Environmental Management System
8.1.19 Discharge to drain

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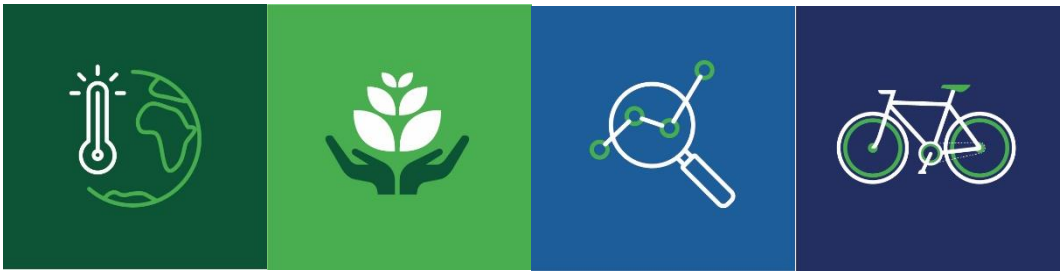
Author:	Victoria Lewis
Approved by:	Teifion Maddocks
Last Review date:	March 2025 * Documents will only be reviewed as and when there has been a legal or regulatory change or a change in university processes that effects the content of the procedure.
Clause Ref:	Ecocampus and ISO14001(2015)



DO NOT PRINT THIS PROCEDURE UNLESS NECESSARY

Discharge to drain

1 Purpose

The University is committed to ensuring all activities undertaken on its premises are to the highest possible standards of safety, health and environment.

This document is relevant for all operations associated with disposal of substances to the University's drain network. It provides guidance on what can and cannot be disposed of to drain in order to maintain legal compliance and protect the environment, in particular aquatic life present on campus and across the locality.

2 Definitions

Ecotoxic waste: Waste, which presents or may present immediate or delayed risks for one or more sectors of the environment

Nanoparticles: A nanoparticle (including nanopowder, nanocluster, nanocrystal) is a microscopic particle with at least one dimension less than 100 nm[1].

Senior Management: person or group of people who direct and control an organisation at the highest level.

Trade effluent: Any liquid other than domestic sewage (toilet, bath or sink waste) or uncontaminated surface water and roof drainage (rainwater).

3 Responsibilities

Sustainability Team	The Sustainability Team is responsible for: • Providing information and guidance to disposal to drain requirements (this document and *ad hoc* emails/information requests) • Acting as the primary point of contact for Welsh Water • Supporting staff in the update or renewal of existing discharge consents • Supporting staff in obtaining new discharge consents or letters of authorisation, if required, for new projects • Offering members of staff and students support, as required
Director/Deputy Director of Area / faculty/school heads/leads	• Ensuring all staff and students working within their area are aware of the 'Disposal to Drain' requirements (this document) • No disposal to drain of substances detailed in Section 0

[1] https://www.sciencedaily.com/terms/nanoparticle.htm, accessed 08 November 2019

Estates and Facilities Management – Projects and Technical Services Teams	• Ensuring contractors and sub-contractors are aware of the 'Disposal to Drain' requirements (this document) and the requirement for no disposal to drain of substances detailed in Section 0
	• Prior to undertaking a new project, liaising with the Faculty/PSU Environment Officer to ensure compliance with discharge consent conditions. Information to be provided to include:
	  ○ List of materials to be disposed to drain (e.g. chemical, biological etc.)
	  ○ Volume to be discharged over time period (in m^3)
	  ○ Concentration of contaminants and pH
	  ○ Drain shown on the drainage plan (that any new builds will be connected to and / or the discharge will be entering)

PIs/Project Managers, Technical Operations Team (Faculties), Technicians, Laboratory Owners	• Ensuring all staff/students working within their project/grant are aware of the 'Disposal to Drain' requirements (this document)
	• No disposal to drain of substances detailed in Section 0
	• Prior to undertaking a new project (research or teaching), liaising with the Faculty Environment Officer to understand whether the discharge is within the consent conditions, information to include:
	  ○ List of materials to be disposed to drain (e.g. chemical, biological etc.)
	  ○ Volume to be discharged over time period (in m^3)
	  ○ Concentration of contaminants and pH

Staff and students	• No disposal to drain of substances detailed in Section 0
	• Prior to undertaking a new project (research or teaching), liaising with the Faculty/PSU Environment Officer to understand whether the discharge is within the consent conditions, information to include:
	  ○ List of materials to be disposed to drain (e.g. chemical, biological etc.)
	  ○ Volume to be discharged over time period (in m^3)
	  ○ Concentration of contaminants and pH

