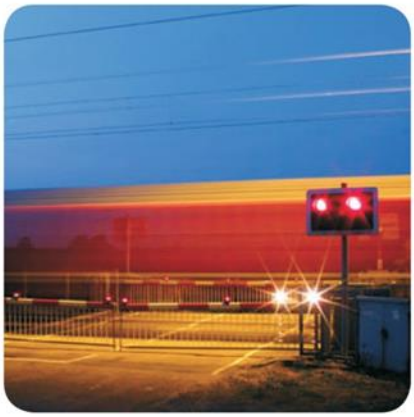
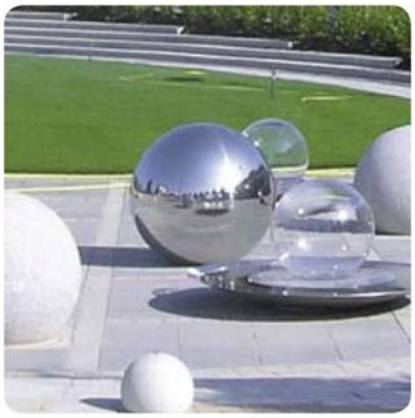
BAT Assessment

Sims Metal Management Avonmouth





Date: July 2018

Our Ref: JER1605

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Date:	04 July 2018	
Revision:	0	
Project Number:	JER1605	
Document Reference:	180703 R JER1605 AG BAT Assessment rev0	
Document File Path:	A:\JER1605 - Sims Permitting\Avonmouth\5. Reports\1. Draft Report\180703 R JER1605 AG BAT Assessment rev0.docx	

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Amendment Record

Revision No.	Date	Reason for Change	Authors Initials
0	04/07/2018	-	AG

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Tables, Drawings & Appendices

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1 Introduction

1.1 Overview

1.1.1 This BAT assessment has been produced to support Sims Group UK Limited's ('Sims') application to vary environmental permit EPR/PP3099FM to expand the site area and install a pre-shredder, a replacement 'downstream' plant, and covered storage bays within the new 'downstream' plant in order to increase the efficiency and improve the visual, noise and dust impacts of the plant.

1.1.2 The site receives, processes and recovers ferrous and non-ferrous metals from scrap and is located at Royal Edward Dock, St Andrews Road, Avonmouth, Bristol, BS11 9BT.

1.1.3 The site undertakes a range of waste management activities including:

- Storage and treatment of ferrous and non-ferrous metals;
- Storage and treatment of general mixed scrap metal;
- Storage and treatment of Waste Electrical and Electronic Equipment (WEEE);
- Storage and treatment of depolluted ELVs;
- Storage of polluted ELV (not currently undertaken);
- Storage of tyres (not currently undertaken);
- Storage of hazardous wastes (not currently undertaken); and,
- Storage and treatment of wastes consisting solely or mainly of dusts, powders or loose fibres e.g. 12 01 02 and 12 01 04 (not currently undertaken).

1.1.4 A fragmentiser (shredder) is installed at the facility that mechanically fragments and shreds infeed materials into smaller pieces. Fragmentised materials are then passed to the downstream processing plant that separates the metallic from non-metallic materials and produces discrete ferrous and non-ferrous metal outputs. Storage of fragmentised scrap and other ferrous grades is undertaken at a shredder yard and storage area (Q Berth).

2 BAT Assessment Summary

2.1.1 Table 2-1 below presents a summary of the techniques or equipment to be incorporated as part of the variation application, whether they are considered to be BAT by the relevant reference document, and where the information to support this can be found. Existing techniques and management systems, which will continue to encompass the existing and varied operations, can be found as part of the original permit application.

Table 2-1 BAT Assessment Summary1

Technique	BAT recommendation	Location of Supporting Information
Management Procedures		
Certified EMS	++++	No change – internal EMS
Certified QMS	++++	No change
Qualified staff/training programmes	++++	Update to include new plant
Noise/vibration management plan	++++	Noise Management Plan
Accident/emergency management plan	++++	AMP in place (part of EMS) to be updated with variation
Site diary	++++	No change – EMS
Annual Emissions Monitoring/Analysis		
Fugitive and depositional dust	++++	AQ Assessment (planning) / Dust Management Plan
Stack emission	++++	AQ Assessment (planning) / H1 Assessment
Water discharge analysis	++++	H1 Assessment
Fragmentiser residue	++++	Dust Management Plan / Operating Techniques
Noise and vibration	++++	Noise Management Plan
Waste Acceptance		
Acceptance Procedure	++++	No change – EMS
Risk Based Inspection and Acceptance	++++	No change – EMS

[1] Based on BAT summary table from 'BREF Style Report - Metal Fragmentising Operations, Industrial Emissions Directive (January 2003). Mayer Environmental, BMRA.' and additional BAT recommendations from EA sector guidance note IPPC S5.06 'Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste (May 2013). Environment Agency.'

