AVONMOUTH WASTE TRANSFER STATION

Environmental Permit Variation Application

Environmental Risk Assessment

Prepared for: Bristol Waste Company Limited

Ref: EPR/EB3702MF

SLR Ref: 402.V54839.00001
Version No: V1
February 2025

BASIS OF REPORT

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APPENDICES

1.0 Introduction

Bristol Waste Company Limited (Bristol Waste) has instructed SLR Consulting Limited (SLR) to prepare an Environmental Permit (EP) variation application for the Avonmouth Waste Transfer Station (WTS) located in Avonmouth (EP Ref: EPR/EB3702MF), under the Environmental Permitting (England and Wales) Regulations 2016 (as amended). Herein the facility will be referred to as 'the site'.

The EP variation includes the following changes as summarised below:

- Modernisation and redevelopment of the existing WTS in Avonmouth;
- Incorporate within the EP the shredding activity currently run in accordance with the T6 exemption, in addition to the shredding of other currently permitted wastes;
- Addition of European Waste Catalogue (EWC) code for Absorbent Hygiene Products (AHPs); and
- Partial surrender of land occupied by an adjacent waste facility, located within the WTS EP boundary in the north west corner of the site.

1.1 Methodology

This Environmental Risk Assessment (ERA) is an assessment of the risks to the environment and to human health that may be associated with the proposed operations at the site.

The assessment has been completed in accordance with the Environment Agency (EA) Technical Guidance *'Risk Assessments for your Environment Permit'* last updated August 2022[1]. The aim of the assessment is to identify any significant risks and demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage these risks.

This ERA uses the following approach for identifying and assessing the risks from the proposed operation:

Step 1 Identify risks and sources of risk from your activity.

Step 2 Where risks are identified from Step 1 then identify the receptors that could be affected

Step 3 Identify potential pathways between the sources of risk and receptors

Step 4 Assess the risks and check that they are acceptable. Justify appropriate measures to control your risks, if necessary.

Step 5 Submit your assessment.

Section 2.0 of this document is a screening step to identify the risks requiring consideration as part of this assessment.

Section 3.0 identifies people or parts of the environment that could be harmed (at potentially significant risk) by the activity. The ERA for an EP variation application requires all receptors that are near the site and could reasonably be affected by the activities to be identified and considered as part of the assessment.

For the purposes of this ERA a 2km radius from the site's EP boundary has been adopted in reviewing potentially sensitive receptors of ecological importance along with features such as sites of cultural and natural heritage. A radius of 500m from the site's EP boundary has been adopted for all other potentially sensitive receptors (for example, residential, commercial, industrial, agricultural and surface water receptors).

Section 4.0 of this document presents the assessment and demonstrates that any risks of pollution or harm will be mitigated to manage the risk.

[1] Risk assessments for your environmental permit - GOV.UK (www.gov.uk)

This ERA should be read in conjunction with the following documents submitted with this EP variation application:

- Non-Technical Summary (NTS);
- Associated Drawings;
- Working Plan;
- Fire Prevention Plan (FPP);
- Dust Management Plan (DEMP);
- Odour Management Plan (OMP);
- Pest Management Plan (PMP); and
- Site Condition Report (SCR).

2.0 Identifying the Risks

Step 2 is a screening step to identify the potential risks to the environment from the development. The following are generally considered to require assessment for bespoke operations:

- Amenity and Accidents;
- Site Waste;
- Global Warming Potential;
- Odour;
- Noise; and
- Point source emissions to air, water and land.

There will be no point source emissions to surface water, groundwater, air or land resulting from the WTS and neither will there be any global warming potential. Site waste arising's only require assessment for installations.

Therefore only 'Amenity and Accidents', remains applicable for assessment in this instance, and includes the consideration of odour, noise and vibration, fugitive emissions (including dust, mud, litter and pests) and accidents.

3.0 Site Setting and Receptors

3.1 Site Setting

The site is situated approximately 2km north east of Avonmouth and 9km north west of Bristol City Centre. The National Grid Reference (NGR) for the site is ST 53315 79858.

