Avon Speciality Metals Ltd

ENVIRONMENTAL PERMIT APPLICATION

MARCH 2021

CONFIDENTIAL

Avon Speciality Metals Ltd

ENVIRONMENTAL PERMIT APPLICATION

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CONTENTS

1 NON-TECHNICAL SUMMARY

Avon Speciality Metals Limited (ASML) accepts waste and virgin metals in a number of ways which include in shipping containers, vans, or heavy goods vehicles (HGV). The metals are stored in drums, bags, strapped to pallets, in metal cages or boxes. The vehicles and containers that deliver the metals to site are covered at all times.

The metal waste can come in a variety of forms which include:

- Metal parts (e.g casting runners and risers, small castings, targets and turbine blades);
- Metal turnings and fines.

Once the load has past acceptance to verify the alloy that is received then it goes forward for treatment. This treatment can take a number of forms:

- Cleaning of metals to remove any dirt or post pickling rinse;
- Cutting and grinding (using mechanical cutters/grinders to a plasma arc cutter) to reduce the size of the metal;
- Shot blasting for both cosmetic finish or to remove a coating; and
- Pickling to remove a coating such as a thermal barrier.

As part of this variation application the following subject areas have been considered:

- **Management systems:** ASML have developed procedures which have been included within the Business management system which is an integrated system with ISO9001.
- **Energy Efficiency:** The additional activities are not expected to change the energy use at the site significantly. The site is a low user of electricity at only 257 MWh per annum.
- **Raw Materials and Water:** There will be some increases in raw material use with chemicals for the pickling process. However, this is limited to 28,000 litres per annum currently. Water use will likely increase 40m^3 from 298m^3 per annum.
- **Waste Management:** The two main waste streams for removal from site are acid waste and aqueous waste both from the pickling process. These are removed and disposed of by an approved contractor and the totals are 34,320 litres of acid waste and 27,840 litres of aqueous waste in 2020.
- **Emissions to Air:** The shot blasters, grinders and cutters vent via a Donaldson Torrit local exhaust ventilation extraction system. This system includes a cyclone and then filtration units fitted with 40 cartridges which collects all the dust particles/shot and metal which is collected in a drum and is then sent off-site for recycling also. There is a pressure control system which shows when filter cartridges need replacing. The unit is serviced each year and approximately 20 cartridges changed at the direction of the service engineer.

  This is checked daily that it is performing correctly and that the filters are operating correctly.

  In addition, there are two scrubber units, one for each pickling line, which are water baths which are trickle fed with sodium hydroxide in order to remove acid fume.

  Both the scrubber units and the Donaldson Torritt are in place to ensure the health and safety of the workforce through meeting long-term and short-term exposure limits as the release from each stack would be minimal.

- **Emissions to Water:** The site discharges surface water to the local surface water drainage network.
- **Emissions to Sewer:** The discharge to foul sewer comprises only domestic effluent and very small quantities of reject water from the vibro barrelling activity which comprises only water with a small amount of detergent. The water discharged can be 60 litres per hour when in use but there can be periods where the unit is used all day (7.5 hours as only 1 shift operation) or will not be used for a month.
- **Emissions of Substances not Controlled by Emission Limits:** Fugitive emissions to water have been considered in relation to sub-surface structures and sumps, site surfacing, bunds / secondary containment and storage areas for IBCs and drums and the site risk is considered low. There are no oil tanks on site and chemicals are received into the workshop area and stored on bunded pallecons until used within the pickling process.
- **Odour:** None of the proposed activities are considered odorous given the received waste being metallic.
- **Noise and Vibration:** The environmental risk assessment screens the noise risk as very low and that determines that a detailed noise impact assessment and noise and vibration management plan are not required. This has therefore not been considered further.
- **Monitoring:** The pressure check system is checked daily to ensure that there is sufficient pressure across the filters. If not, this shows which cartridge needs to be replaced.
- **Environmental Risk Assessment:** The application includes an environmental risk assessment which identified the risks relevant to the site. The risk assessment is provided in Appendix B.
- **Best Available Techniques (BAT):** The site has been compared against appropriate guidance on the gov.uk website as well as Non-hazardous and inert waste: appropriate measures for permitted facilities July 2020 consultation draft.
- **Site Condition Report (SCR):** As part of this environmental permit application a SCR has been developed and is included as Appendix C.

2 PROJECT BACKGROUND AND INTRODUCTION

2.1 ABOUT THE SITE

This document has been submitted as part of an application for a bespoke waste operation permit for Avon Speciality Metals Limited based in Gloucester. The site currently operates under waste exemption T9: recovering scrap metal.

The address of the installation is:

Avon Speciality Metals Limited

Centurion Industrial Estate

Unit 2 Empire Way

Gloucester

GL2 5HY

Avon Speciality Metals comprises the recycling of highly specialised alloy metals, including preparation through surface coating removal and cleaning, revert management of faulty or off-spec components, and processing to recover all metals in the alloy. The processed metals are sent on to the next processor in the chain (melting).

The site is located on an industrial estate in Gloucester. The site is an industrial building with hard standing outside with car parking space and access for deliveries.

The area immediately surrounding the installation is comprised of industrial or commercial properties in each direction. There is a road 50m to the West with the Gloucester and Sharpness Canal beyond, 75m from the site. Beyond the Canal is the A430.

The nearest surface watercourse is the Gloucester and Sharpness Canal which is 75m to the West of the site. The other significant surface water feature is the River Severn which is approximately 750m to the West.

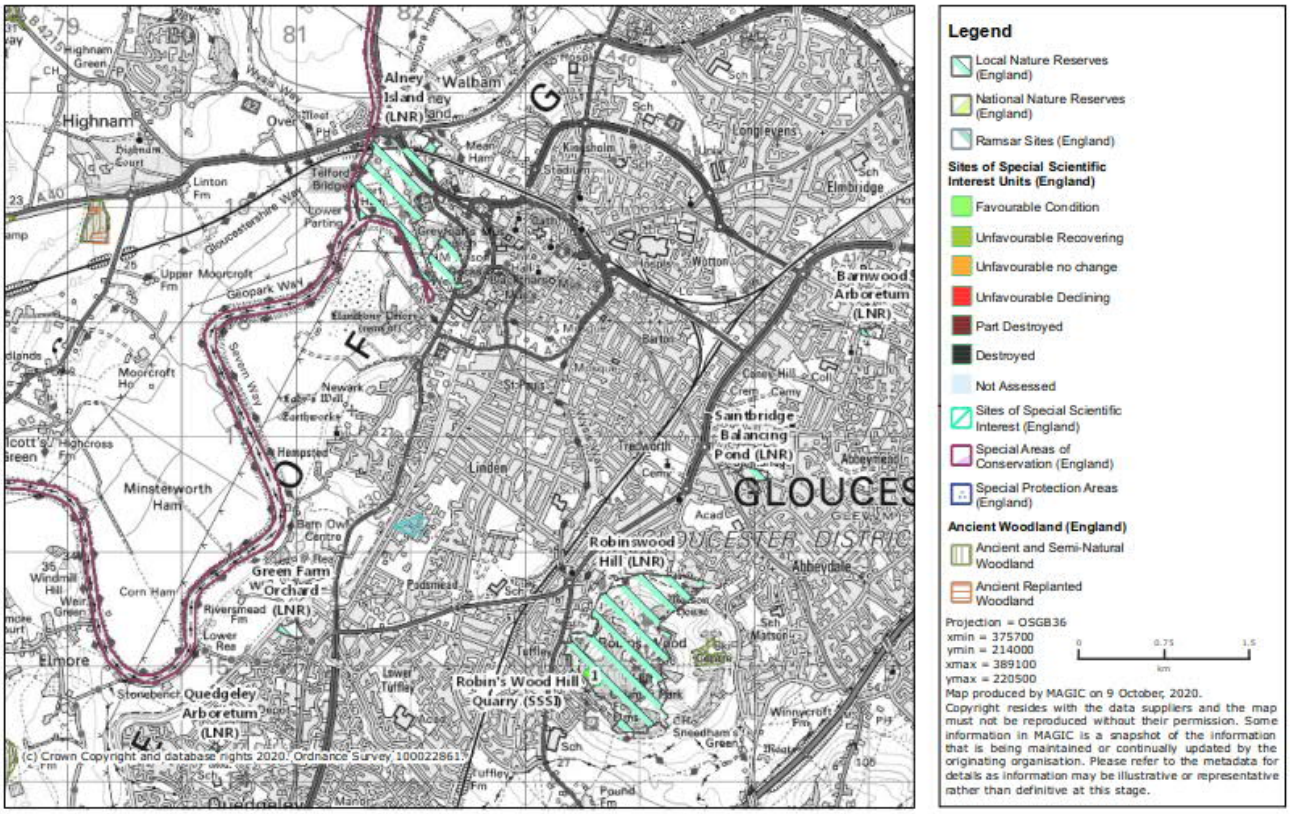
Figure 2-1 below shows the site boundary in red.

Figure 2-1 - Site Boundary

Figure 2-2 below shows the ecologically designated sites within 2km of Avon Speciality Metals limited:

- Alney Island Local Nature Reserve (LNR);
- Robinswood Hill LNR;
- Quedgeley Arboretum (LNR);
- Green Farm Orchard LNR;
- Robin's Wood Hill Quarry Site of Special Scientific Interest (SSSI); and

Figure 2-2 - Screenshot from MAGIC.GOV



2.2 REGULATORY CONTEXT

The site currently operates under waste exemption T9: recovering scrap metal. The waste exemption that Avon Speciality Metals have, T9, has the following requirements:

- 1,000 tonnes at any one time- the site currently stores approximately 300 tonnes;
- Can have metal on site for 24 months- most is removed from site within 6 months and if not is derated (in terms of value) and removed from site after 12 months;
- Allows for sorting, grading, shearing by manual feed, baling, crushing and cutting with handheld equipment. The shot blasting activity, plasma cutting, and pickling process would mean that the T9 exemption would not be valid for use at the site. It is understood that the T9 exemption is likely to be removed by the Environment Agency in the near future.

In addition to the activities of shot blasting, plasma cutting and simple pickling process not being in accordance with the T9 exemption, the site is proposing a new acid plant with the use of the existing acid pickling plant to be used to extract precious/high value metals from the acid processing. The existing process will be used for research and development activities in the first instance, before scaling these up to commercial operation if proven.

