Procedure for Disposal of Hazardous Wastes

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PROCEDURE FOR DISPOSAL OF HAZARDOUS WASTES

INTRODUCTION

The University inevitably produces hazardous waste as a result of its operations and accepts that it has a duty of care to dispose of this in a manner that is safe, environmentally appropriate and legal.

This procedure is intended to ensure that all staff and students of the University who generate, manage or dispose of hazardous waste do this in a manner that assists the university to discharge its duty of care in this area.

While this procedure applies to all Schools and Departments, those that do not generate hazardous waste need not set up the infrastructure as defined below. However, all members of staff should be aware of the existence of this procedure as it can also apply to seemingly innocuous materials such as concentrated detergents, batteries and darkroom chemicals.

RESPONSIBILITIES

Deans/Heads of Department are responsible for the safe and legal disposal of hazardous waste arising within their Schools or Department. This includes ensuring that all processes within their area of responsibility that could give rise to hazardous waste are assessed as part of the Risk Assessment. See Risk Assessment and COSHH procedures.

The University Health & Safety Manager and in particular, the Hazardous Waste Advisor.

- Are the only personnel with access to the waste chemical store
- Advise on all matters relating to waste
- Can refuse to accept waste for disposal if it is inappropriately contained or labelled or poses a danger to disposal staff or requires specialist disposal through an alternative management system e.g. (clinical or radioactive)

The Hazardous Waste Advisor

- Is the only member of staff with approval to add or remove material from the waste chemical store - exceptions are: **In the absence of the Hazardous Waste Advisor and in an emergency** - Operational Health & Safety staff
- Will inform all departments to compile a list of waste for disposal at the appropriate times
- Will collate all lists, compile and keep up to date a hazardous waste register
- Will check that all special waste is labelled with the appropriate code for disposal
- Will arrange for a “drop off” point (waste store at rear of the Denholm Building) and a time for all Schools and Departments prior to finalised waste disposal uplift
- Will check all containers are securely packaged prior to the arrival of the waste disposal company
- Will ensure all waste leaves the university in a safe condition.

Laboratory supervisors, project supervisors, and technical staff

- Will appropriately manage general laboratory and student project waste
- Complete **COSHH** and **RISK ASSESSMENT** forms to include waste information
- Will ensure waste leaving their work area is labelled appropriately.

  All staff, project students & waste generators

- Will inform the School or Department waste coordinator or Hazardous Waste Advisor of any waste that may arise within their work area.
- Must ensure that all stocks and samples, whether in use, storage, or for disposal, are labelled with the correct chemical content.
- Will ensure on completion of projects that all hazardous materials used or stored are to be disposed of.

The local Health, Safety and Wellbeing Champion or relevant staff must ensure that all waste generators, i.e. academic, technical, research staff and students are aware of this Procedure and the requirements placed upon them.

PROCEDURE

This procedure covers management of hazardous waste anywhere within the University. It does not apply to the management of hazardous waste in areas outside of the University (e.g. as the result of visits to other workplaces with University Staff, field trips). Separate arrangements must be put in place for such management in consultation with the Resilience and Safety team prior to the commencement of the activities that may generate such waste.

There is a specific requirement, under the Environmental Protection Act 1990 and subsidiary legislation to ensure the safe management and disposal of hazardous waste. The responsibility to ensure compliance rests with the University, the School / Department and all individuals involved.

This procedure details how the University is organised to manage hazardous waste. Compliance with this procedure will ensure that there is no breach of legislation. Failure to follow this procedure is a breach of University rules and it likely to lead to a breach of legislation.

Electronic lists are used to give clarity, easier use of auditing.

The development of the university electronic “waste list” depends upon School or Department lists being grouped by specific chemical type and hazard. These lists are used by the Hazardous Waste Advisor to compile a master file. Such a list will reduce the time required to compile departmental and master waste lists.

Where reasonably practicable it should be possible to replace some hazardous materials with less hazardous ones, for example, replacement of mercury apparatus with non-mercury

systems e.g. water manometers, electronic thermometers.

Risk Assessments

All Risk Assessments must identify the nature and quantity of hazardous wastes arising out of processes and, in doing so, identify methods to minimise such waste where possible, storage facilities prior to disposal and the routes of disposal. A copy of all such Risk Assessments with the hazardous wastes so identified must be sent to the Hazardous Waste Advisor.

Contact Resilience and Safety for further information and advice regarding Risk Assessments.

Early sight of such Risk Assessment and identified wastes will allow the Hazardous Waste Advisor and, if necessary, the University Health & Safety Manager, to give advice on minimisation of waste, neutralisation of waste prior to disposal, storage of waste and correct routes for disposal if the University hazardous waste disposal management system is not appropriate for this function. It will allow the Hazardous Waste Advisor to exercise good forward planning.

Special Waste is hazardous waste in Scotland but called hazardous waste elsewhere in the UK.

