PRINCE OF WALES MEDICAL RESEARCH INSTITUTE NEUROSCIENCE RESEARCH PRECINCT

WASTE MANAGEMENT PLAN

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January 2009

Contents

Summary

Handling and disposal of Operational Waste for the Prince of Wales Medical Research Institute is carried out by way of the Waste Management Plans for its two principal precinct partners, the Prince of Wales and Sydney Children's Hospital and the University of New South Wales.

POWMRI maintains records of the levels of all waste generated by type and a summary of these for current operations is presented in the schedule included in this compilation.

The schedule includes and addresses the disposal entity for the following specific waste types

- Clinical waste
- Sharps
- Chemical waste (non radioactive)
- Radioactive waste
- Recyclable paper
- Dirty linen
- General office/lab/kitchen waste
- Wet bag (animal carcass)
- Animal bedding
- Empty chemical containers
- Broken glassware
- Recyclable copper wire

POWMRI actively monitors waste levels and continually seeks to reduce materials and resource consumption and waste generation levels as far as is practicable without compromising the research programs being undertaken.

The progressive development of the Neuroscience Research Precinct will expand and add to the range of research programs being undertaken by POWMRI essentially based on similar world class leading edge laboratory techniques and equipment to those currently utilised.

The Waste Management Plan for the Neuroscience Research Precinct will continue current handling and disposal practices for operational waste and the schedule has been expanded to provide estimates for future levels of waste based on average current levels generated per research staff member.

The current Waste Management Plan for the POWH and Laboratory Hazardous Waste Disposal Procedures for UNSW are included as Appendix A and B to this compilation

These Waste Management Plans provides safety guidelines and produces to ensure ongoing improvements in all aspects of waste management including the generation, handling, storage and disposal of all current and anticipated types of waste for the Prince of Wales Medical Research Institute and the proposed Neuroscience Research Precinct.

Schedule of Waste for Prince of Wales Medical Research Institute and Estimates of Waste for the Neuroscience Research Precinct

Waste type	Container	Approx average monthly disposal	Average monthly disposal volume (L) per employee	Estimated total monthly disposal volume (L)					Disposal Service
				Existing	Stage 2A	Stage 2B	Stage 2C	Stage 2D	
			Staff No:	**225**	**300**	**500**	**500**	**650**	
Clinical waste	50L bags	100	22.22	5000	6667	11111	11111	14444	POWH
Sharps	Containers	11 x 19L, 4 x 5L, 1x7.8L	1.05	236.8	316	526	526	684	UNSW
Chemical waste (non radioactive)	Litre container	245L	1.09	245	327	544	544	708	UNSW
Radioactive waste	Litre container	11L (mixed liquid & solid)	0.05	11	15	24	24	32	UNSW
Recyclable paper	39L bins	96	16.64	3744	4992	8320	8320	10816	POWH
Dirty linen	Bags (assume 50L bags)	13	2.89	650	867	1444	1444	1878	POWH
General office/lab/kitchen waste	40L bags	6/day ~ 120/month (1st floor) 8/day ~ 160/month (ground floor)	49.78	11200	14933	24889	24889	32356	POWH
Other:									
Wet bag (animal carcass)	50L bag	1	0.22	50	67	111	111	144	POWH
Animal bedding	50L bag	24	5.33	1200	1600	2667	2667	3467	POWH
Empty chemical containers		3x20L, 4x5L, 1x2L	0.36	82	109	182	182	237	UNSW
Broken glassware	30L bin	2/year	0.02	5	7	11	11	14	UNSW
Recyclable copper wire		6L	0.03	6	8	13	13	17	

Waste Data Source: POWMRI 19 November 2008

Appendix A – Prince of Wales & Sydney Children's Hospital Waste Management Plan

Prince of Wales & Sydney Children's Hospital

WASTE MANAGEMENT PLAN

1st Edition
July 2006

1 Introduction

1.1 Aim & Objectives

The Prince of Wales & Sydney Children's Hospitals is committed to providing a clean and safe environment for all staff, patients and visitors.

The purpose of the ***Waste Management Plan,*** is to provide guidelines to:

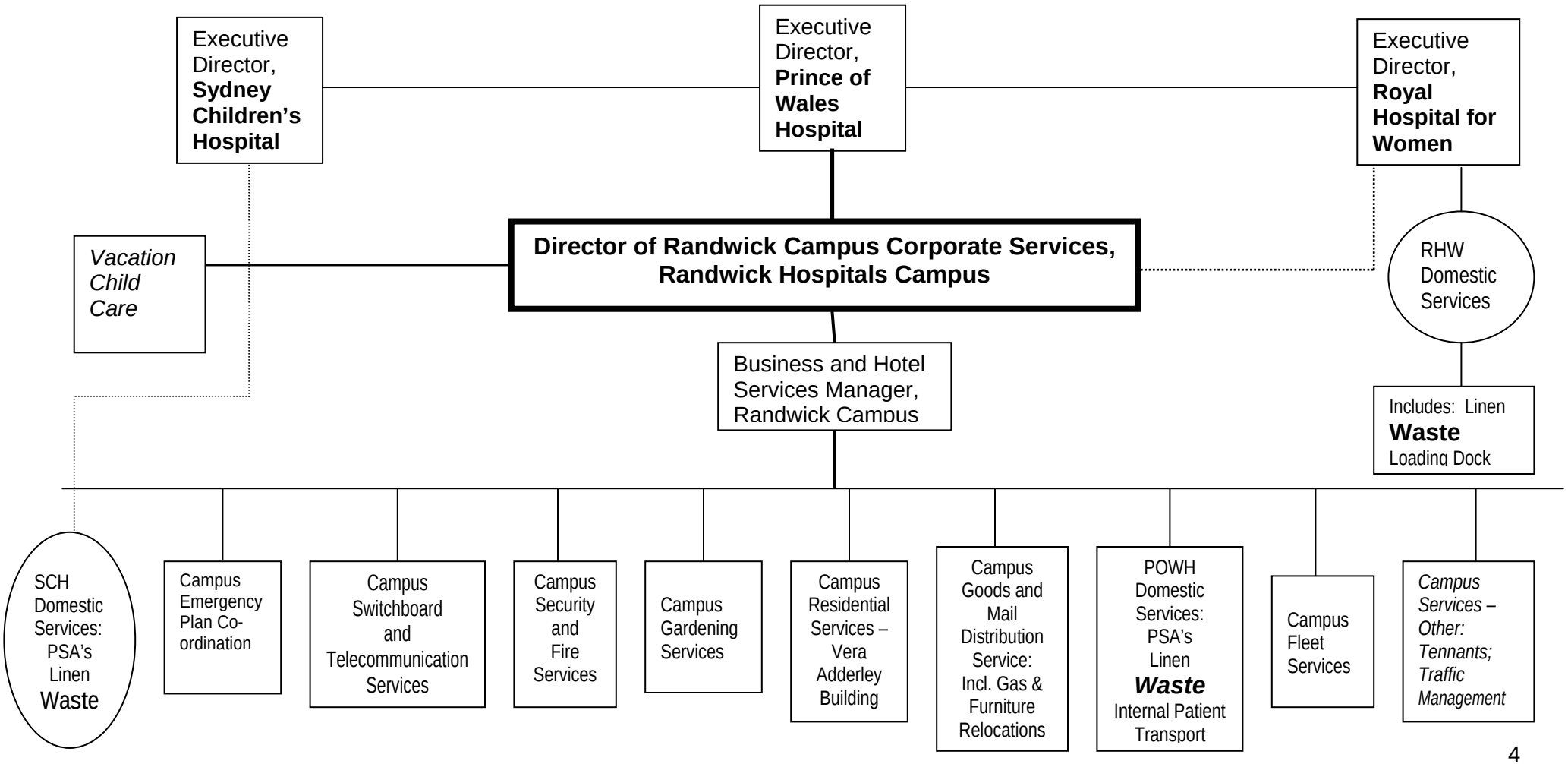
- reduce potential hazards
- reduce waste
- increase segregation
- increase recycling
- increase environmental awareness.
- Reduce environmental impact

1.2 Randwick Campus Services Organisational Structure – Which Incorporates Waste Management (THIS NEEDS TO BE UPDATED to reflect Northern Hospital Network)

ORGANISATIONAL CHART FOR

RANDWICK CAMPUS SHARED SERVICES

August 2005



1.3 Waste Management Committee

Terms of Reference

Main Purpose Statement

- Provide a forum for discussion, monitoring, decision-making and evaluation of systems and processes related to the efficiency and effectiveness of Waste Management across the Campus.

Strategies and processes to assist the Committee to achieve its aims

- Report, monitor and evaluate performance in regard to Waste Management across the Campus.
- Initiate, receive and act on reports related to the functioning of Waste Management
- Develop, implement, monitor and evaluate operational policies, business plans and key performance indicators related to service provision.
- To provide a reporting mechanism to the SESIAHS Northern Sector Executive
- To maintain compliance with the EQuIP Waste Management Guidelines

Reporting lines and relationships to other committees

Minutes and Reports of the Waste Management Committee will be included in the report to Safe Practice and Environment Committees.

Membership of the Waste Management Committee includes:

- Director of Campus Corporate Services (Chairperson)
- Waste Management Coordinator — Prince of Wales Hospital Campus
- Domestic Services Manager — Prince of Wales Hospital
- Domestic Services Manager — Sydney Children's Hospital
- Domestic Services Manager — Royal Hospital for Women
- Representative, — Prince of Wales Private Hospital
- Representative, — Property Building & Maintenance Service
- Representative, — Material Resources Department
- Representative, — Prince of Wales Hospital OH&S
- Representative, — Royal Hospital for Women OH&S
- Representative, — CHESS
- Representative, — Nursing
- Representative, — S.E.A.L.S.
- Representative, — Q.F.S.
- Quality Manager — Prince of Wales Hospital
- Quality Manager — Sydney Children's Hospital

Other persons may be co-opted as required.

Chairperson

Duly elected member of the Committee, Elections to be held annually

Secretary

Secretarial support will be provided by Campus Corporate Services.

Quorum

A quorum will be 50% plus one, other than when it is agreed by the Chairperson that the meeting should proceed with a reduced number

Frequency and duration of the meetings

Meetings will be held bi-monthly on the second Tuesday at 10:30am for up to one hour.

Distribution of minutes and business papers

Agenda items should be forwarded to the Chairperson at least one week prior to the scheduled meeting. Business papers will be circulated 3 days prior to the meeting. Minutes will be distributed two weeks after the meeting.

Copies of minutes will be distributed to:

- Prince of Wales Hospital Executive Unit
- Sydney Children's Hospital Executive Unit
- Members, Waste Management Committee

Reporting Standards

An Action Table is to be maintained for all committees and should form part of the agenda.

No.	***Action***	***Responsible Officer***	***Status/Due***
1			
2			
3			

Minutes will follow standard meeting procedures and be ratified at the next meeting. Minutes that have not been ratified by the appropriate committee should be identified as such when distributed. The general order of business for all committee meetings will be:

Item 1: Present/Apologies
Item 2: Confirmation of Previous Minutes
Item 3: Action Table
Item 4: Business Arising
Item 5: General Business
Item 6: Business without Notice.

Evaluation

The effectiveness of the Committee should be evaluated annually using KPIs agreed from time to time by the Committee. As a minimum, these should include:

- The number of meetings (6) held throughout the year and the attendance record (80%) of members of the Committee.