The site is set within the wider commercial/industrial area of Avonmouth, adjacent to the neighbouring Household Reuse & Recycling Centre (HRRC) which lies to the south east. Access to the site is via Kings Weston Lane. The EP boundary is illustrated on Drawing 001 and the site's location is illustrated on Drawing 002.

The surrounding land uses and local receptors within 500m are also identified on Drawing 002, in addition to the cultural and natural heritage within 2km on Drawing 003.

A summary of the site's immediate surrounding land uses is identified in Table 3-1 below.

Table 3-1
Surrounding Land Uses

Boundary	Description
North	Clinipower Avonmouth LLP Waste Facility and open ground followed by surface water features. Beyond this lies Lawrence Weston Road, Merebank Road, and a large area of industrial/commercial units including Avon and Somerset Police Workshop.
East	Immediately to the east lies Lawrence Weston Road, and the wider commercial/industrial area of Avonmouth including Macfarlane Packaging Bristol, Yankee Candle Official and Elemis.
South	Avonmouth HRRC, followed by the site's access road and Avonmouth Sewage Treatment Works.
West	Immediately to the west lies a surface water ditch, followed by open ground and several surface water features, including a lake. Beyond this lies industrial/commercial premises and the Severn Estuary.

The immediate surrounding land uses are described in further detail below.

3.1.1 Industrial/Commercial Premises

The area surrounding the site predominantly consists of industrial/commercial premises. The closest are as follows:

- North: Clinipower Avonmouth LLP Waste Facility (adjacent);
- East: Yankee Candle Official (40m);
- West: DVSA, Avonmouth Bristol (300m);
- South: Avonmouth HRRC (adjacent).

3.1.2 Residential Properties

There are no residential receptors within 500m of the site's boundary. The closest residential properties to the site are located at an extended distance (of approximately 1km to the east of the site), and therefore have not been considered further.

3.1.3 Sewage Works

Avonmouth Sewage Treatment Works is located approximately 10m from the site's southern boundary.

3.1.4 Local Transport Network

The site is bounded to the south by the site's access road which joins to Kings Weston Lane approximately 540m to the south west and Lawrence Weston Road which runs adjacent to the site's north eastern boundary.

The local road network is illustrated further on Drawing 002.

3.1.5 Surface Water Features

Surface water ditches lie adjacent to the site's east and west EP boundary. Several ponds/lakes are located approximately 40m to the west at their closest and the Severn Estuary is located approximately 1,450m from the site's western boundary.

3.1.6 Open Ground

Areas of open ground are found on all sides of the site. The closest areas are located adjacent to the sites northern boundary.

3.2 Geology

A review of the British Geological Survey (BGS)[2] map reveals that the site is underlain by a bedrock of Mercia Mudstone Group – Mudstone and Halite-stone. Sedimentary bedrock formed between 252.2 and 201.3 million years ago during the Triassic period.

The superficial geology consists of Tidal Flat Deposits – Clay and Silt. Sedimentary superficial deposit formed between 11.8 thousand years ago and present during the quaternary period.

3.3 Hydrogeology

3.3.1 Aquifer Designations

The bedrock geology is classified as a Secondary (B) Aquifer on the Multi-Agency Information for the Countryside (MAGIC)[3] website. These are described by the EA as "predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering".

The superficial geology beneath the site is classified by the EA as Unproductive Strata.

3.3.2 Source Protection Zones

The site is not situated within a groundwater source protection zone (SPZ).

3.4 Hydrology

The main surface water features in the area are represented by a series of parallel rhines which collect water across the typically flat-lying surrounding area and channel it in a north westerly direction toward the Severn Estuary. The site is broadly equidistant between the Mere Bank Rhine, approximately 200m to the south west, and the Salt Marsh Rhine, approximately 200m to the north east. Both of these arterial rhines (Mere Bank and

[2] British Geological Survey Geology Viewer – Available at: https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/ , accessed October 2023
[3] Multi-Agency Information for the Countryside – Available at: http://magic.gov.uk, accessed October 2023

Salt Marsh) run in a north westerly direction and are fed by a complex network of smaller rhines, most of which are parallel or perpendicular.