Waste is defined as hazardous, when it is particularly reactive and cannot be neutralised in a safe manner. Hazardous waste, within the definition of special waste, includes the following types of materials:

Acids	**Alkalis**	**Carcinogenic**
Mutagenic	**Teratogenic**	**Ecotoxic**
Explosive	**Flammable**	**Harmful**
Infectious	**Irritant**	**Corrosive**
Toxic agents	**Reducing agents**	**Oxidising agents**
Amines - (these must be kept separate from other material)		
Any material that releases toxic gas in contact with air, water or acid		

Removal of Hazardous Waste

All waste accepted by the Hazardous Waste Advisor must meet the following criteria:

- No hazardous waste will be accepted if it is not on the coded list or there is no indication on the storage container as to its contents. i.e. NO UNKNOWNS WILL BE ACCEPTED
- No hazardous waste will leave the university without a waste code.
- Hazardous waste will be removed from the University, generally on a once per annum basis and normally at the beginning of September. Other uplifts may take place at the discretion of the Health & Safety Manager (or Depute) and Hazardous Waste Advisor.
- Hazardous (and other) wastes may not be transferred between campuses of the University. Such transfer is in breach of legislation. Hazardous waste arising on

campuses other than the Paisley Campus will be uplifted from the campus of origin. The receipt, classification, coding and uplift of such waste will be arranged by the Hazardous Waste Advisor in conjunction with the School/Department were the waste has been generated on the campus involved.

On receipt of hazardous waste from each School or Department, the Hazardous Waste Advisor will:

- Designate a code for each chemical type
- Print off final lists as required for removal of waste.
- Contact SEPA approved waste receiving contractor and arrange removal of waste at a mutually agreed time for each campus.
- Ensure all documentation is legally correct and "sign off" waste to contractor.
- Ensure contractor has correctly labelled all waste prior to removal.
- Keep records of all waste consignments that have been removed for **5 years** and send a copy to the University Health & Safety Manager.

Management of General Laboratory Waste

- All laboratory waste from experiments should be collected in the appropriately labelled containers by the waste generator or supervisor
- Organic solvents waste must be classified as *chlorinated* or *non-chlorinated* and must be kept separate from other waste types. The Hazardous Waste Advisor, from whom advice on the different types of solvent is available, will provide suitably labelled containers for these materials
- Small quantities of waste that can be neutralised safely and then diluted with water, may be washed down the sinks in fume cupboards.

  Advice on such disposal must always first be obtained from the Hazardous Waste Advisor and be incorporated into the COSHH Risk Assessment
- Mercury waste from broken thermometers should be collected using the appropriate spillage kit. The Health & Safety Manager must be informed of every such spillage immediately it occurs. The waste must be placed in a sealed container and stored safely by the Hazardous Waste Advisor until the yearly disposal.

Management of Project Waste

- Student and special projects, which may produce unique wastes, must be stored in the appropriate labelled container and kept safely until subsequent removal / disposal by the Hazardous Waste Advisor.
- Large quantities of hazardous waste arising out of one project or operation may need to be disposed of through an approved, licensed waste disposal company. Such disposal must be made in conjunction with the Hazardous Waste Advisor.

Solvent Waste

Organic solvent must be collected in 2.5 litre bottles in each generating department. When the bottles are full, the Hazardous Waste Advisor must be notified. They will remove them to the hazardous waste area where they are then decanted into larger 25-litre drums. Conversely, the Hazardous Waste Advisor may call the department and request advice as to whether there is material to be moved into storage.

The solvent must be categorised as either:

- Chlorinated
- Non-chlorinated
- Toxic solvent, i.e. Biohazard solvent waste - store as separate waste.

N.B. - For toxic solvent waste, the generating School or Department must supply complete chemical content details to the Hazardous Waste Advisor.

It is important to note that if the non-chlorinated solvent has chlorinated waste within it that exceeds a 1% concentration of chlorinated hydrocarbon, it must be treated as chlorinated waste.

Unknown and non-specified materials should be isolated until tested and identified.

Type Specific Waste

Type specific waste, i.e. that classified under REACH Regulations (Registration, Evaluation, Authorisation and Restriction of Chemicals) as toxic, harmful, irritant etc., should be identified by the Hazardous Waste Advisor, who shall generally designate a package for each specific waste stream then code and pack the items.

Oil Waste

Oil/contaminated oil may also be managed within this system, and must be accommodated and managed with the following guidelines:

- Waste oil from machinery that has not been contaminated by chemicals should be stored in a suitably labelled container.
- Contaminated oil must be stored in a separate container and labelled with comprehensive details of the contaminants.
- Heavy oil and light lubricating oil waste should be kept separate from each other.
- All waste oil should be stored by the generating School or Department until the specified disposal date. The Hazardous Waste Advisor will provide containers and labels.
- Bulk quantities of waste oil may have to be disposed of as a “one-off” operation. This may need to be disposed of through an approved, licensed waste disposal company. Such disposal must be made in conjunction with the Hazardous Waste Advisor.

Charges for such a disposal may require to be met by the School or Department that generates such bulk waste.

Clinical Waste

The risk assessment for work being carried out must be displayed in the labs.

Clinical waste within the School of Health and Life Science

Plastic pipette tips are put into the plastic tip boxes, which are then put into the autoclave waste bags for plastics.

