

TIP sheet

Use of Reclaimed Water

T010 – DECEMBER 2006



Reclaimed water is sewage effluent that has been treated and disinfected to a standard that is suitable for reuse for non-potable purposes (non- drinking water purposes). It can be reused for limited purposes. Sewage treatment plants use a range of treatment methods and the quality of effluent from plants is variable. Therefore, the water quality standard (see Table 1) needs to be considered before using reclaimed water.

Minimum requirements

- Reclaimed water must only be used for approved construction tasks, on sites where access is restricted to inducted personnel.
- Reclaimed water shall only be drawn from a licensed water supply authority.
- Prior to using reclaimed water the RTA/Principal Contractor provide the following information to a licensed water supply authority:
 - Proposed use/s of reclaimed water.
 - Quality of reclaimed water required as per [Table 1](#).
 - Written request for documented confirmation that the water supply authority's reclaimed water meets water quality specified.
- Controllers of workplaces shall establish a system for:
 - Checking water carter registration
 - Checking driver log books or other records of reclaimed water deliveries

- Preparing appropriate Safe Work Method Statements (SWMS) for use of reclaimed water on their site, prior to the commencement of works.
- [Training](#) for staff using reclaimed water to ensure that all site staff are made aware of the use of reclaimed water and persons undertaking activities using reclaimed water, are inducted into reclaimed water SWMS and safety controls, at a recorded toolbox meeting or similar, prior to reclaimed water use.
- Ensuring, where possible, that water carts used for transporting reclaimed water are not used for transporting potable water.
- Water carts used for reclaimed water shall be cleaned in accordance with the [NSW Health](#) – Guidelines for Water Carters before carting potable water.

Excluded activities

- Reclaimed water shall not be used as drinking or personal washing water.
- Due to chance of concentrated Reclaimed water runoff to waterways, Reclaimed water shall not be used for:
 - Saw cutting.
 - Subsoil drainage flushing.
 - Pavement or structure wash-down.
 - Geotechnical drilling.

Hazards

Some hazards associated with use include:

- Drawing reclaimed water from non licensed suppliers.
- Improper use that may lead to contamination of a potable water supply.
- Incorrect size discharge nozzles/jets leading to misting and/or spray drift.
- Failure to dose or incorrect dosage of chlorine, at the prescribed point.
- Use, handling, transport and storage of disinfecting chemicals, if used as a control.
- Application of reclaimed water too close to personnel, buildings, watercourses and public areas.
- Low risk of mild gastric irritation if swallowed in small quantities, or gastro enteritis if swallowed in moderate to large quantities.
- Low skin irritant (it is poorly absorbed through skin);
- Low risk of infections to open cuts and abrasions.
- Not disinfecting tankers.

Risk assessment

Risk Assessments and SWMS for activities involving the application of reclaimed water at any RTA site must be completed by a competent person prior to work commencing



and must identify the use of reclaimed water as a hazard.

As a minimum, Risk Assessments shall comply with RTA OHS Risk Management policy.

When significant change is proposed at any work site, or in work practices or procedures to which the assessment relates e.g. changes in the weather, especially wind (spray drift); further risk assessment shall be conducted and consideration given to postponing reclaimed water work.

The affect of reclaimed water within each work activity needs to be considered on an individual basis.

Risk controls

The framework for quality assurance outlined under Minimum Requirements has been developed to ensure that reclaimed water accepted for use in construction work meets national water quality standards.

All TIP sheets are available on the RTA [internet](#) or contact your OHS facilitator for assistance.

Where the *water quality standard* can not be met, reclaimed water should not be used.

Further controls include:

- Reclaimed water is not to be applied where there is a risk of spray drift.
- Minimise application rate to reduce pooling and misting caused by passing vehicles.
- Keep a register of *locally approved* tankers and trained/inducted driver/operators.
- A high standard of personal hygiene is insisted upon, using a supplied anti bacterial hand wash.

