at the Installation. This has been done by sending acceptable feedstock information to each supplier, prior to approving any deliveries. Contracts with suppliers are in place prior to accepting waste from them and regular supplier visits are carried out by EMR staff to ensure ongoing compliance.

As part of the contract of supply with the waste suppliers, EMR stipulate that all material supplied by that supplier must have concentrations of Persistent Organic Pollutants (POPs) below the EA's threshold for hazardous level classification.

Waste deliveries are received at the Installation at the gatehouse located at the access to the site. Upon arrival, waste pre-acceptance checks are made, to ensure that only wastes covered by the applicable EWC codes are accepted onto the Installation. Waste documentation is checked and an initial visual inspection of the delivery is carried out.

Staff carrying out waste acceptance checks, including sampling and analysis of waste, are appropriately trained to classify and characterise waste correctly, and to identify whether it is suitable for processing at the Installation. They are also trained on how to identify and manage any waste loads that do not conform to the Installation's waste acceptance criteria.

Provided pre-acceptance checks are satisfactory, the delivery vehicle is then weighed and a record made before the receipted waste is transferred to the concreted yard area, and unloaded into one of the 20 waste storage bays located around the yard. The unloading activity is manned, so that further visual inspection of the waste can be carried out, ensuring that the waste is in line with the EWC code.

The storage bays are constructed of duo interlocking concrete blocks, and the ground is sloped so that rainwater run-off from the bays will drain to the centre of the yard area. The bays hold segregated and individually identified (and logged) process batches – any material classed under 16 01 21* and 17 04 10* will be kept separate from other non-hazardous batches and treated separately.

Following unloading, the delivery vehicle returns to the weighbridge to be weighed out and the driver receives the completed waste documentation for their own records.

4.2.3 Waste Rejection

No waste will be accepted at the Installation unless there is sufficient storage capacity available, and the Installation is adequately manned to receive the waste.

On arrival at the Installation, checks will be made to ensure that the waste type and source has been pre-accepted in accordance with the EMR Pre-Acceptance procedure. Where a waste has not been pre-accepted, the Site Manager will be contacted, and the waste assessed by inspection and comparison with the waste documentation. The decision of whether the waste can be accepted lies with the Site Manager, managers or fully trained site supervisor.

Any non-conformance in the load i.e., not meeting the assigned EWC code, gross contamination, odorous, burnt material etc. will result in the load being rejected. Any incoming loads that do not meet the Waste Acceptance Protocol will be either not unloaded or if already unloaded, reloaded and removed from the Installation. If this is not possible (i.e., the delivery vehicle has left the Installation) then non-conforming material will be placed in the dedicated quarantine storage bay, where it will be covered to prevent potential contamination of surface water run-off, until removal from site can be arranged.

If any load is to be rejected the Installation's management will call the supplier to inform them of the reason why the load is being rejected, this will be followed up with a supplier site visit by the EMR Commercial Team to resolve the issue and ensure no further occurrence.

Rejection information/ documentation will be sent to the relevant suppliers and acknowledged/ signed by them before intake of any further loads from that supplier recommences at the Installation. A record of any rejected loads will be made in the Installation's site diary and will be available for EA inspection.

All relevant EMR staff are trained in the acceptance and rejection procedures starting with an induction, regular toolbox talks and supplier updates.

The waste acceptance and rejection criteria are further detailed in the Installation's Waste Acceptance Procedure (CUP-OP02).

4.3 Waste Processing

From the external storage bays, waste is transferred by means of mobile plant waste handling equipment into a containment hopper, feeding the shearing mechanism of the super chopper, located external to the main building. In the super chopper, rotating blades reduce the size of the material input from variable sizes to a piece size of 100 - 300mm.

An electro overband magnet extracts ferrous material from the chopped waste stream before it enters the process building. The material continues via conveyor into the main building to a manned picking station, which acts as a final visual check to extract any non-conforming material from the chopped waste stream.

The conveyor system then continues to a multi-purpose rasper, which reduces the waste piece size to 10 – 15 mm by shearing, using rotating blades. On exit from the rasper, the material passes along the conveyor system, under an overband magnet and over a stainless-steel separator to further remove any residual ferrous material.

Once through this section of the plant, the processed waste material is fed directly to a silo prior to automatic dosing into two individual fine granulators. Material arriving from the silo, along two screw feed conveyors, enters the fine granulators for a further reduction in size from 10 - 15mm to 4 - 5mm uniform material. Metals are liberated from the plastic insulation at this point. On exit from the fine granulator's, material is fed directly to a fine material storage silo via an enclosed air transport system.

The fine material in the fine material storage silo is then transferred to three separation tables by automatic dosing valve systems, to ensure smooth and consistent material flow onto the separation tables. Once material arrives on the separation tables it is segregated by density, separating the metal fraction (which is heavy) from the insulating (plastic) materials (which are light). The clean metal fraction travels directly from the separating table to be packed into bulk bags, weighed and identified ready for transfer into stock.

Insulation materials (containing approximately 2 - 3% metal) travels via an enclosed air transport system to two downstream classifier tables. Once processed on the classifier tables, clean insulation material travels directly to its bagging station to be packed into bulk bags, where it is identified and weighed ready for shipment to stock.

The balance of materials from the classifiers is sent to a Turbomill to be further separated. Copper (metal) is manually returned to the copper (metal) conveyor and plastics are transferred to the plastic bagging station via an enclosed air transport.