All contaminated plastics are put into the autoclave waste bags labelled for plastics.

Contaminated disposable gloves and paper are put into autoclave waste bags labelled for non-plastics.

Autoclaved plastics are sent in dry mixed recycling (DMR) waste

All other autoclaved materials go to landfill.

All autoclave waste is deemed safe due to sterilisation by steam, the autoclaves are serviced bi-annually and tested with a spore test monthly.

All sharps are disposed of in yellow sharp bins, these are uplifted by a waste company from a secure locked cage location.

All glass is put into the yellow plastic bins, these are uplifted by Estates and taken to the glass waste skip.

Any individual who will create clinical waste has an induction at local level, into the correct procedures.

Within the waste disposal process, procedures are recorded as part of a risk assessments i.e.

The Class 2 Cabinet must be washed with, at least, 70% alcohol before and after use.

Bench tops must be washed with 1% VIRKON after use.

Any contaminated materials not for incineration, glassware etc. which has been in contact or contained microorganisms, must be placed in a METAL BUCKET for autoclaving before cleaning. Buckets must not be overfilled.

Any contaminated soft materials such as plastics, tissues etc. (not sharps) must be placed in the plastic pedal bin labelled ‘CLINICAL WASTE NO SHARPS BIN.’
Bins must not be overfilled.

Clinical waste must be autoclaved on the appropriate cycle.

Battery Waste

All waste batteries must now be recycled and this is carried out by an approved licensed contractor arranged by the University Hazardous Waste Advisor.

NO BATTERIES MUST ENTER THE WASTE STREAM THAT GOES TO LANDFILL

All batteries should be placed in the containers provided by the approved contractor at locations on each campus, recycling boxes can be found at campus reception desks.

General battery recycling containers are provided at locations on each campus, such as campus reception desks. Each container is clearly marked "RECYCLE YOUR BATTERIES HERE". Most common single-use batteries can be placed in these containers. It is not necessary to separate the different types and sizes of battery placed in these containers, as the removal company will do this. However, rechargeable batteries (including lithium-ion types commonly found in portable electronics), lead-acid batteries, mercury batteries, or thionyl chloride batteries must NOT be placed in these general recycling containers. These specific types must be given directly to the hazardous waste advisor to be managed as part of the hazardous waste stream. Once the general recycling container is full, the Hazardous Waste Advisor must be informed so that it can be removed and emptied. A record of the weight of batteries removed for recycling will be kept by the Hazardous Waste Advisor.

Radioactive Waste

All radioactive wastes are dealt with by the Health & Safety Manager only in coordination with the local UWS Radiation Protection Supervisor and Radiation Protection Advisor.

Contact Health and Safety for further information and advice regarding radioactive waste.

Movement of Waste from Generating Source to Disposal

The collection of wastes from points of generation is an on-going process, with regular weekly movement of materials from source of generation to storage facility. In general the following procedure is adhered for the removal of waste:

1. Contact SEPA approved waste receiving contractor and arrange removal of waste at a mutually agreed time for each campus.
2. Ensure all documentation is legally correct and "sign off" waste to contractor.
3. Ensure contractor has correctly labelled all waste prior to removal.
4. Keep records of all waste consignments that have been removed for **5 years** and send a copy to Health & Safety.

Preparation for Waste Removal

The Hazardous Waste Advisor will:

- Inform the Health & Safety Manager of the impending waste uplift
- Advise the licensed waste contractor that the waste is being made ready for uplift
- Advise all Schools and Departments via the waste coordinator of the impending uplift, allowing two weeks for lists to arrive
- Advise on the types of waste that are acceptable for disposal
- State the date by which completed lists must be sent
- Establish of a drop-off or pick-up point and the date on which all materials must be delivered to these points
- State the date by which the waste will be removed by licensed waste receiving contractor

Once all lists are received, the Hazardous Waste Advisor will compile a full list on a database of all waste to be removed in accordance with the master list. This master list may be viewed by all Schools and Departments upon request to the Hazardous Waste Advisor. This list is protected and only the Hazardous Waste Supervisor and Health & Safety Manager (or Depute) have the authority to add or remove information from the database.

Details on the use of the electronic waste database can be obtained from the Hazardous Waste Advisor.

Compilation of Final Waste List

The Hazardous Waste Advisor will contact all Schools and Departments once again to advise that the master list is being finalised and that all waste materials must be submitted within two days. Thereafter, he will:

- Check lists for materials that could be recycled
- Finalise complete master list with School or Department codes
- Contact authorised licensed waste receiving contractor and supply them with the final master list
- Receive confirmation from the authorised licensed waste receiving contractor that the list and costs are acceptable (interdepartmental recharges may apply).
- Inform the Health & Safety Manager of accepted list and ensure all appropriate documents are signed by the appropriate Head of Department.
- Set an uplift date

Programme for Actual Removal

The Hazardous Waste Advisor and a representative from Health & Safety will be present at the waste storage area (currently at the rear of Denholm building). The waste master list and consignment notes will be checked with the authorised licensed waste contractor. Copies of all consignment notes will be retained by the Hazardous Waste Advisor and a copy to the Health and Safety Department.