



BUFFALO CITY
METROPOLITAN MUNICIPALITY



SAFE USE OF GREYWATER

INTRODUCTION

By re-using some water, we can save water and money. Typically, 50-80% of indoor water used in the home can be re-used as greywater. However, there are some significant health and hygiene risks that need to be well managed as greywater often contains harmful bacteria / germs, and the way it is used can result in disease. Follow the advice in this booklet to use different types of greywater safely and effectively.

Note: This guide applies to greywater which is used within 24 hours, and for general (manual) "bucketing" use in, for example, formal dwellings, businesses, sports and other clubs, schools and places of worship.

If greywater is stored for longer than 24 hours it needs treatment such as filtration and disinfection as advised by a specialist.

Use greywater for flushing toilets as the priority, and not for garden irrigation or washing vehicles which are not essential uses. In times of extreme water shortages, some levels of restriction may not allow greywater use for garden irrigation and / or washing vehicles.

This guide is intended specifically for urban consumers in drought periods. The city also advises that users must perform their own safety checks and use their own discretion.

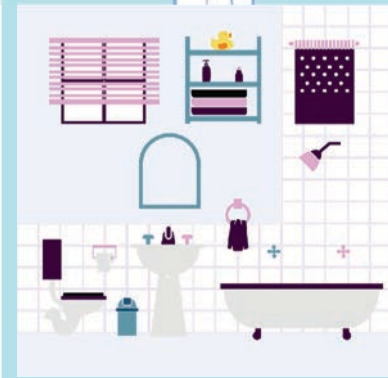


WHAT IS GREYWATER?

Greywater is untreated wastewater which comes from baths and showers (body washing) and hand wash basins. Laundry water from washing machines or hand washing only qualifies as greywater for re-use if environmentally friendly detergents have been used. Greywater can contain the following, grease, soap and detergent residue, pesticide residue, dirt, lint, sodium, nitrates and phosphates, high salt and pH levels, bleach, hair and skin particles.

Greywater is not: toilet water (which contains faecal matter and germs / pathogens) or water from spas, Jacuzzis and pools. Water from kitchen sinks and dishwashers contains grease, fats, oils, bacteria and food / other solid particles and must not be re-used.

Greywater use is entirely at the risk of the consumer. The city cannot be held liable for any consequential damage or loss arising directly or indirectly thereof (as per the City's Water By-law).



GENERAL RULES FOR GREYwater USE

WHAT TO DO

- Sanitise your hands after use
- Use environmentally-friendly detergents and soaps where possible
- To install an alternative water system (e.g. borehole) that requires plumbing work, see conditions for safe and legal installations at www.buffalocity.gov.za/thinkwater and consult a specialist.

WHAT NOT TO DO

- Don't store for longer than 24 hours as this will lead to bad odour, slime build-up and health risks. If you do, it needs filtration, disinfection and treatment as advised by a specialist
- Don't use if any household member is sick
- Don't re-use nappy-washing water
- Don't allow children and animals to come into contact with greywater
- Don't spray greywater. Spraying disperses and spreads pathogens (through aerosols)
- Don't allow greywater to leave the property and flow into stormwater drains or stream / rivers.
- Once you have used some greywater, don't use the same greywater for anything else.



*Use with caution.
See "Greywater conditions of use" on page 6.






USES OF GREYWATER


SOURCE OF GREYWATER	POSSIBLE CONTENTS	USE
<p>“Warm-up” / lag water Cold water that runs while waiting for hot / warm water from taps or shower heads. This is water from the geyser which typically gets cold in the pipes leading from the geyser to your tap, while waiting for use.</p>	<p>This is still good quality water and is “low risk” if used immediately and collected in clean, sanitary containers and not combined with other water sources. Not recommended for drinking. If it comes into contact with human bodies or potentially unclean surfaces then it is considered to be greywater.</p>	<ul style="list-style-type: none"> • Flushing toilets • Cleaning indoor surfaces • Laundry washing
<p>Shower and bath water</p>	<p>Bacteria, hair, organic material, skin particles, lint, oil and grease, soap and detergents.</p>	<ul style="list-style-type: none"> • Flushing toilets* • Cleaning vehicles*
<p>Laundry water – from washing machine or handwashing The rinse water from a washing machine cycle has the lowest risk if you are able to capture it separately from to wash vehicles. Preferably use to wash vehicles as other greywater can leave a residue. Rinse water can also be used for the next wash cycle.</p>	<p>Dirt, lint, organic material, oil and grease, sodium, nitrates and phosphates (from detergents), high salt and pH levels, bleach.</p>	<ul style="list-style-type: none"> • Flushing toilets* • Cleaning vehicles* • Garden irrigation*
<p>Hand basin washing water</p>	<p>Bacteria, organic material, oil and grease, soap and detergent residue.</p>	<ul style="list-style-type: none"> • Flushing toilets* • Cleaning vehicles* • Garden irrigation*
<p>Vegetable and fruit rinsing water</p>	<p>Bacteria, organic matter, and pesticide residue.</p>	<ul style="list-style-type: none"> • Flushing toilets* • Cleaning vehicles*