The closest rhine to the site is located immediately beyond the northern boundary. Walkover inspection of this rhine recorded imperceptibility slow flows and high-density of duckweed on the surface of the water.

The Groundwater Vulnerability layer on the MAGIC map reveals the site lies within an area known for groundwater vulnerability classified as low.

3.4.1 Flooding

EA mapping[4] indicates that the majority of the site is located within flood zones 1 and 2, with a low probability and medium probability of flooding respectively. Land in flood zone 1 in any year has less than a 0.1% chance of flooding from rivers or the sea, and flood zone 2 in any year has between a 1% and 0.1% chance of flooding from rivers and between a 0.5% and 0.1% chance of flooding from the sea.

Limited areas of the site (restricted to roadways and areas of vehicle storage) are situated within flood zone 3 and have a high probability of flooding meaning in any year land has a 1% or more chance of flooding from rivers, or a 0.5% or more chance of flooding from the sea. The area does benefit from flood defences.

3.5 Ecology

The following information has been assessed in order to determine the ecological site setting:

- MAGIC website; and
- EA Nature and Heritage Conservation Screening provided as part of enhanced pre-application advice, and included as Appendix 01.

3.5.1 Multi-Designated Site

The Severn Estuary is located approximately, 1,450m west of the site's boundary. The area is designated as follows:

- Ramsar;
- Site of Special Scientific Interest (SSSI);
- Special Protection Area (SPA); and
- Special Area of Conservation (SAC).

3.5.2 Local Nature Reserve (LNR)

The Lawrence Western Moor Local Nature Reserve is located approximately 1,200m south east of the site's boundary.

3.5.3 Local Wildlife Sites (LWS)

The Nature and Heritage Conservation screening provided as part of the EA's enhanced pre-application advice, identified the following LWS:

- Avonmouth Sewage Works and Hoar Gout: located approximately 10m from the site's western EP boundary at its' closest; and
- Lawrence Weston Road Rhines: situated adjacent to the site's eastern EP boundary.

[4] Flood Map for Planning – Available at: https://flood-map-for-planning.service.gov.uk/, accessed March 2023

The Nature and Heritage Conservation screening, is included as Appendix 01.

3.5.4 Protected Species

The European Water Vole was identified during the EA's Nature and Heritage Conservation screening provided as part of the enhanced pre-application advice.

3.5.5 Protected Habitats

Coastal floodplain grazing marsh protected habitat has been identified to the south and east of the site.

The searches confirmed that there are none of the following within the 2km:

- Areas of Natural Beauty;
- National Nature Reserves; and
- National Parks.

3.6 Cultural and Heritage

The review of MAGIC revealed that there four listed buildings within 2km of the site's boundary as illustrated on Drawing 003, and described as follows:

- Grade II listed 'Wellington Farmhouse', lies approximately 1,460m east;
- Grade II listed 'Hallen War Memorial' is located approximately 1,670m east;
- Grade II listed 'Cambell's Farm and Attached Garden Wall and Railings' is situated approximately 1,700m south; and
- Grade II listed 'Perimeter Wall of Friends Burial Ground' lies approximately 1,880m south.

Two scheduled monuments are found within 2km of the site's boundary:

- The Mere Bank and Flanking Ditches are located approximately 360m south west.
- The Heavy Anti-aircraft Battery 520m east of Holes Mouth lies approximately 1,140m north west

The search on MAGIC confirmed that the following features do not lie within 2km of the site:

- World Heritage Sites;
- Registered Battlefields; and
- Registered Parks and Gardens.

3.7 Identified Receptors

Table 3-2 and Drawings 002 and 003 identify the receptors which are considered to be potentially sensitive and could reasonably be affected by activities at the site.