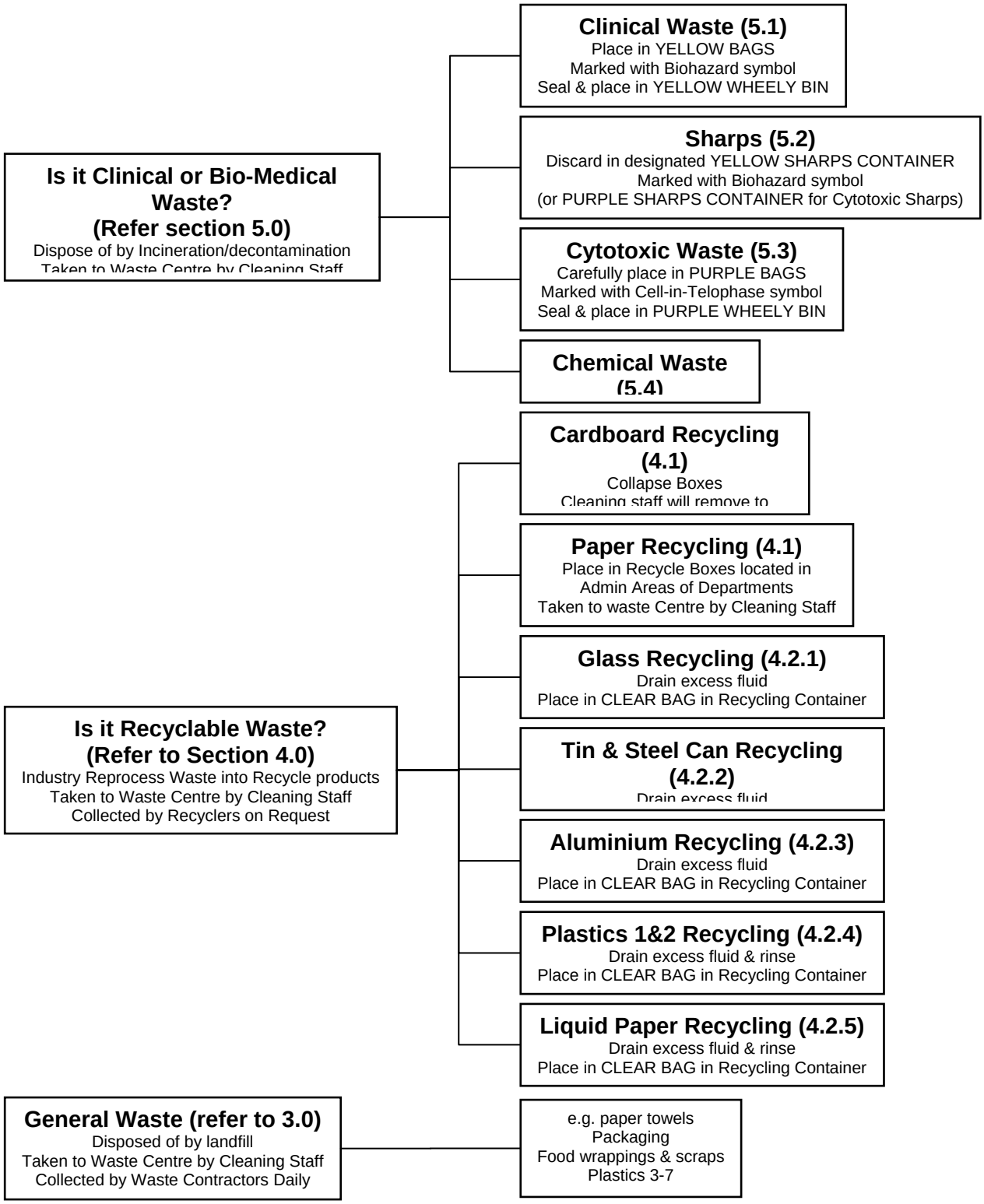
- The number of agenda and action items listed in the business papers that were successfully resolved by Committee members.
- The level of satisfaction with the functionality and effectiveness of the Committee by its membership.
- The extent to which the Committee can demonstrate it has achieved its aims by comparison to the appropriate ACHS and Numerical Profile Standards.

Terms of Reference Ratified

Chairperson: _____

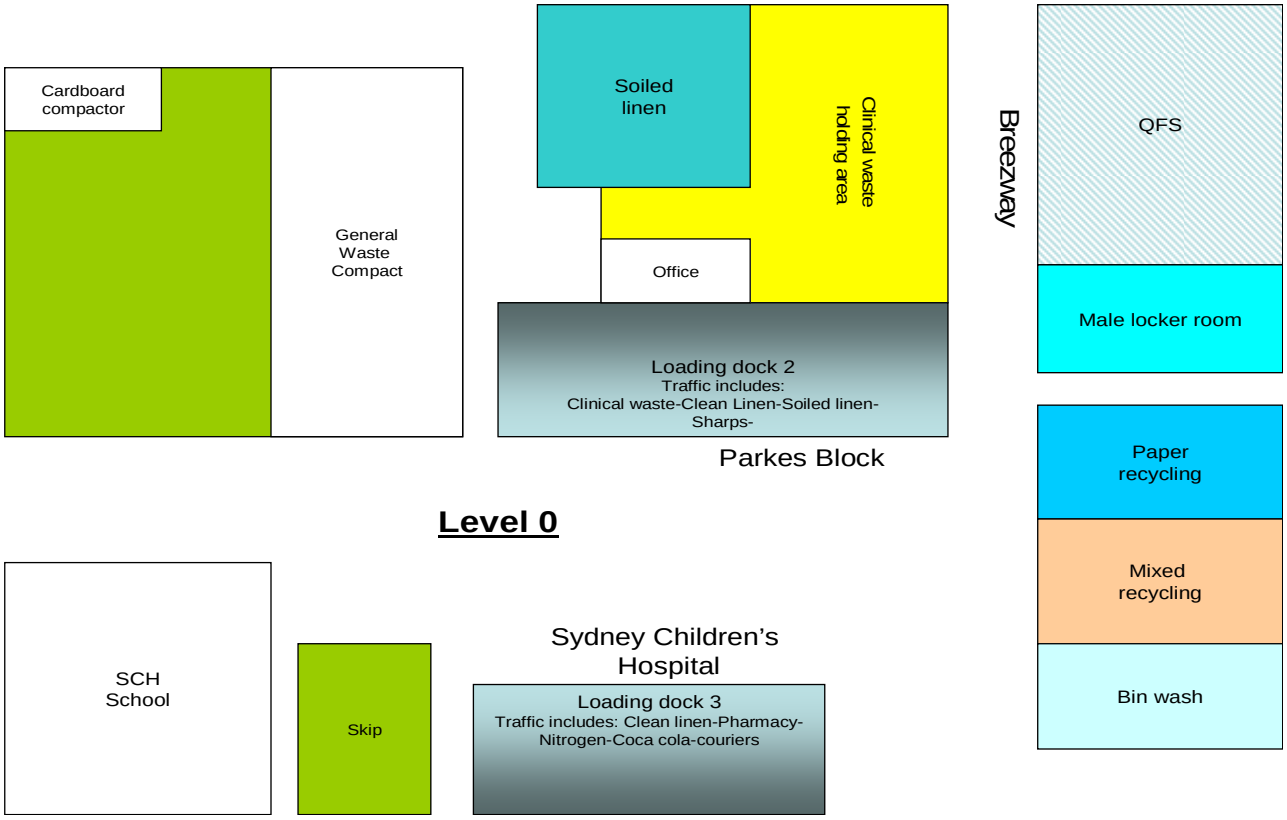
Date: _____ Review Date: _____

1.4 Waste Management at Glance



1.5 The Waste Centre

The Waste Centre is the area located on Level 0 Parkes Building and delivery dock 2 and is divided into several sections for storage of the different waste streams prior to collection by Waste Contractors.



Clinical and cytotoxic wastes are collected and transported externally by a NSW Health Department appointed contractor. General waste and recyclable materials are collected and transported externally by the South Eastern Health appointed contractor. Unwanted hospital equipment is donated to charity. Discarded items such as desks, cabinets and folders are available for reuse by staff. Contact the Waste Management Coordinator Ext. 22815 if you are interested in any items.

1.6 Relevant Regulations & Guidelines

There are many guidelines and regulations, which determine the waste management practices, which we must follow.

Legislation:

- NSW Occupational Health & Safety Act 2000
- NSW Occupational Health & Safety Regulation 2001
- Poisons and Therapeutic Goods Regulation 2002
- NSW Radiation Control Act 1990 and Amendment Act 2002
- NSW Radiation Control Regulation 2003, (s.27)
- Energy Administration Amendment (Water & Energy) Act 2005

NSW Environmental Legislation:

- Protection of the Environment Operations Act 1997
- Waste Avoidance and Resource Recovery Act 2001
- Environmental Guidelines: Assessment Classification, & Management of Liquid and Non Liquid Wastes, 1999

External References:

o **WorkCover NSW**

- WorkCover NSW Code of Practice for Control of Workplace Hazardous Substances
- WorkCover NSW Storage and Handling of Dangerous Goods Code of Practice, 2005

o **Guidelines:**

- NHMRC: National Health and Medical Research Council, National Guidelines for Waste Management in the Health Care Industry, (1999)
- NSW Department of Energy, Utilities and Sustainability

o **Standards and Policy**

- ISO1401 – Environmental Standard
- Australian Standards, AS/NZ: 3816, Management of Clinical and Related Wastes, June 1998
- Australian Standards, AS/NZ: 4031, Non-reusable Containers for the Collection of Sharp Medical Items in Healthcare Areas. 1992
- Australian Standards, AS/NZ: 4261, Re-usable Containers for the Collection of Sharp items in Human and Animal Medical Applications, 1994
- Australian Council Healthcare Standards EQUIP Mandatory criteria 5.1.9
- NSW Government Waste Reduction and Purchasing Policy (WRAPP) November 2004

- **Codes of Practice:**

  - Code of Practice for the Management of Clinical and Related Waste, 4th Edition 2004

- **NSW Health Policy Directives:**

  - NSW Policy Directive PD2005 132 “Waste Management Guidelines for Health Care Facilities 1998”
  - NSW Health Policy Directive PD2005 247 “Infection Control Policy”
  - NSW Health Policy Directive PD2005 409 “Workplace Health and Safety – Policy and Better Practice Guide”

- **Internal References**

  - Area Infection Control Manual – Occupational Exposure Procedure, Section 01
  - Area Policy Directive PD 069 Emergency Management
  - Area Policy Directive PD 042 Privacy Policy
  - Area Policy Directive PD 076 Contractor Management
  - Area Policy Directive PD 082 Dangerous Goods and Chemicals
  - Area Internal Disaster Management Procedures – Code Yellow.

If you would like to know any details contained within the above documents, contact the Waste & Environmental Services Manager Ext 22815, or the relevant publisher of the document.

2 Roles & Responsibilities

2.1 Management Responsibility

Management includes directors, department heads, unit managers, supervisors etc.

Refer to: OH&S Act 2000

Responsibilities:

- Ensure safe handling, storage and transport of wastes
- Provide information, instruction, training and supervision necessary to ensure the health and safety of staff relating to waste management activities including the display of safe handling and spill clean-up procedures in a prominent place in risk areas
- Provide and maintain personal protective equipment (PPE), equipment and systems of work that minimise safety/health risks to staff
- Forward completed Incident Report Form of all accident/incidents to the OH&S Coordinator, following signature by a senior manager.

All regulations associated with OH&S procedures must be adhered to by all Hospital and contract staff, who handle, store or transport waste. This includes the requirements relating to manual handling and hazardous substance management.

Actions:

- **Ensure waste bins are located to ensure safe disposal and encourage proper segregation –** e.g. where possible both general waste bin and clinical waste bin available in clinical areas; general waste bin, mixed recycling container and paper/cardboard recycling containers available at workstations and tearooms where space permits.
- **Ensure staff are adequately trained in safe waste management practices** by arranging in-services or attendance at mandatory education sessions

2.2 Staff Responsibility

"Staff" refers to everyone who works at Prince of Wales & Sydney Children's Hospitals everyone generates waste! – including Management, Administrative, Clerical, Medical, Nursing, Allied Health, Maintenance, Kitchen, Cleaning

Responsibilities:

- Safely handle, store and transport wastes
- Actively participate in receiving information, instruction, training and supervision
- Use the personal protective equipment (PPE), equipment and systems provided for safe work conditions (refer to Section 2.4)
- Report all accidents/incidents to management including completion of Incident Report Forms

All Hospital and Contract Staff, who handle, store or transport waste, must adhere to all regulations associated with OH&S procedures. This includes the requirements relating to manual handling and hazardous substance management.

Actions:

- place all wastes in appropriate bags or containers –

  COLOUR CODING OF WASTE

General Waste	=	*Clear bags / dark green bins*
Clinical Waste	=	*Yellow bags / bins*
Cytotoxic Waste	=	*Purple bags / bins*
Anatomical Waste	=	*Yellow bags / Burgundy bins*
Paper / Cardboard Recycling	=	*Paper Recycling Boxes / Blue bins*
Mixed Recycling	=	*Clear bags*

  Sharps must be discarded in designated Sharps Containers

- seal waste bags & sharps containers securely when 3/4 full
- ensure waste wheelie bins are not overfilled
- hold waste bags away from body when transferring to a wheelie bin, (if the bag is heavy, bring the wheelie bin to the bag)
- seal clinical waste bags immediately after discarding wet items and place in yellow wheelie bin
- seal cytotoxic waste bags immediately after use and place in purple wheelie bin
- ensure clinical / cytotoxic & anatomical waste bin lids are locked at all times when transporting.