All finished metal product is stored in woven bags inside the warehouse for a period of no longer than two weeks. Granulated plastics will also be stored in woven bags and be removed from the Installation within two weeks.

There is no risk of self-combustion from these products, but each batch will be stored in single order with no stacking and will be visually checked at the start of each shift by EMR staff.

The granulated plastic waste is collected by a licenced third-party waste contractor for further separation, recycling or disposal.

The layout of the Installation is shown in Figure 3 (Appendix A).

4.4 Calculated Capacity

In order to determine the maximum viable annual tonnage that could be processed at the Installation, a Site Waste Capacity assessment has been undertaken. The capacity assessment has determined that no more than 56,940 tonnes of waste will be accepted and processed at the Installation per annum, which equates to 6.5 tonnes per hour.

4.5 Management Systems

The Installation has an Environmental Management System (EMS) in place, which has been developed in line with the EA's guidance for Developing a Management System [3]. The EMS is described in detail in procedure CUP-B01 - EMS Manual, and covers all aspects of the operation of the waste cable and metal treatment facility, detailing the procedures in place to minimise the risk of pollution from the activities carried out at the Installation.

In summary, the EMS identifies systems and procedures that minimise the risk of pollution to the environment or potential harm to human health; which may arise from the operation, maintenance, accidents, incidents and non-conformances specific to the Installation.

The EMS and procedures are available for inspection and are applicable to all staff, contractors and visitors to the Installation. Written procedures clearly describing responsibilities, actions and communication channels are available for operational personnel dealing with emergencies.

4.6 Maintenance

Routine inspection and maintenance of all equipment is carried out in line with the Maintenance Procedure (CUP-OP-04), which defines the inspection and maintenance requirements and frequencies.

The fuel tanks, interceptor and impermeable yard surfacing are checked on a daily basis to ensure that they are in good condition with no evidence of spills or damage being present. In addition, the ducts, bag filter and cyclone comprising the dust extraction system are routinely checked and maintained to ensure they are working correctly.

EMR will maintain in good repair, all systems, plant (fixed and mobile) and all equipment in compliance with BAT requirements. A Computerised Maintenance Management System will be in place, which will be updated where necessary on a regular basis. This will be formulated from EMR's written maintenance schedule that has been specifically developed by EMR management. The maintenance system will include consideration of any plant modifications and incorporate any new control procedures, any changes to equipment and systems.

EMR will ensure that all maintenance is carried out in accordance with manufacturer guidelines, which will be included within the Computerised Maintenance Management System.

4.7 Raw Materials

The main raw materials received at the Installation are the wastes that are received for processing. A list of the EWC codes that can be accepted at the Installation are provided in Table 4.1.

Table 4.1: EWC Codes Accepted

Code	Description
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 01	*end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance*
16 01 17	ferrous metal
16 01 18	non-ferrous metal
16 01 21*	Hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
16 01 22	discarded components not otherwise specified
17	**CONSTRUCTION AND DEMOLITION WASTES**

Code	Description
17 04	*metals (including their alloys)*
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 06	tin
17 04 07	mixed metals
17 04 10*	Cables containing oil, coal tar and other hazardous substances
17 04 11	cables other than those mentioned in 17 04 10 (i.e., not containing oils, coal tar or other dangerous substances)
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
19 12	*wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified*
19 12 02	ferrous metal
19 12 03	non-ferrous metal
19 12 04	plastic and rubber
19 12 11*	Other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11)
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL< INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	*separately collected fractions (except 15 01)*
20 01 40	metals

In addition to the wastes received at the Installation, diesel fuel is used for mobile plant, which transfers the waste from the storage bays to the super chopper, and other transfer operations. The diesel is stored in a 5,000 litre doubled skinned (integrally bunded) storage tank with a bund alarm. The tank is located in the impermeable concrete yard area and protected by anti-collision barriers. Drainage in the vicinity of the tank goes to a fuel tank interceptor, which discharges the treated water into the foul sewer. Any captured/ separated fuel in the separator cell is periodically removed by road tanker / sucker for off site disposal by a licenced third party. The fuel cell of the interceptor has a level alarm, to alert the site that it requires emptying. Testing the alarm is on the site preventative maintenance system.

Adblue is stored in an IBC adjacent to the diesel fuel tank, which is mounted on top of a covered bunded plinth. Both the integral bunding of the diesel fuel tank and the external bunding of the Adblue tank meet the EA requirement of 110% bunded.

As detailed in Table 2.1, the Installation currently operates a diesel-fired generator to provide electricity for the site operations, although this will be replaced when improvements to electricity supply are complete (further detail provided in Section 4.9). Diesel for the generator is stored in a 2,000 litre integrally bunded internal fuel tank within the generator housing, with an additional dedicated 5,000 litre externally bunded fuel tank, outside of the generator housing. The external fuel tank feeds the internal fuel tank. When filing the external fuel tank, the delivery tanker lays out the refilling hose, allowing enough length for the nozzle to comfortably reach the tank's filler cap, which is within the external bunded area of the tank. The nozzle is placed in the filler cap, with the valve in the off position before the transfer pump is turned on. The delivery tanker operator remains present during the tank filling operation to ensure that the tanks are filled to the correct level and the hose is monitored for any potential leaks. A spill kit is located just inside the nearest roller shutter door. Again, both the integral bunding of the internal fuel tank and the external bunding of the external fuel tank meet the EA requirement of 110% bunded. Both of these tanks will be removed from site when the generator is replaced.