Technique	BAT recommendation	Location of Supporting Information
Reception Areas	++++	No change – Operating Techniques
Inspection procedures	++++	No change – EMS
Radiation Screening	++++	No change – EMS
Quarantine Areas	++++	No change – Operating Techniques
Storage and Movement		
Covered conveyors and conveyor transfer point	++++	Operating Techniques / Noise Management Plan / Section 3.4
Covered storage bays	++++	Operating Techniques / Section 3.4
Water mist and sprays	++++	Section 3.4
Screening / Acoustic barriers/walls	++++	Noise management plan
Waste water management		
Appropriately Designed Drainage System	++++	Section 3.6
Foul Sewer Discharge	++++	H1 Assessment
On site water treatment and reuse	++++	No change
Sedimentation tanks and oil interceptors	++++	Section 3.6
Water use		
Water use reduction plan	++	Section 3.6
Metering at areas of use	++++	Section 3.6
Annual water use reporting	++++	Section 3.6
Calibrated Mill water injection systems	O	No change -shredder includes an automatic smart water system
Processing		
Pre-shredding	++	Operating Techniques / Section 3.5
Continual in feed inspection	++++	No change – Bale inspection procedure
Detailed inspection plans for bales	++++	No change – Bale inspection procedure
Detailed inspection plans for ELVs	++++	No change – EMS
Detailed inspection plans for CA scrap	++++	No change – EMS
Recycle wear parts	++++	EMS to be updated to include new plant
Protection of underlying ground and baseline		

Technique	BAT recommendation	Location of Supporting Information
Site investigation/monitoring	+++	SCR for extension area
Appropriate concrete paving	++++	SCR for extension area
Appropriate liquid storage	++++	SCR and ERA
Power use		
Power use reduction planning	++++	Section 3.6
Metering at areas of use	++++	Section 3.6
Metering of separate functions	++++	Section 3.6
Annual power use reporting	+++	Section 3.6

++++ Strongly recommended

+++ Recommended

++ Suggested

+ Desirable

O Not applicable

3 Supporting Information

3.1.1 This section sets out the techniques considered in the determination of BAT according to the BREF style report for metal fragmentising operations and EA sector guidance note S5.06, to support the application to vary permit EPR/PP3099FM. If the techniques will have changed with the variation application, the location of the relevant supporting information within the documents submitted as part of the variation is provided in the following paragraphs.

3.2 Management Systems

3.2.1 This facility currently operates an environmental management system (EMS) which follows the requirements of ISO14001, as described in the EMS summary submitted as part of the variation application.

3.2.2 A quality management system (QMS) with certification to ISO9001:2008 is also currently in place at the facility, which covers the scope of safe loading and unloading of bulk carriers

3.2.3 The operating techniques document for the variation application contains a description of the new activities to be carried out as a part of this variation as well as the current operational activities at the facility, including detail of each operational stage of the process.

3.2.4 Housekeeping procedures at the facility will remain as described in the main operating techniques document to prevent or reduce emissions from the facility and its operations. These have been updated to include the new areas and equipment included in the variation application.

3.3 Improving Knowledge of Waste Input

3.3.1 The materials received at the site are suitable for fragmentising and there will be no change in these as a result of the variation application. The currently accepted waste codes can be found in the main operating techniques document for the variation application and are consistent with those included in the permit.

3.3.2 The waste acceptance and pre-acceptance procedure is detailed within the EMS for the facility and will not change as a result of the variation. A summary is provided in the main operating techniques document for the variation application. The waste acceptance procedure will include pre-acceptance, inspection and specific bale inspection procedures. Sims undertake risk based assessments for baled and other infeed materials to base their inspection and pre-processing procedures before fragmentising. A pre-shredder will be installed as part of the variation and will process automotive baled materials before they enter the shredder. This will greatly reduce the possibility of deflagrations aka shredder energy releases / explosions. Further information concerning this pre-shredder can be found in Appendix 3 to the main operating techniques document.

3.3.3 There is a clear documented and auditable procedure for the assessment of potential infeed, as described in the Waste Acceptance Procedure in the EMS. This will not change as a result of the variation application. The reception and acceptance of drums and tanks is done only with a certificate of cleanliness, with prior notice and with hazard warning symbols obliterated.

3.3.4 Sims have established quarantine areas for materials that are prohibited, awaiting inspection, or awaiting testing or removal. These will not change as a result of the variation application and details of these are in the main operating techniques document for the variation.

