Avonmouth Bioresources Centre 11800

Residues Management Plan

1. Introduction

This residues management plan should be read alongside the Avonmouth Bioresources Centre (BC) Waste Management Plan (OPSP343) which includes details on the scope of the plan and operations of the permitted activity on the site. The BC forms part of the wider Avonmouth Water Recycling Centre (WRC) site.

This plan is designed to set out how we optimise production of residues generated to meet the requirements of the Environmental Permitting Regulations (EPR) permit process for waste installation activities and addresses management of waste residues including hazardous and non-hazardous waste.

2. Management of the plan

The list of residues known & anticipated from this site is maintained on an online *SharePoint List* (see section 3) which allows for directly starting the waste transfer process for disposal or recycling of wastes by 3rd parties from the list as well as version tracking and automatic user access.

This list should be reviewed annually, or when significant changes are identified in either on-site processes or the management of residues.

This review should include:

- Waste & Recycling Advisor
- Area Scientist
- Operations Representative
- Compliance Representative

3. List location

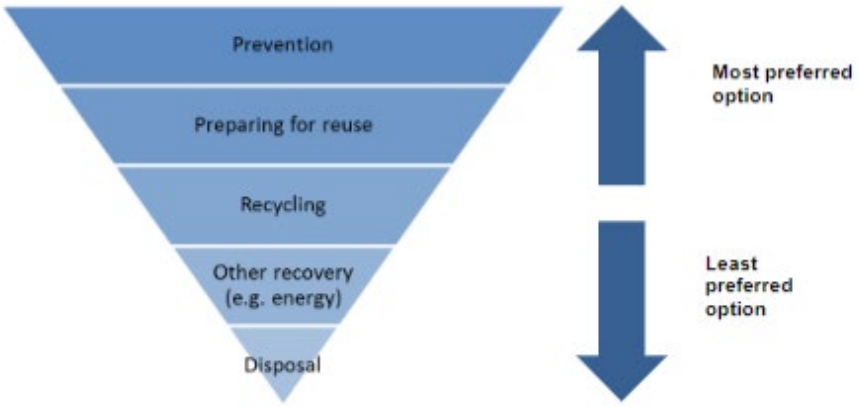
Source \ Functions \ Environment \ Waste Types \ IED – Avonmouth 11800 - *Link*

4. Residues policy

Our approach to management of residues across the business is set out in:

- *ENVW02 – Management of Waste from Treatment Processes*
- *ENVW04 – Management of Support waste*

Our approach to sustainably managing each residue generated by the site is set out in one of the above plans - see column '*WW Plan'* for which Plan applies to which residue. These Plans set out our approach including compliance with legislation, managing waste up the waste hierarchy as well as supporting our zero to landfill goals and combining Procurement, Operations, Compliance, Sustainability and Strategy in one place. The Plans also reference procedures to manage specific waste streams which are of importance due to either the volumes generated, or the extra regulatory controls involved.



As well as the specific process Plans, the company's waste & recycling strategy sets out our approach to waste management including company targets, use of novel recycling technologies and data we aim to collect for waste management to support this.

- *ENVW05 – Waste & Recycling Strategy*

In the site processes we aim to prevent residues either by reducing the amount of residues we generate or reducing the harm they cause either via reducing the harmful substances they contain or by optimising the residues to be suitable for recovery processes.

5. Residues list

The live residue list which is linked to in section 3 is shown as an extract in Appendix 1, but staff should always refer to the live list. The list identifies the key waste residues managed by Avonmouth BC and includes the results of a detailed assessment on optimising residues for sustainability.

Fields maintained in the List include:

- Waste Description and
  - The likely EWC
  - Whether that EWC is a Mirror/Absolute code
  - Possible Alternative EWC Codes.
  - Any Hazardous Properties & components with concentrations
  - Any POPs components with concentrations
  - Source of the components (SDS or Analysis or Guidance)
  - Container type - optimised for recycling or recovery.
- The company plan related to that waste which gives guidance on managing the waste.
- The specific procurement framework which control contractors including setting targets for recycling and avoidance of landfill and ensuring that permits and carrier registrations are maintained.
- The waste hierarchy column which shows the current type of recycling or disposal that has been assessed as most sustainable when optimised for the residue.
- The 'Up Hierarchy' column which shows the next step in the waste hierarchy that is currently being worked towards.
- Steps taken to minimise or prevent residues. This could include either reducing the volume of the residue or reducing the harmful substances in the residue. This could

be done by optimising the process, monitoring the inputs or rethinking the entire process. Where generation of a residue is necessary, we will look to reduce any effect it has on the environment.

6. Explanation on detailed analysis

The *SharePoint list* and associated Plans records our detailed assessment of controls for generation and disposal of wastes. Here we have set-out the considerations that make up the detailed assessment for our two largest tonnage residues which combined make up >90% of disposals from the site.

- Strainpress grit solids / digester grit solids; both of which consist of the non-organic sludge solids that are removed by either mechanical filtering or settlement in digester tanks. These solids are a part of the wastewater waste stream that serves as the input waste to sewage sludge and the production of Grits & Screenings removed from Water Recycling Centres & BCs is tracked by the Wessex Water Enterprises (WWEL) Bioresources team and controlled by Wessex Water design standard: *422 - Preliminary Treatment*.
  - **Reduce**: Both general and targeted outreach projects by the customer engagement department look to influence public behaviour in their use & misuse of sewers to reduce the amount of non-sewage wastes that enter sewers.
  - **Reuse/recycle**: As the input to this process is a waste it cannot be re-used. Recycling is also not a currently available option as the input wastewater is not source segregated; although the water industry is in dialogue with the EA on identifying end of waste options and what evidence and controls would be needed to achieve this.
  - **Recovery**: Both these wastes are recovered on the same site via a Composting process to produce a, solid, compost like output for land restoration, and a high calorific screening output for Energy from Waste Incineration.
  - **Disposal**: No grits are routinely disposed of, if grits were subject to high levels of foreign contamination from a spill such as oil it may be necessary to dispose of to landfill. Wessex has had a zero to landfill policy since 2012 and all waste being sent to landfill must be reviewed and approved on an individual basis.