A pre-application consultation was submitted to the Environment Agency on the 28th July 2020 with the advice being provided on the 19th August 2020. The pre-application advice EPR/JB3601UD/A001 confirmed the site would be performing a waste operation as a metal recycling facility and would need to submit, where appropriate, the following documents in support of the application.

- Application forms – Part A, Part B2, Part B4 and Part F1

- Site Plan
- Evidence of appropriate technical competence
- Environment Management System summary
- Non-Technical Summary
- Site-specific risk assessment
- Site Condition Report
- Fire Prevention Plan
- Emissions (Dust) Management Plan (DMP)
- Noise Impact Assessment (NIA)
- Noise Management Plan (NMP)

Appendix B Environmental Risk Assessment shows that the site will not cause noise nuisance likely to cause pollution from noise or vibration beyond the site boundary and therefore the NIA and NMP have not been required.

A fire prevention plan has not been included as the waste metal received is not combustible.

2.3 APPLICATION STRUCTURE

This application report has been structured and developed in accordance with guidance obtained from the GOV.UK webpages or Environment Agency guidance as detailed below:

- Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste Sector Guidance Note IPPC S5.06 May 2013;
- Non-hazardous and inert waste: appropriate measures for permitted facilities July 2020 consultation draft; and
- https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

3 OPERATIONS

3.1 PROCESS OVERVIEW

The site accepts waste and virgin metals in a number of ways which include in shipping containers, vans, or heavy goods vehicles (HGV). The metals are stored in drums, bags, strapped to pallets, in metal cages or boxes. The vehicles and containers that deliver the metals to site are covered at all times.

The metal waste can come in a variety of forms which include:

- Metal parts (e.g casting runners and risers, small castings, targets and turbine blades);
- Metal turnings and fines.

The metal is received into bay 1 which is the acceptance area. Each item in the delivery is given a work in progress (WIP). No metal is allowed forward into production with a WIP number, this signifies that the material has not yet been tested to ensure conformity to purchase order.

The delivery is weighed in and compared with the delivery paperwork to ascertain whether there are any discrepancies.

The metal is then subject to material analysis to provide further detailed information on the metal's composition and verify that the received metal is as described from the supplier. This is done via the use of a Thermo Scientific Niton Goldd X62 x-ray unit which is a handheld device. This is held to the metal surfaces and analyses the metal against a library of known alloys. This breaks down the elements in the alloy and is attached to the load along with the WIP number.

Not every item in the load is tested but a representative sample is assessed. For example, if a 2-tonne load is received then the sample requirement can be anything between 10% and 100% using the handheld x-ray device. If any non-conforming material is found, then the sample is dismissed, and a 100% check is completed. Any items which do not look visually correct compared to the rest of the load will be checked more thoroughly.

When the sorting takes place and the alloy is confirmed, the information is recorded on an Out Turn (sorting sheet) for each individual container, a hand-written label is placed on the container(s) for the interim until the delivery has been completed. Once sorting has been completed for the load, then the out turn will be taken into the office and either IWIP labels or FG labels will be produced to replace the WIP label.

Any of the metal loads within the facility will have one of 3 labels associated with it. These are:

- WIP- metals which have arrived but not yet been tested;
- I-WIP- metal that has been tested and is awaiting further processing; and
- FG- these are finished goods which have been processed and quality assured and is awaiting collection for despatch to end user.

Once the load has been qualified as to the alloy that is received then it goes forward for treatment. This treatment can take a number of forms:

- Cleaning of metals to remove any dirt or post pickling rinse;

- Cutting and grinding (using mechanical cutters/grinders to a plasma arc cutter) to reduce the size of the metal;
- Shot blasting for both cosmetic finish or to remove a coating; and
- Pickling to remove a coating such as a thermal barrier.

Cleaning can be undertaken using a pressure washer in an enclosed area.

Cutting and grinding can be done for several reasons. This can be for size reduction of metals prior to despatch to a customer without further treatment. It can also be done to remove a base metal from an alloy. For example, with a turbine blade the blade housing is a base metal whilst the blade itself can be a highly valuable alloy. The blade is cut off at the junction where the base metal and valuable metal alloy meet. The blade is then sent off-site for recycling whilst the base metal (root) goes forward for further treatment. Any blades that exhibit a Thermal Barrier Coating (TBC) but no high value coating would then be size reduced so that it would fit into the baskets to go within the pickling process to remove the TBC on the outside of the blade. The site has 2 hydraulic scissor cutters (JMC McIntyre Units), circular cutter (Reichmann 20" Cut Off), angle grinder and 3 plasma cutter units. All of these are located in the cutting room and are ducted to the Donaldson Torritt extraction unit.

Other metals with coatings such as a zirconium coating would then be loaded into the basket within the shot blasting unit which is then enclosed, and the material is subject to blasting with shot to remove the coating. This can then either be sent off site to the customer or go for size reduction, pickling and cosmetic shot blast before sending on to the customer.

Current pickling process takes place on two types of metals. Those with a thermal barrier that requires removal to access the valuable alloy beneath or to remove an indium coating which is used as a bonding agent to bond two metals together. The pickling process currently takes places in 4 tanks with 2 further water tanks each of 400 litres. The pickling tanks are filled with an acid mixture of 80% Hydrochloric acid (HCl@32% strength) and 20% ferric chloride (@40% strength) which in itself is a 40% liquid blend. The metal to be treated is loaded within baskets which are allowed to soak in the acid mixture until the coating is removed. The baskets are then removed from the acid tanks and dipped in the water tanks as a rinse. These then go for further pressure washing to ensure they have been fully cleaned.

Once the pickled metal is pressure washed it is then retested to ensure that the coating is fully removed using the handheld x-ray device. If any of the coating remains, then the metal is sent back for a further soak to remove it. If the coating has been fully removed it then first of all it is dried in the oven and then goes forward for further size reduction using the cutting or grinding equipment or it is packed and made ready for despatch to the customer.

The acid mixture is removed every 3 to 4 weeks dependent on production volumes. The water baths are also changed at the same time. A barrel pump is used to empty each of the tanks to an IBC and this is then sent off-site using an approved waste contractor.

The fumes off the acid tanks are vented via a scrubber system. The scrubber system is fitted with a water bath. There is also a dosing pump which periodically doses sodium hydroxide (NaOH) to neutralise any of the acidity in the water bath prior to venting to atmosphere via a roof line stack. The extraction hoods are directly over the tanks. The tanks are lidded during the pickling process, so it is only during loading and unloading operations when they are open. The tanks are heated to 50^{o}C

to aid the pickling process. The NaOH is in an IBC co-located with the acid tanks. The area has a chemical spill kit.

This pickling line will become the research and development pickling process when the new pickling line is operational. The tanks will either remain the same configuration e.g. 4 acid tanks to 2 wash tanks or will be changed to 5 acid tanks to 1 wash tank.

The chemical mixture will be 5-10% HCl. The tank will have an anode and cathode and sonic probe to remove high value metals from some specialist coatings which use platinum/silver/gold as a coating.

The site has a vibro barrelling machine to remove dirt and rough edges by the metal tumbling on each other and stones to take of edges. This is then washed with a detergent water mix prior to being dried. The detergent goes to a filter tank prior to reuse whilst the water is discharged to sewer.

There are also 2 shot blasting units with a third smaller unit being prepared. The metal is loaded into a hopper in the mill. This has 6 or 8 paddles and is then spun at high velocity with steel grit to remove the coating. The steel grit gets constantly recirculated. The shot blasting only occurs between 7.15 and 15.45 Monday to Thursday and 7.00- 15.30 on Fridays.

The shot blasters vent via a Donaldson Torrit local exhaust ventilation extraction system. This system includes for a filter which collects all the dust particles/shot and metal which is collected in a drum and is then sent off-site for recycling also. There is a pressure control system which shows when filter cartridges need replacing. The unit is serviced each year and the cartridges changed at the direction of the service engineer.

In addition, there is a baler which can be used to crush like metals to a bale for easy transport to the customer.

The new pickling line will have greater capacity to treat metals. There will be 12 tanks with 8 acid tanks and 4 wash tanks (all 1500 mm long x 770mm wide x 1130mm high) each 1.3m^3. The tanks would not be filled all the way to the top and would have sufficient headroom to avoid spillage so are likely to be a maximum of 1,200 litres each. They will operate on the same principle as described for the current pickling process. They will include an anode and cathode extraction system to take metallics from the acid tanks and further prolong the life of the acids before requiring replacement.

