RECYCLED WATER TANKER OPERATOR

TRAINING PROGRAM
PARTICIPANT RESOURCES

Unitywater

Recycled Water Tanker Operator Training

Document Details



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Recycled Water Tanker Operator Training

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1. Introduction

1.1 Aim and purpose of recycled water training program

Only trained persons can take and use recycled water from the Unitywater supply points. Recycled water is not permitted to be used by operators without training from a recognized South East Queensland Water Distributor – Retailer (service provider).

The aim of this training program is to provide guidance on the safe use of recycled water for tanker operators.

It includes the quality, hazards and control measures required for safe use and handling of recycled water.

The assessment ensures all users have demonstrated that they have the relevant knowledge to safely use recycled water.

2. What is Recycled Water and why do we use it?

Recycled water is safe for both people and the environment if used appropriately. It is important that safety protocols are followed carefully. For this reason only people trained to use recycled water are allowed to use this product.

Management of recycled water is strongly based on assessing the risks and adopting a management approach to ensure that the quality of water is suited to the end use purpose. This is called the fit-for-purpose approach.

2.1 What is Recycled Water

- Recycled water is treated sewage
- Sewage includes everything that goes down the kitchen sink, laundry, bathroom sink and toilet (also called grey water)
- Sewage goes to the sewerage system and then to a sewage treatment plant
- The treatment plant ‘cleans’ the sewage until it meets standards set by the Department of Energy & Water Supply (DEWS).
- Once treated, the water is safe if used appropriately. Recycled water is a valuable product and is used for parks, gardens, dust suppression and many other uses, depending on its quality

2.2 Why use Recycled Water?

Recycled water is produced and used for a number of reasons including:

- Reducing the nutrient load going back to the environment
- To reduce the demand on existing and future potable (town) water storages, particularly as the population continues to grow.
- Providing a reliable, alternative and sustainable source of water

3. Recycled Water Quality

Unitywater offers recycled water of Class A+, A and B quality from various outlets. The recycled water available meets the standards set by the Department of Environment and Resource Management (DERM).

The standards categorise recycled water into Class A+, A, B, C and D with Class A+ being the highest quality class of recycled water. Note, purified recycled water is of a different quality and has undergone further water treatment.

Some other water entities may supply other qualities of water for tanker reuse, such as C and D. These are not available in the Unitywater supply area for tanker use and to use them you may need to undertake further training with those entities.

Operators need to be aware of the class of recycled water they are transporting and using and to ensure that receiving customers are also aware of the quality and permitted uses. Operators must provide the relevant recycled water fact sheet to the customer on the first delivery of recycled water.

4. Recycled Water Uses

Common Approved Uses	A+	A	B
Construction			
• Dust Suppression	☑	☑	☑
• Road works	☑	☑	☑
• Sewer works (gravity mains, pressure mains)	☑	☑	☑
Irrigation			
• Landscaping on construction sites	☑	☑	☑
• Residential gardens & lawns – below ground irrigation	☑	☑	☒
• Residential gardens & lawns – aboveground irrigation	☑	☒	☒
• Above ground open space irrigation	☑	☒	☒
• Watering parks, playing fields, footpaths, roadside plants	☑	☑	☑
(**note** Class B is only approved if area has controlled access or restricted irrigation hours)			
Agricultural			
• Filling of fenced ponds, lagoons or dams (non recreational use)	☑	☑	☒
• Washing animals (excluding pigs)	☑	☒	☒
• Agricultural wash down	☑	☑	☑
Industrial			
• Fire fighting	☑	☒	☒
• Business use	☑	☑	☑
Property Use			
• Toilet flushing	☑	☒	☒
• Washing cars	☑	☒	☒
• Filling residential 'non drinking water' tanks	☒	☒	☒

Table 1 – Common Approved Uses

4.1 Recycled Water Fact Sheets – MSDS

Unitywater is the manufacturer of recycled water and provides you with a Fact Sheet/MSDS for the classes of recycled water that are supplied within our area.

There are two fact sheets available:

1. Class A+ and A
2. Class B

As a supplier of recycled water, you must provide a copy of the relevant fact sheet to all customers on the first delivery of recycled water.

5. Hazards – Health, Legal and Other

To make sure everyone is safe while working with recycled water, it is important to understand the hazards. Every day, through normal living, we are exposed to pathogens through working, contact with animals or handling food. Recycled water has been used safely for years and our local creeks and rivers naturally have more pathogens than recycled water.

5.1 Health Hazards

Recycled water does contain some pathogens (germs), but the risks from these pathogens are low if the water is used correctly and if you comply with the requirements of this training manual.

Examples of recycled water health hazards include:

- Handling items after touching recycled water
- Using equipment contaminated with recycled water
- Cross connecting recycled water to the potable (town) water supply
- Accidentally drinking or using recycled water incorrectly
- Being splashed or sprayed with recycled water
- Breathing recycled water droplets (aerosols)
- Splashing recycled water on open wounds

People working with recycled water need to ensure that the health and safety of members of the public is protected.

Example of how members of the public can be affected are:

- Cross connection of recycled water to the town water supply
- Accidentally drinking or using recycled water incorrectly
- Sprayed by water from a tanker

5.2 Other Hazards

Environmental damage from spillage or runoff

- ✓ Erosion
- ✓ Groundwater / standing water contamination (ponding)
- ✓ Water way contamination
- ✓ Algal blooms
- ✓ Soil Salinity
- ✓ Soil sodicity (clumping)
- ✓ Nutrient imbalances
- ✓ Damage to the public image of recycled water and your company

5.3 Legal Regulations

Recycled water supply and use in Queensland is governed by a number of key regulations and guidelines. Some examples include:

- Water Supply (Safety and Reliability) Act 2008
- Public Health Act 2005
- Public Health Amendment Regulation (No 1) 2008
- Environmental Protection Act 1994
- Plumbing and Drainage Act 2002
- Integrated Planning Act 1997

The regulator of recycled water in Queensland is DEWS (Department of Energy and Water Supply (formerly DERM (Department of Environment and Resource Management)).