3.3.5 There is a clearly designated material reception area, with trained staff controlling the inspection, reception and validation of materials at the site, and this will not change as a result of the variation application.

3.4 Management of Process Generated Residues

3.4.1 The management and storage of all materials is handled in such a way as to prevent or reduce emissions from the site. Details of the measures in place can be found in the main operating techniques document and Environmental Risk Assessment (ERA) accompanying the variation application for the facility. A dust management plan has been prepared and will be implemented to establish a protocol for managing dust impacts which could become a nuisance to sensitive receptors if unaddressed.

3.4.2 All waste products, residues and other materials are characterised and assessed for further processing, recovery or disposal as detailed in the main operating techniques document.

3.4.3 The variation application includes the installation of covered storage bays which will cover outgoing materials such as fragmentiser residue, improve dust management and the visual appearance of the site. Details of these storage bays can be found in the main operating techniques document.

3.4.4 The downstream separation processes at the replacement downstream plant will be optimised to ensure efficient processing and operations will be enclosed to prevent or reduce emissions from this aspect of the process. A flow diagram and detailed description of the whole process, including the downstream separation processes can be found in Appendices 2 and 3 to the main operating techniques document.

3.4.5 Shredder non-ferrous materials will be processed within the fully enclosed non-ferrous processing building, as described in Appendix 3 to the main operating techniques document, in order to prevent or reduce emissions where possible. The separated recyclable and non-recyclable materials will be stored in separate covered waste bays outside of the non-ferrous building, to reduce or prevent emissions from these areas.

3.4.6 Ferrous materials will be processed in the enclosed ferrous separation building, as detailed in Appendix 3 to the main operating techniques document. Once processed, the ferrous material will be transported by an industrial grade, fully covered conveyor to a quality control building where hand picking will be undertaken to remove any remaining non-ferrous material. On

exiting the quality control building, the ferrous material will be transported via a high level enclosed gantry conveyor to the dock for storage.

3.4.7 Used, end of life wear parts are removed from site for recycling or recovery if unable to be treated on site. Those materials unable to be passed through the processing plant on site, i.e. hydraulic oils, will be tankered away for offsite recovery or recycling.

3.4.8 Material handling and transport is managed to prevent emissions including dust and noise, as set out in the dust management plan (DMP) and the noise management plan (NMP) accompanying the variation application. These reports state that the closest residential receptor is located 230 m to the south of the site, with a large amount of industrial and commercial development separating the site from the closest residential properties. Although the new plant will be located slightly closer to sensitive residential receptors, the enclosure measures and acoustic mitigation will reduce the impacts of noise and dust at these receptors. The hours of operation will not change as part of the variation application. The ERA has been updated with the new material handling measures to support the variation application.

3.4.9 A new conveyor belt will be installed, as part of the replacement downstream plant, which will handle and move materials in a way that will prevent or reduce the generation of dusts or other emissions. The conveyor, transfer points and drop points downstream will also be covered to prevent the release of dusts and particulates. Wet misting systems will be used over the areas where scrap is originally tipped, the storage bays, and loading out bay.

3.4.10 The main operating techniques document and ERA detail how all potentially polluting liquids are stored and that they will be handled in such a way as to prevent their escape, and uncontrolled leaks from tanks or pipes are prevented. There are no below ground items such as storage tanks or fuel lines on site and therefore the risk of uncontrolled environmental risks from these is prevented.

3.5 Process Efficiency

3.5.1 Monitoring and management of the facility's processing efficiency will be undertaken as discussed in paragraph 3.6.1.

3.5.2 The current accident management plan (AMP) will be updated to incorporate the new activities and extended area of the site. A Fire Prevention Plan has been provided in support of the variation application.

3.5.3 Observations with regard to daily events on site will continue to be recorded in the Site Diary.

3.5.4 The variation application includes for installation of a pre-shredder unit. This will process automotive baled materials before they enter the shredder and greatly reduce the possibility of deflagrations aka shredder energy releases / explosions with associated noise benefits. The new 'downstream' plant and the existing shredder plant will also be housed within a number of acoustic enclosures in order to reduce noise and vibration from the facility. A noise impact assessment was undertaken to support the variation application, and a noise and vibration

management plan (NMP) accompanied this which sets out the BAT measures included at the facility with respect to noise.

3.6 Utilities and Raw Material Management

3.6.1 Sims will develop an energy efficiency plan for the Avonmouth facility. This plan will set out the energy efficiency measures that are in place for both the existing and new plant subject to this variation, as well as routine ongoing energy efficiency monitoring that will be undertaken to identify improvements over the operational life of the facility.