Spill kits and drain cover mats are present on site in the event of a spill of fuel/ Adblue from either primary containment, secondary containment, pipework or vehicles.

Table 4.2 summarises the raw materials within the Installation.

Table 4.2: Raw Materials

Material	Purpose	Estimated Maximum Storage Quantity	Estimated Annual Consumption
Diesel	Fuelling mobile plant	5,000 litres	4,000 litres
Diesel[(a)]	Diesel generator	7,000 litres (2 x tanks)	564,000 litres
Adblue	Mobile plant	1,000 litres	600 litres
Waste cables and metals	Waste for processing	400 tonnes	56,940 tonnes
Lube oils	Maintenance activities	75 litres	100 litres

(a) Diesel for the generator is only needed currently for a temporary measure and the storage tanks will be removed when the improvements to mains electricity are complete and the generator removed from site.

4.8 Waste

The main waste streams generated at the Installation comprise the component parts of the materials that are processed at the Installation, which are then sent on for further recovery, recycling or disposal, as required.

In addition, bag filter waste from the dust extraction system is collected in a skip for off-site disposal.

Fuel/ water mixtures from the fuel interceptor will also be periodically removed and sent for off site disposal.

A list of the annual quantities of waste generated are provided in Table 4.3.

Table 4.3: Waste Streams Generated

Waste Stream	Estimated Annual Quantity	Generation frequency	Disposal Route
General office waste	5 tonnes	Continuous	Recycled or sent for use as Solid Recovered Fuel via a third-party waste contractor.
Metals – non ferrous	105 tonnes	Continuous	Recycled via other EMR's sites.
Metals - ferrous	830 tonnes	Continuous	Recycled via other EMR's sites.
Plastic	13,500 tonnes	Continuous	Recycled via a third-party waste contractor.
Bag filters/ dust from the bag filters	52 tonnes	Intermittent	Sent for further processing to an

Waste Stream	Estimated Annual Quantity	Generation frequency	Disposal Route
			aggregate producer or for disposal.
Waste oil filters	4 x 250 litre drums	Intermittent	Disposal via a third-party waste contractor.
Yard surface water run-off	Dependant on rainfall	Intermittent	Disposal via a third-party waste contractor.
Fuel / oil / water mix - fuel cell of Interceptor	Dependant on level of spillages but anticipated to be very low.	Periodic	Disposal via a third-party waste contractor.

4.9 Energy Use

The main energy usage for the Installation is the requirement for electricity to power the super chopper, raspers, granulator, separator tables, classifier, Turbomill, conveyors and the dust extraction system.

The site on which the Installation is located is council owned and was developed on brownfield land as a manufacturing park in 2019/ 20. Despite this, the electricity supply to the Installation site is not adequate to meet the requirements of the equipment at the Installation and therefore EMR has currently leased a diesel-fired generator in order to provide the additional electricity required to operate, as a temporary measure. A diesel generator was originally selected as the gas supply to the Installation site is also not suitably sized to provide the required gas input for a gas-fired generator.

The thermal input of the diesel-fired generator is approximately 1.4MWth, and therefore it comprises a Medium Combustion Plant and Specified Generator under the EP Regulations. EMR were not aware of the MCP requirements of the EP Regulations at the time the generator was leased, and therefore it currently does not meet the required oxides of nitrogen (NOx) emission limits under the EP Regulations.

After investigating options to ensure EPR compliance, EMR will upgrade the mains electricity supply to eliminate the requirement for a diesel generator. The supply upgrade requires an infrastructure upgrade which will be carried out by PowerOn. EMR will facilitate a new substation and internal electrical equipment to complete the installation. We anticipate that the new supply will be in place prior to permit issue and will confirm the status when the application is being ‘Duly Made’. However, we recognise that if the installation continues to use the generator at that point then an assessment of the environmental impacts of the emissions from the generator will need to be carried out.

Currently, the only gas usage at the Installation is for heating the administration area of the main building.

5. Emissions to Air, Water and Land

5.1 Emissions to Air

5.1.1 Point Source Emissions to Air

The waste treatment processes carried out within the main building has a localised dust extraction system with a pre-cyclone and bag filter to prevent dust emissions to air. The release from the extraction system vents to air from the roof of the main building, via Emission Point A1.

The first stage of the abatement process employs a cyclone, which spins the air and removes larger dust particles by centrifugal force, dropping them down through the cyclonic system into a collector at the bottom of the cyclone. Cleaned air from the first stage is then fed into the second stage, which uses fabric filter media to remove smaller dust particles, before the cleaned air is released to atmosphere via an external vent. The filter media is monitored by a differential pressure system to ensure that they remain effective. The system includes a regular and reactive automatic self-cleaning cycle.

The extraction system is subject to daily operational checks.

Extractive monitoring of the A1 Emission Point has been carried out and demonstrated that dust emissions are within the BAT-AEL for bag filters of 5mg/Nm^3.

Although there are not anticipated to be any VOC emissions from this Emission Point, due to the nature of the waste received at the Installation, this was also monitored at the same time as the particulate monitoring. VOC emissions were measured as 2.8mg/Nm^3.

The details of the point source emissions to air from the Installation are shown in Table 5.1.