6. Risk Assessment

6.1 What is a risk assessment

Risk assessment is the process where you:

- ✓ Identify POTENTIAL hazards.
- ✓ Assess or evaluate the risk associated with the hazard
- ✓ Determine appropriate ways to eliminate or control the hazard
  - Safe work procedures
  - Control measures
- ✓ Implement the control measures
- ✓ Monitor and review control measures

Why complete a risk assessment?

- ✓ Create an awareness of the hazards or risks
- ✓ Identify others who may be as risk
- ✓ Can help determine if your control measures are adequate
- ✓ Prevent injury or illness

6.2 Safe Work Procedure

Prepare for RW Use	• Defective Equipment
	• Environmental or health incident
		• Operator must have drivers licence
		• Operator to undertake Safety Induction (i.e. white/blue card)
		• Operator to attend RW training
		• Conduct a pre-start inspection
		  • Hose or valve damage
		  • Tank damage
		  • First aid kit
		  • Potable water and soap for washing
		• Tanker to have signage i.e. RW and safety stickers
		• Tankers not to transport potable water if they are using RW
		• Tanker operator to notify site they are using RW

Take Health Precautions	• Pathogens	• Do not drink or shower in recycled water • Avoid direct contact with recycled water i.e. skin and eyes • Wear/use appropriate PPE i.e. gloves or safety glasses • Do not eat, drink or smoke while working with recycled water • Wash hands with soap and potable water before eating, drinking • Wash wounds that come into contact with RW with antiseptic

Filling Tanker	• Overfilling or defective equipment • Fill station leak • Ponding of water or runoff • Driver/clothing saturated with RW • Lifting and connecting hoses • Uneven slippery surface causing slips, trips or falls	• PVC gloves are worn and recommended to wear safety glasses • Be aware of body position to minimize strain to lower back • Operator to stand on stable, reasonably level surface • Check hoses prior to connect for serviceability • Shut off all valves or taps before disconnecting • Do not overfill tank • Have available potable water and soap to wash/clean hands • Have eyewash bottle containing potable water to flush eyes • Report any incidents using the incident report form
Transport of RW	• Poor driving or traffic • Other vehicles • Defective equipment • Environmental or health incident	• Follow road rules • Allow enough stopping distance • Tanker fitted with approved and current backflow device • Monitor for spillage during transport • Do not use hoses for potable water use after using RW • Provide your customer with a copy of the relevant MSDS • Operator should not supply water to a site/customer without knowledge of the water quality and uses
Storage of RW	• Pathogen growth • Contact with Recycled water	• All tankers, containers, hoses and taps to be labelled with recycled water and safety stickers • Any class of recycled water cannot be stored for longer than 24 hours • Disinfect tanker as appropriate
Applying RW On site	• Other vehicles • Inappropriate or excessive application • Persons or clothing saturated with RW • Over spray or leaks	• Adhere to work site conditions • Do not enter work zone of other vehicles • Ensure appropriate exclusion zones • Install portable RW signage • Ensure flashing lights and reverse alarms are operational • Implement a customer recycled water management plan • Implement public access controls including: • Appropriate buffer zones (minimum 30m buffer distance to the nearest public access point) • Ensure no spray drift beyond boundaries of the recycled water usage site • Implement spray drift control measures

		(e.g. through low boom spray positions, large size nozzles on spray equipment, do not use recycled water in windy conditions or use vegetation screening) • Do not irrigate with this recycled water if there is a risk that the public will sustain skin or aerosol contact or ingest the water in any way.
Ongoing monitoring of equipment	• Other vehicles • Hygiene equipment failure	• Tanker operator to check signage is in good condition • Keep accurate records

6.3 Your Vehicle

You are responsible for your vehicle and for compliance with all road transport legislation, including the

Department of Transport and Main Roads

and other State and Federal laws.

Weight limits – **don't overload**

Tank baffles – **ensure your tank complies**

Load security – **don't allow water to leak or splash onto the road**

7. Control Measures

7.1 Unitywater control measures

Unitywater has control measures in place to reduce any hazards from working with recycled water.

These include:

- ✓ Registered agreements with recycled water users
- ✓ Monitoring recycled water quality at treatment plants and access points
- ✓ SMS notification system for users
- ✓ Backflow prevention devices on all vessels, with a current backflow certificate
- ✓ Unitywater will continue to improve the quality of recycled water
- ✓ A training program for all recycled water users
- ✓ Records (logbooks) to track:
  - Who is using recycled water
  - Where recycled water is being used
  - How much recycled water is used

7.2 Tanker Operator control measures

Tanker operators and drivers, like sewage treatment plant staff, will be continuously exposed to recycled water. Experience over a long period of time in recycled water plants around the world, shows that the risk of illness from recycled water is minimal when safe working procedures are followed.

Some examples of tanker operator control measures include:

- ✓ Attend training sessions.
- ✓ Hold a current recycled water agreement with Unitywater.
- ✓ Ensure your clients have permission to receive recycled water and that the location and use is appropriate.
- ✓ Carry a first aid kit in the vehicle.
- ✓ Minimise the amount of water spilled or sprayed in public places.
- ✓ Minimise runoff of recycled water into waterways and stormwater drains and not allowing ponding of water.

- ✓ When using Class B recycled water use gloves (we recommend you use gloves if handling any class of recycled water).
- ✓ Regularly maintain equipment and keep records of checks.
- ✓ Wash your hands regularly with potable (town) water.
- ✓ Label all recycled water tanks, pipes, taps with recycled water and safety stickers.
- ✓ Do not contaminate the town water supply.
- ✓ Notify contractors that you use recycled water and provide a copy of the relevant fact sheet.
- ✓ Use a different hose for town water and recycled water.
- ✓ Make sure recycled water does not come into contact with open wounds.
- ✓ If someone comes into contact with recycled water, tell them what it is, and explain what they can do. **Provide a copy of the relevant Fact Sheet.**