Table 3-2
Identified Receptors

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Local receptors within 500m and ecological, cultural and natural heritage receptors located within 2km of the EP boundary as shown on Drawings 002 and 003			

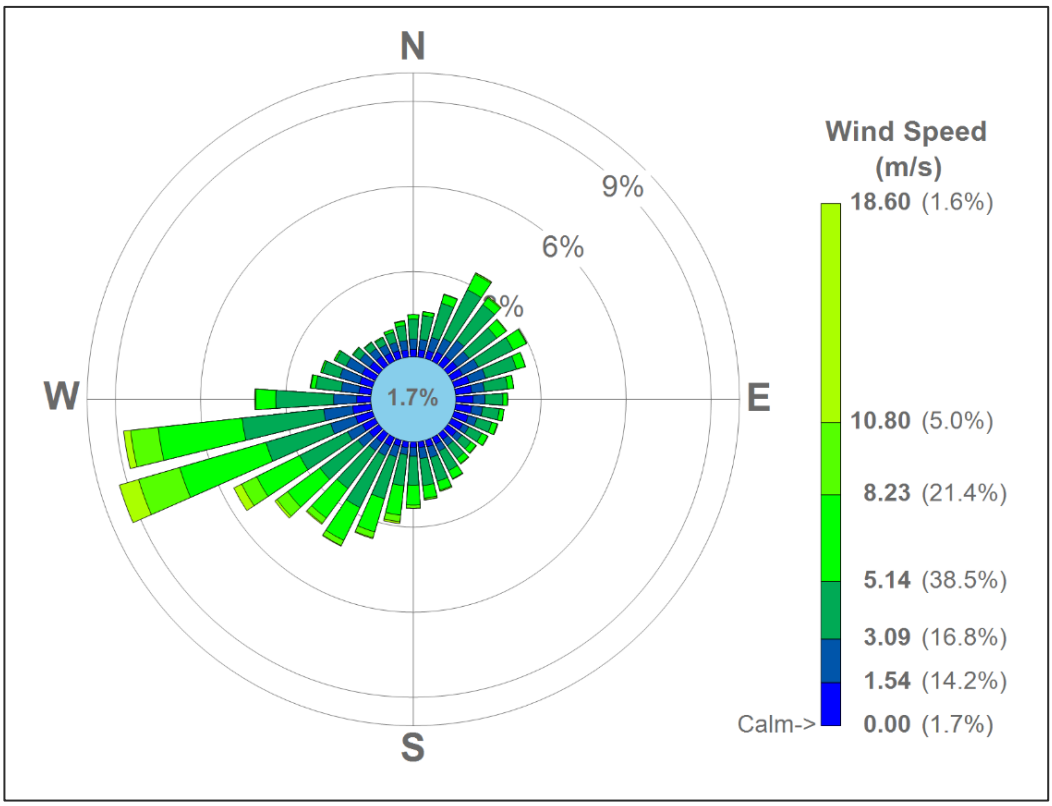
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Secondary (B) Aquifer	Secondary Aquifer	N/A	N/A
European Water Vole	Protected Species	N/A	N/A
Avonmouth HRRC	Industrial/Commercial	South and east	Adjacent
Unnamed Road	Local Transport Network	Southeast	Adjacent
Lawrence Weston Road	Local Transport Network	Northeast	Adjacent
Surface Water Ditch	Surface Water Feature	Northeast	Adjacent
Surface Water Ditch	Surface Water Feature	Southwest	Adjacent
Clinipower LLP Waste Facility	Industrial/Commercial	North	Adjacent
Open Ground	Open Ground	North	Adjacent
Rhine	Surface Water Feature	North	Adjacent
Lawrence Weston Road Rhines	Local Wildlife Site	East	Adjacent
Coastal and Floodplain Grazing Marsh	Protected Habitats	East	Adjacent
Avonmouth Sewage Treatment Works	Sewage Works	South	10m
Avonmouth Sewage Works and Hoar Gout	Local Wildlife Site	West	10m
Yankee Candle Official	Industrial/Commercial	East	40m
Ponds/Lakes	Surface Water Feature	West	40m
Avon & Somerset Police Workshop	Industrial/Commercial	North	110m
Merebank Road	Local Transport Network	North	180m
Mere Bank Rhine	Surface Water Feature	South west	200m
Salt Marsh Rhine	Surface Water Feature	North east	200m
DVSA, Avonmouth, Bristol	Industrial/Commercial	West	300m
The Mere Bank and Flanking Ditches	Scheduled Monument	Southwest	360m
Kings Weston Lane	Local Transport Network	Southwest	540m
The Heavy Anti-aircraft Battery 520m east of Holes Mouth	Scheduled Monument	Northwest	1,140m