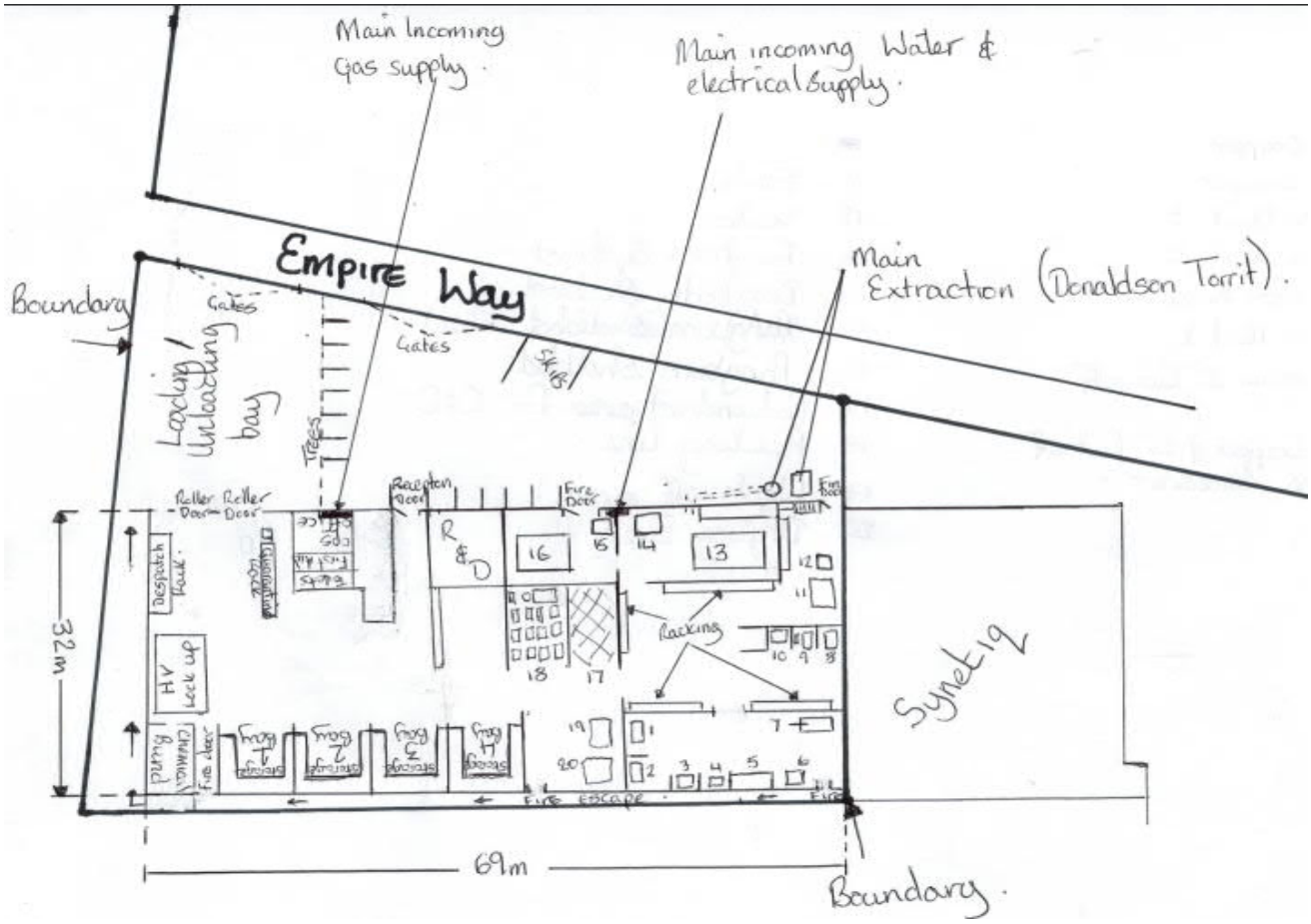
These tanks are set within a bund which has a sump and a float switch which would pump anything in the sump to an IBC.

The extraction system is the same as for the pre-existing process with extraction hoods via a water bath trickle fed with NaOH prior to discharge to atmosphere. This will be independent to the original scrubber system so there will be two separate vents.

In addition, there is an onsite laboratory with an XRF machine, this will provide a true analysis of material down to parts per million (PPM), an Inductively Coupled Plasma (ICP) spectrometry machine due to be installed in the near future to produce provide a true analysis to parts per Billion (PPB), a polishing and preparation machine and Leco Units for gas levels (Nitrogen, Oxygen, Hydrogen, Carbon and Sulphur) found within the alloys.

A site layout plan can be seen in Figure 3.1 below.

Figure 3-1 Site Layout Plan



Key to Drawing:

1	JMC Cropper
2	Jinc cropper
3	Plasma Unit 3
4	Plasma Unit 2
5	Compressor House
6	Plasma unit 1
7	Reichmann 20” cut off
8	Baler
9	JMC Cropper & 14” cut-off
10	Untha Shredder
11	Scales
12	Scales
13	Pangborn Shotblast
14	Doug Booth Shot Blast
15	Water Trowell Vibro cell
16	Pangborn Shot Blast
17	Redundant area for R&D
18	Pickling Line
19	Wash off Area
20	Drying oven

3.2 SITE CONDITION REPORT

The Site Condition Report (SCR) has been included as Appendix C to this main application document.

3.3 ACTIVITIES

Table 3-1 below shows the activities that take place within the site along with the capacities of each activity.

Table 3-1 Activity capacities and throughput

Activity	Disposal and Recovery codes	Throughput (tonnes per day)	Capacity
Waste Storage	R 13 Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where the waste is produced)	Up to 25 tonnes in one day	Maximum of 500 tonnes at any one time
Cutting and Grinding	-	Up to 5 tonnes per day (based on 5-day week 48 weeks per year)	Up to 1,200 tonnes per annum
Pickling	R 4 Recycling/ reclamation of metals and metal compounds		
Research and Development Process	R 4 Recycling/ reclamation of metals and metal compounds		
Shot blasting	R 4 Recycling/ reclamation of metals and metal compounds		
Vibro Barrelling	R 4 Recycling/ reclamation of metals and metal compounds		

Table 3-2 below shows the EWC codes that the site will accept for the metals it treats.

Table 3-2 EWC Codes to be accepted at site

Code	Description
12 01 03	Non-ferrous metals filings and turnings
19 12 03	Non-ferrous metals

4 MANAGING YOUR ACTIVITIES

4.1 APPROPRIATE MEASURES

Appropriate measures are the minimum standards that operators must meet to comply with their environmental permit requirements. Pre-application advice stated that the site should consider Sector Guidance Note S5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013 for guidance with regards non-hazardous waste recovery and disposal. Therefore, the following sections assess the site against these appropriate measures where they are applicable for a site that treats metal, other appropriate measures for non-metal sites will not be considered as they are not relevant. These are considered throughout Sections 4 and 5.

4.2 ENVIRONMENTAL MANAGEMENT SYSTEM

Table 4-1 below shows appropriate measures with regards to management systems as detailed in Environment Agency Guidance Non-hazardous and inert waste: appropriate measures for permitted facilities July 2020. Whilst this guidance is not for metal sites it is considered that the management system guidance is appropriate.

Table 4-1 Appropriate measures for environmental management

BAT Condition	Actual	BAT Adopted?
You must have an up-to-date written management system, and activities at your facility must follow it. Your management system must incorporate the following features.	The site is developing an environmental management system (EMS) for Quarter 4 2020.	**Yes**
You have: • management commitment, including from senior managers • an environmental policy that is approved by senior managers and includes the continuous improvement of the facility's environmental performance, so you can identify pollution risks and minimise them through appropriate measures.	The EMS will be authorised and be committed to by senior management. The EMS will include an environmental policy.	**Yes**
You plan and establish the resources, procedures, objectives and targets needed for environmental performance alongside your financial planning and investment.	The procedures within the EMS and any objectives and targets will be established from the identification of the key risks through aspects and impacts evaluation and register. The appropriate resources will be identified by senior management in order to implement measures to control the key aspects.	**Yes**

You implement your environmental performance procedures, paying particular attention to: • staff structure and relevant responsibilities • staff recruitment, training, awareness and competence • communication (for example of performance measures and targets) • employee involvement • documentation • effective process control • maintenance programmes • management of change • emergency preparedness and response • making sure you comply with environmental legislation	These will be adopted in the EMS where required.	**Yes**
You check environmental performance and take corrective action, paying particular attention to: • monitoring and measurement • learning from incidents, near misses and mistakes, including those of other organisations • records maintenance • independent (where practicable) internal or external auditing of the management system to confirm it has been properly implemented and maintained.	The EMS will include for monitoring of the key activities. In addition, there will be procedures in place for non-conformance and corrective action. The annual management review will identify any patterns and any further measures to be adopted to mitigate against repeat occurrences. The EMS when developed will be subject to third party audit.	**Yes**
Senior managers review the management system to check it is still suitable, adequate and effective at least annually. Improvements should be carried out within a reasonable time.	The EMS will be subject to an annual management review conducted by senior managers.	**Yes**
You review the development of cleaner technologies and their applicability to site operations.	This can be considered during the annual management review which would also consider the cost implications of such changes.	**Yes**
When designing new plant, you make sure that you assess the environmental impacts from the plant's operating life and eventual	When the permit issued the site will ensure that for future changes the permit is amended in advance of adopting the changes.	**Yes**

decommissioning. You must make sure that new plant is authorised by your environmental permit.		
In order to track and control the process of change, you must have a written procedure for proposing, considering and approving changes to procedures or infrastructure that are related to the storage or treatment of waste or pollution control.	There is a procedure in the existing quality management system with regards to process change.	**Yes**
You consider the risks that a changing climate poses to your operations. You have appropriate plans in place to assess and manage future risks.	This will be undertaken as part of the permit application and will be reassessed every 4 years. A Climate Change Risk Assessment is included in Appendix E.	**Yes**
You compare your facility's performance against relevant sector guidance and standards on a regular basis, known as sectoral benchmarking.	Should the Environment Agency issue any new guidance for the metal sector the site will compare against these benchmarks. All benchmarks within the environmental permit will be reported to the Environment Agency annually.	**Yes**
You carry out appropriate waste stream management.	All waste streams are segregated and given unique identifiers and kept separate throughout both treatment and finishing for despatch off-site.	**Yes**
You have and maintain the following documentation as part of your management system: • inventory of emissions to air and water • residues management plan • accident management plan • site infrastructure plan • site condition report for new facilities or where you are increasing the facility's area • odour management plan, if required • noise and vibration management plan, if required • dust management plan, if required • pest management plan, if required • fire prevention plan, unless your facility does not handle combustible waste	The site will maintain an inventory of emissions to air, water and waste which is reported annually to the environment agency in the annual report. The permit application includes: ▪ Site Condition report; ▪ Climate change risk assessment; and ▪ Dust management plan. A noise and vibration management plan is not required as the site activities screen out as being low risk with regards to noise. In addition, a fire prevention plan is not required as the metal waste received is not combustible.	**No- accident management plan not currently available**

• climate change risk assessment, if required		
Your management system must include a schedule of inspection and maintenance for all pollution control infrastructure, including for example the: • impermeable surfacing and drainage system • gas ducts of abatement systems	There is no formalised inspection schedule. This is managed by the maintenance operator who ensures that: ■ An annual visual inspection of guttering and surface water drains to ensure clear and running free is undertaken. ■ The Donaldson Torritt has an annual service and that inspection air ducts do a full local exhaust ventilation inspection to ensure pressure maintained. In addition, there is a procedure to ensure that operators as part of the total productive maintenance system inspect the sump so that the IBC for any pumped leaks is empty at the end of each day.	**Yes**
You must have a document control procedure that clearly describes how and when you will periodically review documentation and maintain version control.	This will be included within the EMS.	**Yes**
Your management system must clearly set out the actual physical capacity of your facility to store and handle waste, which may be less than the quantity limits allowed by your permit. You must specify limits for the maximum: • waste storage capacity at any one time • daily and annual throughputs • residence time for waste	This is clearly stated within Section 3 of this report.	**Yes**
When doing this, you must take into account the characteristics of your facility, the waste types and the pollution risks, for example fire and odour.	There is no risk from odour as the metal is not degradable. There is no risk from fire as the metal is not combustible.	**N/A**
Your limits must also reflect the constraints of the available space and processes. You must include factors like seasonal changes in supplies of inputs, and markets for outputs.	Capacity is designed on the capability of the site to store and treat waste and is not subject to seasonality.	**Yes**

Further information on determining capacity is available in our RGN 2 guidance.		