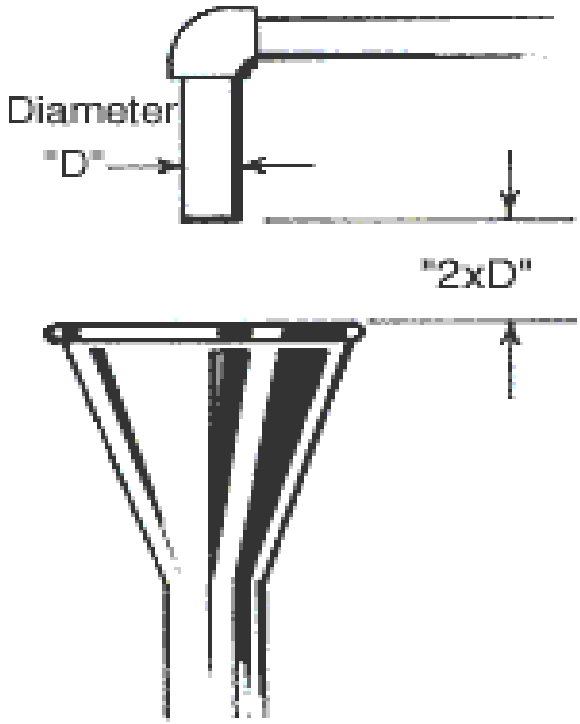
7.3 Things to avoid

- ✗ Drinking, showering or processing food with recycled water.
- ✗ Splashing or spraying the public with recycled water during filling and use of the product.
- ✗ Damage to the environment by your operation.
- ✗ Use of recycled water as stock water for pigs.
- ✗ Irrigation of edible food crops (except with authorisation from Unitywater).
- ✗ Carrying any substance that could contaminate or reduce the quality of the recycled water (e.g. trade waste, dam water, or a lower grade recycled water)

8. Backflow Prevention

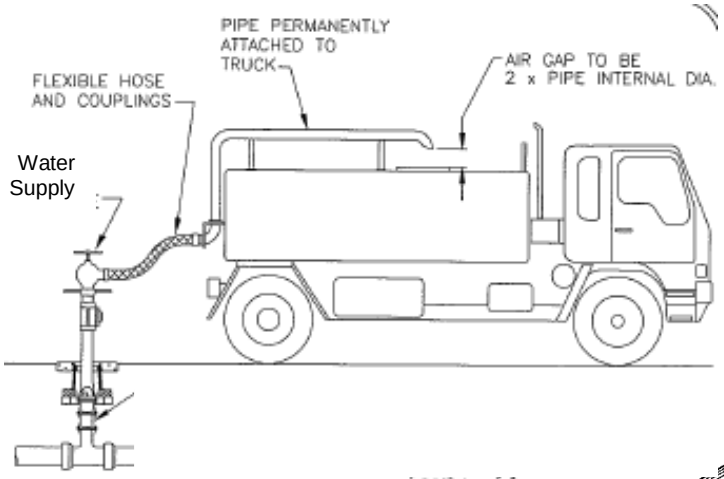
Why is backflow important?

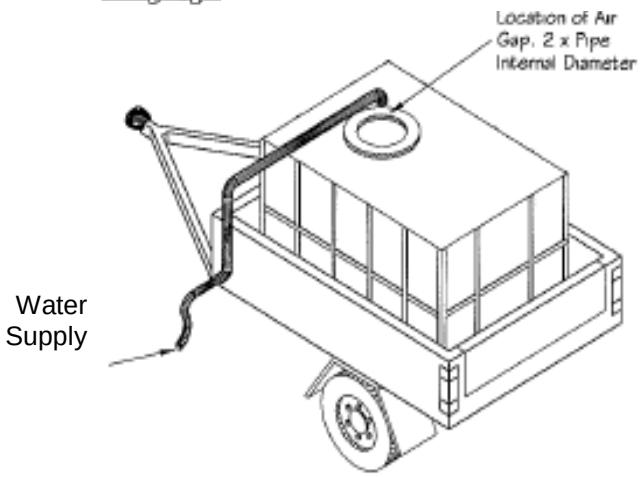
- A backflow device prevents water accidentally siphoning out of the tank back into the supply pipe if the pressure drops unexpectedly.
- The backflow device must be certified by a plumber licensed for backflow certification before Unitywater will allow recycled water to be collected from the Unitywater Service area.
- An Air Gap is the backflow prevention device for water trucks under the recycled water agreement.

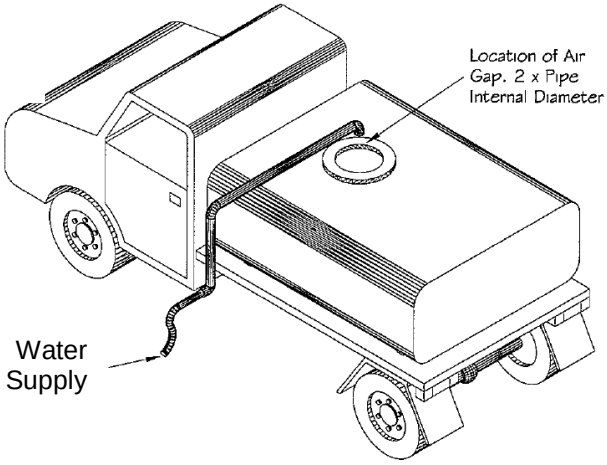


8.1 Backflow Arrangements for tankers or trailers

AIR GAP







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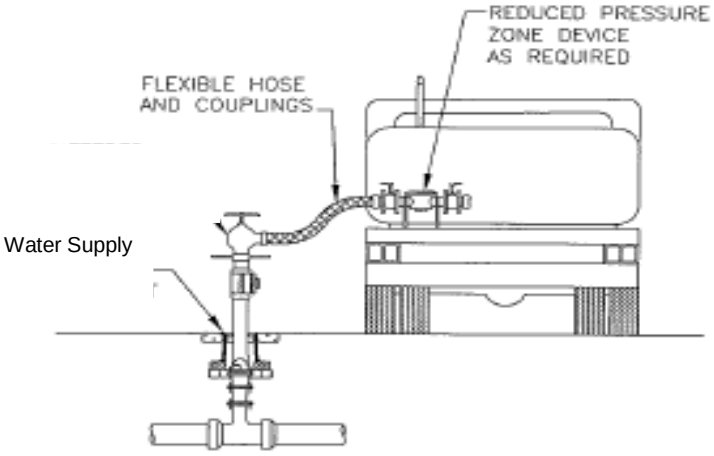


9. Incidents

When things go wrong:

for example

- When people are exposed; sprayed with water from a sprinkler or tanker
- Complaints from the public
- Spray drift across boundary lines
- Tanker Leakage
- Leaking pipes at filling stations
- Disputes over the application of recycled water

If any of the above occur fill in an incident form **(copy provided in attachments to this training manual, or obtain a copy from Unitywater)** and send it to Unitywater.