Table 5.1: Emission Parameters and Pollutant Emission Rates for the Emissions to Air

Emission Point	A1 (Dust Extraction)
Location (NGR)	447983, 520297
Exhaust height (m above finished ground level)	16.8
Approx. flue diameter (m)	1.2
Average efflux velocity (m/s)	16.5
Volumetric flow at stack exit parameters (Am/s)	18.6
Temp (°C)	23
Volumetric flow (Nm^3/s)	16.8
Operating hours	24 hours/ day
Particulate matter (PM) mg/Nm^3	5
Particulate matter (PM) emission rate (g/s)	0.084
Volatile Organic Compounds (VOCs) mg/Nm^3	2.8
Volatile Organic Compounds (VOCs) g/s	0.047

A H1 Screening assessment was carried out on the basis of the monitoring results received, which indicated that detailed dispersion modelling would be required to further assess the potential impacts of these emissions. Detailed dispersion modelling has been carried out and an Air Impact Assessment is provided. The dispersion modelling impact results are discussed in Section 7.

As stated in Section 4.9, the Installation currently has a diesel-fired generator to provide electricity as a temporary measure, although this will be replaced with an upgraded mains supply. The current status of the mains supply upgrade will be confirmed at the time of 'Duly Making', and we recognise that if the

installation continues to use the generator at that point. then an assessment of the environmental impacts of the emissions from the generator will need to be carried out.

The location of the current Emissions Point for emissions to air are shown in Figure 2 (**Error! Reference source not found.**) i.e., Emission Point A1.

5.1.2 Fugitive Emissions to Air

There are commercial / industrial properties within the immediate vicinity of the Installation. Material stored external to the main building is raw material that has not been processed on site and therefore the material is of significant particle size and will not result in the generation of dust.

The nearest residential properties to the Installation are approximately 530m to the south and southeast of the Installation site boundary on Newport Road. Between the Installation and the receptors lies the A66 road, which is higher than both the site location and the receptors, thereby creating a natural barrier. It is therefore considered highly unlikely that such residential properties would be affected by fugitive dust emissions from the EMR facility.

5.2 Emissions to Water

5.2.1 Point Source Emissions to Water

Rainwater falling on building roofs is collected via gullies, spouting and down-pipes and directed to the AMP Business Park's local surface water drainage network, which discharges clean water into the River Tees off site. As this comprises rainwater only, from areas where there is no risk of contamination (i.e., building roofs), it is considered that this surface water run-off is uncontaminated, and therefore no controls for this emission are required.

Emissions to the AMP Business Park's local surface water drainage network occur at Emission Point W1, the location of which is shown in Figure 2 (**Error! Reference source not found.**).

5.2.2 Fugitive Emissions to Water

The vast majority of the waste processing activities are undertaken in a fully enclosed building, although there are 20 waste storage bays located external to the main building. All outside operational areas are constructed on impermeable concrete to prevent contamination to surface and groundwater.

The Installation has a penstock value fitted to the surface water Emission Point co-located with the sewer emission point at S1. Currently this is used to shut off drainage in the event of a fire, to contain any fire water. This can also be used where atypical, contaminated rainwater from the waste storage bays could enter the surface water drainage system, to prevent any possibly contaminated surface water entering the River Tees via this route. Drainage upgrades are scheduled to capture all surface water that has come into contact with waste, to be tankered off site for further treatment. Once complete, this valve will be closed off permanently, capturing all water in tanks, to be treated by a third party (as required).

5.3 Emissions to Sewer

5.3.1 Point Source Emissions to Sewer

The weighbridge, mobile plant diesel fuel tank and washdown areas drain to foul sewer via an interceptor (Emission Point S1, Figure 2, Appendix A).

All other surface water drainage from the yard area currently goes to surface water drainage discharging into the River Tees (Emission Point W1). Although all efforts are made to ensure that waste received at the Installation is free from contamination, there could be potential for surface water from the external yard areas to be contaminated by trace erroneous substances on the waste stored in the yard area. As such, EMR have scheduled works to redirect all yard area surface water (which may have come into contact with stored waste) to storage tanks. The stored water will then be removed from site for testing and treatment (as required).

In the meantime, it is considered that the risk of contamination from surface water drainage from the yard area currently entering the River Tees, whilst this diversionary work requires completion, is low.

The strict waste acceptance procedures in place and the limited time that waste is stored in the yard area before being processed at the Installation minimise any potential risk.

Samples of surface water from the yard area have been collected and analysed. Laboratory tests confirmed that the concentrations of hazardous materials were below the limit of detection for the analysis methods employed. The results of these tests can be made available as required.

Whilst it is recognised that there is a potential pollution risk, works are scheduled on site for completion by the start of November 2023.

5.3.2 Fugitive Emissions to Sewer

The main areas for potential fuel contamination of surface water drainage are the weighbridge, mobile plant diesel fuel tank and washdown areas, which drain via an oil / fuel interceptor to prevent fugitive oil/ fuel emissions from these areas entering the sewer. None of the surface water from these areas comes into contact with waste.

5.4 Emissions to Land

There will be no process emissions to land as a result of this Environmental Permit application. All proposed processes will be undertaken on hard and impermeable concrete flooring.

5.5 Odour

Odour is not considered to present a significant risk due to the types of materials accepted (metal and cable waste) and the types of treatment activities (mechanical), which are undertaken within an enclosed building.

5.6 Noise

There are industrial/ commercial properties in the immediate vicinity of the EMR facility. In addition, there are residential properties approximately 530m to the south and southeast of the Installation. Given these distances to receptors, and the operational hours of the facility, noise is not considered a potential issue for the Installation.

A Noise Impact Assessment has been carried out and is provided. The assessment monitored daytime and night-time noise levels at nearby Noise Sensitive Receptor Locations. In addition, noise from the EMR extraction system and yard area were also measured during an operational day.