4.3 MANAGEMENT

Table 4-2 below shows appropriate measures with regards to management from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 4-2 Appropriate measures for management

BAT Condition	Actual	BAT Adopted?
Operations and Maintenance		
Effective operational and maintenance systems should be employed on all aspects of the process whose failure could impact on the environment, in particular there should be: • documented procedures to control operations that may have an adverse impact on the environment • a defined procedure for identifying, reviewing and prioritising items of plant for which a preventative maintenance regime is appropriate • documented procedures for monitoring emissions or impacts • a preventative maintenance programme covering all plant, whose failure could lead to impact on the environment, including regular inspection of major 'non-productive' items such as tanks, pipework, retaining walls, bunds ducts and filters.	Certain key pieces of equipment are subject to annual services and inspections which include: ▪ Donaldson Torritt dust collection system; ▪ Local exhaust ventilation system; Both the existing and new pickling process is subject to a full service three times per year which also includes the scrubber system. Shot blasters are a destructive process and are maintained through the replacement of parts when they wear out.	**Yes**
The maintenance system should include auditing of performance against requirements arising from the above and reporting the result of audits to top management.	Maintenance activities will be audited as part of the EMS when fully implemented.	**Yes**
Competence and Training		
Training systems, covering the following items, should be in place for all relevant staff which cover	Training will be provided to staff with regards to the requirements of the environmental permit once it is issued.	**Yes**

• awareness of the regulatory implications of the Permit for the activity and their work activities; • awareness of all potential environmental effects from operation under normal and abnormal circumstances • awareness of the need to report deviation from the Permit • prevention of accidental emissions and action to be taken when accidental emissions occur	Training will also be given to staff with regards their requirements under the EMS.	
The skills and competencies necessary for key posts should be documented and records of training needs and training received for these posts maintained.	All operators signed off as competent for each piece of equipment they operate. Training is undertaken via a qualified trainer for each piece of equipment. Competence is evaluated by on the job evaluation as the trainer has the operator talk through the process from start to finish as they perform the task. Upon successful completion the operator is authorised by the trainer and they both sign the training form along with the Site Manager and this is held within the training records. The site has a skills matrix which shows what each individual is trained on.	**Yes**
The key posts should include contractors and those purchasing equipment and materials;	Staff purchasing equipment and materials will be provided with training on the EMS.	**Yes**
The potential environmental risks posed by the work of contractors should be assessed and instructions provided to contractors about protecting the environment while working on site.	All contractors will be notified of their requirements under the company EMS whilst on site.	**Yes**
Where industry standards or codes of practice for training exist (e.g. WAMITAB) they should be complied with.	Several members of key staff are undertaking the Environmental Permitting Operators Certificate training (EPOC).	**Yes**
Accidents/Incidents/non-conformance		
There should be an accident plan as described in Section 2.8 on page 89 which:	Accident management plan not currently available.	**No**

• identifies the likelihood and consequence of accidents • identifies actions to prevent accidents and mitigate any consequences		
There should be written procedures for handling, investigating, communicating and reporting actual or potential non-compliance with operating procedures or emission limits.	There is an incident investigation form and accident near miss reporting form in the developmental EMS.	**Yes**
There should be written procedures for handling, investigating, communicating and reporting environmental complaints and implementation of appropriate actions.	There are procedures in place for the management and handling of environmental complaints within the EMS. This is through: ▪ Accident, Incident, near miss report; and ▪ Incident investigation form	**Yes**
There should be written procedures for investigating incidents, (and near misses) including identifying suitable corrective action and following up.	There are procedures in place for the management and handling of environmental complaints within the EMS. This is through: ▪ Accident, Incident, near miss report; and Incident investigation form	**Yes**
Organisation		
The company should adopt an environmental policy and programme which: • includes a commitment to continual improvement and prevention of pollution; • includes a commitment to comply with relevant legislation and other requirements to which the organisation subscribes; and • identifies, sets, monitors and reviews environmental objectives and key performance indicators independently of the Permit.	An Environmental Policy will be in place which is to align with the requirements of ISO14001.	**Yes**
The company should have demonstrable procedures (eg. written instructions) which incorporate environmental considerations into the following areas: • the control of process and engineering change on the installation;	The site is developing an EMS which will be in place Quarter 4 of 2020.	**Yes**

• design, construction and review of new facilities and other capital projects (including provision for their decommissioning); • capital approval; and • purchasing policy.		
The company should conduct audits, at least annually, to check that all activities are being carried out in conformity with the above requirements. Preferably, these should be independent.	The site is developing an EMS which will be in place Quarter 4 of 2020 and will include an audit programme to check the EMS is being followed on at least an annual basis.	**Yes**
The company should report annually on environmental performance, objectives and targets, and future planned improvements. Preferably, these should be published environmental statements.	The company environmental performance will be reported annually to the Environment Agency in line with the requirements of the environmental permit.	**Yes**
The company should operate a formal Environmental Management System. Preferably, this should be a registered or certified EMAS/ISO 14001 system (issued and audited by an accredited certification body).	The site is developing an EMS which will be in place Quarter 4 of 2020.	**Yes**
The company should have a clear and logical system for keeping records of, amongst others: • policies • roles and responsibilities • targets • procedures • results of audits • results of reviews	The site is developing an EMS which will be in place Quarter 4 of 2020.	**Yes**

4.4 RAW MATERIALS

Table 4-3 below shows appropriate measures with regards to raw materials from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 4-3 Appropriate measures for raw materials

BAT Condition	Actual	BAT Adopted?
The Operator should maintain a list of raw materials and their properties as noted above.	See Table 4-4 below.	**Yes**
The Operator should have procedures for the regular review of new developments in raw materials and for the implementation of any suitable ones with an improved environmental profile.	Raw materials and their suitability for use will be reviewed at least annually as part of the annual management review.	**Yes**
The Operator should have quality-assurance procedures for controlling the impurity content of raw materials.	All raw materials are delivered in accordance with the specifications of the product as detailed within the relevant safety data sheets. These are purchased from approved suppliers.	**Yes**
The Operator should complete any longer-term studies needed into the less polluting options and should make any material substitutions identified.	This will be undertaken by those involved in research and development and will be reported to management as appropriate.	**Yes**
The substitutions in Table 2.9 should be employed, where applicable.	Where applicable substitutions will be made for less harmful raw materials where they provide the same level of performance as the current raw materials.	**Yes**

Table 4-4 Raw Materials used at site

Material and Composition	Use of Material	Risks	Approximate Annual Usage (litres)	Environmental Impact Where Known e.g. degradability, bioaccumulation potential, toxicity)	Suitable Alternative for those with Significant Impact Potential / Justification
			Current		
Hydrochloric acid (HCl) 32%	Pickling Process	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation.	10,000	Forms corrosive mixtures with water even if diluted. Harmful effect due to pH shift. Discharge into the environment must be avoided.	Not applicable – major raw material required for pickling process.

Material and Composition	Use of Material	Risks	Approximate Annual Usage (litres) Current	Environmental Impact Where Known e.g. degradability, bioaccumulation potential, toxicity)	Suitable Alternative for those with Significant Impact Potential / Justification
Ferric Chloride 40%	Pickling Process	H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H401 Toxic to aquatic life	3,000	Harmful to aquatic life. Avoid release to the environment.	Not applicable – major raw material required for pickling process.
Sodium Hydroxide (NaOH)	Scrubber	H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H402 Harmful to aquatic life	5,000	Harmful to crustacea. Harmful to fishes. Groundwater pollutant. pH shift.	Not applicable – major raw material required for neutralisation of acid fumes.
Ferric Chloride/HCl Blend	Pickling Process	H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H401 Toxic to aquatic life	10,000	Harmful to aquatic life. Avoid release to the environment.	Not applicable – major raw material required for pickling process.

4.5 WATER USE

Table 4-5 below shows appropriate measures with regards to water use from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 4-5 Appropriate measures for water use

BAT Condition	Actual	BAT Adopted?
The Operator should carry out a regular review of water use (water efficiency audit) at least every 4 years. If an audit has not been carried out in the 2 years prior to submission of the application and the details made known at the time of the application, then the first audit should take place	Water use will be reported annually. The site is a very low user and only uses 298 m^3 per year. The additional pickling line will add a further 40m^3 of water use annually. The site has very limited use of water and a water audit would be of limited benefit.	**Yes**

within 2 years of the issue of the Permit. • Flow diagrams and water mass balances for the activities should be produced. • Water-efficiency objectives should be established, with constraints on reducing water use beyond a certain level being identified (which usually will be usually installation specific). • Water pinch techniques should be used in the more complex situations such as chemical plant, to identify the opportunities for maximising reuse and minimising use of water (see the Water efficiency references:).		
Within 2 months of completion of the audit, the methodology used should be submitted to the Regulator, together with proposals for a time-tabled plan for implementing water reduction improvements for approval by the Regulator.	The site has very limited use of water and a water audit would be of limited benefit.	**N/A**
The following general principles should be applied in sequence to reduce emissions to water: • Water-efficient techniques should be used at source where possible • Water should be recycled within the process from which it issues, by treating it first if necessary. Where this is not practicable, it should be recycled to another part of the process that has a lower water-quality requirement • In particular, if uncontaminated roof and surface water cannot be used in the process, it should be kept separate from other discharge streams, at least until after the contaminated streams have been treated in an effluent treatment system and been subject to final monitoring.	The water dip tanks are reused for approximately 3-4 weeks before they are emptied to an IBC and disposed of.	**Yes**
Measures should be in place to minimise the risk of contamination of surface waters or groundwater by fugitive releases of liquids or solids.	Both pickling lines are within bunds in a building and therefore there is no risk to either surface water or groundwater.	**Yes**
The water-quality requirements associated with each use should be established, and the scope for substituting water from recycled	All water streams, limited as they are, are used for cleaning water and need to be of highest quality.	**N/A**