*2.3 **Cleaning Staff Responsibility***

Responsibilities:

- Safely handle, store and transport wastes
- Actively participate in receiving information, instruction, training and supervision
- Use the personal protective equipment (PPE), equipment and systems provided for safe practices (refer to Section 2.4)
- Report all accidents/incidents to management including completion of the Incident Report form.

All Hospital and Contract staff who handle, store or transport waste, must adhere to all regulations associated with OH&S procedures. This includes the requirements relating to manual handling and hazardous substance management.

Actions:

- Place all wastes in appropriate bags or containers:

  COLOUR CODING OF WASTE

General Waste	=	*Clear bags/dark green bins*
Clinical Waste	=	*Yellow bags/bins*
Cytotoxic Waste	=	*Purple bags/bins*
Pharmaceutical Waste	=	*Purple bin*
Anatomical Waste	=	*Yellow bags/Burgundy bins*
Paper/Cardboard Recycling	=	*Blue bins/office recycling boxes*
Mixed Recycling	=	*Clear bags/Orange bins*

  Sharps must be discarded in designated Sharps Containers

  - Bags of waste are to be collected either when 3/4 full or if they become offensive
  - ensure waste wheelie bins are not overfilled
  - hold waste bags away from body when transferring to a wheelie bin, (if the bag is heavy, bring the wheelie bin to the bag)
  - seal clinical waste bags immediately after discarding wet items and place in yellow wheelie bin
  - ensure clinical and cytotoxic waste bin lids are locked at all times when transporting
  - All wastes are to be transported in the approved receptacles

- All Wastes are to be transported along a route that gives minimum exposure to the public and maximum safety to staff

- Where it is unavoidable to carry bags of waste it is essential to hold the bag away from the body

- Clinical cytotoxic waste must be taken directly from the generating clinical area to the clinical/cytotoxic waste bin. It must not be stored in any other areas

- Clinical and cytotoxic waste must be kept separate from all other kinds of waste when stored, handled and transported

- All waste must be in the designated receptacles when deposited at the Waste Centre

- Ensure Waste Centre is secure and tidy at all times. Clinical Waste Bay must be locked at all times when not in use.

- Thoroughly clean trolleys used for collection of wastes weekly, or as required.

- Notify domestic services supervisor of any spills and assist with clean up using spills kit (refer to Section 2.5 – Location of Spills Kits) Complete incident report form including all details of spill.

- Report any problem with waste equipment to the Waste Management Coordinator Ext 22815 or the Domestic Services Supervisor.

- Provide appropriately coloured and labelled waste bags.

2.4 Personal Protective Equipment

Refer to

- NSW Health Department Infection Control Policy Circular 2002/45
- The Prince of Wales & Sydney Children's Hospitals – Infection Control Manual
- WorkCover NSW (1995) Guidelines for Handling Cytotoxic Drugs and Related Waste in Health Care Establishments, 2nd Edition

Handling and Disposal of Wastes:

Gloves must be worn when handling all wastes:

Health Care Workers must wear non-sterile disposable gloves when handling materials contaminated with blood or body substances.

Cleaning Staff must wear non-sterile disposable gloves when handling all waste.

Waste Handlers must wear leather gloves when transporting all wastes on trolleys or in bins to the Waste Centre. Non-sterile disposable gloves must be worn when handling waste for collection.

Additional PPE must be worn when:

- **there is a risk of splash with blood or body fluids**
  Health Care Workers must wear:
  - gloves
  - gown/apron
  - facial protection

- **handling cytotoxic waste**
  Cleaning staff must wear:
  - double PVC or latex gloves or purpose manufactured gloves
  - safety boots

2.5 Location of Spill Kits

Clinical/General Waste

Each domestic services room (located all over the hospital) contains a yellow bucket, mop with yellow handle for use in clinical spills, and a bucket and mop for general spills. Gloves, paper hand towels, clear and yellow bags, disinfectant and a general purpose detergent are also available from domestic service rooms for use in spills.

If you notice a spill of any kind, contact the cleaner in your area.

Cytotoxic Waste

Cytotoxic spill kits are kept in:

- Pharmacy
- The Waste Centre

Mercury

Mercury spill kits are kept by Security. If you have a mercury spill (e.g. from a broken thermometer or sphygmomanometer), prevent access to the area, and contact:
After Hours contact Security on Ext 22847, and request that they bring the mercury spill kit (refer to Section 5.4.2. for procedure).
Monday – Sunday 0600-1430 contact Cleaning supervisor on Ext 22884 to assist in the spill cleanup

Chemical

Chemical spill kit is held in the maintenance department. If you have a chemical spill prevent access to the area, and contact:
After Hours contact Security on Ext 22847, and request that they bring the chemical spill kit (refer to Section 5.3.1. for procedure).
Monday – Sunday 0600-1430 contact Cleaning supervisor on Ext 22884 to assist in the spill cleanup

2.6 Education

Staff education is an important part of achieving a successful waste management program. There are several different means of education available to staff.

Orientation
All new staff who attend orientation will attend at least one session on waste management. Contact the orientation coordinator for details regarding when the orientation program is next running.

Mandatory Program
The Mandatory Program is a block training, which runs for two hours. In this time, many mandatory subjects are covered such as Fire Safety, Infection Control, and Waste Management. The ten minute session on waste management covers waste segregation, the hospital waste management program, relevant requirements and the reasons behind waste management. All staff should attend this program annually.

In-Service Program
The Waste Management Coordinator Ext 22815 is available to give in-services to individual areas requiring specific waste management training.

Educational Materials
Education materials such as this manual, stickers and posters are available from the Waste Management Coordinator Ext. 22815.

3 Recycling

Many familiar items can be recycled. The Prince of Wales & Sydney Children's Hospitals has a commingled and paper product recycling service, which is explained in more detail in the following pages.

There are two main types of recycling:

▪ Paper & Cardboard Recycling

Paper to be recycled is placed in the appropriate desk side boxes marked as paper recycling.

These boxes are emptied by the individual staff member who sits at that desk, into the blue paper recycling bin located in their department (this is not the role of the PSA/cleaner).

Cardboard boxes must be broken down flat and left next to the blue recycle bin for collection.

▪ Mixed Recycling

Recycling containers are labelled to indicate items that can be recycled.

Recycling material is transported in the bin and stored in the Waste Centre in the designated place.

Cleaning Staff **must** wear gloves when collecting recycling and when transporting recycling in bags or containers.

3.1 Paper & Cardboard Recycling

What is it?

Used paper and cardboard is a valuable resource. It is not waste until it becomes part of the rubbish stream.

If you're not sure whether the item can be recycled, check on the Paper and Cardboard Recycling List

Where will it go:

All paper and cardboard is taken to one of the main paper mills where it is remade into paper with recycled content or cardboard, saving the virgin raw material which is trees.

What to do:

- **Separate paper waste** using a desktop or desk side container. Label these containers "Recyclable Paper". It's best if paper is left flat and not crumpled.

- **Transfer paper waste to paper and cardboard recycling blue bin.** This is the responsibility of the staff member at the desk (this is not the role of the cleaner/PSA).

- **Collapse / flatten cardboard boxes** and place next to the paper recycling bin. Each person should flatten the box they discard to fully utilise the space available in the area and assist in the collection process.

What else can I do?

Saving Your Paper
Remember Reduce, Re-use, and Recycle

Ask yourself questions:

- Do you need to keep extra "hard copies" of documents (perhaps a back-up disk is better)?
- Can I inform people using a circular/e-mail rather than individual copies of memos etc?
- Can I print or photocopy onto both sides of the paper?
- Can I reduce the size of the print to fit it all onto one piece of paper?
- Do you have to print the e-mail?

Paper & Cardboard Recycling List
(Blue Bins)

These paper products are recyclable	These are NOT recyclable
Photo copier paper	**Carbon paper**
Writing paper	**Thermal fax paper**
Note paper/ pads	**Waxed paper and cardboard**
Reports (remove binders and plastic sleeves)	**Plasticised paper** (eg sterile pack wrapping, kimguard)
Envelopes (including window envelopes)	**Label backing paper**
Books (can they be reused)	**Lunch & sweet wrappers and bags**
Manila folders	**Facial tissues and paper hand towels**
Computer paper & print outs	**Plastic sheet protectors** (reuse or general waste)
Index cards	**Plastic covers and binders** (reuse or general waste)
Telephone books	**Milk & drink cartons*** (liquid paper board)
Newspapers	**Plastic bottles***
Magazines	**Glass bottles***
Cardboard boxes (flattened / collapsed)	**Aluminium & steel cans***
Thin cardboard boxes (medicine boxes)	

**These items can go in the Orange Recycling Bins*

3.2 Mixed Recycling

What is it?

Mixed recycling (sometimes called commingled) allows those materials, which are able to be recycled to be placed into a single bin (orange). These items are normally food and drink containers and made of material which, can be remanufactured into new products, saving virgin raw material such as oil, power and water.

Where will it go:

The recycling Contractor collects from dock 2 and takes it all to a Material Recovery Facility (MRF) which, is a conveyer belt where people do the final sorting of the materials. One person might pick out all the aluminium cans which are then crushed and sent off to Comalco or Alcan, another person may pick out all the glass jars and bottles which are then sent off to ACI etc.

What to do?

The Prince of Wales & Sydney Children's Hospitals has Mixed Recycling for many familiar items including:

- Glass Jars and Bottles
- Tin and Steel Cans
- Aluminium Cans
- Plastics 1 & 2 (PET and HDPE)
- Liquid Paper Board (or tetra pak or milk and juice cartons)

All these items should be collected placing them in the Orange Recycling Containers. They do not need to be separated into different bins for each item.

NB: Please ensure that no rubbish is put in with the recycling. For example, polystyrene cups used for hot drinks are not recyclable, plastic sandwich containers are not recyclable. These wastes must be put into a general waste bin.

Ensure no food waste is included with the recyclable materials by emptying all containers first, and rinsing where possible.

3.2.1 Glass Recycling

What is it?

Glass Recycling List

These glass items can be recycled (empty & without lids)		**These items are NOT recyclable**
Glass Fruit juice bottles		**Glass I.V. bottles containing antibiotics, albumin etc.** (these are unable to be emptied. Dispose of as clinical waste)
Glass jars		**Injectable drug vials**
Glass medicine bottles		**Ampoules a broken glass vials** (dispose of as sharps)
Beer bottles		**Drinking glasses**
Wine bottles		**Plate glass** (window / mirror)
		Pyrex laboratory glass
		Crockery (ceramic cups / mugs / plates etc.)

What to do:

- **Remove lids** and dispose of lid as general waste
- **Empty contents** of container and rinse if likely to become offensive
- **Place in a Recycling Container** marked specifically for recycling and/or clear plastic bag. Be careful to avoid breakage.

3.2.2 Tin and Steel Can Recycling

What is it?

Food and drink tins such as:

- nutritional supplement cans e.g. ISOCAL cans
- tins from fruit, baked beans etc.

What to do:

- Empty contents of container
- Rinse container to prevent foodstuffs remaining from becoming offensive
- Place lid inside container to avoid accidental injury
- Place in a Recycling Container marked specifically for recycling and/or clear plastic bag

3.2.3 Aluminium Can Recycling

What is it?
e.g.: Soft Drink Cans

What to do:

- Empty contents of container
- Place in a Recycling Container marked specifically for recycling and/or clear plastic bag

3.2.4 Plastics 1 & 2 Recycling

What is it?

Plastics Recycling List

These plastic items are recycled		These are not recycled
PETE – Plastic Type 1 – Polyethylene Terephalate		**V – Vinyls – Plastic Type 3 –** Vynils
HDPE – Plastic Type 2 - High Density Polyethelene		**LDPE – Plastic Type 4 –** Low Density Polyethelene
		PP – Plastic Type 5 – Polypropylene
		PS – Plastic Type 6 – Polystyrene
		Other – Plastic Type 7 – Acrylic, nylon, Polyurethane, laminates etc.

Refer to figure 4.3 for more description.

What to do:

- Remove lids unless they too have a 1 or 2 plastics recycling symbol
- Empty contents of container and rinse if likely to become offensive (such as milk and fruit juice containers)
- Place in a Recycling container marked specifically for recycling.