10. Tanker Disinfection

10.1 Tanker Disinfection

There may be times when a tanker driver may wish to clean or disinfect a recycled water tanker and its delivery lines. Some reasons for this could be:

- Where you have been carting Class B Recycled Water or creek/river water, you **must** disinfect your tanker before taking Class A or A+ recycled water for a use which is only suitable for that class, eg. residential properties, use in water fountains, etc.
- The tanker has become smelly.
- There is concern about growth in the tanker (including lines and fittings).
- There is concern about the build up of solids in the tanker.
- The tanker may be converted from recycled water to potable water (Domestic Water Carrier Permit required – refer to Council's relevant local laws).
- Disinfection may also be required for general cleaning

Disinfection process (refer attachments for disinfection procedure)

- Use an appropriate disinfectant.
- Make sure the disinfectant mix is strong enough to kill pathogens
- Remove any solids from the tanker before disinfecting.

10.2 Disposal of washing water

The disposal of solids and disinfectant contaminated water needs consideration.

✓ Discharge to the sewer system.

✓ Clean the truck in a vehicle wash bay which does not discharge to stormwater.

✗ Do not discharge any material into the stormwater system.

11. Accessing Recycled Water

Before accessing recycled water, you must:

- Successfully complete recycled water training
- Hold a current agreement with Unitywater
- Pay the fees (annual fee – financial year and refundable key deposit)
- Receive a key and tag

11.1 Recycled water access points

Unitywater has many access points. Sites vary in the class of recycled water available.

All outlets are fitted with an 80mm male camlock fitting.

All sites must be locked after use regardless of another tanker waiting to access.

Recycled Water Access Point	Hours of access	Class A+	Class A	Class B
MORETON BAY				
Brendale sewage treatment plant - Cribb Road Access via Cribb Road only – Do not cross the bridge.	24 hours 7 days			√
Burpengary - Caboolture Regional Aquatic Centre, Aquatic Drive (near bus car parking area)	24 hours 7 days	√		
Caboolture - Mewett Street	24 hours 7 days	√		
Morayfield - 67 Weier Road	24 hours 7 days	√		
Murrumba Downs sewage treatment plant - Bickle Road	24 hours 7 days			√
Woodford - adjacent to Woodford Showgrounds - Neurum Rd	24 hours 7 days		√	

Recycled Water Tanker Operator Training

Recycled Water Access Point	Hours of access	Class A+	Class A	Class B
SUNSHINE COAST				
Coolum sewage treatment plant – Marsh Road (off West Coolum Road)	24 hours 7 days			√
Landsborough sewage treatment plant – Forestry Road (off Steve Irwin Way)	24 hours 7 days			√
Maroochydore sewage treatment plant – cnr Fishermans and Commercial Roads	24 hours 7 days			√
Noosa – Wallum Lane	24 hours 7 days		√	
Nambour sewage treatment plant – Bli Bli Road	24 hours 7 days			√
Noosa sewage treatment plant – Wallum Lane	24 hours 7 days			√
Warana - Kawana sewage treatment plant – Mains Drive	24 hours 7 days			√

12. Appendices

Appendix A: Glossary of Terms and Acronyms

Term / Acronym:	Explanation:
CFU	"Coliform Units" clusters of bacteria.
EPA	Environmental Protection Agency.
Faecal Coliform	A type of bacteria found in the human intestines.
MBRC	Moreton Bay Regional Council.
Hazard	Something with the potential to cause harm.
High Contact	Activities which provide a high likelihood of direct public contact with reclaimed water e.g. urban residential garden watering.
Low Contact	Activities which provide minimal opportunities for direct public contact with reclaimed water e.g. irrigation of open spaces with controlled public access.
NRM	Department of Natural Resources and Mines.
NTU	"Nephelometric Turbidity Units": The amount of suspended particles in water, how "dirty" the water looks.
Nutrients	Chemicals and other things similar to those found in fertilisers.
Pathogen	An agent that causes disease, especially a living micro organism such as a bacterium or fungus.
Potable Water	Water suitable on the basis of both health and aesthetic considerations for drinking or culinary purposes. Commonly referred to as town water.

Appendix B: Classification of recycled water for use in Queensland [1]

Class of Water	E.Coli (median) cfu/100mL [2]	BOD5 mg/L median	Turbidity, NTU	SS, mg/L	TDS (mg/L) or EC (µS/cm) medians TDS/EC	pH	Recycled water uses [3]
A+ (see other criteria below)	<1 (median) <10 (95% percentile)	20	<2 (5)	5	1000/1600	6-8.5	Toilet flushing, outdoor hosing & wash down, domestic or commercial above ground garden watering, food crops, industry, fire fighting, other users as detailed in Class A to D.
A	<10	20	<2 (5)	5	1000/1600	6-8.5	Above ground open space irrigation, retail nurseries (not ready to eat products), industry, fountains, water features (no primary or secondary contact) other users as detailed in Class B to D.
B	<100	20	—	30	1000/1600	6-8.5	Pasture for dairy animals without withholding period, wash down of hard surfaces in agricultural industry, other users as detailed in Class C to D.
C	<1000	20	—	30	1000/1600	6-8.5	Controlled access or subsurface irrigation, sugar cane and grapes for wine production, pasture (with certain withholding periods), other users as detailed in Class D.
D	<10,000	—	—	—	1000/1600	6-8.5	Silviculture, turf, cotton, wholesale nurseries with controlled access.

[1] Source: Queensland Guidelines for the Safe Use of Recycled Water
[2] cfu = colony forming units
[3] A recommendation for use of any particular class of recycled water includes higher classes as well. In other words, if Class C is recommended for a particular use, then Classes A+, A and B could also be used, but Class C is the minimum recommended quality.