sources identified and input into the improvement plan.		
Less contaminated water streams, such as cooling waters, should be kept separate from more contaminated streams where there is scope for reuse - though possibly after some form of treatment.	All water streams, limited as they are, are used for cleaning water and need to be of highest quality.	**N/A**
Most wastewater streams will however need some form of treatment (see Section 2.2.2 on page 62 for techniques) but for many applications, the best conventional effluent treatment can produces a water that is usable in the process directly or when mixed with fresh water. Though treated effluent quality can vary, it can often be recycled selectively - used when the quality is adequate, discharged when the quality falls below that which the system can tolerate.	The water in the pickling dip tanks is reused until the acid tanks are emptied then they are also emptied before they get too contaminated.	**Yes**
In particular, the cost of membrane technology continues to reduce, and they can be applied to individual process streams or to the final effluent from the effluent treatment plant, as appropriate. In some applications in some Sectors, they can supplement (or possibly completely replace) the ETP plant so that most water is recyclable and there is a greatly reduced effluent volume. Where the remaining, possibly concentrated, effluent stream is sufficiently small - and particularly where waste heat is available - further treatment by evaporation can lead to zero aqueous effluent. Where appropriate, the Operator should assess the costs and benefits of using membrane techniques to minimise water usage and effluent discharge.	The site is a low user of water at 298 m^3/year an considers that the cost would significantly outweigh the benefit in using membrane technology to clean the water for reuse. This would also generate a concentrated effluent stream which would need to be disposed of.	**N/A**
Water usage for cleaning and washing down should be minimised by: • vacuuming, scraping or mopping in preference to hosing down; • reusing wash water (or recycled water) where practicable; • using trigger controls on all hoses, hand lances and washing equipment.	Pressure washer with trigger hoses are used for washing of post pickling metals.	**Yes**

Fresh water consumption should be directly measured and recorded regularly at every significant usage point - ideally on a daily basis.	Water consumption is monitored and recorded. The site is not a significant user of water and does not need to monitor it daily.	**Yes**

4.6 ENERGY

Table 4-6 below shows appropriate measures with regards to energy use from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 4-6 Appropriate measures for energy use

BAT Condition	Actual	BAT Adopted?
The Operator should provide the energy consumption information, shown in the table below, in terms of delivered energy and also, in the case of electricity, converted to primary energy consumption. For the public electricity supply, a conversion factor of 2.6 should be used. Where applicable, the use of factors derived from on-site heat and/or power generation, or from direct (non-grid) suppliers should be used. In the latter cases, the Operator should provide details of such factors. Where energy is exported from the installation, the Operator should also provide this information. All this information should be submitted in the application (in England and Wales the H1 software tool should be used to produce this information). The Operator should also provide energy flow information (such as “Sankey” diagrams or energy balances) showing how the energy is used throughout the process.	See Table 4-7 below. The additional activities are not expected to change the energy use at the site significantly. The site is a low user of electricity.	**Yes**
The Operator should provide the following Specific Energy Consumption (SEC) information. Define and calculate the SEC of the activity (or activities) based on primary energy consumption for the products or raw material inputs that most closely match the main purpose or production capacity of the installation. Provide a comparison of SEC against any	Where available the site will compare its SEC against any sector specific benchmarks.	**To be confirmed after issue of appropriate benchmark from Environment Agency.**

relevant benchmarks available for the sector. (See Energy Efficiency Guidance)		
The Operator should provide associated environmental emissions. This is dealt with in the Operator's response to the emissions inventory using the H1 software tool.	See Table 4-7 below.	**Yes**

Table 4-7– Current and Future Estimated Annual Energy Consumption

Energy Source	Current Delivered Energy Consumption (MWh)[1]	Current Primary Energy Consumption (MWh)[1]	Future Delivered Energy Consumption (MWh)[2]	Future Primary Energy Consumption (MWh)[2]
Electricity from public supply	257.193	617.26[3]	257.193	617.26[3]
Gas	38.488	38.488	38.488	38.488
Oil	0	0	0	0
Biomass	0	0	0	0

Notes:
1. Current energy consumption based on 2019 data for the existing pickling process.
2. Future energy consumption is a best estimate at this stage based on the proposed addition of new pickling process.
3. Electricity imported from the grid is multiplied by a factor of 2.4 to account for heat losses from thermal generation.

4.7 ACCIDENTS

Table 4-8 below shows appropriate measures with regards to accidents from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 4-8 Appropriate measures for accidents

BAT Condition	Actual	BAT Adopted?
A formal structured accident management plan should be in place which covers the following aspects: A - Identification of the hazards B - assessment of the risks. C - identification of the techniques necessary to reduce the risks.	An EMS is in development for Quarter 4 2020. An accident management plan is not currently in place.	**No**

4.8 WASTE ACCEPTANCE

4.8.1 WASTE PRE-ACCEPTANCE

The site does not accept just any metal, but very specific metals made of specialist high value alloys. This is sourced from specific manufacturers who look to dispose of specialist items such as turbine blades or from waste sites for specific high value alloys. These would be subject to a detailed analysis in order for Avon Speciality Metals to get the specific alloys they purchase and those that are able to be treated for resale.

The analysis is provided with the associated delivery paperwork.

4.8.2 WASTE ACCEPTANCE AND STORAGE

Upon arrival the delivery vehicle enters through the roller shutter door to the reception area. They are then inspected for suitability to off-load e,g that the load has not slipped in transit. They are then off-loaded to an appropriate location after the paperwork is checked.

The metal is received into bay 1 which is the acceptance area. Each item in the delivery is given a work in progress (WIP). No metal is allowed forward into production with a WIP number, this signifies that the material has not yet been tested to ensure conformity to purchase order.

The delivery is weighed in and compared with the delivery paperwork to ascertain whether there are any discrepancies.

The metal is then subject to material analysis to provide further detailed information on the metal's composition and verify that the received metal is as described from the supplier. This is done via the use of a Thermo Scientific Niton Goldd X62 x-ray unit which is a handheld device. This is held to the metal surfaces and analyses the metal against a library of known alloys. This breaks down the elements in the alloy and is attached to the load along with the WIP number.

Not every item in the load is tested but a representative sample is assessed. For example, if a 2-tonne load is received then the sample requirement can be anything between 10% and 100% using the handheld x-ray device. If any non-conforming material is found, then the sample is dismissed, and a 100% check is completed. Any items which do not look visually correct compared to the rest of the load will be checked more thoroughly.

When the sorting takes place and the alloy is confirmed, the information is recorded on an Out Turn (sorting sheet) for each individual container, a hand-written label is placed on the container(s) for the interim until the delivery has been completed. Once sorting has been completed for the load, then the out turn will be taken into the office and either IWIP labels or FG labels will be produced to replace the WIP label.

Any of the metal loads within the facility will have one of 3 labels associated with it. These are:

- WIP- metals which have arrived but not yet been tested;
- I-WIP- metal that has been tested and is awaiting further processing; and
- FG- these are finished goods which have been processed and quality assured and is awaiting collection for despatch to end user.

Once the load has been qualified as to the alloy that is received then it goes forward for treatment. The metal is stored on pallets, in drums or containers on pallets in a bay within a racking system awaiting treatment.

In addition, there is an onsite laboratory with an XRF machine, this will provide a true analysis of material down to parts per million (PPM), an ICP machine due to be installed in the near future to provide a true analysis to parts per Billion (PPB), a polishing and preparation machine and Leco Units for gas levels (Nitrogen, Oxygen, Hydrogen, Carbon and Sulphur) found within the alloys.

4.9 WASTE TREATMENT

Table 4-9 below shows appropriate measures with regards to waste recovery or disposal from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013. The appropriate measures shown are only those relevant to the treatment of metal.

Table 4-9 Appropriate measures for treatment-general principles

BAT Condition	Actual	BAT Adopted?
Provide adequate process descriptions of the activities and the abatement and control equipment for all of the activities such that the Regulator can understand the process in sufficient detail to assess the operator's proposals and in particular to be able to assess opportunities for further improvements. This should include: • diagrams of the main plant items where they have environmental relevance, for example, storage, tanks, treatment and abatement plant design, etc. • details of chemical reactions and their reaction kinetics/energy balance • equipment inventory, detailing plant type and design parameters, for example, flashpoints • waste types to be subjected to the process • control system philosophy and how the control system incorporates environmental monitoring information • process flow diagrams (schematics) • venting and emergency relief provisions • summary of operating and maintenance procedures	See process description and details within section 2.2. Waste types subject to the process are metals as defined by the EWC codes in Section 3.2. There are no chemical reactions which would have an energetic release. The chemicals cause the dissolution and removal of the thermal barrier or coating on the metal treated within the pickling process.	**Yes**

• a description of how protection is provided during abnormal operating conditions such as, runaway reactions, unexpected releases, start-up, momentary stoppages and shut-down for as long as is necessary to ensure compliance with release limits in Permits • additionally, for some applications, it may be appropriate to supply process instrumentation diagrams for systems containing potentially polluting substances		
Provide an assessment of the efficiency of the treatment process in relation to Schedule 5 (of the PPC Regulations) pollutants in terms of the removal or partition of substances within the process, for example: • the precipitation of metals from solution for removal in the filter cake • the degree of transfer between the incoming waste and the emissions (to air, solid waste to land and liquid effluent to sewer of, for example, pesticides or solvents)	The treatment process is designed to remove 100% of the coating or thermal barrier of the metal. If any remains on the metal this can be seen due to the colouration on the metal and can be tested for by using the handheld x-ray machine. If there are still some small amounts of the barrier/coating left the metal is returned to the pickling process for more time to allow the treatment to fully take place.	**Yes**
The Operator should analyse these parameters using the following steps: • process mapping - identify the pathways within the process for the specific substance or substances • mass balance • action plan - if the study indicates that losses from a process are contributing to: – the breach of an Environmental Quality Standard – the breach of benchmark – a significant environmental impact	The process is a very simple process in that it is a tank and a dip tank to rinse the treated metal. This activity has been in place for a number of years and the staff are aware of how to manage the treatment activity. This is a very low impact process that does not result in a significant environmental impact.	**Yes**
Then an action plan should be prepared and implemented.	The site is currently developing an EMS.	**Yes**
For each treatment process, the objectives and reaction chemistry should be clearly defined. There must be a defined end-point to the process so that the reaction can be monitored and controlled. The suitable	The end point of the pickling process is the removal of the coating/thermal barrier. This is checked using the hand-held x-ray machine. The duration of treatment in the pickling process is known for the removal of the coating/barrier.	**Yes**