3.6.2 The set-up of plant and equipment will minimise the consumption of raw materials and water at the site. Water use will be metered and the daily usage is monitored by the Site Manager via the 'Insight' system. The variation will include additional water use and the installation of new pumps will provide an opportunity to add further metering to connect the additional water system to the Insight program.

3.6.3 There are no discharges to controlled waters from this facility, only point source emissions to sewer exist. The variation application includes two additional point source emissions to sewer and, like the current emission points, will be monitored in accordance with a Point Source Emissions to Sewer Protocol as agreed in writing with the Environment Agency. The details of the additional point source emissions to sewer are provided in drawing *JER6361-001D*. In addition the variation includes installation of covered storage bays and includes internal processing, which will remove the potential for generating potentially contaminated rainwater runoff and associated discharge to sewer.

3.6.4 Site drainage is via oil interceptors to the Bristol Port Company sewer which flows to the Wessex Water pumping station located within the Port area. The site drainage plan is provided in drawing *JER6361-001D*. Records of drainage maintenance will be held on site and made available to the EA on request.

3.6.5 Sims will use routine analysis to demonstrate compliance and improvement in discharged water quality. The H1 assessment for the discharge to sewer has been produced to support this variation application in order to assess the relevant pollutants present in the discharge and their estimated impact on the receiving water after passing through the Wessex Water pumping station.

3.6.6 The strategy for preventing or reducing dust emissions to air is included within the DMP. The DMP addresses the inspection, monitoring, repair and maintenance measures to be undertaken at the facility to avoid or reduce dust emissions to air from the facility. An ambient air emissions monitoring strategy was produced in response to improvement condition 7 of the environmental permit and Sims will be undertaking stack emissions testing of the point source releases to air. Following the testing further assessment of emissions to air will be undertaken.

3.7 Training

3.7.1 Training of operatives and management will remain the same as in place with the current permit, with a specific training and development programme set out by Sims to ensure employees are suitably trained to undertake their duties competently and with a record kept of the relevant training. This will be updated to include the new plant to be installed as part of the variation.

3.8 Ground Contamination and Decommissioning

3.8.1 Sims will prevent where practicable the contamination of soils/ground and groundwater below the facility as set out in the ERA. An application site condition report (SCR) has been produced to support the variation application. This includes a baseline report to record the potential condition of the land at the time of the permit variation application, within the boundary of permit EPR/PP3099FM and the proposed extension to the boundary. Site investigations were also carried out to support this. The facility is located upon an impermeable concrete paved surface, designed and constructed under the supervision of a suitably qualified civil engineer, and the new areas of site will be the same, as described in the ERA and main operating techniques document.

3.8.2 The SCR will be updated throughout the operational life of the facility and will be available for comparison upon decommissioning of the site, during which Sims will continue to prevent pollution.

4 Conclusion

4.1.1 RPS has undertaken a BAT assessment to support Sims Group UK Limited's application to vary environmental permit EPR/PP3099FM (EAWML 27202). The variation will include expansion of the site area and installation of a pre-shredder, a replacement 'downstream' plant, and covered storage bays within the new 'downstream' plant in order to increase the efficiency and improve the visual, noise and dust impacts of the plant. The primary purpose of this report is to provide information to the Environment Agency in relation to the BAT used at the facility as a result of the permit variation.

4.1.2 The techniques currently used at the site are BAT and those being introduced as part of the variation application are also considered BAT, in accordance with the BMRA BREF Style Report – Metal Fragmentising Operations, Industrial Emissions Directive (2013) and EA Sector Guidance Note S5.06 (2013). Sims have included the implementation of an energy efficiency plan as an improvement.

4.1.3 The pre-shredder to be installed at the facility represents BAT and reduces the noise impact, and improves the efficiency and visual impact of the facility. The shredder will be built within an acoustic enclosure to reduce the noise impacts. This will also somewhat reduce the dust emissions to air from the shredder. The replacement downstream plant will increase the efficiency of the plant, will reduce the visual impacts of the facility and will be built within enclosures to reduce the noise and dust impacts.

References

‘BREF Style Report – Metal Fragmentising Operations, Industrial Emissions Directive’ (January 2003). Mayer Environmental, BMRA.

IPPC S5.06 ‘Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste’ (May 2013). Environment Agency.

Glossary

AMP	Accident Management Plan
AQ	Air Quality
BAT	Best Available Techniques
DMP	Dust Management Plan
EA	Environment Agency
ELV	End of Life Vehicles
EMS	Environmental Management System
ERA	Environmental Risk Assessment
NMP	Noise and Vibration Management Plan
QMS	Quality Management System
SCR	Site Condition Report
WEEE	Waste Electrical and Electronic Equipment

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