The impact assessment concluded that the large distance and the amount of screening objects and noise sources between the EMR facility and the nearest residential sensitive receptor points means that there is limited potential for an adverse impact from the Installation.

6. Monitoring

6.1 Infrastructure

The Installation's Maintenance Procedure (CUP-OP-04) includes monitoring of the Installations civil infrastructure and containment infrastructure (integral bunds, alarms, externally bunding etc.), so as to protect the soil and groundwater beneath the Installation site.

Regular inspection of all Installation infrastructure associated with bulk storage of fuel, the oil (fuel) interceptor, site drainage and impermeable concrete surfacing is undertaken.

Any issues identified during these inspections are recorded and actions assigned to relevant personnel to be closed out once they have been actioned.

6.2 Emissions to Air

Monitoring on the dust extraction unit has been carried out to ensure that emissions of particulates are compliant with the BAT-AEL of 5mg/Nm^3. It is proposed that extractive monitoring will be carried out annually, as there are considered to be adequate controls in place to ensure that the bag filters remain effective at removing entrained dust from the extraction system. These include differential pressure measurement across the filter media to detect clogging or bursting of a filter sock.

All extractive monitoring will be carried out by MCERTs accredited contractors.

The Environmental Permit will specify the emission limits and applicable analytical requirements for emissions monitoring. The proposed limits and monitoring requirements are shown in Table 6.1.

Table 6.1: Proposed Emissions and Monitoring (for insertion into the Environmental Permit)

Emission Point Ref.	Source	Parameter	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
A1	Main Building Dust Extraction	Particulates	5 mg/Nm^3	Average over the sampling period	Periodic extractive monitoring to be carried out annually	BS EN 14792

If for any reason the Installation continues to utilise a generator to provide electricity, monitoring of the generator emissions to comply with the MCP requirements of the EP Regulations will also be carried out and confirmed with the EA.

6.3 Emissions to Water

Only uncontaminated surface water from building roofs will be discharged to surface waters and therefore no monitoring of this release is proposed.

Surface water from the yard area (which has come into contact with waste) will be collected in the onsite drainage and directed to storage tanks prior to export to a suitably licenced facility for treatment. No onsite discharge is proposed.

6.4 Emissions to Sewer

Emissions to sewer are normal foul water sources (toilets, showers, etc) and separated water from the site interceptors. No emission limits or monitoring is required for these discharges.

7. Environmental Risk Assessment (Impact Assessment)

7.1 Introduction

This section discusses the potential impact on sensitive receptors and the surrounding area and shows how the emissions have been assessed and minimised. Guidance contained in the EA guidance – 'Risk assessments for your environmental permit' [8], has been used to scope and assess the emissions from the Installation.

Where necessary, impact assessments and detailed modelling has been completed to ensure that any predicted significant effects on sensitive receptors can be avoided/ mitigated.

The impact assessments are reported in the Air Quality Impact Assessment and the Noise Assessment of this report.

7.2 Installation Location and Sensitive Receptors

7.2.1 Human Receptors

The closest residential receptors to the Installation is the housing located along Newport Road, approximately 530m to the south of the Installation. The receptors were selected to be representative of residential dwellings and recreational areas around the Installation and are shown in Table 7.1.

Table 7.1: Human Receptor Locations in the Vicinity of the Installation

Receptor	NGR Grid Reference	Approximate Distance and Direction from Installation
Public footpath	447970, 520240	Adjacent, west
Residences on Newport Road	448070, 519600	560m South
Residences on Leven Street	448295, 519700	530m Southeast
Residences on Lees Road	448540, 519950	540m Southeast
Residences on Laycock Street	448280, 519650	570m Southeast

7.2.2 Ecological Receptors

EA guidance requires that the effects of stack emissions on designated ecological sites be assessed where they fall within set distances of the source, up to 10km for European designated sites and up to 2km for Nationally designated sites.

Statutory designated sites have been identified through a desk study of the Defra Magic mapping[9] website, which identifies Sites of Special Scientific Interest (SSSIs), Ramsar sites, Special Protection Areas (SPAs) and Special Areas for Conservation (SACs). In addition, non-statutory designated receptors have also been identified, including Local Wildlife Sites (LWSs) and Local Nature Reserves (LNR).

The relevant sites are listed below in Table 7.2.

[8] Risk Assessments for your Environmental Permit, DEFRA and EA, Published on: 1st February 2016, Last updated on: 31st August 2022, accessed at: https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit
[9] Defra Magic mapping accessed at http://magic.defra.gov.uk/MagicMap.aspx

Table 7.2: Ecological Receptor Locations in the Vicinity of the Installation

I.D	Receptor	Designation	NGR Grid Reference		Approximate Distance and Direction from Installation
ER01 and ER02	Teesmouth and Cleveland Coast	SPA, SSSI	447957	520293	16m west
ER03	Linthorpe Cemetery	LNR	448337	519146	1.2km
ER04	Portrack Meadows	LWS	447731	519850	500m
ER05	Portrack Marsh	SPA, SSSI, LWS	447079	519475	1.2km
ER06	Maze Park	LNR	447242	519298	1.2km
ER07	Whinney Banks Pond	LWS	447428	518414	1.9km
ER08 and ER09	Norton Bottoms	LWS	446737	520667	1.3km
ER10	Teessaurus Park	LWS	448634	521776	1.6km

7.2.3 Geology

The Installation is underlain by the Mercia Mudstone Group bedrock, characterised by a sequence of calcareous clays and mudstones. There is also some record of superficial Tidal Flat Deposits consisting of Clay and Silt.