FIGURE 4.3: Plastics Coding System recommended by the Plastics Industry Association

Type of Plastic	Characteristics	Applications
Polyethylene Terephthalate PET	Clear, rough, solvent resistant, often used as a fibre	Carbonated soft drink bottes, pillow and sleeping bag filling, textile fibres
High Density Polyethylene HDPE	Hard to semi-flexible, waxy surface, opaque, melts at 135 deg. C.	Crinkly shopping bags, freezer bags, milk bottles, bleach bottles, buckets, rigid agricultural pipe, milk crates
Unplasticised Polyvinyl Chloride UPVC	Hard, rigid, can be clear, can be solvent welded	Electrical conduit, plumbing pipes and fittings, blister packs, clear cordial and fruit juice bottles
Plasticised Polyvinyl Chloride PPVC	Flexible, clear, elastic, can be solvent welded	Garden hose, shoe soles, cable sheathing, blood bags and tubing, watch straps
Low Density Polyethylene LDPE	Soft, flexible, waxy surface translucent, melts at 80 deg C, scratches easily	Garbage bags, squeeze bottles, black irrigation tube, black mulch film, garbage bags
Polypropylene PP	Hard but still flexible, waxy surface, melts at 145 deg C, translucent, withstands solvents. Very versatile material with many applications.	Potato crisp bags, drinking straws, microwave ware, plastic kettles, plastic garden settings, baby baths, plastic ;hinged lunch boxes
Polystyrene PS	Clear, glassy, rigid, brittle, opaque, semi-touch, melts at 95deg C. Affected by fats and solvents.	Plastic cutlery, imitation crystal glassware, low cost brittle toys.
Expanded Polystyrene EPS	Foamed, lightweight, energy absorbing, heat insulating.	Foamed polystyrene hot drink cups, hamburger take-away damshells, foamed meat trays, protective packaging for fragile items.
OTHER: Includes all other resins and multimaterials (eg laminates) Examples are polyamida, acyloninle butadiene styrene (ABS), acrylic, nylon, polyurethane (PU) and phenolics.		

3.2.5 Liquid Paper Board Recycling

What is it?

Liquid Paper Board also goes under the names of Liquid Cardboard and Tetra-Pak cartons. They are the 'cardboard-like' containers used for milk and fruit juices. These items cannot be placed in the blue paper and cardboard recycling bins because the actual package contains a plastic coating or is a mixture of paper and plastic which makes it water-proof.

What to do:

- Empty contents of container
- Rinse container to prevent foodstuffs remaining from becoming offensive
- Place in a Recycling Container and/or Clear Plastic Bag

3.3 Reusable items

3.3.1 China Cups

What is it?

Foam, plastic or cardboard disposable cups are NOT RECYCLABLE.
Therefore every time one is used, it must be thrown into general waste. This creates a large volume of general waste, which is sent to landfill. Once in the landfill, disposable cups can take hundreds of years to biodegrade. When they are broken crockery goes to General waste.

A china cup can be reused many times. This is much better for the environment, and more cost effective. Dishwasher in the Kitchen washes ceramic cups at over 90 deg C to kill any bacteria or viruses.

What to do:

- Use china cups when drinking in the cafeteria
- Bring your own mug with you if you are taking tea/coffee away
- Provide access to china/reusable cups for patients and visitors – ensure facilities are available to adequately clean all cups first.

3.3.2 Dietary Supplement Cups

What is is:

Dietary Supplement Cups are used to provide patients with their medications. Some are made from disposable plastic or foam. These cups generate a significant amount of general waste (and environmental impact). Reusable clear plastic cups are available for use as Dietary Supplement Cups, and for water.

What to Do:

- DO NOT THROW AWAY!!! The reusable cups are made from HDPE, which is a hard, clear plastic. The lid with patient details can be thrown into general waste.
- Place used cups back on food trays to be sent to catering for washing before reuse.

5 Clinical or Biomedical Waste

5.1 Clinical Waste

Refer to:
- NSW Health Waste Management Guidelines for Health Care Facilities, August 1998
- NSW Health Infection Control Policy Circular 95/13
- The Prince of Wales & Sydney Children's Hospitals and Community Health Service – Infection Control Manual

What is it?

Clinical Waste is material which has the potential to cause injury, infection or offence. (There are special procedures for sharps, cytotoxic and radioactive substances – see relevant sections)

E.g.
- Urinary and Wound Drainage Bags and Containers including tubing
- Microbiological and Pathological waste
- Materials visibly stained with blood/body fluids and visibly blood stained disposable material and equipment
- Bottles and vials that have contained antibiotics, pharmaceuticals or products from human sources

Disposable Nappies and Incontinence Pads may be disposed of as general waste, if only lightly soiled. However, where they are generated in bulk, or are heavily soiled or infectious, they should be handled, stored and disposed of as Clinical Waste.

What to do:

- Gloves must be worn when handling clinical waste
- Gloves, gown/apron and facial protection must be worn if there is risk of splash with blood or body fluid
- Place all Clinical Waste in Yellow Plastic Bag with the 'bio-hazard' symbol
- Empty bulk body fluids, blood, suctioned fluids, excretions and secretions into the sluice when it is safe to do so (see Safe Work Practice in Infection Control Manual)
- Securely seal the bag when it is 3/4 full
- Place sealed bag in Yellow Wheelie Bin marked with the bio-hazard symbol
- Yellow Clinical Waste Containers / Wheelie Bins must be locked at all times during transport

Cleaning staff must wear gloves (refer to Section 2.4) when handling Yellow Bags and Wheelie Bins and transporting them to the Waste Centre

Waste Contractors provide clean clinical waste containers and remove full clinical waste bins for disposal six (6) days per week

5.1.1 Clinical Waste Tracking

Labels indicating the place of origin must be attached to all sharps containers and waste bags. This must be attached before use. Labels are available from Domestic Services.

The Prince of Wales & Sydney Children's Hospitals conducts clinical waste tracking audits.

The results from these are available from The Waste Management Coordinator Ext 22815.

5.1.2 Pharmaceutical Waste

Refer to:

- **Poisons and Therapeutic Goods Act 1966**
- **Guidelines for the Handling of Medication in NSW Public Hospitals, Circular 95/37**

WHAT IS IT?

Waste generated from pharmaceuticals or other chemical substances specified as regulated goods in the Poisons and Therapeutic Goods Act. Because of advances in technology and more cost effective methods of treatment, such as shredding and decontamination, it is necessary to separate bulk pharmaceutics from other clinical waste. Because anything in the purple (cytotoxic) bin will be incinerated, bulk pharmaceuticals must be placed in purple bins.

Eg.: expired pharmaceuticals
discarded pharmaceuticals

What to do:

- place bulk pharmaceuticals in purple bins for disposal
- ensure pharmaceuticals are not discharged to the sewer, or released into the environment
- participate in pharmaceutical recycling schemes where available.

Cleaning Staff must wear gloves (refer to Section 2.4) when handling Purple Wheelie Bins and transporting them to the Waste Centre. Waste Contractors remove waste for incineration six days per week.

5.2 Sharps

Refer to:

- NSW Health Waste Management Guidelines for Health Care Facilities, August 1998
- NSW Health Infection Control Policy Circular 2002/45
- The Prince of Wales & Sydney Children's Hospitals – Infection Control Manual

What is it?

A Sharp is defined as any object capable of inflicting a penetrating injury.

e.g.	Scalpel blades	Stitch cutters
	Wires	Intravenous sets
	Trocars	Pasteur pipettes
	Autolancets	Broken glass
	Syringe with needle attached	Glass slides
	Hypodermic needles	Hollow bore needles
	Suture needles	Staplers

What to do:

- **Gloves must be worn**
- Gloves, gown/apron and facial protection must be worn if there is risk of splash with blood or body fluid
- Place waste sharps **ONLY** in the sharps container
- Place non sharp waste into relevant bin (eg Interlink system, bloodied tubing into clinical waste, unsoiled packaging into general waste)
- Only fill sharps containers to 3/4 full. This is a staff safety measure to ensure that all sharps fit safely inside the container
- When full, a trained member of staff, seals the sharps container it is then collected by Domestic Services Staff.
- Sharps must be discarded into designated, puncture resistant containers

NB: Sharps must be discarded into Yellow Sharps Containers (disposable/reusable)

Disposable Sharps Containers (Clear/translucent lid)

(See Figure 5.2.1)

- Seal lid of container when 3/4 full to ensure no sharps can escape during transportation
- Place sealed yellow disposable sharps containers into a clinical waste bin
- Waste handling staff will remove clinical wast e bins as required.

5.2.1 Reusable Sharps Containers

What is it?

Designated, puncture resistant yellow sharps containers with a swing tray opening and a handle on the lid (see figure 5.2.1)

What to do:

- Gloves must be worn

*Gloves, gown/apron and facial protection must be worn if there is risk of splash with blood or body fluid.

- Place waste sharps in the sharps container

- Only fill containers 3/4 full. This is a staff safety measure to ensure that all sharps fit safely inside the container. Check when the container is 3/4 full by using the clear viewing window on the side. When container is 3/4 full, nursing staff must:
  Close the lid of the sharps container
  Slide the front lock of the container to the right
  Slide the side locks of the container to the front into the 'Lock' position
  Place sealed Resusable Sharps Container in Utility Room or Waste Collection Room for collection by the waste handling staff.
- Waste handling staff must ensure that the front and side locks are engaged before collecting the sharps containers
- Waste handling staff must wear gloves (refer to Section 2.4) when handling Sharps Containers and transporting them to the Waste Centre
- Waste handling staff will remove full sharps containers as required.
- Empty containers are obtained on production of a sharps exchange docket.

Figure 5.2.1 Sharps Container

Figure 5.2.2 Cytotoxic Sharps Container

5.2.2 Cytotoxic Sharps Containers

What is it?

Designated, puncture resistant purple sharps containers with a Clear/translucent lid opening and a handle on the lid (see figure 5.2.1)

What to do:

- **Double gloves must be worn**
  *Double gloves, tyvek gown and goggles/glasses must be worn if there is risk of splash with blood or body fluid

- **Place all Cytotoxic sharps in Purple sharps container** marked with the cell in telophase symbol and labelled with the word 'Cytotoxic'
- Cytotoxic waste containers are to be locked at all times during transport.

*Reusable sharps containers are <u>NOT</u> used for cytotoxics

Cytotoxic Waste

Refer to:

- The Prince of Wales & Sydney Children's Hospitals – Safe Handling of Cytotoxic Drugs and Related Waste, Information Package for Registered Nursing Staff and Cleaning Staff
- Workcover NSW – Guidelines for handling cytotoxic drugs and related waste in Health Care Establishments 1995.

Any queries about cytotoxic waste can be referred to Clinical Nurse Consultant, Haematology/Oncology.

POWH extn
SCH extn

WHAT IS IT?

Cytotoxic waste is material contaminated with drugs which are poisonous to cells and are largely used in the treatment of cancer.

E.g: Packaging in which cytotoxic drugs have been delivered.
Syringes used for cytotoxic administration (without needles attached)
Syringe caps
Urinary and Wound Drainage Bags and Tubing contaminated with body waste from a
patient receiving cytotoxic substances
Gloves and disposable personal protective equipment used for administration of cytotoxic substances

WHAT TO DO:

- **Double gloves must be worn**

*Double gloves, tyvek gown and goggles/glasses must be worn if there is risk of splash with blood or body fluid

- **Place all Cytotoxic Waste in Purple Bag** marked with the cell in telophase symbol and labelled with the word 'Cytotoxic'

- **Seal the bag with tie**

- **Place sealed bag into Purple Wheelie Bin** marked with the cell in telophase symbol and labelled with the word 'Cytotoxic'

- Cytotoxic waste containers are to be locked at all times during transport.

Cleaning Staff must wear full PPE when collecting purple wheelie bins and transporting them to the Waste Centre

- boiler suit with long sleeves
- double PVC or latex gloves or purpose manufactured gloves
- safety boots

NB: Refer to instructions in the Cytotoxic Spill Kit for cytotoxic spill clean-up procedures

4 General Waste

4.1 General Waste

What is it?
A process of exclusion defines General Waste! If the waste does not fit into any other category of waste, it is general waste.

e.g.: Paper towel waste after hand washing
Gloves not contaminated with blood or body fluids
Paper not able to be recycled
Plastic not able to be recycled (not labelled with a 1 or 2)
Packaging not able to be recycled
Others wastes that are not recyclable

Figure 5.1 General Waste/Litter Bin

Where will it go:

All general waste goes directly to landfill, it is not treated in any way.