Contractors and sub-contractors	• Ensuring all staff working on the project are aware of the 'Disposal to Drain' requirements (this document) • No disposal to drain of substances detailed in Section 0

4 Related Documents

- **Adverse Event Procedure:** University system for reporting and investigating adverse events *via* the website

- **Chemical Waste Store Users Procedure**: Guidance to Swansea University staff and students on the liquid chemical waste disposal process.
- **Contractor's Safety and Code of Conduct Policy Arrangements:** Guidance for Contractor's onsite and how they must manage their discharge to drain
- **Drainage Plan – Bay Campus**: A plan mapping all surface and foul water drains at Swansea University's Bay Campus. Available on request from the Sustainability Team.
- **Drainage Plan – Singleton Campus**: A plan mapping all surface and foul water drains at Swansea University's Singleton Campus. Available on request from the Sustainability Team.
- **Risk assessments**: Templates available on the website from H&S including a general, biological and chemical.
- **Waste Management Guidance Note 20 Chemical Waste Classification and Storage Guidance**: Guidance to Swansea University staff and students on the classification of chemical waste.

5 Process

Under the Water Industry Act 1991, Swansea University is subject to ensuring that all trade effluent discharges into a public foul sewer have the permission, known as consent, of the relevant local water undertaker (Welsh Water) before any discharges commence. Any water discharged into the public foul sewer will be released (after off-site treatment) in Swansea Bay.

In order to minimise the University's environmental impact on the local environment (waterbodies and aquatic life) the organisation operates a "Zero to Drain" policy as far as reasonably practicable, which means any discharge of materials hazardous to the environment should be avoided.

5.1 Consent and authorisation

The University holds a number of consents with the relevant regulatory body (Welsh Water) for the discharge of trade effluent into the public drainage network. These consents are subject to conditions and regular review by Welsh Water.

If new discharges are proposed or current activities change, the Sustainability Team should be notified **as soon as possible** (during the risk assessment process) in order to assess if:

1. A new consent application needs to be formulated
2. A current consent needs to be amended to include the new activity e.g. increasing discharge volumes or different contaminant levels
3. Operations fall under an existing consent e.g. within the same area, but not increasing discharge above the permitted volume and with same contaminant levels

There will be a cost associated with options 1 and 2, which will be borne by the requesting party. It is the responsibility of all individuals discharging substances to drains to satisfy themselves that such a discharge is permitted. Advice can be sought from the Faculty's Environment Officer and/or *via* the Sustainability Team.

Failure to review and confirm if activities are adequately consented may lead to enforcement from the regulatory bodies (legal and financial penalties).

5.2 Discharging to drain

With or without a need for a specific consent to discharge in specific areas, the following *(figure 1*) must always be applied to ensure that the university remains compliant with its overall discharge consent. A discharge to drain log (see **APPENDIX B**) should always be kept where the discharge contains hazardous materials, exceeds 1m3 per day and is not between the pH value of 6 and 9 (*see figure 1*).

