GREYWATER REUSE INFORMATION SHEET

What is Greywater?

Domestic wastewater is made up of 'greywater' and 'blackwater'.

- **'Greywater'** is the wastewater generated from bathrooms, kitchens and laundries.
- **'Blackwater'** is the wastewater generated from toilets and is contaminated with faeces and urine.

Greywater characteristics vary according to the number of household occupants, their age, lifestyle, health and water use patterns. There are essentially three different greywater streams, they are:-

Bathroom Greywater (bath, basin, and shower) contributes about 55% of the total greywater volume. Bathroom greywater can be contaminated with hair, soaps, shampoos, hair dyes, toothpaste, lint, nutrients, body fats, oils and cleaning products. It also has some faecal contamination (and the associated bacteria and viruses) through body washing.

Laundry Greywater contributes about 34% of the total greywater volume. Wastewater from the laundry varies in quality from wash water to rinse water to second rinse water. Laundry greywater can have faecal contamination with the associated bacteria and viruses, lint, oils, greases, chemicals, soaps, nutrients and other compounds.

Kitchen Greywater contributes about 11% of the total greywater volume. Kitchen greywater is heavily polluted with food particles, cooking oils, grease, detergents, and other cleaning products such as dishwashing powders. The detergents and cleaning products may be alkaline and contain chemicals that are harmful to soil structure, plants and groundwater.

Reducing Greywater Volume

Greywater reuse is only part of the approach we need to adopt to protect our water resources. To conserve ground and surface water resources, even before considering greywater reuse, it is essential that water conservation be practised.

Various water-saving devices can be used to conserve water, including dual flush toilet cisterns, low-flow taps and reduced flow showerheads, dishwashers and front-loading washing machines. Water may also be conserved using a range of practices such as shorter showers, turning the tap off when cleaning teeth, ensuring that taps do not drip, and using dishwashers and clothes washers only when the machine is full. As 47% of household water usage is for garden watering, a water wise garden can greatly reduce water use.

How do I reuse my greywater?

Bucketing

Manually irrigating greywater using a bucket (eg. bucketing laundry wastewater) to absorptive soils is acceptable provided that the health and safety conditions are complied with.

Installing an Approved Greywater System

Greywater systems can range from those that provide primary treatment which coarsely filter or settle out oils, greases and solids from the greywater before irrigation via small trench systems, to more expensive secondary treatment systems which treat and disinfect the greywater to a high standard before irrigating it via microdrip or spray systems.

Health and Safety Requirements

To minimise the risk to public health and prevent a nuisance from greywater reuse, the following requirements apply:-

- Greywater systems (this does not include bucketing) must dispose of greywater below the ground surface unless treated and disinfected to an appropriate standard.
- The system must exclude human and animal contact with the greywater and the irrigation area signposted with warning signs.
- Greywater must not be allowed to enter any stormwater drainage system.
- Greywater shall not be used in a manner that will result in direct contact with vegetables or other edible plants.
- No opportunity for mosquito breeding is to exist in any part of a greywater system.
- All irrigation pipe work must be colour coded (ie purple) to allow for identification of greywater reticulation system pipelines

Environmental Requirements

To minimise negative impacts on the environment from greywater reuse, the following requirements apply:-

- Only use household products with a low phosphorus content. Some native plants are sensitive to additional phosphorus.
- Greywater tends to be slightly alkaline (pH 6.5-9.0). Some exotic plants will not thrive on greywater.
- High levels of sodium in washing powders can produce saline greywater. Products with potassium salts or liquid concentrates are better.
- Some detergents and powder cleansers contain boron. In high concentrations, this can be toxic to plants and animals.

Avoid the use of bleaches or softeners, and detergents that contain boron, borax, chlorine, bleach, sodium perborate and sodium trypochlorite (salts).

Installation of a Greywater Reuse System

Only greywater systems that have been **approved** by the **Executive Director, Public Health** may be installed.

Installation of an approved greywater system or conversion of an existing septic tank system must be approved by the City of Rockingham and will require a formal application to be made and payment of all relevant fees.

An 'Application to Construct or Install an Apparatus for the Treatment of Sewage' form can be obtained from the City's Website www.rockingham.wa.gov.au. The applicant must complete the relevant sections, including:-

- Greywater source to be reused (eg laundry or bathroom etc).
- Number of bedrooms in the house.
- Brand name and details of the proposed system.
- A detailed site layout plan (in duplicate or triplicate as the case requires) drawn to a scale of 1 in 500 showing:
  - block dimensions;
  - natural ground contours, wells, bores, dams, watercourses and depth to groundwater;
  - existing and proposed buildings, other structures and paved areas;
  - details and location of any diversion trenches to collect surface or migrating subsurface water;
  - details and location of roof water disposal;
  - setback distances from boundaries, buildings, surface irrigation area and other structures; and
  - details of the sewer overflow pipework where this is intended.
  - Details of the treatment and irrigation systems including:
  - proposed location of greywater system and reuse area including the position of irrigation lines/trenches;
  - method of construction of surface irrigation area bed, including the materials to be used; and
  - where a split irrigation system is used; details of mechanisms to ensure an even discharge to each area and to prevent overloading of individual areas.

All plumbing work must be undertaken by a licensed plumber under the Water Services Coordination (Plumbers Licensing) Regulations 2000 and must comply with the Metropolitan Water Supply Sewage and Drainage By-Laws 1981. The plumber who installs the system must also obtain approval from the Sewerage Service Provider for any required connection or modification to the plumbing works connected to the sewer system.

The City's Health Services will seek approval from the Water Corporation as part of the approval procedure. The Water Corporation must agree to the diversion of greywater from the sewer system, in regard to possible negative impacts on the sewerage system. The City of Rockingham will only issue approval for the use of greywater systems in sewered locations where the Water Corporation has indicated no objections.

You may be eligible to receive a rebate from the Water Corporation with the installation of a greywater reuse system. For further information contact the Water Corporation.

The City's Health Services will also seek approval from the Waters and Rivers Commission should there be concerns that the greywater reuse system will be installed in an environmentally sensitive area.

Once the City issues an approval, the system can be constructed, but not used. Before a system can be used the system must be **inspected** to ensure that it has been installed correctly before excavations are refilled. If satisfactory, the City will issue an approval for the system to be used. **NB** It is an offence to commence using the system prior to receiving the City's approval.

Operation and maintenance

Once a greywater system is installed, it becomes the householder's responsibility to ensure it is operated and maintained according to the manufacturer's instructions.

Some greywater systems may require weekly cleaning or replacement of filters, periodic de-sludging of treatment tanks, the manual diversion of greywater back to the sewer in winter, flushing of the irrigation lines, and occasional replacement of pumps.

Further information

This document has been prepared using the Department of Health document – Code of Practice for the Reuse of Grey Water in Western Australia (adopted in January 2005).

For further information the full document should be consulted and is available at the Department of Health website at http://www.health.wa.gov.au.

A current list of approved greywater reuse systems can be obtained by contacting the Wastewater Management Section of the Department of Health on (08) 9388 4932 or their Website.

The Water Corporation can be contacted for further information on saving water in the home and any rebates available.

Water Wise Helpline	13 10 39
Water Corporation (rebates)	1300 133 646
www.ourwaterfuture.com.au	

For further details, please contact:

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