7.2.4 Hydrology

The River Tees is located immediately to the west of the Installation. The current (2019) classification of the River Tees shows a 'Moderate' ecological status and a chemical status of 'Fail' due to priority hazardous substances (mercury and its compounds and polybrominated diphenyl ethers (PBDE)). It is also designated as a heavily modified water body.

The Installation is located in Flood Zone 1 – an area with a low probability of flooding, according to the EA flood map planning tool. This indicates that there is low flood risk at the Installation site. The adjacent River Tees, however, is categorised as a Flood Zone 3 area.

7.2.5 Hydrogeology

The underlying Mercia Mudstone Group is classified as a Secondary B Aquifer. The EA defines a Secondary B Aquifer as "mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers". The aquifer is categorised as having high vulnerability.

The superficial Tidal Flat Deposits are designated as a Secondary Undifferentiated Aquifer. The EA defines a Secondary Undifferentiated Aquifer as "where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value".

The Installation is not situated within a Groundwater Source Protection Zone (SPZ).

The closest water abstraction to the Installation is approximately 1.5km away operated by Middlesbrough Council.

There is the potential for groundwater flooding to occur across the southern and central portion of the Installation site.

7.2.6 Pathways for Pollution

In order for a pollution risk to occur, there has to be a source - pathway - receptor (S-P-R) linkage.

Pathways to sensitive receptors primarily include, but are not limited to, the following:

- Fuel stored on site for the refuelling of mobile plant which could be accidentally released into the drainage system or leach into the ground and be washed into surface water or groundwater through the underlying soils;
- Trace contaminates could be washed off the stored waste and enter the surface water drainage, although this is to be rerouted to foul sewer and the risk is considered low;
- dust from the extraction system could be dispersed in the air to sensitive receptors; and
- flue gases from the generator (if remaining on site) will be dispersed in the air to sensitive receptors.

In order to prevent and minimise the risk of pollution, the Installation is designed and managed to eliminate or reduce the risk of these pathways, preventing pollution from migrating off site other than through properly managed systems.

7.3 Impact Assessment

The following sections provide an assessment of the impact of releases from the facility, so as to underpin and justify the control measures that will be put in place to adequately protect the environment.

The risk assessment approach has been based on the following four sequential stages:

- identify risks from the activity;
- assess the risks and check that they are acceptable;
- justify appropriate measures to control the risks, if necessary; and
- present the assessment as detailed in the EA's Guidance 'Risk assessments for your environmental permit'.

Activities with the potential to impact on the surrounding environment have been identified in line with guidance provided by the EA, and include the following assessments:

- amenity and accidents;
- emissions to air;
- emissions to surface water;
- Installation waste;
- global warming potential; and
- Installation site closure.

7.3.1 Amenity and Accidents

A qualitative risk assessment has been undertaken for the facilities activities. A short description of the key potential risks from the site is provided in the following subsections.

7.3.1.1 Odour

Due to the nature of the non-hazardous materials accepted and processed at the Installation, it is not anticipated that there will be any issue with odour. The waste acceptance procedure for the site stipulates that odour waste should be rejected.

7.3.1.2 Noise and Vibration

A Noise Impact Assessment has been carried out and is provided. The assessment monitored daytime and nighttime noise levels at nearby Noise Sensitive Receptor Locations. In addition, noise from the EMR extraction system and yard area were also measured during an operational day.

The impact assessment concluded that the large distance and the amount of screening objects and noise sources between the EMR facility and the nearest residential sensitive receptor points means that there is limited potential for an adverse impact from the Installation.

7.3.1.3 Fugitive Emissions

Based on the various controls placed on the Installation plant and equipment and the assessments carried out, it is expected that fugitive emissions from the facility, particularly process emissions to air and water will be negligible and of low risk.

7.3.1.4 Accidents

For the management of day-to-day accidents, an Accident Management Plan (AMP) is in place for the Installation (CUP-C01-Accident Management Plan). The AMP details the potential hazards in place at the Installation, identifies the risks and details the environmental protection measures that will be implemented on site via the EMS, to prevent and control accidents

Although the wastes stored at the Installation are considered to have a low potential for combustion to occur, a Fire Prevention Plan has been prepared for the site. A penstock valve is to be installed on the surface water drainage system, so that in the event of a fire the surface water drainage from the site can be closed off, preventing firewater run-off from entering the off site surface water drainage system, leading to the River Tees.

7.3.2 Emissions to Air

An air dispersion modelling exercise has been undertaken to assess the impact on local air quality as a result of the anticipated emissions identified in Table 5.1. A copy of the Air Quality Impact Assessment is included and the key findings are summarised below.

7.3.2.1 Impact on Local Air Quality

The maximum process contributions (PCs) of annual mean particulates released from Emission Point A1 (dust extraction system) are predicted to be 0.6µg/m^3 at the maximum impacted location. This represents 1.5% of the Air Quality Standard (AQS) for PM_{10}. When combined with the existing background concentration of 14.2µg/m^3 it represents 37% of the AQS, and therefore can be screened as having 'insignificant' impact at human health receptors at the second stage of screening, being well below the 70% threshold applied.