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Lawrence Western Moor	Local Nature Reserve	Southeast	1,200m
Severn Estuary	Surface Water Feature, Ramsar, SSSI, SPA, SAC	West	1,450m
Wellington Farmhouse	Grade II Listed Building	East	1,460m
Hallen War Memorial	Grade II Listed Building	East	1,670m
Campbell's Farm and Attached Garden Wall and Railings	Grade II Listed Building	South	1,700m
Perimeter Wall of Friends Burial Ground	Grade II Listed Building	South	1,880m

3.8 Windrose

Figure 3-1 shows the average wind patterns from 2012-2016 as identified by the Filton meteorological station. The most prominent wind direction is from the west and southwest to the east and northeast. Winds from the north, east and south are relatively infrequent.

Figure 3-1
Filton Meteorological Station, (2012-2016, Average)



4.0 Environmental Risk Assessment

The following tables in this section assess the site in terms of potential hazards posed, receptors and pathways, along with management and assessment of the identified risks.

As detailed in Section 2, the risks associated with the WTS will be assessed as part of this variation application.

The probability of exposure is the likelihood of the receptors being exposed to the hazard, and is defined as low, medium or high. These terms are qualified as follows;

- Low: exposure is unlikely, barriers in place to mitigate against exposure.
- Medium: exposure is fairly probable, barriers to exposure less controllable.
- High: exposure is probable, direct exposure likely with few barriers.

The methodology outlined in Section 1.1 of this report is the basis on which it is determined whether the proposed operations will lead to significant impacts on the surrounding environment. Where a conclusion of 'not significant' has been reached, it is proposed that the mitigation and management measures that will be in place at the site will be sufficient to ensure that there will be no impact at the surrounding environment.

Table 4-1 Odour Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
<u>Odour</u> **Receipt and handling of waste at the WTS** **Storage of waste** **Increase to permitted annual throughput** **Incorporation of T6 waste wood shredding activities within the EP**	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors. See Drawings 002 and 003.	Air	The waste wood shredding activity is currently undertaken on site in accordance with the T6 waste exemption, and the site's working plan. Therefore, the inclusion of the waste wood shredding activity within the EP does not constitute a change to the activities currently undertaken on site. It is therefore not considered to increase the risk of odour emissions, and existing odour management measures are considered to be adequate. AHPs will be received on site in bags and stored in sealed skips for a maximum of 72 hours. There will be no treatment of AHPs on site. Full skips will be removed and replaced with a clean, empty skip therefore there will be no cleaning/washing of containers on site. The site will operate in accordance with the Odour Management Plan (OMP) (Ref: 402.V54839.00001/OMP) enclosed as Section 7 of the variation application. A copy of the OMP will be available on site. The Site Manager will be responsible for implementing risk management measures in conjunction with the OMP.	Low	Odour Nuisance	**Not Significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Addition of 20 01 99 (AHPs)						