inputs to the process must be defined, and the design must take into account the likely variables expected within the waste stream.		
For each new reaction, proposed mixes of wastes and reagents should be assessed prior to treatment in a scale laboratory test mix of the wastes and reagents to be used. This should lead to all reactions and mixing of wastes being to a predetermined batch "recipe". It should also take into account the potential scale-up effects, for example, increased heat of reaction with increased reaction mass relative to the reactor volume, increased residence time within the reactor and modified reaction properties. See HSG143 for further Guidance.	The new pickling process will take place of the current process and will perform the same duty with a larger capacity. The current pickling process will include an anode and cathode in each of the treatment tanks and will become a research and development process to trial a novel way of recovering metal from solutions by electrolysis.	**Yes**
The reactor vessel and plant should be specifically designed, commissioned and operated to be fit for purpose. Such designs should include consideration of chemical process hazards and a hazard assessment of the chemical reactions, prevention and protective measures together with consideration of process management i.e. working instructions, staff training, plant maintenance, checks, audits and emergency procedures.	The new pickling process is designed off the current pickling process and is designed for the specific treatment activity. The activity will be included in the EMS and the management of the process is included within procedures in the quality management system.	**Yes**
In order to track and control the process of change, there should be a written procedure for proposal, consideration and approval of changes to technical developments, procedural or quality changes.	This is included within the quality management system.	**Yes**
All treatment/reaction vessels should be enclosed and should be vented to atmosphere via an appropriate scrubbing and abatement system (subject to explosion relief).	The lids are kept on the pickling tanks until the baskets are removed. The fumes are then discharged via a fume extraction hood via a scrubber which is a water bath which is trickle fed sodium hydroxide in order to neutralise the acid fume.	**Yes**
Where appropriate, reactor vessels (or mixing vessels where the treatment is carried out) should be charged with pre-mixed wastes and reagents. For example, reactor vessels should be "pre-limed" or charged first with the reacting alkali to control the reaction using, for example, calcium hydroxide	The acid mixture is good for 3-4 weeks before requiring replacement and each load of metals for treatment is loaded in via basket.	**Yes**

solution made up prior to charging the reactor vessel. The decanting of sacks or drums to the vessel should be avoided. Failure to charge the vessel can lead to: • concentration “hot spots” at the surface of the reaction liquor • loss of reaction control • emission of fume from the instantaneous reaction at the interface • the open hatch venting any fume and by-passing appropriate abatement		
The reaction should be monitored to ensure that the reaction is under control and proceeding towards the anticipated result. For this purpose, vessels used for treatment should be equipped appropriately eg. high-level, pH and temperature monitors. These should be automatic and continuous and linked to a clear display in the control room or laboratory together with an audible alarm. Risk assessment may require process monitors to be linked to cut-off devices.	The reaction is the dissolution of the thermal barrier. It is not an energetic or potentially uncontrollable reaction which requires secondary monitoring to ensure it is controlled. This process takes places over a number of hours to ensure that all of the coating is removed.	**Yes**

4.10 AVOIDANCE, RECOVERY AND DISPOSAL OF WASTES

Table 4-9 below shows appropriate measures with regards to waste recovery or disposal from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 4-9 Appropriate measures for waste recovery or disposal

BAT Condition	Actual	BAT Adopted?
Waste production should be avoided wherever possible. Any waste that is produced should be recovered, unless it is technically or economically impractical to do so.	Waste metal is brought to site to be treated for sending to customers to be recovered. Drums and IBCs reused wherever practicable for onward transport of recovered metals or for the acid tanks and water bath contents when requiring change.	**Yes**
Where waste must be disposed of, the Operator should provide a detailed assessment identifying the best environmental options for waste disposal - unless the Regulator agrees	See Table 4-10 with regards to disposal or recovery routes for waste streams.	**Yes**

that this is unnecessary. For existing disposal activities, this assessment may be carried out as an improvement condition to a timescale to be approved by the Regulator.		

Table 4-10 - Current and Future Estimated Waste Stream and Quantities

Waste Type	Origin	Storage Details	Method of Transfer and Disposal	Current Generation per Year	Justification for Disposal
Acid waste	Pickling process	IBCs	Waste contractor CSG for treatment and disposal	34,320	In accordance with waste contractor assessment.
Aqueous waste	Pickling process	IBCs	Waste contractor CSG for treatment and disposal	27,840	In accordance with waste contractor assessment.

4.11 ENVIRONMENTAL RISK ASSESSMENT

See Appendix B.

4.12 GLOBAL WARMING POTENTIAL

Impacts with regards to global warming from the activities undertaken at the site is assessed in accordance with the following guidance https://www.gov.uk/guidance/assess-the-impact-of-air-emissions-on-global-warming**.**

The carbon dioxide released due to the power used at site is shown below.

Table 4-11 – Carbon dioxide release from power use

Fuel	Conversion factor: tonnes per megawatt hour	Conversion factor for indirect use	MWh used 2019	CO_2 released tonnes
Electricity from national grid	0.166	2.4	257.193	102.46
Natural Gas	0.19	-	38.488	7.31

Total	109.77

This shows the total released from the facility in 2019 was 109.77 tonnes. The site does not have any onsite direct sources of combustion.

4.13 CLIMATE CHANGE RISK SCREENING

The climate change risk screening tool from the Environment Agency has been completed and can be seen in Appendix E.

Some of the considerations when undertaking the climate change risk assessment can be seen below:

- The process is not temperature sensitive.
- There is no heating or cooling demand in the process therefore this will not cause any adjustment to activities.
- All activities take place internally.
- Surface water drainage can be reviewed if the increase in rainfall causes any localised pooling of surface water during rainfall events.
- The site is a low consumer of water and therefore water scarcity would have limited impact on the site.
- The site does not abstract water and supply through Severn-Trent water is assured.

5 EMISSIONS AND MONITORING

5.1 POINT SOURCE EMISSIONS TO AIR, WATER OR LAND

5.1.1 POINT SOURCE EMISSIONS TO AIR

Table 5-1 below shows appropriate measures with regards to control of point source emissions to air from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 5-1 Appropriate measures for control of point source emissions to air

BAT Condition	Actual	BAT Adopted?
In conjunction with information in this Guidance Note, information and recommendations in the BREF on Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector should be formally considered as part of the assessment of BAT for point source releases to air.	The BREF on Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector was considered with regards to consideration of appropriate measures for emissions to air.	**Yes**
Abatement is used to clean what could be termed incidental emissions from a process. Emphasis should be placed on the prevention of the production and displacement of pollutants. Abatement can be readily overloaded and become ineffective. Abatement techniques should not be used as an inline process tool as part of the treatment process.	The abatement in place is to ensure workplace safety with regards to employees for occupational exposure levels within the cutting and grinding area and pickling process areas. The cutting and grinding emissions are periodic in relation to use of the equipment and the pickling processes are lidded the majority of the time with the abatement only in use when the tanks are being loaded or unloaded.	**Yes**
Operational control is required to prevent the production of gas during any mixing process. In a dilute aqueous system it should be possible to conduct neutralisation processes without either deliberately or inadvertently producing gases as described above. In such systems, processes involving potentially hazardous substances, for example, acid neutralisation can normally be performed without creating substances that require continuous abatement, for example, SOx, etc. However, the production of such substances may occur and abatement, for example, wet scrubbing should therefore be installed.	No mixing processes occur. The neutralisation of the acid fume takes place in the scrubber system.	**Yes**

Correctly operate and maintain the abatement equipment, including the handling and disposal of spent scrubber medium or spent carbon.	The scrubber units are subject to 3 services per year as part of the planned maintenance programme.	**Yes**
The benchmark values for point source emissions to air listed in Section 3.2.1 on page 112 should be achieved unless alternative values are justified and agreed with the Regulator.	Point source emission limit from enclosed systems 50 mg/m^3 with regards to particulates. There is no particulate release from the pickling vessels which then subsequently pass through the water bath scrubber which would wash out any particulates.	**Yes**
The main chemical constituents of the emissions should be identified, including VOC speciation where practicable.	The main emission from the scrubber units would be acid fumes and from the Donaldson Toritt system particulate matter. No VOCs are released.	**Yes**
Vent and chimney heights should be assessed for dispersion capability and an assessment made of the fate of the substances emitted to the environment (see Section 4 on page 125).	The stacks for the scrubber units and dust extraction system are mainly for the purposes of local exhaust ventilation with the systems included to treat any incidental emissions.	**N/A**
Even where particulate benchmarks are already met, the aim should be to avoid visible emissions. However, because plume visibility is extremely dependent on the particle size and reflectivity, the angle of the light, and the sky background, it is accepted that, even when BAT is employed and very low emissions are being achieved, some plumes may still be visible under particular conditions.	The system is checked daily and there is no sign of visible emissions. The Donaldson Toritt has a drum underneath for the capture particulate metal as it is a valuable commodity still and is sold on so it is advantageous to capture as much as possible.	**Yes**
The need to minimise water vapour plumes should always be considered as, in addition to possible local visual amenity issues, in severe cases, plumes can cause loss of light, fogging, icing of roads, etc. High moisture content can also adversely affect plume dispersion so, where practicable, water content of the exhaust stream should be reduced. Ideally, the exhaust should be discharged at conditions of temperature and moisture content that avoid saturation under a wide range of meteorological conditions, including cold damp conditions.	No water vapour releases.	**N/A**

The use of primary energy to reduce a plume simply because it is visible is not considered BAT. However, it may be appropriate to use waste or recovered heat, for example, heat in a gas stream prior to wet scrubbing can be used for re-heating the exhaust stream after scrubbing by means of a gas-gas heat exchanger. The use of energy for exhaust gas re-heat should be balanced against the benefits gained.	No water vapour releases.	**N/A**
VOCs. Refer to Section 3.11 on page 124 for general thresholds for Class A and B substances seeTable 3.13: VOCs benchmark emission values	No VOC releases.	**N/A**
The Operator should justify whether or not abatement is required, assessing the impact of the emissions (this can be done in the response to Section 4.1 on page 125) and the costs of abatement (see Ref 2).	No water vapour releases.	**N/A**

5.1.2 POINT SOURCE EMISSIONS TO WATER

Table 5-2 below shows appropriate measures with regards to control of point source emissions to surface water and sewer from Sector Guidance Note IPPC s5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste May 2013.