Class A+ other criteria

- Treatment train that will achieve 6 log removal of viruses, 5 log removal of bacteria & protozoa (from raw sewage)
- Clostridium perfringens <1 cfu/100mL (median); <10 cfu/100mL (95%ile)
- F-RNA bacteriophage: <1 pfu2/100mL (median); <10 pfu/100mL (95%ile)
- Somatic coliphage: <1 pfu/100mL (median); <10 pfu/100mL (95%ile)

Appendix C: Contacts

Unitywater

5431 8333

Department of Energy and Water Supply

Ph: 13 74 68

ATTACHMENT A – SAFE WORK PROCEDURE

Unitywater

ABN : 89 791 717 472

SAFE PLAN 2

Safe Work Procedure 2798

Recycled Water Use

Hierarchy of Control – Safety Risk Assessment Process

Eliminate → Substitute → Isolate → Engineer → Admin → PPE

Scope:	The purpose of this Safe Work Procedure is to provide guidelines and information to effectively control risks associated with transporting & using Recycled Water. Recycled Water is available for various uses. Class B recycled water is available for limited construction site uses, watering parks, playing fields, footpaths and roadside plants where the site access is controlled. Class B recycled water should not to be used for fire fighting. An agreement must be obtained from Unitywater before taking recycled water and all staff using recycled water must be trained in the use of Recycled Water. Class A+, A or B recycled water can be obtained from various Unitywater outlets. This safe work procedure applies to all employees of Unitywater and visitors including contractors, volunteers, work experience students, trainees and clients.

Job Steps	*Hazards* ➔ Risks	Control Measures

Prepare for Use of Recycled Water	***Defective equipment*** ➔ health risks and/or environmental damage
	
	Environmental or health incident relating to the carrying of recycled water ➔ Long term health issues.
		• Driver must have appropriate drivers licence.
		• Always conduct the pre-start inspection and follow start up instructions of vehicle as per the plant daily inspection logbook requirements and;
		  ○ Hose from re-use standpipe - for damage;
		  ○ Tank, hoses, valves & cam-locks - for damage; and
		  ○ Potable washing water and mild disinfectant soap is available on the truck.
		• Ensure driver has undertaken a General Safety Induction (Construction Industry).
		• Drivers are to receive instructions and documentation in the safe use, handling and storage of Recycled Water. (Training Program to be undertaken by Drivers, statement of attendance to be placed on employees file).
		• Trucks used to transport recycled water shall **NOT** be used to transport potable water and are to be fitted with warning signs denoting Non-Potable Water or Not Drinking Water or Recycled Water.
		• Supervisor is to brief water truck driver re task requirements before despatch to work site.
		• Water truck driver is to notify site supervisor that recycled water will be used.
		• Water truck driver is to undergo a site-specific induction before being permitted to enter a part of a workplace where construction or garden maintenance work is being performed.

Take Health Precautions	***Pathogens*** ➔ health risks	All onsite personnel should adhere to the following safe practices: • Do not drink recycled water. • Avoid direct contact with recycled water from water tankers and sprays and wet areas on the work site. • Wear/use equipment appropriate to the tasks being undertaken—e.g. wear rubber gloves if contact with recycled water is unavoidable. • Do not consume food or drink and do not smoke while working with recycled water. • Keep hands and fingers away from the nose, mouth, eyes and ears. • Wash hands well with potable water and soap and/or alcohol based gel before eating, drinking or smoking, and at the end of the working day.

Job Steps	*Hazards* ➔ Risks	Control Measures
		• Any open wounds to be covered with water proof dressings. • Report all cuts and scratches, and receive first aid treatment.
Filling Water Tanker	***Overfilling or defective equipment*** ➔ health risks and/or environmental damage ***Filling station leaking*** ➔health risks and / or environmental damage ***Ponding of water or runoff from stand pipe location*** ➔ health risks and/or environmental damage ***Driver/clothing saturated with recycled water*** ➔ health risks from open wounds or contact with eyes ***Lifting and Connecting hoses*** ➔ back injury, sprains and strains ***Uneven slippery surface causing slips trips and falls*** ➔ serious injury	• PVC gloves are worn and recommended to wear safety glasses. • Body position is to minimize strain to lower back and do not over-reach. • Operator can stand on a stable, reasonably level surface with a secure footing. • Prior connecting hoses; connections are check to ensure O-rings are in place. • Before removing the hose, drain it using the drain valve on the standpipe. • Shut-off all valves and taps prior to moving. • Do not overfill water tank. • Shut-off standpipe in event of connection and/or valve failure. • Have available potable water and soap and/or alcohol-based gel to wash hands and clean hands. • Have eyewash bottle containing potable water to flush eyes. • Check for any leaks in tanker or equipment and ensure standpipe is locked prior to leaving site. • Tanker driver to report any problems to treatment plant operator.
Transporting Recycled Water	***Poor driving or traffic*** ➔Injury, property/environmental damage ***Other vehicles etc*** ➔ collisions with people and plant resulting in personal injuries and property damage. ***Defective equipment*** ➔ health risks and / or environmental damage ***Environmental or health incident relating to the carrying of recycled water*** ➔ Long term health issues.	• Follow all road rules. • While following another vehicle, allow enough distance to stop. • Tanker fitted with approved backflow prevention that has been appropriately maintained. • Monitor for spillage during transport. • Do not use tanker, hoses for potable water after they have contained recycled water. • Tanker driver to ensure safety information for recycled water is provided to relevant person in charge of site on first delivery or whenever quality changes. • Tanker driver not to supply water to site without knowledge of the water quality.
Storage of Recycled	***Pathogen growth*** ➔ health risks	• All trucks, containers, hoses & taps to be labelled with warning signs denoting