What to do:

- General waste must be kept separate from other waste
- Place in clear bag and then into a green wheelie bin/general waste bin
- Staff must wear gloves when sealing general waste bags and when transporting general waste in bags/containers or bins.

5.3 Chemical Waste

Refer to:

- Material Safety Data Sheets (MSDS) for further information on the handling, storage, disposal and spill clean up procedures
- Chemwatch for details regarding particular chemicals

What is it?

E.g.: Cyanide
Azides
Formaldehyde
Soluble Oils
Alcohols etc.

What to do:

For all chemical wastes regardless of whether it is a small or large quantity, regularly or irregularly produced, the process is to:

- **Gloves must be worn**
- collect chemical wastes in suitable containers
- check with other departments to see if they require the chemical
- contact the Waste Management Coordinator for details of the EPA licenced Chemical Waste Collection contractor.
- ensure the EPA docket brought by Chemical Waste Contractor is completed accurately with The Prince of Wales & Sydney Children's Hospitals written in as the generator, your department and a contact name and number should also be provided.
- obtain a completed copy of the docket and forward to the Waste Management Coordinator for record keeping and invoice approval.

This is The Prince of Wales & Sydney Children's Hospital's 'proof' of appropriate disposal – it is a legal requirement that proof of correct disposal is kept. Waste chemicals must NOT be disposed of in any drain or waste receptacle, unless it is stated to be safe to do so on the MSDS or approval is obtained from relevant government authority.

5.3.1 Chemical Spill Clean-Up Procedure

When chemical is spilled, prompt action to clean up the spill is essential.

- Gloves must be worn
  *gown/apron, facial protection are also required if there is risk of splash with blood or body fluid or hazardous substance
- refer to the Material Safety Data Sheet (MSDS) for directions to safely manage the spill
- contain the spill (stop it going into the earth, air or sewer or stormwater system etc)
- clean up the spill (using mops, buckets, bags and containers for spilt chemical, soiled cloth etc. see Spill Kit Location List in Section 2.5)
- complete the Incident Report Form
- contact your Manager or the after hours senior nurse manager who will notify the OH&S Coordinator and the Director of Nursing

5.3.2 Mercury Spill Clean-Up Procedure

This refers to small spills e.g. from thermometers or sphygmomanometers on hard floors

SPILL

STEP 1: Ensure area is well ventilated and prevent access to spill. Remove patient/s ` from immediate vicinity

STEP 2: Call Cleaning Supervisor on Ext 22884 between 0600-1430 for Mercury (Hg) Spill Kit. nominate that there is a mercury spill and your location.

STEP 3: Call Security 2100-0600 on Ext 22847 between 0600-1430 for Mercury (Hg) Spill Kit. nominate that there is a mercury spill and your location

STEP 4: Security to fill out Mercury Spills Register in Mercury Spill Kit

Procedure

1. Remove gold or silver rings and bracelets (Mercury bonds to metals). Put on disposable gloves, safety glasses and disposable shoe covers from Spill Kit.
2. Remove any broken glass, place in rigid container (e.g. empty spill kit container)
3. Sprinkle chemical Hg Absorb powder on spill (use twice the volume of powder as there is mercury)
4. Sprinkle powder with water and work into a paste.
5. Use dustpan & scraper to collect Hg compound into provided bag and seal (use clean sample jar if extra container required) Place used bag, dustpan and scraper back in kit.
6. Shine a torch over the area to check that no beads of mercury have been left (repeat steps 3 to 5 if more mercury is found)
7. Mop area with water and disinfectant
8. Place used kit, shoe covers and gloves in yellow bag. Dispose of bag to Yellow Clinical Waste Bin. Mop to be thrown in general waste.
9. Wash hands
10. Ward staff to fill out Incident Report Form and forward to OH&S Coordinator

For spills in crevices or on carpet, remove as much mercury as possible using a syringe (minus the needle) or pipette. Add Hg Absorb Powder, isolate area, and contact the Waste & Environmental Services Manager.

NOTE: Vacuum Cleaners must not be used to clean up mercury spills.

5.4 Radioactive Waste

Refer to:

- National Health and Medical Research Council (1985) Code of Practice for the Disposal of Radioactive Waste by the User
- Radiation Control Act 2001 and regulations
- The Prince of Wales & Sydney Children's Hospitals Radiation Safety manual 1998

Any queries about radioactive waste, or any requests to dispose of radioactive waste, referred to The Prince of Wales & Sydney Children's Hospitals Radiation Safety Officer. The Radiation Safety Officer can be contacted for any urgent matter through the Prince of Wales & Sydney Children's Hospitals Switchboard.

What is it?

Radioactive waste is material contaminated with a radioactive substance.

E.g. tissues and swabs used during injection of a radiopharmaceutical
unused stock vials of radioactive substances
soiled bed linen from patients who have received a radiopharmaceutical
pipette tips used in radioimmunoassays

What to do:

- Disposable Gloves and Lab Coat/Long Sleeved Gown must be worn
  *****Overshoes are to be worn if cleaning up a spill
- Place any material that has been in contact with a patient in a Yellow Clinical Waste Bag, and seal the bag
- Place this Yellow Bag inside a Red Radioactive Waste Bag marked with the 'radiation' symbol and writing in black type and label the bag with the maximum external dose rate, the radionuclide(s) and the date. The bag must then be stored in lead shielded cabinets or transported to the Radioactive Waste Store
- Place any other material in a General Waste bag, and seal the bag
- Place this General Waste Bag inside a Red Radioactive Waste bag and label the bag with the maximum external dose rate, the radionuclide(s) and the date. The bag must then be stored in lead shielded cabinets or transported to the Radioactive Waste Store.
- All radioactive waste bags stored in the Radioactive Waste Store must be recorded in the Radioactive Waste Record Book kept by the Radiation Safety Officer

6 Other Wastes

6.1 Confidential Document Management

What is it?

Many documents generated within the hospital are classified as confidential. The paper recycling system available throughout the hospital does not offer sufficient confidentiality for documents that should have restricted access. The Safety and Security Manual (NSW Department of Health August 1996) defines Confidential Documents to be those which when disclosed could cause:

- embarrassment
- disruption to the efficient operations of the facility
- financial loss
- loss of privacy for patients or staff

This includes any file notes that contain an identifiable name, address, phone number and personal details about a patient or staff member.

Regular staff memos are not generally considered confidential, these should be torn in half 3 or 4 times and placed in the Paper and Cardboard Recycling bins,.

Records containing confidential information must be stored and locked in sturdy steel filing cabinets. The documents must then be disposed in the confidential paper waste stream. Several areas have their own paper shredder for this purpose, and the shredded paper can be placed in a blue bin for recycling. However, when large volumes of paper are involved, a specialised service for the destruction of confidential documents is available, confidential document disposal bins are located in administrative areas of the hospital.

Medical Records **must never** be disposed of in this system.

What to do:
The Patient Matters Manual Part 1 (NSW Dept of Health) sets out the Disposal Schedule for NSW Hospitals for various confidential documents.

Remove any plastics or folders (e.g. lever-arch folders) from the confidential documents, as these are not able to be shredded and can sometimes be reused within the hospital. The confidential documents should either be placed in cardboard boxes and sealed, or arrangement can be made with the Waste Management Coordinator to supply a locked Confidential Document Bin to your area prior to document collection.

6.2 X-ray Recycling

What is it?

X-Rays contain confidential information and they must be disposed of accordingly. The developing processes also leaves silver on the X-ray, which can be recovered before disposal.

What to do:

- All X-Rays that are no longer required should be returned to the Radiology Department for periodical destruction and silver recovery.

6.3 Large Metal Items Recycling

This includes metal beds beyond use, trolleys beyond repair, cabinets etc.

What to do

- Contact the Waste Management Coordinator Ext 22815 who will identify if the item can be used for spares or direct that the item has no further use and be taken to an approved metal recycling centre.

6.4 Furniture, Medical and Office Equipment Recycling

What is it?

Unwanted furniture, medical equipment and office equipment can sometimes be donated to charities, such as Australian Friends of Asia and the Pacific, for distribution to underprivileged nations.

e.g.:
- Beds, bedside cabinets, overbed tables etc.
- mattresses
- filing cabinets
- out of date medical supplies (not medicines)

What to do:

Contact the Waste Management Coordinator on ext. 22815 or pager 42883 to arrange inspection and evaluation.

6.5 Printer & Photocopier Toner Cartridge Recycling

What is it?

Plastic toner cartridges can be recycled. They can be refilled for reuse or disposed of in an environmentally responsible manner. When a quantity has been collected from the hospital, they are sent for recycling.

What to do:

- Bring used toner cartridges to the Waste Management Centre.

6.6 Battery Recycling

What is it?

Nickel Cadmium Batteries sold under Saft, Sunica, Nife, Alcad and Saft-Nife are able to be 'recycled'.

Sealed Lead Acid Batteries which are used in medical equipment (and are usually rechargeable) have reached the end of their life they are also able to be 'recycled'.

Most regular batteries (alkaline etc.) are to be disposed of as general waste as there is currently no better alternative.

What to do:

- Take Nickel Cadmium and Sealed Lead Acid Batteries ONLY to Waste Management Centre who will store them (in separate boxes) until there is a sufficient quantity to call the recyclers for collection.

6.7 Electrical Component Recycling

What is it?

Light Globes, Florescent Tubes, lighting transformers are able to be 'recycled'.

Computer components (less the hard drives), which have reached the end of their life are also able to be 'recycled'.

What to do:

- *Take Light Globes, Florescent Tubes, lighting transformers to Maintenance Supervisor who will store them (in separate boxes) until there is a sufficient quantity to call the recyclers for collection.*
- Take computers to the ISD support staff who will remove the hard drive (for data security purposes), computers will then be stored by the Waste Management Coordinator until there is a sufficient quantity to call the recyclers for collection.

6.8 ***Storm Water Waste***

What is it?

Contaminated water must be prevented entering stormwater drains through large stormwater grates e.g. in the wash down area near Dock 2 Parkes Building.

What to do:

- Take preventative action to ensure that potential contaminants including leaves, oils, papers, cigarette butts etc. are removed on a daily basis from areas forming stormwater drain catchment.
- Hard surfaces within the stormwater catchment are not “hosed down” as a cleaning method to remove rubbish and other contaminates

Liquid Trade Waste

All substances entering the sewerage system through sinks or toilets must be in quantities and/or concentrations acceptable to Sydney Water (the authority monitoring this method of waste disposal). For all chemicals, check disposal requirements on the Material Safety Data Sheets and if in doubt contact the OH&S Coordinator on ext. 22328.

A relevant excerpt from Sydney Water:

> "Spent solvents, preservatives, and other chemicals used in hospital laboratories and research units, other than residues washed off glassware etc. are not to be disposed to the sewer. These materials must be collected in suitable containers and taken off site for disposal in an enviornmentally acceptable manner. If a collected waste chemical such as formalin is treated by an inactivation ("neutralisation") system approved of by Sydney Water, permission may be sought to discharge this in accordance with a written protocol by annexure to this permit.
>
> Spent instrument solutions, including those based on gluteraldehyde may be discharged to sewer without treatment by flushing with copious quantities of water to achieve a dilution 1:100 or more.
>
> If a safe and practical inactivation system for gluteraldehyde becomes available this should be introduced in lieu of dilution. Gluteraldehyde contaminated with heavy metals or other primary pollutants must not be flushed down the drain but removed from the site by an authorised contractor.
>
> In all situations, due care must be exercised to ensure the health and safety of sewerage system workers is not placed at risk".

When liquid and/or hazardous wastes are pumped out and taken off site for specialised treatment, a copy of the EPA Docket must be forwarded to the Waste Management Coordinator for record keeping. Types of wastes included under this system include:

- Grease Trap Wastes
- General Purpose Tanks
- Drummed or Bottled Chemical Wastes

Under no circumstances are liquid, sludge or solid wastes to be flushed through the stormwater system (down outside drains or in the gutter) as this goes directly into our waterways with no treatment.