Table 4-2 Noise Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Noise **Delivery of waste to site** **Deposit of waste in bays** **Mobile plant moving waste** **Operation of baler** **Ad hoc operation of a mobile crusher.**	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors. See Drawings 002 and 003.	Air	There are no residential receptors within 500m of the site's EP boundary and the site is situated within a busy commercial/industrial area where noise nuisance is not normally considered an issue. The proposed increase to the permitted annual throughput will increase vehicle movements on site proportionately. All vehicle movements will be within current working hours. Existing noise management measures are considered to be effective and will continue to be implemented on site. The waste wood shredding activity is currently undertaken on site in accordance with the T6 waste exemption, and the site's working plan. Therefore, the inclusion of the waste wood shredding activity within the EP does not constitute a change to the activities currently undertaken on site. It is therefore not considered to increase the risk of noise emissions, and existing noise management measures as described below are considered to be adequate.	Low	Nuisance and health risk to human receptors during daytime hours.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Incorporation of T6 waste wood shredding activities within the EP **Increase to permitted annual throughput**			The following noise management measures will continue to be implemented on the site to mitigate noise emissions: • The baler will be located in the waste processing building which is fully enclosed and benefits from roller shutter doors; • Drop heights will continue to be kept to a minimum; • Site operations are restricted to hours specified in the planning consent; • All plant is switched off when not in use; • Speed limits will continue to be implemented for vehicles using the site; • All site personnel are trained in the need to minimise site noise, and are responsible for monitoring and reporting excessive noise when carrying out their everyday roles; • All plant and equipment in use at the site will continue to be regularly maintained in accordance with manufacturer's guidance to minimise noise resulting from inefficient operation; • The regular maintenance of roads to prevent the development of potholes will significantly			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			reduce the noise generated particularly by empty vehicles exiting the site; • Consideration will be given to the fitting of noise suppression kits on items of plant and equipment; • The shredder and crusher are located within the middle of the site away from the EP boundary; • The shredder and crusher will only be used intermittently on a campaign basis. Material will be bulked up until a sufficient amount is available; • Auditory inspections will continue to be carried out daily by Site Operatives & in response to complaints; and • Any complaints will be responded to immediately, and should any noise problem or complaints persist, its amelioration, will be discussed with the EA. The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the Working Plan.			

Table 4-3 Fugitive Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
To Air:						
Dust **Vehicle movements** **Deposit of waste and storage** **Increase to permitted annual throughput**	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors. See Drawings 002 and 003.	Air	The waste wood shredding activity is currently undertaken on site in accordance with the T6 waste exemption, and the site's working plan. Therefore, the inclusion of the waste wood shredding activity within the EP does not constitute a change to the activities currently undertaken on site. It is therefore not considered to increase the risk of dust emissions, and existing dust management measures are considered to be adequate. The site will operate in accordance with the Dust Management Plan (DEMP) (Ref: 402.V54839.00001/DEMP). The Site Manager will be responsible for implementing risk management measures in conjunction with the DEMP.	Medium	Dust nuisance	**Not significant – due to mitigation measures included in DEMP.**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Incorporation of T6 waste wood shredding activities within the EP **Ad hoc operation of a mobile crusher.**						
To Water						
Runoff from the site	Surface water and groundwater.	Run off and percolation.	The entire site benefits from impermeable surfacing throughout, and all areas of the site where waste storage or treatment occurs benefits from a sealed foul drainage system, with subsequent discharge directly to the Avonmouth Sewage Treatment Works located 10m to the south of the site. Chemical or fuel used on site will continue to be stored in an appropriate tank that benefits from a bund with the capacity to store 110% of the tank capacity. Bunds are:	Low – due to preventative management measures in place and the waste types accepted on site.	Contamination of surrounding land and water.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			• Impermeable and resistant to the stored material; • Have no outlet; • Be designed to catch leaks from tanks or fittings; • Have a capacity greater than 110% of the largest tank or 25% of the total tankage (whichever is greater); • Have pipework routed within bunded areas with no penetration or contained surface; • Have tanker connection points within the bund; and • Be subject to regular visual inspection. The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the Working Plan.			
Pests						