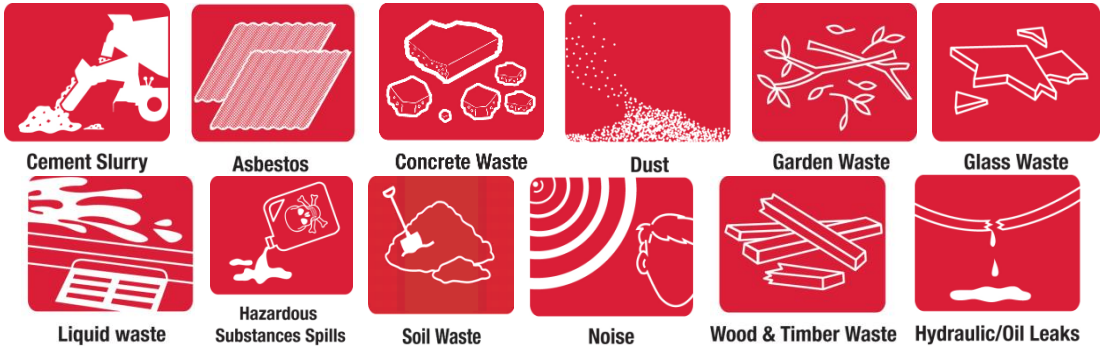
Job Steps	*Hazards* ➔ Risks	Control Measures
Water on-site or in Tanker	and/or environmental damage ***Swallowing of water*** ➔ health risks	Non-Potable Water or Not Drinking Water or Recycled Water. • Recycled water not to remain in tanker greater than 24 hours. • Disinfections is required if water remains in tanker > 24 hours, as per the WH&S Qld, Guidelines to the Use of Non-Potable Recycled Water. • With hold unused recycled water from concreters, site staff and contractors for water drums, washing of tools, road rollers or profilers etc.
Applying Recycle Water at Site	***Other vehicles etc*** ➔ collisions with people and plant resulting in personal injuries and property damage. ***Inappropriate/excessive application of recycled water*** ➔ health risks and/or environmental damage. ***Persons or clothing saturated with recycled water for over spray or leaks***➔ health risks from open wounds or contact with eyes	• Adhere to worksite speed limits – otherwise, drive safely as guided by the local conditions. • Do not enter the working zone of another vehicle or mobile plant without first gaining permission from the other driver or operator. • Ensure appropriate exclusion zones using signage, barriers, witches hats, etc. as required, by taking into consideration the site conditions, wind speed, boom spray height, spray pattern and validated by observing the area bordering the exclusion zone during commencement of spraying to identify any over spray. • Install portable signage in work area “Recycle Water In Use”. • Use spotter or guide to position/locate vehicle if necessary. • Ensure flashing lights & reversing alarms are operational. • Restrict applying recycled water near schools and child care centres to hours where children are indoors. • Do not spray when pedestrians or cars are in the work area. • Take into account wind speed and direction to limit air born spray travel. • Do not apply recycled water to footpaths, which may result in runoff to storm water drains. • Do not apply recycled water on picnic/eating tables, barbecue facilities and drinking fountains. • Use low boom spray position and - or larger sized nozzles on spray equipment. • Allow water to be absorbed before second application. • Use only a hand-held hose to apply recycled water to parks, gardens etc. • Recommended to use PVE gloves and Safety glasses.
Clean up and Exiting Site	***Poor Housekeeping*** ➔ injury, damage to property ***Traffic, other person*** ➔ injury, property/environmental damage	• Close all valves & taps before leaving area. • Ensure that site is clean and tidy and that all signs and barriers have been removed before leaving the work area. • Ensure work area is safe for vehicular traffic. • Trucks to give way to all other vehicles.

Job Steps	*Hazards* ➔ Risks	Control Measures
Carry out on-going monitoring of equipment	***Other vehicles*** ➔ transit and usage damage. ***Hygiene equipment failure*** ➔ health and environmental risks.	• Water truck driver will check truck signage is legible. • Site supervisor and water truck driver to ensure that hand/face washing facilities are being used and maintained within their respective areas of responsibility. Good hygienic practices should always be followed.

Monitor & Review the Effectiveness of all Control Measures	
• Supervisors to ensure inspection and maintenance of PPE carried out correctly • HSR to review and monitor incidents • HSR to ensure information & training sessions being conducted	• HSR to review & monitor procedures. • Supervisors to ensure understanding of employees in regard to obligations for WH&S & wearing of PPE.

Qualifications and Equipment Required			
Relevant Training	**Relevant Legislation**	**Task Specific P.P.E, Tools & Equipment**	**Relevant Work Instructions & Work procedures**
• General Construction Induction Card. (Mandatory for construction work). • Relevant training pertaining to specific trades and tasks. • Training for Recycled Water Tanker Operators. • Safety Information Sheet. Environmental Facts Sheet.	• WH&S Act 2011 • WH&S Regulation 2011 • COP Plant • COP Hazardous Substances • WH&S Qld Model water management plan for the civil construction industry. • WH&S Qld Guide to workplace use of non-potable water including recycle water. • WH&S Qld Guide to supplying water in workplaces using water tankers. • Public Health Regulation 2005 • Water Supply (Safety & Reliability) Act 2008 • DERM recycled water guidelines Queensland	• Relevant PPE, Tools & Equipment pertaining to specific trades and tasks.	All relevant Work Instructions and or Safe Work procedures pertaining to specific tasks.

Personal Protective Equipment Options


Possible Environmental Hazards	Environmental Control Options
	

Other Hazards & Risks	Control Measures

Name	Position	Signature

Issue Date		Prepared By		Approved By	

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Recycled water fact sheet

Class A+ & A tanker customers

Class A+ & A recycled water

- Recycled water is treated effluent. Everything that is washed down then kitchen, laundry and bathrooms sinks as well as the toilet is effluent. After being piped through the sewerage network to sewage treatment plants, the effluent is “cleaned” to standards set by the State Government.
- Recycled water can be used for irrigating parks, gardens and playing fields, dust suppression, soil compaction and many other uses, according to its quality.
- Class A+ water is a high quality product that looks and smells like drinking water.

Why is recycled water being used?

- Using recycled water helps to reduce the amount of nutrients going into our waterways and saves valuable drinking water for personal use, drinking and hygiene.

Is recycled water safe?