GREYWATER CONDITIONS OF USE FOR FLUSHING TOILETS, CLEANING VEHICLES AND GARDEN IRRIGATION

USE	CONDITIONS OF USE TO REDUCE RISKS
 <p data-bbox="192 624 327 651">Flushing Toilets</p>	<ul style="list-style-type: none"> • Use a jug and carefully pour greywater directly into the toilet bowl. Avoid splashing as it may spread pathogens through aerosols, particularly from faecal matter. Keep the toilet and surround area disinfected. • If you are using jugs or buckets to manually flush the toilet, do not pour it into the cistern as the greywater can flow back into the drinking water system and contaminate it – which is a health hazard for people on your property as well as others in the area. Even if you have turned off the “angle value” / stopcock which is usually at the base of the toilet, this cannot prevent backflow. If you have a greywater system installed, the drinking water supply should be completely disconnected from the toilet. • Regularly check for leaks as greywater can clog up the valve mechanism.
 <p data-bbox="184 975 337 1002">Cleaning Vehicles</p>	<ul style="list-style-type: none"> • Use greywater to wash vehicles with discretion as very soapy water may leave a residue. • Environmentally-friendly detergents, soaps and shampoos must be used in the washing machine if this water is to be re-used. This avoids harmful chemicals entering the stormwater or surface water systems which could contaminate them. • If possible, wash the car on permeable ground (grass or dirt) away from any surface water, so that the water does not run off hard surfaces (driveways, road, and pavements, etc.) into stormwater systems. The run-off may contain oils, dirt and hazardous chemicals, which are harmful to water systems and the environment.
 <p data-bbox="165 1268 356 1295">Irrigating food gardens</p>	<ul style="list-style-type: none"> • Prioritise use of low-risk water e.g. rinse water from the washing machine. • Care should always be taken to ensure greywater never comes into contact with the above-ground part of fruit or vegetable plants being grown. Water the roots only. • To avoid direct contact with edible food plants, use drip irrigation with a thick layer of mulch on top. No greywater on leafy vegetables (e.g. spinach) and root vegetables (e.g. carrots) • Always wash fruit and vegetables before food preparation and cook root vegetables first if they've had (sub-surface) greyw

Greywater should always be used for flushing toilets as an essential use priority before gardening irrigation or washing vehicles. In times of extreme water shortage, some levels of restriction may not allow greywater use for garden irrigation and/or washing vehicles.

USE	CONDITIONS OF USE TO REDUCE RISKS
 <p data-bbox="146 821 381 874">Irrigating non-food gardens i.e. lawn and plants</p>	<ul style="list-style-type: none"> • Greywater can make the soil alkaline and add salt which builds up and damages soil quality. Some plants can't grow in that kind of soil. Seek advice from garden centres or experts, and use with discretion. • Spread the water across the garden to avoid soil clogging or pooling, which attracts mosquitoes and leads to grey / green slime areas developing. • Do not irrigate within 48 hours of rain, as it may pool on the surface if the soil is wet. • Do not use hosing, spraying (or misting) methods when watering to prevent spreading and breathing in airborne germs. The use of sprinklers is discouraged, but if you do, then ensure it is low spray with large water droplets. Rather use the drip / sub-surface irrigation, with a layer of a mulch on top. • Avoid / limit the use of greywater in parts of the garden where people and animals go. • Water the garden at night to avoid human contact for 8 hours after irrigating and to reduce evaporation. • Environmentally-friendly detergents, soaps and shampoos must be used in the washing machine if this water is to be re-used. These are low in phosphorus, sodium, boron and chloride and reduce negative impacts on soils, plants and ultimately the water system. Phosphate is particularly dangerous to the environment. • Rinse water from the washing machine (if not used for the next wash cycle, vehicle washing or toilet flushing) has the lowest risk for plants. If you are able to capture it separately from the general water, prioritise its use in the garden. • Only water well-established plants with greywater and monitor them for signs of stress (e.g. yellowing, wilting or mottled colour). Rather use alternative water (e.g. rainwater harvesting) for new plants. • Consider planting salt-tolerant plants, if plant shows stress from irrigation with greywater.



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WATER DEPARTMENT

NO. 26 | OXFORD STREET | EAST LONDON

EAST LONDON : 043 705 9234 / 5 / 6

MDANTSANE : 043 705 9860 / 1

BHISHO : 040 608 3101 / 041 635 0017