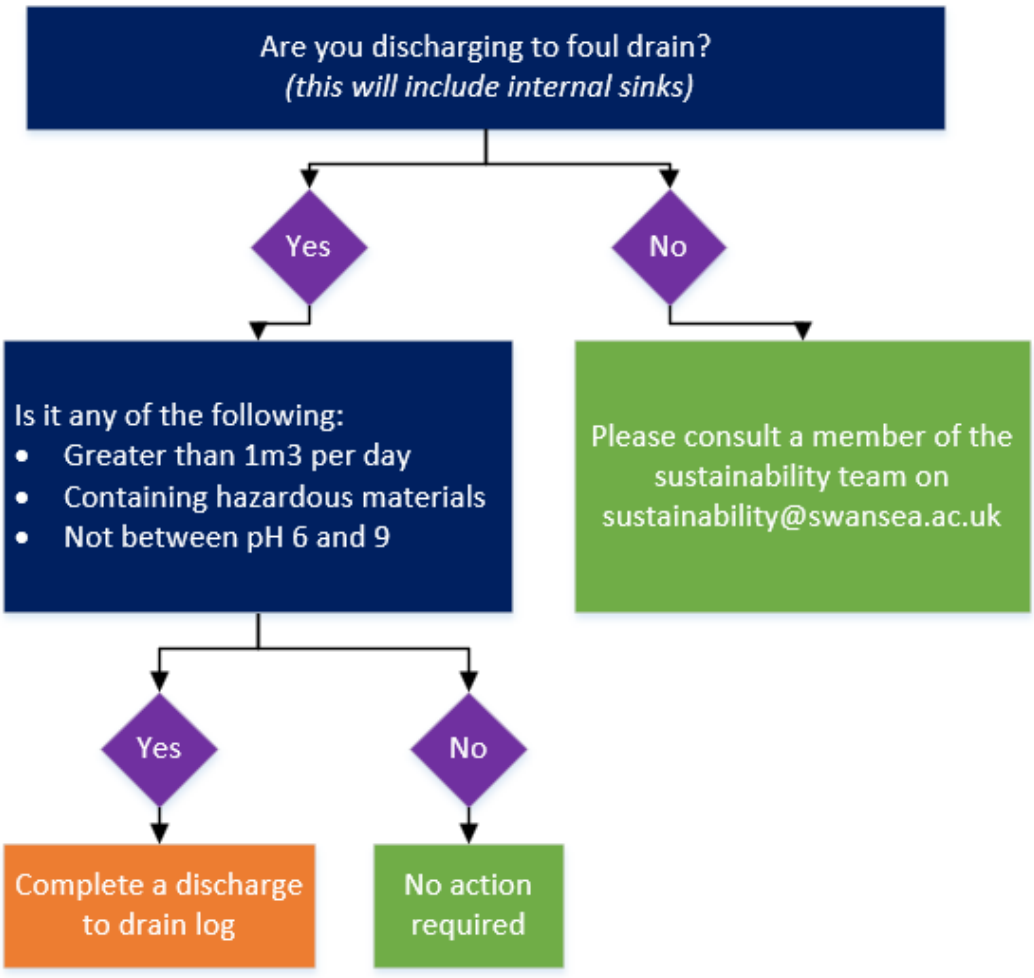


Figure 1: *Discharge to drain decision tree*

5.3 Banned or restricted substances

5.1.1 Solids

The disposal of solids or semi-solid waste materials **is prohibited**. Materials that cannot be described as liquid must be disposed of *via* alternative means. There is a

comprehensive suite of Waste Management Guidance Notes (WMGN)[2] available for staff and students to reference what services are in place for a wide variety of waste materials. The Sustainability Team, upon request, can provide further guidance.

5.1.2 Liquid chemical waste

The disposal of chemicals and other liquid wastes *via* the drain (and subsequently the public foul drainage network) is not the primary or preferred method of disposal. Adequate assessment of liquid waste must be part of risk assessments and safe operating procedures prior to work commencing, with guidance sought from the Sustainability Team (as required). If you are planning on discharging liquid to drain and it will be greater than 1m^3 per day and /or contains more than 2 mg/L of metals (those not included in the bullet points below), you must contact the Sustainability Team to ensure the correct permissions are in place.

Any discharge going to drain must be between **pH 6 and 11**, as per Welsh Water requirements. In addition, discharge of the below may not occur under any circumstances to foul sewer *via* any University sink (laboratory, fume cupboard, floor drains or otherwise) or open drain or open drain (including Schedule 1 substances **(see Appendix 1)**, The Trade Effluents (Prescribed Processes and Substances) Regulations 1989 (SI 1989/1156)[3]):

- Compounds of the following elements: - antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, tellurium, thallium, tin, titanium, uranium, vanadium and zinc.
- Organohalogen, organophosphorus or organonitrogen pesticides, triazine herbicides, any other biocides.
- Cyanides and compounds containing cyanides
- Mineral oils and hydrocarbons
- Poisonous organosilicon compounds, metal phosphides and phosphorus element
- Fluorides and nitrites
- Live microbiological cultures
- Corrosives (acids and bases)
- Oil and grease including mineral oils and oil emulsions
- Tar and tar oils
- Paints and varnish
- Phenols, cresols and simple derivatives
- Organo-halogen compounds, including pesticides, herbicides (their residues) and degreasing agents
- Any substance that can or has the potential (when mixed with other compounds) to cause a nuisance (e.g. smell)

[2] Access online https://staff.swansea.ac.uk/professional-services/estates-and-facilities-management/our-services/sustainability/waste/

[3] Source: https://www.legislation.gov.uk/uksi/1989/1156/schedule/1/made

- Any substance that produces flammable, harmful or toxic vapours (e.g. solvents, petroleum spirit)
- Beer
- Nanoparticles

Note: If you have very low concentrations (e.g. 0.01M or 0.1M) and require disposal to drain contact your local Environment Officer to confirm whether a consent may be possible and the requirements (e.g. between pH 6 and 10 and high dilution when discharging to drain).

In addition to this, any substance that is identified as environmentally hazardous cannot be disposed of via the drain network. This can be checked by reviewing the hazard/risk phrases on a substances packaging and/or Material Safety Data Sheet (MSDS) and for looking out for symbol shown in Figure 1 and hazard phrase HP14 - Ecotoxic.