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Birds, vermin and pests	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors. See Drawings 002 and 003.	Land (vermin) and Air (flies).	The waste wood shredding activity is currently undertaken on site in accordance with the T6 waste exemption, and the site's working plan. Therefore, the inclusion of the waste wood shredding activity within the EP does not constitute a change to the activities currently undertaken on site. It is therefore not considered to increase the likelihood of the site attracting pests and pest management measures are considered to be adequate. The site will operate in accordance with the Pest Management Plan (PMP) (Ref: 402.V54839.00001/PMP). The Site Manager will be responsible for implementing risk management measures in conjunction with the PMP	Low – due to the preventative management measures in place.	Nuisance to human and commercial receptors.	**Not significant – due to the proactive preventative measures that will be implemented on site.**
Mud/Litter						
Mud from vehicle movements	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors.	Land	The site access road is a 550m private road that leads to Kings Weston Lane. Vehicle movements on site will increase proportionately as a result of the increase to the permitted annual tonnage. The site will continue to benefit from good housekeeping and all areas of the site will be cleaned on a daily basis.	Low	Mud on road, road safety.	**Not significant.**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
	See Drawings 002 and 003.		Areas of hardstanding on site will continue to be maintained free of significant quantities of mud. As all surfaces of the facility are of impermeable structure, the tracking of mud out onto the highway is rare. All vehicles leaving the operational areas will continue to be cleaned as necessary before leaving site. Daily visual inspection of the site by site management will identify any problem with mud which will be cleaned up as soon as possible. Where necessary road cleaning equipment will be deployed. In the event that mud is deposited onto public areas outside of the site the following remedial measures will be implemented: • The affected public areas outside the site will be cleaned; • Traffic will be isolated from sources of mud and debris within the site to prevent further tracking of mud and debris and measures taken to clear any such source as soon as practicable;			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			• Provisions will be made for road sweepers on the site access roads to stop mud from being carried onto public roads and bowsers made available to damp down areas during dry periods to ensure that dust is not a problem. The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the Working Plan.			
Litter from waste acceptance, deposit and storage	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors. See Drawings 002 and 003.	Air	The waste wood shredding activity is currently undertaken on site in accordance with the T6 waste exemption, and the working plan and does not generate litter. Therefore, the inclusion of the waste wood shredding activity within the EP does not constitute a change to the activities currently undertaken on site. It is therefore not considered to increase the likelihood of the site generating litter and existing litter management measures are considered to be adequate. Strict waste pre-acceptance and acceptance procedures are implemented on site to ensure that only permitted waste type are accepted. All waste bays and storage areas are clearly labelled to ensure the segregation of waste. All surfacing will be maintained free of significant quantities of litter.	Low	Nuisance from litter.	**Not significant.**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			All vehicles leaving operational areas are cleaned as necessary to remove loose waste. All vehicles are covered when loads are entering and exiting the facility. Bins are provided on site around welfare areas for the use of site visitors and personnel. The site and its immediate surroundings will continue to be inspected daily and action will be taken to maintain the area free of significant accumulations of litter and debris. Any excessive litter material at the facility or on the highways will be cleared using a mechanical sweeper and/or litter picker if required. The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the Working Plan.			