7 Appendix 1: References

AS/NZS 3816: 1998 Management of Clinical and Related Wastes

AS/NZS 4261:1994 Reusable containers for the collection of sharp items used in human and animal medical applications

AS/NZS 4031:1992 Non-reusable containers for the collection of sharp medical items used in health care areas

Australian Cleaning Standards

EMIAA (Environment Management Industry Assoc. of Australia Ltd) National Medical Waste Industry Group (1998) Industry Code of Practice for the Management of Clinical and Related Waste

EPA NSW (1998) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes

EPA NSW (1994-1995) Industrial Waste Recycling Directory

EPA NSW – Special Conditions Applicable to the Transportation of Trade Waste being contaminated wastes generated in Hospitals, Nursing

EPA NSW – Special Conditions Applicable to the Storage of Trade Waste being Contaminated Wastes generated in Hospital, Nursing Homes, Pathology Laboratories, Veterinary premises and other Health Care Facilities

Material Safety Data Sheets

National Health and Medical Research Council (1995) National Guidelines for the Management of Clinical and Related Wastes

National Health and Medical Research Council (1993) Management Guidelines for the control of infectious disease hazards in health care establishments

National Health and Medical Research Council (1985) Code of Practice for the Disposal of Radioactive Wastes by the user

NHS Estates / Department of Health, London (1995) Health Facilities Notes Environmental Management in Health Care

NSW Health Department (1998) Waste Management Guidelines for Health Care Facilities

NSW Health Department (June 1995) Infection Control Policy

NSW Health Department Safety and Security for Health Care Facilities – Minimising the risks

NSW Health Department – Safety and Security A Checklist for Management Minimising the risks

Occupational Health & Safety (Hazardous Substances) Regulation 1996

Prince of Wales Hospital (1998) Radiation Safety Manual

The Prince of Wales Hospital Infection Control Manual

The Prince of Wales Hospital (2004) Occupational Health and Safety Policy Statement

The Prince of Wales Hospital (July 1996) – Safe Handling of Cytotoxic Drugs and Related Waste, Information Package for Registered Nursing staff.

Sydney Water (1996) Trade Waste Policy and Management Plan

Waste Minimisation and Management Act 1995 and Regulations

Water Board (Corporatisation) Act 1994

Water Board (1994) Guidelines for the On-site Treatment of Trade Wastewater Dischargers

WMA NSW (1990) Office Paper Recycle It

WorkCover NSW (1995) Guidelines for Handling Cytotoxic Drugs and Related Waste in Health Care Establishments, 2nd Edition

WorkCover NSW (1995) Handling Cytotoxic Drugs in Health Care Establishments – Training Competencies, 1st Edition

Appendix B – University of New South Wales Laboratory Hazardous Waste Disposal Procedure

UNSW THE UNIVERSITY OF NEW SOUTH WALES	**Laboratory Hazardous Waste Disposal Procedure**
UNSW Procedure	
Document Number	OHS321
Linked UNSW Policy	This procedure details actions and processes pursuant to the UNSW OHS Policy.
Responsible Officer	Director, Human Resources.
Authorisation	Director, Human Resources.
Contact Officer	Manager, OHS and Workers Compensation.
Effective Date	23 March 2007
Superseded Documents	Disposal of Hazardous Waste Procedure September 2003
Review	This procedure will be reviewed in accordance with the OHS Management System Review Procedure.
File Number	TRIM 2007/1217

1. Purpose

The purpose of this procedure is to comply with the University's obligations to dispose of hazardous waste items generated by research and teaching laboratories in an environmentally safe manner.

2. Scope

This procedure applies to all UNSW facilities and operations where hazardous substances are used for research or teaching. It includes chemical waste (solids, liquids and gases), infectious and biological hazardous waste, general laboratory waste, glass, sharps, radioactive wastes and other hazardous liquids and materials.

3. Definitions

Animal Carcases – deceased animals or animal tissue that has been used for research or teaching. This category does not include animals that have been contaminated with any other hazardous substance see section 4.11 Co-mingled material

Biological waste – any material containing or contaminated with infectious microorganisms, infectious material sample remains, used Petri dishes, culture bottles, disposable equipment, used gloves, non-recognisable human tissue, human blood or body fluids, infected animal carcasses and infected bedding, animal blood or body fluids.

Broken Glass – non-contaminated broken glass.

Chemical waste – All chemicals or materials that are contaminated with chemicals. This includes but is not limited to explosive, flammable liquids/solids, poisonous, toxic,

ecotoxic, infectious substances, waste oils/water, hydrocarbons/water mixtures, emulsions; wastes from the production, formulation and use of resins, latex, plasticisers, glues/adhesives; wastes resulting from surface treatment of metals and plastics; residues arising from industrial waste disposal operations; and wastes which contain certain compounds such as: copper, zinc, cadmium, mercury, lead and asbestos.

Co-Mingled Waste - co-mingled waste is a combination of 2 or more waste categories, such as infectious and radioactive waste, or infectious and chemical wastes.

Cytotocxic waste – Cytotoxic waste is material that is, or may be, contaminated with a cytotoxic drug during the preparation, transport or administration of chemotherapy. Cytotoxic drugs are toxic compounds known to have carcinogenic, mutagenic and/or teratogenic potential.

Domestic waste – Non-contaminated waste, eg paper, boxes, plastic (non-scientifc disposables) that have not been in contact with chemical, biological, radiation or other hazardous substances.

Double Containment – Any container of viable microorganisms shall be transported between laboratories or to pressure steam sterilizers within the building within a second unbreakable and closed container which can be readily decontaminated. All GMOs must be transported according to the OGTR Guidelines for the Transport of GMOs.

General laboratory waste (GLW) – contains paper, gloves, pipette, tips, tubes or other general laboratory material contaminated with chemical residues. Absorbent materials and disinfectants used to disinfect surfaces are included in general laboratory waste.

Note: General laboratory waste does not include any gloves, pipette, tips or tubes that have come into contact with infectious substances or radiation.

Hazardous Waste - Explosive, flammable liquids/solids, poisonous, toxic, ecotoxic, infectious substances, chemicals, clinical wastes; waste oils/water, hydrocarbons/water mixtures, emulsions; wastes from the production, formulation and use of resins, latex, plasticizers, glues/adhesives; wastes resulting from surface treatment of metals and plastics; residues arising from industrial waste disposal operations; and wastes which contain certain compounds such as: copper, zinc, cadmium, mercury, lead and asbestos. (The Australian Department of Environment and Heritage list above categories as examples of Hazardous Waste)

Human Tissue – Recognisable human tissue or body parts.

Plant Workshop Waste – Typical waste includes hydrocarbons such as oil and grease, detergents, batteries, scrap metal, timber off cuts, perspecs, fibre glass, obsolete plant and equipment and building materials.

Sharps - These can include syringes with needles, broken glass, scalpel blades and objects or devices having sharp points, protruding pieces or cutting edges, capable of cutting or piercing the skin. Sharps must be collected in a rigid, puncture-proof container (see AS 4031).

Radioactive waste – is radioactive materials that is:
a) a specific activity less than 100 becquerels per gram (2.7 nCi/gm or 2.7 μCi/Kg) **or**
b) a total activity less than **40 kBq** (~ 1μCi) of Group1 radionuclides,
or less than **400 kBq** (~ 10 μCi) of Group2 radionuclides,
or less than **4 MBq** (~ 100 μCi) of Group 3 radionuclides
or less than **40 MBq** (~ 1 mCi) of Group 4 radionuclides.

Schedule 8 Drugs – those drugs which are listed under Schedule 8 of the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) which is incorporated within the Drugs and Poisons and Controlled Substances (DPCS) Act and are also known as Drugs of Addiction.

4. Procedure

All hazardous waste generated for the purposes of research or teaching shall be:

- managed using Sections 4.1 to Section 4.14 of this Procedure;
- segregated into the waste categories identified in Table 1 Hazardous Waste Categories;
- clearly labelled using the UNSW Hazardous Waste Label (additional information may be added if required).

There must be ready access to spill kits and PPE close to the waste storage location.

The UNSW Hazardous Waste Label requires the following information:

1) **Waste Category:** eg Biological
2) **Specific hazard information:** (See sections 4.1 – 4.13
3) **Emergency information:** (See sections 4.1 – 4.13
4) **Waste Generator:** person responsible for the waste
5) **Building:** Building and building No.
6) **Room:** where the waste was generated (laboratory or facility, room number)

Table 1 - UNSW Hazardous Waste Collection Days

Waste Type	Fax must be received on	Collection Day	Fax Number
Biological	Monday Noon	Tuesday	9385 2365
Biological	Thursday Noon	Friday	9385 2365
Chemical	Monday Noon	Thursday	9385 2365

Download the Chemical Waste Request form. (scroll to W).
Download the Biological Waste Request form. (scroll to W).

Table 1 Hazardous Waste Categories

Waste Category & Colour Code	Waste Descriptor (See Section 3 Definitions)	Specific Category Information	Legislation, Australian Standard
Domestic	Paper and plastics	4.1	• AS/NZS 2243.3
Broken glass	Broken glass – non contaminated	4.2	• AS/NZS 2243.1
Sharps	Sharps, e.g. scalpel blades, syringe needles	4.3	• AS/NZS 2243.3 • AS 4031
Chemical	Chemical	4.4	• NSW OHS Act and Regulation • AS/NZS 2243.2
Biological	Infectious, Biological, Clinical, GMO, human blood or body fluids, infectious animal carcases or material	4.5	• AS/NZS 2243.3 • AQIS • Gene Technology Act and Regulation
Cytotoxic	Cytotoxic drugs or materials contaminated with cytotoxic drugs	4.6	• AS/NZS 2243.1
Animal Carcasses	Animal carcasses	4.7	• AS/NZS 2243.3 & .4
Radioactive	Radioactive	4.8	• NSW Radiation Control Act and Regulation • AS/NZS 2243.4
Schedule 8 Drugs	Drugs of addiction	4.9	• NSW Poisons and Therapeutic Goods Act and Regulation
Human Tissue	Recognisable Human Tissues or body party	4.10	• NSW Anatomy Act and Regulation
Co-mingled	Mixed waste categories	4.11	• AS/NZS 2243.3
General Laboratory Waste	General laboratory disposable materials eg. including soft waste (PPE) and tips/tubes contaminated with residues including absorbent materials used with disinfectants.	4.12	• ANZCWMIG • EMIAA
Plant Workshop Waste	Typical waste includes hydrocarbons such as oil and grease, detergents, batteries, scrap metal, timber off cuts, perspecs, fibre glass, obsolete plant and equipment and building materials	4.13	• DEC

4.1 Domestic Waste Requirements

Domestic waste must only be placed in a bin labelled "Domestic Waste Only". This may also include uncontaminated plant material. Domestic Waste must not be mixed with any other waste category.
If domestic waste is contaminated it takes on the waste category of the contaminating material.

Labelling
The bin for collecting non contaminated waste must be labelled as "**Domestic Waste Only**"

Storage
Black plastic lined bin.

Disposal
Cleaning staff collect Domestic Waste Only bins weekly. Domestic waste is removed from UNSW by council waste contractors.

4.2 Broken Glass Waste Requirements

All broken glass is to be collected in the white 20L broken glass buckets. These buckets are reserved for non-contaminated broken glass only and labelled specifically for that purpose.

The white 20L broken glass buckets are available from:

1. Biological Sciences Store, Biological Sciences Building D26 - ext. 52007.
2. Chemistry Store, Applied Science Building F10 – ext. 54695.

When disposing of any broken glass ensure any contamination hazard is taken into account before disposal.

Note: No "sharps" are to be places in these buckets.

Labelling
The broken glass waste label requires the following information:

Waste Category	:	Broken Glass
Specific hazard information	:	Broken Glass Hazard - Always keep lid closed
Emergency information	:	If injury occurs contact first aid officer or UNSW Health Services
Waste Generator	:	Generator' Name
Building	:	
Room	:	

Storage
All broken glass must be stored in a white 20L broken glass bucket with the lid closed.

Disposal
When the glass bucket is full, close the lid and fill out a chemical waste request form identifying the number of glass buckets to be removed.

All waste request forms should be faxed through to the OHS & WC Unit on ext. 52365.

4.3 Sharps Waste Requirements

All sharps are to be collected in a rigid, puncture-proof container that meets Australian Standard requirements (see AS 4031).

UNSW supplies Australian Standard AS 4031 approved sharps containers free to all staff and students.

Figure 1 – Sharps Container before assembly

The UNSW supplied sharps containers are available from:

1. Biological Sciences Store, Biological Sciences Building D26 - ext 52007.
2. Chemistry Store, Applied Science Building F10 - ext 54695.