Figure 1: Hazard symbol 'Dangerous for the environment'

Table 1 below (taken from the WMGN3: Waste Classification - Guidance on the classification and assessment of waste[4]) outlines the relevant information for the classification of waste that would be deemed to be ecotoxic. These are category codes and hazard statement codes users should be aware of.

Table 1: Hazard class information

Hazard class and category code(s)	Hazard statement code(s)	Description
Aquatic acute 1	H400	Very toxic to aquatic life
Aquatic chronic 1	H410	Very toxic to aquatic life with long lasting effects
Aquatic chronic 2	H411	Toxic to aquatic life with long lasting effects
Aquatic chronic 3	H412	Harmful to aquatic life with long lasting effects

[4] https://staff.swansea.ac.uk/professional-services/estates-and-facilities-management/our-services/sustainability/waste/

Hazard class and category code(s)	Hazard statement code(s)	Description
Aquatic chronic 4	H413	May cause long lasting effects to aquatic life
Ozone	H420	Harms public health and the environment by destroying ozone in upper atmosphere

5.2 Nanoparticles

If you are working with nanoparticles you must not dispose to drain, instead follow the process detailed in Section 5.3. Due to the size of the nanoparticles there is a risk of bioaccumulation in sea life if disposed to drain. To understand how the materials should be disposed of check the associated MSDS.

5.3 Accepted disposal

Any hazardous chemicals detailed in Section 0 and those with hazard classifications shown in Table 1 must be disposed to the Chemical Waste Store, in line with the Chemical Waste Store Users Procedure (see footnote 2). All nanomaterials must be disposed of in-line with 'Waste Management Guidance Note 33 Nanomaterials Waste'.

Any

5.4 Accidental discharge to drain

If a volume greater than 1m^3 or containing any chemical compounds detailed in Section 0 is accidentally discharged to drain the following process **must** be followed:

- Notify laboratory technician (if applicable) and space owner/manager of the accidental discharge
- Contact your Faculty specific Environment Officer
- Raise an adverse event through the on-line 'Report it!' system[5]

If deemed necessary your Faculty's Environment Officer will notify Welsh Water and any other applicable regulatory bodies. In addition, an investigation will be undertaken in-line with the University's Adverse Event Procedure.

6 Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of EcoCampus and the ISO 14001:2015 standard.

Departure from this procedure is addressed in the procedure **10.1 Nonconformity and Corrective Action**

[5] Report it! system: https://www.swansea.ac.uk/about-us/safety-and-security/health-and-safety/report-it/

7 Version Control

Date	Version	Update
Feb-2021	1.0	New document
Feb-2025	2.0	- Removal of review date. Documents to be reviewed only when there has been a change in activities, scope, legislation/regulatory requirements or university procedure/policy. - Section 5.2 added including Figure 1: decision tree - Added section 8 – relevant UNSDG tiles - Added Appendix 1 - Added Appendix 2: Discharge to Drain Log

8 Relevant United Nations Sustainable Development Goals

Appendix A: Schedule 1

Schedule 1 compound of 'The Trade Effluents (Prescribed Processes and Substances) Regulations 1989 (SI 1989/1156)'

- Mercury and its compounds.
- Cadmium and its compounds.
- gamma-Hexachlorocyclohexane.
- DDT.
- Pentachlorophenol.
- Hexachlorobenzene.
- Hexachlorobutadiene.
- Aldrin.
- Dieldrin.
- Endrin.
- Carbon Tetrachloride.
- Polychlorinated Biphenyls.
- Dichlorvos.
- 1, 2-Dichloroethane.
- Trichlorobenzene.
- Atrazine.
- Simazine.
- Tributyltin compounds.
- Triphenyltin compounds.
- Trifluralin.
- Fenitrothion.
- Azinphos-methyl.
- Malathion.
- Endosulfan.
- Pentachlorophenol and its compounds.

For the most up to date version access *via* https://www.legislation.gov.uk/uksi/1989/1156/schedule/1/made

APPENDIX B: Discharge to Drain Log

Discharge to Drain Log

Swansea University Prifysgol Abertawe

All discharges to the foul drain (this includes internal sinks) should be recorded if:

- They **exceed** more than **1m3 per day** *(this will include all discharges across the university)*
- Contain **hazardous** materials *(all hazardous materials should be disposed of through the chemical waste store).*
- Not betweeen **pH 6 and 9.**

The log should be available at all times for inspestion as part of the University Trade Effluent Permit requirements. **Failure to provide this can result in prosecution.**

Date	What has been discharged?	Amount	pH value	Who discharged?
Date	**What has been discharged?**	**Amount**	**pH value**	**Who discharged?**