- Excess Chemicals & Empty Chemical Packaging are linked residues subject to the correct ordering of volumes of chemical needed and the management of empty packaging.
  - **Reduce**: Where possible large volume flocculants are held in bulk storage tanks removing the need for individual containers. Where the volume of polymer needed doesn't allow for a tank this is managed in IBCs or 25kg bags.
  - **Reuse/recycle**: Unneeded polymer can be transferred to other sludge treatment sites within the business although as Avonmouth BC is the largest site excess chemicals is rare. Empty IBCs are kept on site (empty with lids in place) until a full load is available (~48 IBCs) and then returned to the supplier for cleaning and re-certification.
  - **Recovery**: Waste polymer can be used to generate either SLF (Secondary Liquid Fuel) where non-reactive or sent for Energy from Waste Incineration via TFS where blending is not an option. Empty packaging from 25kg bags and contaminated/damaged IBCs are sent for re-processing which will for the IBCs include some amount of open-loop recycling alongside recovery.
  - **Disposal**: Where 3rd party treatments are not available excess polymer can be sent for high temperature incineration or liquid physio-chemical treatment (depending on viscosity). Wessex has had a zero to landfill policy since 2012 and all waste being sent to landfill must be reviewed on an individual basis.

7. Hazardous Waste Storage

The wider Avonmouth WRC site has a gated Hazardous Waste Recycling Hub area which allows for bulking and storage of certain residues such as oil, oil filters, rags etc and which operates under NWFD4. This allows waste from our network and other smaller un-staffed nearby sites to be brought onto site and stored prior to off-site transfer as part of mobile teams travel between networks and sites. See *WRG007 – Site Waste Management Plan Avonmouth WRC* and *TRTWG644 – Hazardous Waste Hub Site operator training notes* for more details.

Revision history

Issue	Date	Description	Prepared by	Reviewed by
1	October 2022	First issue	Mike Foley	Carolyn Dewhirst
2	November 2025	Revision	Mike Foley	Carolyn Dewhirst

Appendix 1 - Residues list November 2025

Title-	EWC	3-Mirror/Absolut...	7b-Alternate Code-	6-Hazard Propert...	4-Components	5-POPs	4-source of comp...	Container	WW Plan	Framework Ref	Hierarchy	Up Hierarchy	Minimise
Screenings	19 08 01	NH					Analysis	Skip	Process	SERV.012A	Recover	Separate grit from screenings	Public relations on network
Strainpress Grit from Digestors	19 12 12	NH	19 08 02 for WRc Grit or 19 02 06 if Digestor grit from dig-out				spot samples plus bioresources pre-acceptance (TRTWP549)	Skip	Process	SERV.012-WARM	Recover	Separate grit from screenings	Public relations on network
General Waste	20 03 01	NH	17 09 04 for mixed C&D or 15 01 06 for DMR				Guidance	Skip	General	SERV.012B	Recycle/Recover	recycle via picking line	source segregation into recyclable fractions
Wood waste (Mixed)	20 01 38	NH Mirror	20 01 37 if Haz, 17 02 01 if from C&D, 15 01 03 if pallets/packaging				Guidance	Skip	General	SERV.012B	Re-use/Recycle/Recover	recycle by grade	re-use on site where possible
Metal waste (Mixed)	20 01 40	NH	17 04 07 if from C&D				Guidance	Skip	General	SERV.078	Recycle/Recover	recycle by grade	use lower carbon alternatives
Dry Mixed Recycling	15 01 06	NH	Can be coded 20 03 01				Guidance	Skip	General	SERV.012B	Recycle/Recover	recycle via picking lines	source segregation into recyclable fractions
WEEE (mixed small)	20 01 36* & 20 01 35	Haz & NH Mirror		POP	POPs,	✓	Guidance	IBC (Cut-Off)	General	SERV.012-WARM	Recycle/Recover	return to manufacturer - WEEE directive	re-use on other sites
Oil Waste (Heat & Insulating)	13 03 07*	Haz			Oil		SDS & Guidance	Tank	General		Recycle/Recover	Increase C.V and reduce contaminants such as Chlorine	Monitor equipment
Absorbs c/w oil	15 02 02*	Haz Mirror			Oil		Guidance	Bin	General		Recover	Ensure metallic debris is removed	Monitor equipment
Filters c/w oil	15 02 02*	Haz Mirrror			Oil		Guidance	Bin	General		Recycle/Recover		Monitor equipment
Empty IBCs (Poly)	15 01 11*	Haz Mirror	15 01 10 if cleaned		Zetag		SDS	IBC	General	WARM	Recycle	<1% residue	Move to tanks
Green Waste	20 02 01	NH	19 08 05 if from sewage works filter beds				Guidance	Skip	General	SERV.012B	Recover	Mulch or compost on site	Mulch or compost on site
Empty IBCs (Antifoam)	15 01 11*	Haz Mirror	15 01 10 if cleaned		Burst		SDS	IBC	General		Recycle	<1% residue	Move to tanks
Sludge (sludge from strainpress i,e mechanical screening)	19 12 12	NH Mirror	190805 if raw, 190206 if limed or thickened				Analysis	Bulk	Sludge		Recover	Process through plant	Avoids spills

Extracted from Source Waste list November 2025.