Table 4-4 Accidents Risk Assessment and Management Plan

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Spillage and Leakage	Local land quality, surface water and groundwater.	Runoff and percolation through ground.	The site benefits from impermeable surfacing throughout (where all waste acceptance and storage are undertaken) and a sealed foul drainage system and will have the capability to contain any spillages or leaks. Tanks used for the storage of fuel, chemicals and maintenance oil, are constructed so that any leaks/spillages will be contained. They are sited above ground on impervious bases and surrounded be impervious bund walls. The volume of the bunded compound is at least the equivalent to the capacity of the tank plus 10%. All filling points, vents and gauges will be located within the bund. Storage tanks are constructed to the appropriate British Standard. Tanks are visually inspected on a daily basis by the site staff to ensure the continued integrity of the tanks and identify the requirement for any remedial action. All equipment used on the site is operated and maintained to prevent leaks or spillages.	Low	Contamination of land, groundwater and surface water.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			Materials suitable for absorbing and containing minor spillages are maintained on site. Site staff undertake daily monitoring for evidence of spillage and leakage. Minor spillages will be cleaned up immediately, using sand or proprietary absorbent to clean up liquids. The resultant materials will be placed into containers and will then be removed from site and disposed of at a suitably permitted facility. The incident will be logged in the stie diary. Any dry wastes spilled on site will be collected and transported to the appropriate area of the site. In the event of a major spillage, which is causing or is likely to cause polluting emissions to the environment, immediate action will be taken to contain the spillage and prevent liquid from flowing outside the EP boundary. The spillage will be cleared immediately and placed in containers for offsite disposal, and the EA will be informed. The Site Manager will continue be responsible for implementing risk management measures in conjunction with the Working Plan.			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Fire	Receptors as identified in Table 3-2, including surrounding commercial/industrial premises and ecological receptors. See Drawings 002 and 003.	Air (smoke) Ground (spillages and firewater).	The site will operate in accordance with the agreed FPP (402.V54839.00001/FPP). A copy will be available on site.	Medium	Harm and nuisance.	**Not significant – due to the mitigation and management methods outlined in the Fire Prevention Plan.**
Vandalism/Security	Harm to Human Receptors, Ecological Receptors, Commercial/industrial receptors, Land and Water. See Drawings 002 and 003.	Land and air.	The site benefits from security measures, which include; • Site perimeter: the site benefits from fencing around the perimeter; • Security doors: the doors to the buildings will be locked at all times when the site is unattended; • Lockable gates: the site benefits from gates at the site entrance which will be locked outside of operational hours;	Low	Theft, plant failure, harm to human health.	**Not significant**

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			• CCTV: CCTV cameras cover operational areas close to the site entrance; • Security lighting: the site benefits from security lighting around the site; • Alarm: The site office is alarmed. If the alarm were to be activated Bristol City Council control room would be alerted; • Inspection: gates and fencing extending around the site will be inspected regularly by the operations staff to identify deterioration and damage, and the need for any repairs; • Maintenance and repair: fencing and gates will be maintained and repaired to ensure their continued integrity. In the event that damage is sustained repairs will be made by the end of the working day. If this is not possible, suitable measures will be taken to prevent any unauthorised access to the site and permanent repairs will be affected as soon as practicable;			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
			• Authorised access system: all visitors to the site will be required to register in the visitor's book and sign out again on exit to minimise the risk of unauthorised visitors being present on site; and • Monitoring techniques: operational procedures, including regular inspections will ensure continual monitoring of security provision at the Site. In the event of a breach of security at the site, the cause will be investigated, and appropriate mitigation measures implemented. Records to be maintained include inspections and maintenance of security fencing gates, breaches of security, investigations and actions taken. The Site Manager will continue be responsible for implementing risk management measures in conjunction with the Working Plan.			

What do you do that can harm and what could be harmed		Managing the Risk		Assessing the Risk		
Hazard	**Receptor**	**Pathway**	**Risk management**	**Probability of exposure**	**Consequence**	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Flooding	Surface water, soils, groundwater and site personnel.	Flood waters over land.	There is no increase to the risk of flooding from the proposed variation to the EP. The majority of the site, and all areas of waste storage, lies within flood zones 1 and 2, with a low probability and medium probability of flooding respectively. Limited areas of the site are situated within flood zone 3. These areas are restricted to roadways and areas of vehicle storage and do not include any waste storage areas. Zone 3 areas have a high probability of flooding meaning in any year land has a 1% or more chance of flooding from rivers, or a 0.5% or more chance of flooding from the sea. The area does benefit from flood defences. An evacuation plan will be implemented in the event of a flood. The Site Manager will continue be responsible for implementing risk management measures in conjunction with the Working Plan.	Low	Contaminated flood waters impacting land in residential, ecological and commercial areas.	**Not significant**

5.0 Conclusion

This ERA has been undertaken in accordance with EA guidance. The assessment is provided as part of the EP variation application for Avonmouth WTS.

This qualitative risk assessment has considered noise, fugitive emissions, dust, releases to water, litter, and potential for accidents and incidents. The assessment concludes that with the implementation of the risk management measures described above, potential hazards from the site are not likely to be significant and no further assessment is required, apart from for fire, dust, and odour for which a FPP, DEMP, and OMP have been produced respectively.

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