- When used correctly, recycled water is safe for all approved uses. Appropriate precautions must be considered when using recycled water. Unitywater’s recycled water is produced and monitored to meet stringent quality guidelines set by the State Government.
- Class A+ recycled water is treated to a higher standard than Class A ad is therefore suitable for a wider range of uses.
- For a list of permitted uses for Class A+ and A recycled water, please refer to the table on the next page.

First Aid Measures

- If you accidentally drink recycled water and any symptoms such as vomiting and diarrhoea develop, you should seek medical advice.
- If recycled water is splashed into your eyes, flush immediately with copious quantities of potable water.

Environmental considerations

- Restrict the amount used to avoid ponding of water and minimise runoff into waterways.
- Like our drinking water supplies, recycled water is a precious resource. Please use recycled water wisely.

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Recycled water fact sheet

Class A+ & A tanker customers

Approved uses for Classes A+ and A recycled water

The table below shows approved uses for Class A+ and A recycled water. Appropriate precautions must be employed at the point of use. A list of appropriate precautions can be found on the following page.

Use	Class A+ South Caboolture recycled water scheme	Class A Noosa & Woodford recycled water schemes
Irrigation of residential gardens and lawns – above ground	✔	✖
Irrigation of residential gardens and lawns – below ground	✔	✔
Dust suppression, compaction	✔	✔
Watering parks, playing fields, footpaths and roadside plants	✔	✔
Filling fenced ponds, lagoons and dams (not used for recreational purposes)	✔	✔
Filling non-fenced ponds, lagoons and dams (not used for recreational purposes)	✔	✖
Road works	✔	✔
Washing cars	✔	✖
Washing animals (except pigs)	✔	✖
Hydraulic testing of sewer infrastructure	✔	✔
Irrigation of landscaping on construction sites	✔	✔
Filling or topping up of swimming pools	✖	✖
Filling or topping up of residential “non drinking water” rainwater tanks	✖	✖

✔ the listed class of recycled water is suitable for this use.

✖ the listed class of recycled water is NOT suitable for this use.

Ground Floor, 33 King Street, Caboolture QLD 4510 PO Box 953

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Recycled water fact sheet

Class A+ & A tanker customers

Precautions for safe use

While Class A+ recycled water is of the highest quality, it is not approved for drinking. Please follow the precautions in the table below and apply normal hygiene practices

Precaution	Class A+	Class A
Washing hands with soap and potable (town) water before eating, drinking or smoking and at the end of the working day	✔	✔
Washing any wounds that have come into contact with recycled water with an antiseptic/disinfectant wash and potable water	✔	✔
If spraying, use a dispersal device which produces large droplets, instead of a mist	*	✔
Ensure correct signage is in place and that is legible. Consideration to the use of languages other than English may be appropriate in certain locations	✔	✔
Ensure that recycled water equipment, taps, pipes, tanks etc are appropriately labelled with “recycled water”, “non potable water” or “not for drinking” and that the colour lilac (purple) is used for all pipes and accessories. All taps should be lockable	✔	✔
Do not irrigate if there is a risk that the public will ingest, breathe or make skin contact with droplets	*	✔
Do not drink, shower or bathe in recycled water	✖	✖
After contact with skin, wash immediately with potable water	*	✔
Avoid contact with eyes – wear safety glasses or similar	*	✔

* this precaution is not necessary if using Class A+ recycled water

Further information

- Please contact Unitywater on 1300 0 UNITY (1300 086 489)

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Recycled water fact sheet

Class B tanker customers

Class B recycled water

- Recycled water is treated effluent. Everything that is washed down then kitchen, laundry and bathrooms sinks as well as the toilet is effluent. After being piped through the sewerage network to sewage treatment plants, the effluent is “cleaned” to standards set by the State Government.

- Recycled water can be used for irrigating parks, gardens and playing fields, dust suppression, soil compaction and many other uses, according to its quality.

Why is recycled water being used?

- Using recycled water helps to reduce the amount of nutrients going into our waterways and saves valuable drinking water for personal use, drinking and hygiene.

Is recycled water safe?

- When used correctly, recycled water is safe for all approved uses. Appropriate precautions must be considered when using recycled water. Unitywater’s recycled water is produced and monitored to meet stringent quality guidelines set by the State Government.

First Aid Measures

- If you accidentally drink recycled water and any symptoms such as vomiting and diarrhoea develop, you should seek medical advice.

- If recycled water is splashed into your eyes, flush immediately with copious quantities of potable water.

Environmental considerations

- Restrict the amount used to avoid ponding of water and minimise runoff into waterways.

- Like our drinking water supplies, recycled water is a precious resource. Please use recycled water wisely.

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Recycled water fact sheet

Class B tanker customers

Approved uses for Class B recycled water

The table below shows approved uses for Class B recycled water. Appropriate precautions must be employed at the point of use. A list of appropriate precautions can be found on the following page.

Use	Class B suitability
Irrigation of residential gardens and lawns – above ground	✖
Irrigation of residential gardens and lawns – below ground	✖
Dust suppression, compaction	✔▲
Watering parks, playing fields, footpaths and roadside plants	✔▲
Filling fenced ponds, lagoons and dams (not used for recreational purposes)	✖
Filling non-fenced ponds, lagoons and dams (not used for recreational purposes)	✖
Road works	✔
Washing cars	✖
Washing animals (except pigs)	✖
Hydraulic testing of sewer infrastructure	✔
Irrigation of landscaping on construction sites	✔▲
Filling or topping up of swimming pools	✖
Filling or topping up of residential “non drinking water” rainwater tanks	✖

✔ the listed class of recycled water is suitable for this use.

✖ the listed class of recycled water is NOT suitable for this use.