Table 5-2 Appropriate measures for control of point source emissions to surface water and sewer

BAT Condition	Actual	BAT Adopted?
In conjunction with information in the following sections of this Guidance Note (Sections 2.2.2.1-2.2.2.9), information and recommendations in the BREF on Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector (see Ref 7) should be formally considered as part of the assessment of BAT for point-source releases to surface water or sewer.	The BREF on Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector was considered with regards to consideration of appropriate measures for emissions to air.	**Yes**
The following general principles should be applied in sequence to control emissions to water:	Only 298m^3 of water is used each year at the site currently with the new pickling process increasing this by 40m^3 per annum.	**Yes**

• water use should be minimised and wastewater reused or recycled (see also Section 2.4.3 on page 81) • contamination risk of process or surface water should be minimised (see also Section 2.2.5 on page 71) • wherever possible, closed loop cooling systems should be used and procedures in place to ensure blow down is minimised • where any potentially harmful materials are used measures should be taken to prevent them entering the water circuit	All activities take place indoors with no risk of contamination of surface water.	
Consideration should be given to the use of filtration/osmosis or other techniques which allow the effluent water to be cleaned for release or, preferably, for return to the process. Particular consideration should be given to the fate of the concentrated residues of such techniques. These can often be returned to furnaces, evaporated, solidified, sent for incineration etc. Tankering of such residues off the site as waste, simply transfers the problem to another place unless they are sent to a facility with the genuine ability to recycle the materials.	Given the very small discharge of process effluent from the vibro barrelling process which is mainly water with low levels of detergent it is not considered appropriate. The vibro barrelling discharges 15 gallons per hour but only runs for a day at a time every other month and is very periodic.	**N/A**
If the pollutants in the wastewater are all readily biodegradable or the effluent contains only materials which are naturally occurring in much larger quantities in the receiving water, there may be justification for filtration/osmosis or similar techniques not being considered appropriate.	The discharge from the vibro barrelling is to sewer and any small amounts of dilute detergent included in the effluent would be readily treated at the local sewage treatment works.	**N/A**
Where prevention is not possible, the emissions benchmarks given in Section 3 on page 110, should be achieved.	The discharge from the vibro barrelling is to sewer and any small amounts of dilute detergent included in the effluent would be readily treated at the local sewage treatment works and would meet the relevant water quality standards.	**Yes**
Where effluent is treated off-site at a sewage treatment works the above factors still apply. In particular, it should be demonstrated that:	The discharge from the vibro barrelling is to sewer and any small amounts of dilute detergent included in the effluent would be readily treated at the local sewage treatment works.	**N/A**

• when considering emission limit values for releases from the installation to sewer, the treatment provided at the sewage treatment works is as good as would be achieved if the emission were treated on-site, based on reduction of load (not concentration) of each substance to the receiving water. (The IPPC Environmental Assessments for BAT - H1 Software tool will assist in making this assessment.) • action plans are appropriate to prevent direct discharge of the waste-waters in the event of sewer bypass, (via storm/emergency overflows or at intermediate sewage pumping stations) - for example, knowing when bypass is occurring, rescheduling activities such as cleaning or even shutting down when bypass is occurring. • a suitable monitoring programme is in place for emissions to sewer.	The vibro barrelling discharges 15 gallons per hour but only runs for a day at a time every other month and is very periodic.	
There must be an understanding of the main chemical constituents of the treated effluent (including the make-up of the COD and the presence of any substances of particular concern to the aqueous environment). The fate of these chemicals in the environment should be assessed.	There are no substances of particular concern discharged.	**Yes**
The primary objective of a waste water treatment operation has been to produce an effluent that can be transferred to the sewerage undertaker under the terms of a trade effluent discharge consent. It must be emphasised that, if emissions can be reduced further than the treatment provided by the undertaker, or prevented altogether, at reasonable cost, then this should be done irrespective of the requirements of a trade effluent consent. BAT therefore can go further than existing consents. Furthermore, irrespective of the receiving water, the adequacy of the plant to minimise the emission of specific persistent harmful substances must also be considered. Guidance on treatment of persistent substances can	The discharge from the vibro barrelling is to sewer and any small amounts of dilute detergent included in the effluent would be readily treated at the local sewage treatment works.	**Yes**

be found in References (see Releases to water references Ref. 7).		
As a minimum, all emissions should be controlled to avoid a breach of water quality standards (see Section 3.2 on page 112 and Section 4.1 on page 125), but where another technique can deliver better results at reasonable cost it will be considered BAT and should be used (see Section 1.1 on page 2). Unless reasonably self-evident, the EQS and BAT points should be demonstrated by calculations and/or modelling in the Application.	The discharge from the vibro barrelling is to sewer and any small amounts of dilute detergent included in the effluent would be readily treated at the local sewage treatment works and would meet the relevant water quality standards.	**Yes**
Effluent management within a waste treatment installation can be classified as shown in Effluent management techniques Table 2.7.	Very little effluent is generated. That which is generated is primarily water with a dilute amount of detergent which is used in the vibro barrelling process to clean some of the metal. Given the very small volume of effluent generated, the fact that there are no substances of concern in the effluent and that the volumes generated, and likely pollutants discharged are readily treated at the sewage treatment workst, it is considered that on-site treatment is not applicable and treatment methods have not been considered further.	**N/A**

5.1.3 POINT SOURCE EMISSIONS TO LAND

There are no point source emissions to land from the site.

5.2 EMISSIONS OF SUBSTANCES NOT CONTROLLED BY EMISSION LIMITS

This section outlines how the site will control any potential impact upon emissions of substances not controlled by emissions limits.

5.2.1 Fugitive Emissions to Water

Fugitive emissions to water are reviewed under four headings, as follows:

- Sub-surface structures and sumps;
- Surfacing;
- Bunds / Secondary Containment; and
- Storage areas for IBCs, drums and bags etc.

Sub-Surface Structures and Sumps

Table 5-3 below provides a list of all sub-surface structures and details of what materials they contain.

Table 5-3 – Sub-Surface Fugitive Emissions

Source	Substance Released	Estimated Release	Control and Monitoring Measures	Improvements Proposed
Surface water drains	Rainwater	Potential for fugitive releases from joints in the pipework	Regular inspections to ensure free flowing discharge. This includes a periodic check of road gullies and manholes.	None
Sump in pickling process areas	Acid mixture Contaminated water	Potential for fugitive releases from defects in sump	Regular inspections to ensure sump integrity.	None
Process effluent drains	Water reject from vibro barrelling process	Potential for fugitive releases from joints in the pipework	Periodic inspection to ensure free flowing discharge.	None
Foul water drains	Domestic sewage	Potential for fugitive releases from joints in the pipework	Local water authority inspections.	None

Surfacing

Table 5-4 below provides a list of all surface finishes on site with potential substances they may have to hold.

Table 5-4 - Surface Fugitive Emissions

Area	Design	Substance Contained	Actual Emissions	Control and Monitoring Measures
Pickling Processes	Impervious concrete hardstanding with sealed construction joints	Hydrochloric Acid Ferric Chloride Sodium Hydroxide	No emissions	A procedure for the management of the pickling process is in place. Any release collected in a sump which would be pumped to an IBC for removal off-site.

				In addition, surface integrity will be visually inspected three times per year when the process is serviced as part of the maintenance programme. Any defects noted and corrective action taken in accordance with procedures in the EMS.
Cutting, grinding and shot blasting	Impervious concrete hardstanding with sealed construction joints	Metal fragments	No emissions	Surface integrity will be visually inspected annually as part of the maintenance programme. Any defects noted and corrective action taken in accordance with procedures in the EMS.
Goods receipt, storage and dispatch areas	Impervious concrete hardstanding with sealed construction joints	Metal in various forms from sand to turbine blades.	No emissions	Procedures in place for the storage and handling of the incoming metal. In addition, surface integrity will be visually inspected annually as part of the maintenance programme. Any defects noted and corrective action taken in accordance with procedures in the EMS.
Waste storage areas	Impervious concrete hardstanding with sealed	Domestic waste Cardboard Plastic	No emissions	A procedure for handling all waste will be in place.

	construction joints	Wood		In addition, surface integrity will be visually inspected annually as part of the maintenance programme. Any defects noted and corrective action taken in accordance with procedures in the EMS.
Raw material storage areas	Impervious concrete hardstanding with sealed construction joints	Hydrochloric Acid Ferric Chloride Sodium Hydroxide	No emissions	A procedure for handling chemicals and oils will be in place. In addition, surface integrity will be visually inspected annually as part of the maintenance programme. Any defects noted and corrective action taken in accordance with procedures in the EMS.

Bunds / Secondary Containment

Table 5-5 below list all fixed tanks on site. Appropriate containment measures will be provided to ensure that any liquids stored in containers do not present an unacceptable risk to the environment or human health. A summary of the intended containment measures is included in the Table below.

All tanks will be impermeable and resistant to the stored materials and regularly inspected for their integrity.

Table 5-5 - Containment Measures for Tanks

Vessel / Tank	Is the structure bunded? (Y/N)	Description	Primary Containment	Secondary Containment	Tertiary Containment

Current Pickling Process					
4 acid tanks each 400 litres	Yes	Any release would be contained within the sump in the bund. This can then be pumped to an IBC for disposal.	Rigid plastic tank	Metal bund with sump	Concrete hardstanding within the wider building.
2 water dip tanks each 400 litres	Yes	Any release would be contained within the sump in the bund. This can then be pumped to an IBC for disposal.	Rigid plastic tank	Metal bund with sump	Concrete hardstanding within the wider building.
Newly Installed Pickling Process					
6 acid tanks each 1,200 litres	Yes	Any release would be contained within the sump in the bund. This can then be pumped to an IBC for disposal.	Rigid plastic tank	Metal bund with sump	Concrete hardstanding within the wider building.
2 water dip tanks each 1,200 litres	Yes	Any release would be contained within the sump in the bund. This can then be pumped to an IBC for disposal.	Rigid plastic tank	Metal bund with sump	Concrete hardstanding within the wider building.

Storage Areas for IBCs, Drums, Bags etc.

Table 5-6 below details indicative BAT requirements for fugitive emissions from GOV.UK guidance.