Labelling

The sharps bin label requires the following information:

Waste Category	:	Sharps
Specific hazard information	:	Sharps Hazard – Infectious Waste
Emergency information	:	If injury occurs contact first aid officer or UNSW Health Services
Waste Generator	:	Generator' Name
Building	:	
Room	:	

Storage

Sharps containers are to remain in the area where the sharps were generated until the container is full or the container is no longer required.

Disposal

When the sharps bin is full, close the lid, press in the locking mechanism and placed in one of the yellow "Sulo" bins at a biological waste collection points (See the Biological Waste Collection Schedule). Fill in the biological waste request form.
Note: only fill a sharps bin to the level indicated.

4.4 Chemical Waste Requirements

Hazardous substances must, under no circumstances, be allowed to enter storm water drains. **Disposing of hazardous chemicals down the sink is strictly forbidden**. In addition, careful consideration shall be given to the siting of chemical waste containers to ensure any potential leaks do not enter storm water drains.

Bunding (i.e. containing the waste in an embankment or secondary container to prevent it from travelling) should be carried out to contain any liquid in the event of an emergency spill or leak. The height of the bund required depends on the volume of liquid in storage and normally is 120% of the size of the original container..

Spill kits must be available for all types of hazardous waste generated and the staff trained and competent in spill clean up procedures.

Where metal drums are used for waste transport, they must be placed in spill containment trays at all times to contain the waste in the event of a leak. Glass containers should be packaged to minimise damage to the container. Glass winchesters should be transported in polypacks, racks, or other suitable non breakable container.

Peroxide forming compounds (e.g. diethyl ether,) must have a date of receipt and opening written on the container. The maximum storage period must not have expired. This is generally six months.

Unknown waste is handled on a case by case basis. Avoid generating Unknowns by keeping good records of the waste you produce and diligently labelling all waste containers.

Explosive waste is handled on a case by case basis. Avoid generating this waste by diligently observing the expiration dates on chemical labels.

Radioactive liquids measured **above** background levels are not allowed to be disposed of down UNSW sinks. (see Section 4.8)

Labelling

The Chemical Waste label requires the following information:

Waste Category	:	Chemical Waste
Specific hazard information	:	Name of substance, DG Class; if a safe mixture then ingredients
Emergency information	:	If exposure occurs contact a first aid officer or UNSW Health Services
Waste Generator	:	Generator' Name
Building	:	
Room	:	

Storage

(a) Collection Point

Ensure there are defined waste collection points in each building which have restricted access to members of the public. If, for some laboratories the waste collection point is inside the laboratory, occupants are to ensure the area is kept clear, is dedicated to waste storage and is labeled accordingly. Bunding is recommended at all waste collection points appropriate to the size of the container.

(b) Waste Segregation
The rule is the same for chemical waste as it is for chemical storage. Waste should be segregated in accordance with chemical compatibility and Dangerous Goods class.

Where many different substances are being used and it is not practicable to have separate containers for each individual substances the following waste categories are acceptable:

Halogenated Hydrocarbons
Non-Halogenated Hydrocarbons
Aqueous Waste – Acid [dilute solutions less than 5M*]
Aqueous Waste – Alkali [dilute solutions less than 5M*]
Aqueous Waste with Heavy Metal Content
Aqueous Waste with non-Heavy Metal Content

Any acids or alkalis more concentrated than this should **not be mixed and should be stored for pick-up by the chemical waste contractor as their individual constituent (eg. Hydrochloric acid, Nitric acid etc).*

Disposal
For collection of chemical waste, please complete a chemical waste request form.

All waste request forms should be faxed through to the OHS & WC Unit on ext 52365.

4.4.1 Other Hazardous Waste

(a)Polychlorinated biphenyls (PCBs)
At no stage should polychlorinated biphenyls (PCBs) or other halogenated compounds be mixed with other waste. These require special disposal through the OHS Unit.
Refer to UNSW's PCB – Spill Response and Disposal Procedure

(b)Asbestos
Where Asbestos material has been identified or is suspected within the infrastructure of a building i.e. pipe lagging, roof sheeting, wall insulation etc., you must contact your Facilities Client Manager. Contact the OHS unit if you have ovens, furnaces or other laboratory equipment which you suspect may pose an asbestos risk. The waste contractor currently used by UNSW for Chemical Waste removal is also licensed to accept Asbestos waste.

4.5 Biological Waste Requirements

Requirements

1) All wastes containing or potentially contaminated with Genetically Modified Organisms (GMOs) or by-products derived from GMOs must be decontaminated by pressure steam sterilisation (autoclaving) or chemical treatment (see AS/NZS 2243.3 Appendix E) before collection and disposal by the waste contractor.

2) Where possible all wastes containing or potentially contaminated with live microorganisms must be decontaminated by pressure steam sterilisation (autoclaving) or chemical treatment (see AS/NZS 2243.3 Appendix E) before collection and disposal by the waste contractor.

3) Animal carcases that are contaminated with GMOs or infectious microorganisms must be autoclaved before disposal as biological waste.

4) Bedding from animals that are infected with GMOs or infectious microorganisms must be autoclaved before removal from the cage and before disposal as biological waste (yes you have to autoclave the whole cage!).

Note:

- *All biological waste or GMO waste that has been chemically treated must be disposed of as general laboratory waste or chemical waste which ever is most appropriate eg bleached cell culture waste as chemical waste, spill cleanup paper as general lab waste.*
- *Transgenic animals that are not infected with GMOs do not require autoclaving before removal from the premises for incineration.*

Labelling

All biological waste bags must have the following label:

Waste Category	:	Biological (and the Bio-Hazard Symbol)
Specific hazard information	:	Infection Risk, DG Class 6.2
Emergency information	:	If exposure occurs wash affected area with soap and water and contact a first aid officer or UNSW Health Services.
Waste Generator	:	Generator's Name
Building	:	
Room	:	

Storage

All biological waste must be collected in a robust plastic bag (autoclave or yellow clinical waste bag) displaying the biohazard symbol. The robust plastic bag must be contained in a solid-based container with a lid and container labelled "Biological Waste" and display a biological hazard symbol.

Figure 2 – Biological Hazard Symbol

Figure 3 – Dangerous Goods Class 6.2 Infectious Substances

Disposal
When you laboratory requires the removal of biological waste, place the biological waste in one of the yellow "Sulo" bins at a biological waste collection points (remember you must double contain all infectious waste for transport to the Sulo Bin).

The University provides a clinical waste contractor to remove biological waste from all University Campuses. The location of all biological waste collection points (yellow biological waste "Sulo" bins) can be found in the Biological Waste Collection Schedule.

240L Sulo Biological Waste Bin

660L Sulo Biological Waste Bin

The biological waste contractor will not go to individual rooms to collect bags of biological waste, sharps bins etc. Biological waste will be picked up regularly from the biological waste collection points on the days indicated in the Biological Waste Collection Schedule.

You will not need to fill in or fax a Biological Waste Collection Form as these waste collections will occur automatically as scheduled (except where indicated on the Biological Waste Collection Schedule.

If you have additional biological waste that needs to be removed or your School does not have a yellow biological waste "Sulo" bin, contact the OHS and WC Unit on ext 52214 to organise a biological waste collection point or waste removal.

Note
Animal carcases are not to be placed in the yellow biological waste "Sulo" bins. Animal carcases will only be collected from freezers identified in the Biological Waste Collection Schedule.

4.6 Cytotoxic Waste Requirements

All Cytotoxic Drugs and Related wastes must be placed in purple sharps containers and/or purple liners and waste bins with the white telophase cytotoxic symbol.

The bins should be identified as 'Cytotoxic waste – incinerate at 1100ºC'.

If you are using cytotoxic chemicals please contact the OHS & WC Unit on extension 51565 for storage and disposal requirements.

Figure 4 – Cytotoxic Waste bin

4.7 Animal Carcasses Waste Requirements

All animal carcases are to be collected in a robust plastic bag (autoclave or yellow clinical waste bag) displaying the biohazard symbol.

Additional precautions and requirements apply to animal carcasses that are contaminated with radiation or chemicals, or that are infected with GMOs. See each of the individual specific hazard categories on how to deal with this issue.

Labelling
The Animal Carcass waste label requires the following information:

Waste Category	:	Animal Carcasses
Specific hazard information	:	Infection Risk, DG Class 6.2
Emergency information	:	If exposure occurs wash affected area with soap and water and contact a first aid officer or UNSW Health Services.
Waste Generator	:	Generator' Name
Building	:	
Room	:	

Storage
Animal carcasses contained in a robust plastic bag are to be stored in a -20 ^{0}C freezer until collection by the waste contractor. See the Biological Waste Collection Schedule which identifies the freezer location (biological waste collection points) for animal carcases.

Disposal
Due to the sporadic demand for the collection of animal carcases you will need to fax the biological waste request form for removal of animal carcases.

All Biological Waste Collection Forms should be faxed through to the OHS & WC Unit on ext 52365.

Disposal of laboratory animal waste and bedding
All animal waste products and bedding that is not contaminated with infectious microorganisms, radiation or chemicals, may be disposed of as solid domestic waste. No such waste is to be disposed of to building drainage, storm water or sewerage system.

All waste request forms should be faxed through to the OHS & WC Unit on ext 52365.

4.8 Radioactive Waste Requirements

Radioactive Waste cannot be disposed of from any Institution in New South Wales without special permission from Department of Environment and Conservation.

Only material having:
1) a concentration activity of less than 100 Bq per gm [2.7 mCi/kg]
(ie not radioactive according to the legal definition) OR

2) Total activity of a given quantity of waste is <1 where:
Total Activity = A1/40 + A2/400 +A3/4000 + A4/40000 and

A1 represents the total activity (kBq) of group 1 radionuclides,
A2 represents the total activity (kBq) of group 2 radionuclides
A3 represents the total activity (kBq) of group 3 radionuclides
A4 represents the total activity (kBq) of group 4 radionuclides
can be disposed of legally."

Please contact UNSW Radiation Safety Officer on ext 52912 for advice regarding your radioactive waste disposal requirements.

1. Liquid

1a) Radiation liquid waste
Radiation liquid waste should be kept for disposal in a container labelled 'Radioactive Waste'. Labelling needs to include the following information:

- Type of Radioisotope;
- Calculated Activity at date of Radioactive Waste Disposal Request (Bq/gram);
- Contact name of waste generator and phone number;
- Originating School.

Radioactive organic solvent waste and water solutions should also be kept separate even if they are of the same radioisotope.

Radioisotopes which have short half lives,(eg. P^{32} should be kept for a period of time depending on volume and activity until the radioisotopes have decayed to below Department of Environment and Conservation (DEC) disposal levels. (See Waste Guidelines on the web page of the New South Wales Environment Protection Authority). This waste can then be disposed of as normal chemical waste (provide former radioactive details on the chemical waste form and fax to OHS & WC unit).

1b). Scintillation Waste and Scintillation Vials
If you wish to dispose of waste consisting of scintillation vials and their contents:-
1) Collect sealed vials into a metal or fibreboard drum (available from OHS & WC) which has been lined with a strong plastic bag.
2) Seal the inner liner.
3) Seal the drum.
4) Label the drum with:-
   a) your name
   b) your laboratory
   c) a description of the contents
   d) the radionuclide

e) activity(Bq) of isotope at current date
g) weight(Kg) of waste
f) the date

5) Send a signed "Request for Disposal of Chemical Waste" form including the above information to OHS & WCt.

You must maintain an inventory of all activity added to waste containers to ensure that the activity limit of 100 Bq/gm is not exceeded.
(These are usually measured quantities and should not be difficult to add up)
Where total activity may exceed the limit, there are a number of alternatives:

1) For short half life radionuclides, decay in storage until appropriate levels are reached.
2) For long half life radionuclides, it may be possible to mix differing levels of waste activities to ensure that the total remains below 100 Bq/gm. Note : Do not mix different radionuclides
3) If this is not possible, carefully decant ONLY the high level scintillation liquid into a suitable vessel for long term storage. Label this as above and send a signed "Request for waste transfer form - Radioactive" to OHS & WC.

Liquid scintillation vials and contents - may be disposed of together if the activity concentration is below 100 Bq per gm (2.7 mCi per kg).
Keep this type of waste separate.
Place in a hazardous waste drum lined with a strong plastic bag.
Identify separately on the "chemical waste request" form."

2. Solids
Solid radioactive waste (pipette tips, lab. coats, gloves etc.) should be placed in a suitable container appropriate to the radioisotope eg. Fibre drums - contact the OHS unit on ext x52912. The container should be lined with a thick strong plastic bag and labelled with radioactive signs and completed waste labels.
All labels should be removed before placing materials in the container. The container can be used until full, at which time the OHS & WC can be notified to pick up the waste and transport it to the University's radiation store.