The maximum PCs of daily mean particulates released from Emission Point A1 are predicted to be 2.9µg/m^3 at the maximum impacted location. This represents 5.8% of the daily AQS for PM_{10} and therefore can be screened as "insignificant" at the first stage of screening, being less than 10% of the short term AQS.

The impacts of VOC from the dust extraction system were also assesses against the AQS for Benzene, as this represents a worst case VOC. The annual average impacts are predicted to be 0.3µg/m^3, representing 6.6% of the Benzene AQS. When combined with the existing background concentration it represents 16% of the AQS, and therefore can be screened as having 'insignificant' impacts at human health receptors by the dispersion modelling, at the second stage of screening, being well below the 70% threshold applied.

The hourly impacts of VOCs were predicted to represent 5.4% of the benzene AQS, and therefore can be screened as "insignificant" at the first stage of screening, being less than 10% of the short term AQS.

There are no environmental standards for the assessment of impacts of particulates or VOCs on habitat sites.

Once clarification on whether electricity will continue to be provided by an onsite generator, and consequently details of the emissions from the generator can be confirmed, a further assessment of the associated impacts from this emission source will be carried out.

7.3.3 Emissions to Water

There are discharges of uncontaminated surface waters from the main building roof to the River Tees, via the AMP Business Park surface water drainage system, Emission Point W1. No further assessment of emissions to water from this source is considered necessary.

The surface water runoff from the yard area is being upgraded to ensure it is collected and stored prior to removal from site for further treatment. Water being exported will be tested to ensure it is sent to an appropriately licenced facility. To minimise the risk of contaminated water being exported, waste is

stored and managed within the yard area in batches, as delivered, to ensure that waste delivered to site is processed in a timely manner.

7.3.4 Site Waste

The details of the anticipated waste streams generated by the facility are provided in Section 4.8. The main waste generated at the Installation is from the processing and segregation of other waste streams, thereby enabling recycling of components. As such, the site reduces the quantities of waste that may otherwise be landfilled.

All wastes requiring removal from the Installation are stored in designated internal storage areas before being transported off site and are consigned via a registered waste carrier for recycling, further treatment or disposal at a suitably licenced waste facility. All waste movement is recorded.

7.3.5 Global Warming Potential

This section is based on guidance presented in the EA guidance – 'Assess the impact of air emissions on global warming'[10].

The GWP for the Installation is shown in Table 7.3.

Table 7.3: Annual Energy Consumption

Energy Source	Energy Consumption Primary		
	At Primary Source	CO_2 Emission Factor	Annual CO_2 Emissions (tonnes)
Electricity	228 MWh	0.166 tonnes/MWh	38
Diesel for existing generator[1]	564,000 litres = 20,889 gigajoules	0.0693 tonnes/gigajoule	1,448
Gas	15 kWh	0.19 tonnes/MWh	3
Total CO_2	**-**	**-**	**1,489**

[1] Assumed that 27 litres of diesel = 1 gigajoule – this will not be required once the improvements to mains electricity are complete.

7.4 Site Closure

A plan for appropriate decommissioning and closure of the facility at the end of its operating life will be developed. The plan will ensure that the Installation is returned to the baseline condition, as outlined in this application.

[10] Assess the impact of air emissions on global warming, DEFRA and EA, published on: 1st February 2016, available at: https://www.gov.uk/guidance/assess-the-impact-of-air-emissions-on-global-warming

I - Assessment of Fugitive Emission Risks

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Fugitive emissions of dust, particulates or litter	Human health receptors Local environment	Blown by the wind to human health receptors, the River Tees or land	Only unprocessed waste is stored external to the main building, which comprises largely rolls of cable, and therefore there is limited potential for dusty material to occur. Waste stored in high-sided bays to prevent wind blow, and yard area protected by fencing with netting. High standards of housekeeping will be maintained. Minimisation of waste storage times in the yard area prior to processing. All plant other than the supper chopper are within the main building.	Due to the controls in place, the distance to receptors, and the natural barrier provided by the A66 road, probability of exposure is considered very low.	Complaints of dust / litter in vicinity of local receptors.	Very low
Fugitive emissions of dust due to the failure in the extraction system abatement	Human health receptors	Dispersion of dust in air to receptors	The extraction system comprises a pre-cyclone and then bag filters. Filter media is monitored by a differential pressure system to ensure that they remain effective. This system is alarmed to alert the supervisor. The system includes a regular and reactive automatic self-cleaning cycle. The extraction system is subject to daily checks and regular maintenance. In the event of equipment failure, waste processing would cease until the extraction system was back online.	Very low due to limited potential for failure of both cyclones and bag filters unlikely to occur at the same time and the maintenance regime in place.	Exposure of human health receptors to dust. Complaints of dust nuisance of low toxicity	Extremely low
Diesel spillage or leaks during storage, unloading or refuelling activities	Emission Point W1 (surface water) Emission Point S1 (trade sewer) Soil and groundwater below the site	Migration into surface water drains and release via Emission Point W1 Migration into foul sewer drains and release via	The yard area is completely covered by hard standing, which is checked daily for spills and defects. All diesel is stored in bunded tanks with leak detection in place. Impermeable concrete surfacing present in the mobile plant fuel tank area, which drains to an appropriately sized interceptor. The interceptor drains to the foul sewer.	Spillages or leaks in the yard area would be contained in the storage tanks, although the controls in place mean that the probability of this is low. All bulk storage tanks are bunded to provide sufficient containment in the event of a tank/ containment failure	Localised pollution of surface water and groundwater. Complaints of odour.	Very low