Table 5-6 - Indicative BAT Requirements for emissions of substances not controlled by emissions limits from GOV.UK Guidance

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
Emissions to water: You need to ensure that site surfaces, including roofs, hardstanding, working areas, and any containment structures required by your permit, such as bunds and other secondary containment measures, and your site drainage infrastructure	Tables 5-3, 5-4 and 5-5 detail how measures in place at site will prevent pollution to surface water and ground water. Surface water systems are separate to foul effluent drainage.	**Yes**

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
will prevent pollution to surface and ground water. Rainfall collection systems must be kept separate from contaminated, or potentially contaminated, areas of the site. Surfaces and containment and drainage facilities must be resistant to spilled chemicals. A plan should be included in your management system about how surfaces and containment facilities will be inspected and maintained. The following measures should be incorporated to prevent contaminated run-off polluting groundwater or surface waters: ▪ A waterproof surface ▪ Spill containment kerbs ▪ Sealed construction joints If you have a sealed drainage system, you must: ▪ Collect any liquid that passes through the system in a sealed sump unless you have a permit to discharge ▪ Dispose of collected liquid through a treatment facility or have it collected by a waste disposal company If your operation causes pollution you must: ▪ Clean up the pollution as soon as possible ▪ Stop the activity until you have changed your operation to prevent future pollution ▪ Inform the Environment Agency		
Leaks from Containers: Leaks or accidental releases of liquids that could cause pollution from tanks, sumps, containers and bunds must be prevented. You must design your site so that leaks from underground structures are prevented and detected quickly. A record of the route of any underground drains or pipework on site must be retained.	Only underground structures take surface water and foul sewage. The site has a foul and surface water drainage plan. See Appendix A. The only sumps are located within the bunds for the collection of any leaked acid. This is pumped to an IBC for disposal.	**Yes**

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
If oil is used, oil separators must be installed to surface water drainage systems. Containment for underground pipework, sumps and storage vessels must be provided. A leak detection system will need to be installed if site is located within a groundwater Source Protection Zone. A list must be kept of any underground sumps or storage vessels. These must be waterproof and resistant to any materials that will be stored in them. The following must be undertaken: ▪ Checks to ensure sumps and bunds are working correctly ▪ Hydraulic testing for any sumps or bunds you suspect are not working properly ▪ Fit a high-level probe to any sumps or bunds that you cannot check with an alarm Bunds must have a capacity larger than both: ▪ 110% of the largest tank the bund is protecting ▪ 25% of the combined volume of all the tanks the bund is protecting Bunds must also: ▪ Have no outlets ▪ Drain to a blind collection point ▪ Have self-contained pipework that is separate from the container pipework Any area where environmentally harmful substances are stored must be bunded. Substances must be stored separately if there is a hazard of storing them close to each other. Storage areas must: ▪ Be located away from watercourses, sensitive groundwater areas,	Bunds are sized to contain 110% of the largest tank or 25% of the total tankage. All storage areas are within the main building. Chemical bund in the corner of the workshop for IBCs of virgin sodium hydroxide, ferric chloride sulphuric acid blend. Spent acid and water washings are stored in a shipping container outside in the yard area which can hold 8 IBCs. This is to be changed to a racking system with bund.	

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
unprotected drainage systems and sensitive boundaries ▪ Be clearly marked and ensure any containers within them are clearly marked ▪ Define the maximum storage capacities for each storage area and container ▪ Have containers stored securely with lids, caps and valves in place ▪ Be inspected at least once a week to check not damaged		
Volatile Organic Compounds (VOCs): The following steps must be taken to prevent emissions of VOCs: ▪ Enclose any containers on site ▪ Fit equipment to capture VOCs on any vents on your site ▪ Install sealed transfer systems ▪ Use sub-surface filling via filling pipes extended to the bottom of the container ▪ Use floating roof tanks and bladder roof tanks ▪ Use tank vent systems that minimise breathing losses If VOCs are released on your site, the release must be countered with techniques such as adsorption or condensation. Vapour and fluid emissions must be prevented by: ▪ Managing inventories ▪ Preventing leaks from any pipework or fluid transport systems ▪ Using white paint, insulation and active temperature controls to reduce the temperature in storage tanks	Any drums of oil on site would be stored with their lids on unless they are being used to change lubricating or machine oil.	**Yes**

5.3 ODOUR

The received waste metal is not odorous, and it is considered that the site is very low risk with regards to odour.

Table 5-7 below details indicative BAT requirements for odour from GOV.UK guidance.

Table 5-7 - Indicative BAT Requirements for Odour from GOV.UK Guidance

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
You must prevent, or minimise where prevention is not possible, odour. Appropriate measures must be incorporated including: ▪ Restricting raw materials likely to cause odour ▪ Minimising quantities and storage times for odorous or potentially odorous materials ▪ Management materials and processes in ways which minimise the production of odorous chemicals ▪ Working within the effective operational capacity of the site ▪ Providing effective containment and abatement for odorous materials and activities	The metal to be treated is not odorous or degradable. Pre-application advice confirmed that an odour management plan was not required for this type of waste.	**N/A**
You must produce an odour management plan that details how odour will be prevented and/or minimised if your site causes odour pollution or if any of the following activities are undertaken: ▪ Landfilling biodegradable waste ▪ Household, commercial and industrial waste transfer system ▪ Composting in open windows ▪ Composting in vessels ▪ Mechanical biological treatment ▪ Sewage sludge treatment ▪ Clinical waste treatment ▪ Animal carcass incineration ▪ Pet cemetery	The metal to be treated is not odorous or degradable. Pre-application advice confirmed that an odour management plan was not required for this type of waste.	**N/A**

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
▪ Mobile plant for landspreading, the treatment of land for land reclamation, restoration or improvement and landscaping of sewage sludge ▪ Anaerobic digestion ▪ Mobile plant for the treatment of waste soils and contaminated material, substances, or products manufacture, use or recovery of compounds containing sulphur, ammonia, amines and amides, aromatic compounds, styrene, pyridine and esters ▪ Abattoirs and renderers ▪ Food production involving any form of cooking or heating and brewing ▪ Refineries ▪ Distilling or heating tar or bitumen		

5.4 NOISE AND VIBRATION

Table 5-8 below details indicative BAT requirements for noise from GOV.UK guidance.

Table 5-8 - Indicative BAT Requirements for Noise from GOV.UK Guidance

GOV.UK Requirements	Current Arrangements	BAT?
You must produce a noise and vibration management plan describing how noise and vibration will be prevented and/or minimised. You must do this if your risk assessment shows your operation could cause pollution from noise or vibration beyond your site boundary. Noise assessment and management plans must be completed using an appropriate standard such as BS4142:2014 'Methods for rating and assessing industrial and commercial sound'.	All activities take place within the main building. Deliveries are driven into the building to an off-loading area. All cutting and grinding operations take place in heavy duty sheeted enclosures within the main building. All doors are kept shut when not in use. All operations on site take place between the hours of 7.00 and 15.30. The site has never had any complaints with regards to noise. The risk assessment demonstrates that noise is considered to be low risk with all management controls in place. Therefore, a noise impact assessment or a noise and vibration management plan are not required.	**Yes**

5.5 PESTS

Table 5-9 below details indicative BAT requirements for pests from GOV.UK guidance.

Table 5-9 – Indicative BAT Requirements for Pest Management from GOV.UK Guidance

GOV.UK Requirements	Current Arrangements	BAT?
If your activity causes pests (such as birds or flies) you must control them by: ▪ Undertaking regular inspections ▪ Securing and removing waste that attracts scavenging birds or flies ▪ Employing professional pest controllers ▪ Using deterrent methods, such as scaring ▪ Netting A pest management plan is to be produced explaining how pests will be prevented or minimised.	The waste to be received at site is metal in various forms which is not attractive to pests as it is not edible nor able to be used for nesting purposes. A pest control contractor (Kilvermin) is used for the control of mice and rats.	**N/A**

5.6 MONITORING

Table 5-10 below details indicative BAT requirements for monitoring from GOV.UK guidance.

Table 5-10 - Indicative BAT Requirements for Monitoring from GOV.UK Guidance

GOV.UK Requirements	Current / Proposed Arrangements	BAT?
Must be possible to access monitoring points. Records must be kept of: ▪ Methods used to carry out checks ▪ Equipment used in checks and how it is calibrated ▪ Any maintenance required to enable checks ▪ Frequency of checks	The Donaldson Torritt is serviced annually. The pressure check system is checked daily to ensure that there is sufficient pressure across the filters. If not, this shows which cartridge needs to be replaced.	**Yes**

6 ENVIRONMENTAL IMPACT

6.1 INTRODUCTION AND OVERVIEW OF SECTION

This section provides an assessment of the potential significant local environmental effects of the foreseeable emissions from the site.

6.2 EMISSIONS TO AIR

The shot blasters, grinders and cutters vent via a Donaldson Torrit local exhaust ventilation extraction system. This system includes a cyclone and then filtration units fitted with 40 cartridges which collects all the dust particles/shot and metal which is collected in a drum and is then sent off-site for recycling also. There is a pressure control system which shows when filter cartridges need replacing. The unit is serviced each year and approximately 20 cartridges changed at the direction of the service engineer.

This is checked daily that it is performing correctly and that the filters are operating correctly.

In addition, there are two scrubber units, one for each pickling line, which are water baths which are trickle fed with sodium hydroxide in order to remove acid fume.

Both the scrubber units and the Donaldson Torritt are in place to ensure the health and safety of the workforce through meeting long-term and short-term exposure limits as the release from each stack would be minimal.

6.3 EMISSIONS TO WATER

The site discharges surface water to the local surface water drainage network.

The discharge to foul sewer comprises only domestic effluent and very small quantities of reject water from the vibro barrelling activity which comprises only water with a small amount of detergent. The water discharged can be 60 litres per hour when in use but there can be periods where the unit is used all day (7.5 hours as only 1 shift operation) or will not be used for a month.

6.4 ODOUR IMPACT ASSESSMENT

The environmental risk assessment screens the odour risk as very low and determines that a detailed odour impact assessment and odour management plan are not required. This has therefore not been considered further.

6.5 NOISE ASSESSMENT

The environmental risk assessment screens the noise risk as very low and that determines that a detailed noise impact assessment and noise and vibration management plan are not required. This has therefore not been considered further.

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