Note: *Reclaimed water should not be held in tankers for more than 24 hrs.*

Hygiene practices and PPE

Using reclaimed water doesn't usually require more comprehensive PPE or detailed hygiene practices, just more thorough use of the hygiene practices we should normally use. More care in cleanliness can be achieved by:

- Washing hands and face thoroughly in clean water and soap, after the work activity.
- Use the supplied antibacterial soap.
- When eating, drinking or smoking, stay clear of any possible reclaimed water mist drift.
- Do not wipe your mouth with unwashed hands or cloth.
- Ensure potable (clean) water is nearby for first aid e.g. eyewash, wound irrigation etc.
- For tanker operators, during loading and discharge, wear:
 - Overalls – to reduce exposure to mist.
 - Elbow length gloves (viton/nitrile/PVC).
 - Normal protective footwear.

Training

All staff, including drivers are to be briefed on minimum requirements and risk controls (with particular attention paid to personal hygiene requirements), prior to commencing work on site.

Drivers should be trained in dosing for disinfection of tankers and provided with Material Safety Data Sheets for substances used.

Log books

The RTA/Principal Contractor shall establish a Log Book/record keeping system and ensure tanker driver/s maintains the log book in each site-registered tanker and drivers are recording entries for:

- Tanker registration and driver's name.
- Date/time of reclaimed water receipt and delivery.
- Source of reclaimed water.
- Reclaimed water quality received from water supply authority
- Delivery site name and address.
- Volume delivered.
- Delivery i.e. spray bar, discharge head.
- When tank was last cleaned.

Tanker requirements

- Display reclaimed water signs at front, rear and sides.
- Have a backflow prevention device as per AS3500.1:1992, Sect 4.6.3.1(a).
- Have a separate filling pipe work and valve with a point of attachment matching the filling point; usually 80mm female cam lock fitting. Filling pipe work to be purple and labelled, 'Reclaimed Water Only'.
- Have spray bars modified to produce larger droplets, rather than a mist.
- Have hand washing facilities, clean water and anti bacterial soap.

Signs for tankers and the site

Signage should include the words, 'Reclaimed Water' and the do not drink pictogram. Signs should be large enough to be read from 20 m.



Reclaimed Water Quality

Reclaimed water quality may vary between suppliers across the state and perhaps from anyone supplier, between pick up days. It is accepted construction practice for reclaimed water quality to be measured against one element, thermotolerant coliforms (cfu); an organism used as an indicator that pathogens may be present. Disinfection, usually with chlorine, controls numbers of e-coli, but the effectiveness of chlorine decreases with time. RTA/Principal Contractors may wish to add more disinfectant to reclaimed water, depending on 'local conditions'. Recommended dosage rates are given in Table I, but advice should be sought from regional OHS and/or Environment resources.

Table I - Water Quality Standard	Reclaimed water	
Quality required from WSA	<10cfu/100mL	<1000cfu/100mL
Level of risk in use	Minor	Moderate
Controlled perimeter access req'd	No	Yes
Allowable for these processes		
Earthworks	✓	✓
Dust suppression	✓	✓
Vegetation watering	✓	4 hr entry exclusion may be required after spraying
Drilling or close proximity work	✓	✗
High pressure applications	✓	✗

Disinfection of tankers

Tankers should be physically cleaned inside (confined spaces work), then dosed with chlorine to provide at least 5.0mg/L free residual chlorine and left stand for at least 30 minutes.

Hose and pipe work should be dosed at the same rate; fill and dose the tank as above and then open valves to fill capped hoses and then flush spray bars.

References

NSW OHS Act 2000 and OHS Regulation 2001 Chapters 2, 3 and 8.

[WorkCover NSW](#) – Safe Handling of Contaminated Ground water at the workplace

[RTA OHS Policy](#) – Risk Assessment

[NSW Public Health Act, 1991](#)

[NSW Health](#) – Guidelines for Water Carters (note these guidelines contain higher standards, as it relates to the transport of potable water for human consumption).

[National WaterQuality Management Strategy \(NWQMS\) 2000.](#)