✔▲ use is accepted only under strict site controls including site management plans

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Recycled water fact sheet

Class B tanker customers

Precautions for safe use

Recycled water **is not approved for drinking purposes**. Please follow the precautions in the table below and apply normal hygiene practices

Precaution
Implement a recycled water management plan for the site. Unitywater customer service will assist you to develop your plan from our template.
Restrict public access to the recycled water by: ▪ allowing a minimum 30 metre buffer zone between the public and the nearest public access point; and ▪ ensuring no spray drifts beyond boundaries of the recycled water usage site.
Control any drifting spray by, for example: ensuring low boom spray positions; using large size nozzles on spray equipment to create large droplets instead of mist; not using recycled water in windy conditions; or using vegetation screening.
If using recycled water, wash hands with soap and potable water (town water) before eating, drinking or smoking and at the end of the working day.
Minimise your exposure to Class B recycled water by: ▪ using waterproof gloves at all times when using it; ▪ conducting a risk assessment about the use of recycled water in the workplace; and ▪ ensuring all employees or others exposed to recycled water are trained in appropriate health and safety procedures.
Ensure correct signage is in place and that it is legible. Consider the use of languages other than English if appropriate to the location.
Ensure that recycled water equipment, taps, pipes, tanks etc are appropriately labelled with “recycled water”, “non-potable water” or “not for drinking”, and that the colour lilac (purple) is used for all pipes and accessories. All taps should be lockable.
Do not irrigate with recycled water if there is a risk that the public will ingest, breathe or make skin contact with droplets.
Do not drink, shower or bathe in recycled water.
After contact with skin, wash immediately with potable water.
Avoid contact with eyes – wear safety glasses or similar.

Further information

- Please contact Unitywater on 1300 0 UNITY (1300 086 489)

Recycled Water carriers – tanker disinfection

Introduction

From time to time, a Tanker Operator may wish to clean or disinfect a recycled water tanker and its delivery lines. This may be for such reasons that the tanker has been used to carry another product, the tanker has become odorous, there is concern about growth of biofilm in the tanker (including lines and fittings) or there is concern about the build up of solids in the tanker.

Disinfection

Sodium hypochlorite (pool chlorine) is a reasonably effective and economical disinfectant but like all disinfectants it must come in contact with pathogens before it can inactivate them. Furthermore, the contact time required to kill organisms varies greatly, with protozoans such as Giardia being amongst the most resistant. Cryptosporidium cysts are difficult to inactivate, at a level of 15 mg/L free chlorine, it would take about 12 hours to adequately disinfect the tank.

Because the disinfecting material must contact the pathogen, the presence of solid residues can shield organisms from the disinfectant. To minimise this, the operator should attempt to dislodge solids by pressure flushing before applying the disinfectant.

When the solids have been removed apply the disinfectant to the tank and delivery lines. There are many combinations of dose and detention time that could prove effective and it is difficult to be specific.

Nevertheless as a guide, about 600mls of pool chlorine into a 5000L tank would be a dose of about 15 mg/L. For better mixing, the chlorine should be added first. If left overnight, this dose should provide a reasonable level of disinfection. One way to check if enough chlorine has been added would be to check for a residual after say 1 hour. A pool chlorine kit is suitable for this task. If the DPD #1 tablet (as used in pools) yields a pink colour, then active chlorine is present. If no pink colour appears, this indicates the chlorine that was dosed has been used up. A problem occurs if chlorine has been heavily dosed. In such cases, the DPD tablet will momentarily turn pink before quickly turning colourless. This indicates excessive chlorine is present. Diluting the sample with un-chlorinated water will enable a calculation of the actual level present.

Conversion to potable water carrying

Unitywater does not support the conversion of recycled water tankers back to potable water for domestic purposes. However, the registration and regulation of potable water carriers is the responsibility of the relevant Council in your business area.

Council licenses domestic water carriers under the Food Hygiene Regulation to ensure that water trucks are suitable to carry water for public consumption. As water is classed as a food under the Food Act, water carriers are bound by the same duty of care to protect the health of the public as are operators of any other food business.

In order for both Council and the Tanker Operator to display due diligence in the conversion process, a series of tests would have to be undertaken. Tests for the presence of viruses, bacteria and protozoans would be required. These tests can be expensive and the cost would be borne by the tanker owner.

Furthermore, these tests are likely to involve surrogate organisms where the absence of the test organisms (say a virus) is meant to infer that all strains of virus are absent. Although this is likely, it is not certain. Also, one-off tests may not pick up contamination existing in crevasses of the tank or delivery system.

Disposal

The disposal of solids and super chlorinated water needs consideration. Under no circumstance should such material be discharged to the stormwater system. The volumes involved in tanker operations would normally be suitable for discharge to the sewer system. If access to the system is not available, the truck should be cleaned in a wash bay designed for such a purpose.

Recycled Water standpipe – operating instructions

1. Set up truck to receive water by connecting hose to the 80mm male camlock fitting on the standpipe.
2. Unlock cabinet using the 8.1.1 (orange) key
3. **HOLD** silver **FOB** key against Key Reader until **"Select"** light turns on.
4. If key is invalid – invalid light will come on.

   If this occurs, please contact:

   Unitywater - 5431 8765 – 8.00 am to 4.00 pm
5. Press **START** to commence water flow.
6. Press **OFF** to stop flow when truck tank is full.

   (Note: an alternative/emergency 'stop' button has been installed adjacent to the outlet)
7. Relock cabinet.
8. Turn off valve on truck and open drain valve on standpipe to drain hose.
9. Remove hose when empty and shut drain valve.

Recycled Water Incident Reporting Form

Postal address
PO Box 953
Caboolture Qld 4510

Customer Relations
Ph: (07) 5431 8765
Fax: (07) 5431 8853

Internet
www.unitywater.com
retail.compliance@unitywater.com

Site/Location:			
Date of Incident:			
Time of Incident:			
Incident Reported by:			
Time of Notification:			
Type of Incident (please tick)	☐ Public Health ☐ Workplace Health and Safety ☐ Burst Pipe ☐ Other – provide details ☐ Dry weather Recycled Water Lagoon overflow		
Source of Recycled water (location):			
Did Recycled Water flow into any receiving waters?	Yes/No	Name of receiving water	
Approx amount of Recycled Water that overflowed into receiving waters? (litres)		Approx amount of Recycled Water that overflowed in total?	

Description of incident (attach extra pages if required):
Suspected cause of incident:
Harm or Nuisance resulting (attach extra pages if required):
Actions taken to resolve incident (attach extra pages if required):
Has this very same incident occurred before? Yes/No Is so, when (list dates of all other occurrences):

Name:	
Contact number:	
Company:	
Postal Address:	

Signed:	Date:	