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
	Human health receptors	Emission Point S1 Overland flow onto unmade ground or hardstanding penetration / broken surface water drains penetration into the soil and groundwater beneath the site Fuel fumes generating odour dispersed to human health receptors	The interceptor is inspected, cleared and serviced annually or upon activation of the level alarm in the oil cell. Mobile plant refuelling is carried out in the fuel tank area to capture any possible spillages. Yard drainage will be redirected to foul sewer as soon as necessary arrangements are in place with the Sewerage Undertaker. Spill kits are present on site and staff trained in their use. All mobile plant and equipment is serviced and maintained in accordance manufacturer's recommendations. Civil assets such as hardstanding and bunds are part of the site inspection and maintenance program.	meaning the probability of this is low. Very low potential for spillage/ leak to enter the foul sewer due to bunding of the fuel tank and the presence of an interceptor. Low potential for exposure to soil and groundwater - through hardstanding failure and penetration into ground.		
Leaching of trace contamination from waste in waste storage areas	Emission Point W1 (surface water) Emission Point S1 (trade sewer) Soil and groundwater below the site	Migration into surface water drains and release via Emission Point W1 Migration into foul sewer drains and release via Emission Point S1 Overland flow onto unmade ground or hardstanding penetration / broken surface	All waste stored on site will have been classified as non-hazardous prior to arrival on site. Waste acceptance procedures will ensure that only waste that can be accepted on site is brought on to site, i.e., uncontaminated. Visual inspections of waste during delivery will ensure waste is visibly clear of contamination. Only unprocessed waste will be stored external to the main building, which comprises largely rolls of cable. Limited potential for contamination to leach out of plastic cables. Minimisation of waste storage times in the yard area prior to processing. The yard area is completely covered by hard standing, which is checked daily for spills and defects.	Limited potential for non-hazardous waste accepted on site to be contaminated and therefore the probability is low. Very low potential for the leaching of contamination from the raw waste as it is stored and processed in batches with material that has been on site the longest being processed first, to ensure storage times are minimised. Concrete hardstanding will limit potential exposure of the ground and therefore the potential is low.	Localised pollution of surface water and groundwater.	Very low

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
		water drains penetration into the soil and groundwater beneath the site	Civil assets such as hardstanding and bunds are part of the site inspection and maintenance program.			
Noise and vibration emission from plant and equipment	Human health receptors	Noise propagation through the air	Noisy operations conducted within the main building, except for the super chopper, which is externally located. Equipment is regularly maintained and monitored.	Noise emissions are regularly monitored to ensure that they are not a nuisance to the public and that they are not a danger to staff.	Complaints of noise from local receptors.	Low

II - Assessment of Accident Risks

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Accidental fire/ arson	Human health receptors Local environment	Emissions of smoke to the air. Contaminated firewater, foam, etc. to site drainage and potentially controlled waters. Contaminated fire water, foam, etc. to soil and groundwater beneath the site. River Tees through firewater overland flow into river to the west.	Unprocessed waste stored externally in segregated bays to limited potential for fire spread. Processed wastes stored internally and each batch will be stored in single order with no stacking. Limited sources of ignition. Fire Prevention Plan in place. Limited potential for firewater to become contaminated due to the non-hazardous nature of the waste and limited volumes of materials held on site. Parts of the wastes are combustible (not flammable). No public access to the Installation and CCTV on site linked to a security company. Fire extinguishing equipment is available on site and in the yard to limit potential for a large fire to occur. Fire alarm system is monitored.	Appropriate design and management actions should allow the early detection of/ minimise the risk of fire and of fire spreading therefore probability low.	Complaints of smoke/ smells in vicinity from local residential receptors. Localised pollution of surface water and soil/ groundwater. Potential to directly contaminate river if overland flow to the west.	Low
Flooding of the Installation and associated contamination of	Local surface water and/ or groundwater	Site flooding causing waste/ fuel to breach containment and	Appropriate bunding and containment of all fuel on site to prevent escape via flood waters.	Appropriate storage and containment measures are in place to prevent the loss of any	Localised flooding of the site and neighbours. Small degree of pollution	Very low

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
flood waters with fuel stored on site		flow by gravity from site, into the surrounding environment.	Tanks are appropriately secured to prevent lifting by floodwaters. The EA Flood Map for Planning shows that the Installation site is located within a Flood Zone 1 and therefore there is a low risk of flooding.	fuel stored in the event of flooding. The EA Flood Map for Planning shows the site as having a low probability of flooding.	of surface waters and groundwater from the escape of fuel. The quantity of materials/ wastes stored onsite is low and there would be significant dilution in a flooding event.	
Vandalism to plant, equipment and infrastructure and associated loss of waste / fuel from site	Emission Point W1 (surface water) Emission Point S1 (trade sewer) Soil and groundwater below the site Human health receptors	Migration into surface water drains and release via Emission Point W1 Migration into foul sewer drains and release via Emission Point S1 Overland flow onto unmade ground or hardstanding penetration/ broken surface water drains penetration into the soil and groundwater beneath the site	• Security fence and monitored CCTV cameras at numerous locations on site, • Security control gates at the Installation's entrance with restricted entry; relevant signage; building envelope around a significant proportion of the operation/ process. • On site security out of hours. • Penstock valve planned to be installed to protect Emission Point W1	Negligible. Appropriate design and management actions should prevent vandalism happening.	Localised pollution of surface water and groundwater. Potential for injury, damage to plant/ equipment.	Very low

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