All requests for pick up of radioactive waste should be faxed to 9385 2365. The radioactive disposal request form can be downloaded as a PDF file.

The Radioactivity Decay Reckoner calculates when radioactive waste will decay to levels (determined by DEC) which will allow its removal by contractors as chemical waste."

4.9 Schedule 8 Drugs Waste Requirements

For information relating to the Schedule 8 drugs of addiction see Schedule 8 Drugs Procedure OHS 331-2006

4.10 Human Tissue Waste Requirements

If you are disposing of recognisable human tissue please contact the OHS & WC Unit on extension 51565 for storage and disposal requirements.

4.11 Co-mingled Waste Requirements

When dealing with mixed waste streams, e.g. biological and radioactive, infectious material and animal carcasses or cytotoxic material and animal carcasses, you must ensure that you addresses all hazards associated with the waste (Contact the OHS & WC Unit for information regarding co-mingled waste – this should be done during the planning phase of the project). However, an assessment of each situation shall be conducted before combining wastes prior to storage or disposal.

4.12 General Laboratory Waste

All waste paper, gloves, plastic pipette tips, plastic tubes or other general laboratory material that is contaminated with chemical residues must be disposed of as General Laboratory Waste. Absorbent materials and disinfectans used to decontaminate surfaces or spills should be treated as General Laboratory Waste.

Labelling
The General Laboratory Waste label requires the following information:

Waste Category	:	General Laboratory Waste
Specific hazard information	:	Chemical residue only (or similar)
Emergency information	:	If exposure occurs contact a first aid officer or UNSW Health Services
Waste Generator	:	Generator' Name
Building	:	
Room	:	

Storage
All **General Laboratory Waste** must be collected in a robust plastic bag. The robust plastic bag must be contained in a solid-based container with a lid labelled "General Laboratory Waste".

Disposal
General Laboratory Waste can be taken to any biological waste collection point and placed directly into a yellow biological waste "Sulo" bins. These bins will be collected by the biological waste contractor according to the biowaste collection schedule.

General Laboratory Waste **must not** be autoclaved. All waste collected by the biowaste contractor goes for incineration. It is critical to segregate biological waste from general laboratory waste in your laboratory to ensure general laboratory waste is not autoclave. If general laboratory waste is autoclaved it could result in an explosion, damage to the autoclave and/or release of toxic vapours.

4.13 Plant Workshop Waste

Typical plant workshop waste includes hydrocarbons such as oil and grease, detergents, batteries, scrap metal, timber off cuts, perspex, fibre glass, obsolete plant and equipment and building materials.

All hydrocarbons (eg oil or grease), asbestos, batteries, paints or other chemicals used in the workshop must be treated as Chemical Waste.

All other waste eg scrap metal, timber off cuts, perspex, fibre glass, obsolete plant and equipment and building materials must be placed in suitable waste bins before disposal in a skip or other appropriate container for reuse or recycling. If any of these wastes or materials have been mixed or contaminated with chemicals then they need to be discarded as Chemical Waste.

Labelling
The bin for collecting non contaminated workshop waste must be labelled to segregate it from chemical or other waste streams.

Storage
A robust container appropriate to the material being stored eg metal bin for steel waste.

Disposal
Staff or students must dispose of waste in an appropriate skip or container for reuse or recycling.

Skips will be collected as scheduled or upon demand from Facilities Management.

Facilities cleaning staff will not collect Plant Workshop Waste.

4.14 Procedure for Waste Collection by Chemical Contractor

(1) Have an appropriate designated area in the laboratory for the storage of hazardous waste until pick-up.

(2) Ensure that waste storage is in accordance with chemical compatibility.

(3) Containers must be in good condition, not leaking and not overflowing. All containers must be lidded. If lids do not adequately seal then containers must be replaced. We have a duty of care to the chemical waste contractor to ensure our waste is in a safe condition for transport.

(4) The waste container's material must be compatible with the waste it contains. Appropriate dangerous goods containers can be obtained from; for upper campus the Biosciences Chemical store and for lower campus the Applied Sciences Chemical store.

(5) Containers should be bunded to at least accommodate the container's contents. Bunded areas subject to rainfall must be maintained dry by removing stormwater after rainfall. Wherever possible, store chemicals under cover.

(6) Containers must remain closed, unless adding or removing waste.

(7) Containers must be labelled as **"Hazardous Waste"** and the components must be listed. The list of contents **MUST** be updated whenever waste is added. Labels must be waterproof or laminated to make them so. The label must include the name of the person responsible for generation of the waste.

(8) In order to arrange to get your waste picked up:

(a) Download the chemical waste form from OHS & WC Unit website;
(b) Complete the details accurately especially regarding the chemical substance, the quantity, the exact location of the waste and local contact details for the contractor in case there are specific questions about the nature of the waste etc.;
(c) Send the completed form to RMU (fax 52365) by 10AM Monday morning;

Chemical waste will be picked up from Thursdays between 8AM and 1PM

(d) On the day of the pick-up ensure access for the contractor. If the waste is located in a locked room, provide details for the person who has a key to this room.

5. Responsibility

Managers and Supervisors

Must ensure that all:

- staff and student implement the requirements of this procedure;
- hazardous waste is identified and segregated into the appropriate waste streams;
- hazardous waste stored, labeled and transported appropriately;
- staff receive appropriate training that includes waste segregation, storage requirements, transportation requirements, labeling, emergency procedures, spill control and awareness of all associated hazards.

6. Legal & Policy Framework

NSW Occupational Health & Safety Act 2000 and Regulation 2001
NSW Environmentally Hazardous Chemicals Act 1985
NSW Waste Avoidance and Resource Recovery Act 2001
OHS Regulation 2001 Chapter 6
Protection of the Environment Operations Act 1997 (POEO Act)

Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes (NSW EPA 1999)
Radiation Control Act 1990 and Regulation 1993
Industrial Chemicals (Notification and Assessment) Act 1989;
Biological Control Act 1984;
Poisons and Therapeutic Goods Regulation 2002
Code for Transport of Dangerous Goods
NH&MRC National Guidelines for Management of Clinical and Related wastes,
Office of the Gene Technology Regulator, Handbook on the Regulation of Gene Technology in Australia, 2001
Australian Standard 1940 The Storage and Handling of Flammable and Combustible Liquids
Australian Standard 2243.2 Safety in Laboratories Part 2: Chemical Aspects
Australian Standard 2243.3 Safety in Laboratories Part 3: microbiological aspects and containment facilities, 2002
Australian Standard 2243.10 Safety in Laboratories Part 10: Chemical Storage

6.1 Associated Documents

UNSW OHS Policy
Hazardous Substances and Dangerous Goods Procedure
Radiation Safety Procedure
Biosafety Procedure
Disposal of PCB Procedure
Asbestos Management Guidelines
Biological Waste Collection Schedule

7. Evaluation & History

The procedure will be reviewed to address changes in legislation or any changes within the University that impact on the management of hazardous waste.

7.1 Modifications

Version	Date	Author	Approval	Sections modified	Details of amendments
1.0	09/2003	Martina Lavin	Director Human Resources	-	New document
0.1	01/11/2006	Adam Janssen	Director Human Resources	Whole document	Consultation draft. Focus on laboratory waste. Segregated laboratory wastes into 13 different waste streams with corresponding procedures for each one.
2.0	22/03/2007	Adam Janssen	Director Human Resources	4.2, 4.3, 4.4, 4.5, 4.7, 6.1	Clarified procedures for biowaste, co-mingled waste, glass waste and chemical waste from stakeholders meeting Changes to biological waste sections due to new waste contractor
2.1	31/7/07	Adam Janssen	Manager OHS&WC	4.12	Up date of changes to disposal of general laboratory waste
2.2	13/11/07	Adam Janssen	Manager OHS&WC	4.0 Table 1	Change to biowaste collection day

8. Acknowledgements

The University of Melbourne whose Environment Health and Safety Manual was reviewed and parts utilised, with permission, in the production of this document.

PRINCE OF WALES MEDICAL RESEARCH INSTITUTE
NEUROSCIENCE RESEARCH PRECINCT
DEMOLITION AND CONSTRUCTION WASTE MANAGEMENT PLAN

INTRODUCTION

This plan details the management of wastes produced during progressive demolition of the existing villas, construction of the Stage 2 works and on-going maintenance of the retained and new facilities. Practical and feasible management options have been identified and are detailed. The priority of waste management principles for this project include:

• reduce wastes at the source;

• reuse materials, where possible;

• recycle wastes, where practicable;

• remove all waste from the site; and

• dispose of wastes appropriately and responsibly.

Effective waste management is essential for the demolition, construction and maintenance phases of the project.

There are several sources of potential waste during the demolition, construction and on going maintenance phases, including:

• Solid waste (demolition and clearance material);

• Solid waste ('domestic' debris);

• Solid waste (putrescibles);

• Hazardous waste (oils and sludges).

These waste streams and potential impacts are discussed below.

1 P0TENTIAL IMPACTS

1.l Solid Waste - Demolition and Clearance Material

During the construction works, concrete, steel, cabling and scrap metal will be encountered.

In accordance with the principles of waste management, opportunities for re use will be utilised.

Inert material (including steel waste if encountered during the excavations) will be kept in a designated 'clean' stockpile area and covered as required with plastic and/or tarpaulins, to minimise potential dust impacts, while awaiting transport off-site. Where possible, the material will be transported to a building waste recycling facility. Alternatively, it will be disposed at a licensed landfill site.

However, excess material, or material unsuitable for re-use as backfill will be recycled at an off-site facility or disposed to an appropriately licensed landfill.

1.2 Solid Waste - Domestic Debris

'Domestic' debris comprises everyday waste such as paper, aluminium cans and other material generated by construction and maintenance workers.

Where possible, collection bins wilt be provided for recyclables (including paper, cardboard, glass bottles and aluminium cans). Other waste generated by on•site staff will be disposed in separate waste bins for disposal by a licensed contractor.

Effluent collected in the site portable toilets will be collected and disposed of by a sub-contractor who will remove the effluent under their own liquid trade waste agreement.

1.3 Solid Waste - Putrescible Waste

Putrescible and green' waste comprises food scraps. These wastes will be collected and stored separately from other wastes produced during construction and disposed off site by a licensed contractor to either a 'green waste' facility or landfill.

Care will be taken to ensure that soil and debris associated with roots is removed prior to off-site disposal.

1.4 Hazardous Waste - Oils and Sludges

Any waste oils accumulated during maintenance of heavy machinery will be disposed off-site by the contractor as part of their own license agreements. Waste oil contractors and maintenance and refuelling contractors will be required to have spill response procedures in place. Refuelling wilt be carried out at designated areas to control potential spill and maintenance issues. Spill response equipment will be stored at the construction sites in the event of unforeseen spills due to hose breaks, etc. Minor waste oil spills will be contained and the impacted soils disposed of according to NSW EPA legislation.

No other hazardous wastes are anticipated on site. Should unexpected materials be discovered during the course of the excavations, work wilt cease immediately and plans for their safe handling, storage and disposal in accordance with relevant statutory guidelines will be developed.

2 MITIGATION MEASURES

2.1 Waste Management Plan

A waste management plan will be developed which will include:

• Designated stockpiles, recycling areas, bins and a clear indication of the waste streams associated with each one;

• Stripped topsoils generated through earthworks would be stockpiled for later use;

• Plans of protection measures for waste storage areas;

• Waste handling, management and storage procedures;

• Disposal procedures for each waste stream;

• Training for on-site staff on the contents of the WMP; and

• Emergency plans and contingency plans.

2.2 Waste Tracking

2.2.1 Waste Management Guidelines

In accordance with the Protection of the Environment Operations Act 1997, and the EPA Environmental Guidelines: Assessment. Classification and Management of Liquid and Non-liquid Wastes, waste tracking requirements apply to the generation, storage, transport, treatment or disposal of certain types of wastes. Wastes generated on site that will require tracking include:

• Waste oils;

• Oil and fuel filters; and

• Oily water.

2.2.2 Waste Register

A register of wastes will be kept throughout the construction project. The register will contain details pertaining to:

• The types and quantity of wastes for each load taken off site;

• The place to which the waste was taken for treatment or disposal;

• The waste contractor used for each waste load; and

• Certification (if necessary) that the waste was taken to an appropriately licensed facility.