

Groundwater disposal from buildings

Released 15 December 2017

The South Australian Environment Protection Authority (EPA) considers groundwater disposal from buildings to be a type of dewatering activity. Groundwater can be polluted, so discharging it to the stormwater system has the potential to cause environmental harm.

Therefore, the EPA requires environmental management of groundwater dewatering be in accordance with the waste management hierarchy and the EPA's guideline for *Environmental Management of Dewatering during Construction Activities*. The following steps are recommended:

- Avoid or minimise the volume of groundwater requiring disposal
- Re-use the groundwater to the extent that is reasonable and practicable, e.g. irrigation of vegetated land, dust suppression or re-injection of groundwater to the original aquifer
- Discharge to the environment is only to be considered once all stages of the waste management hierarchy have been investigated and groundwater can not reasonably and practicably be completed re-used
- Discharge to stormwater or any other surface waters (inland or marine) is dependent of the water quality and must meet discharge limits provided in the EPA guideline for Environmental Management of Dewatering During Construction Activities
- On-going discharges from buildings should be brought to the attention of the EPA
- Proponents should treat groundwater where possible prior to any environmental discharge in order to meet discharge limits
- If these options are impractical, disposal to sewer can be negotiated, or, if groundwater remains unsuitable for sewer or environmental discharge, removal for off-site disposal will be required via a hazardous liquid waste facility

We classify groundwater as a restricted wastewater category. Where the groundwater entry cannot be reasonably excluded and the EPA's other recommended disposal options are not practical, we may approve sewer disposal subject to conditions in this guideline. Each customer wishing to discharge groundwater to our sewerage system must first obtain specific authorisation.

For the purposes of this guideline, 'groundwater' means naturally occurring underground water (also known as sub-surface water) that accumulates in basements or service pits, but may include rain and surface water draining from vehicles entering an underground space in wet weather. **Stormwater entering the basement or service pit from entry ramps is not accepted as 'groundwater' for the purposes of this guideline.**

This guideline applies to uncontaminated groundwater that meets our *Restricted Wastewater Acceptance Standards* without the need for pre-treatment before discharge. The [Contaminated Sites Guideline](#) applies if contaminant levels in groundwater must be reduced by pre-treatment to meet these standards.

Existing discharges

We will assess discharges of groundwater from installations in buildings in existence before 1 March 2009 as they become known to us. This assessment will determine whether we should accept further discharges. If so, the site operators must seek authorisation to discharge. In any event, we will allow a reasonable period for remedial works to be completed.

Applications

Applicants for discharge approval use a [Groundwater Disposal to Sewer Application Form](#) and pay the liquid hauled waste application fee. The following details must be included:

- Typical analysis results of a representative groundwater sample, including electrical conductivity as specified in Table 1.
- Proposed discharge flow rate. Please allow 10 working days for analysis of receiving sewers ability to accept proposed flows and volumes.
- Estimated discharge volume per day .
- Drawings of any proposed discharge system.

Groundwater disposal to sewer test parameters *	
Suspended Solids	Biochemical Oxygen Demand
Total Dissolved Solids	Grease
Total Kjeldahl Nitrogen	Total Phosphorus
Total Petroleum Hydrocarbons (TPH)	Benzene, Toluene, Ethyl-benzene, Xylene (BTEX)
Polycyclic Aromatic Hydrocarbons (PAH)	Phenols
Metals	

**Testing should be carried out by a NATA certified laboratory for the specified tests. Extra test parameters may be stipulated depending on the application.*

Typical installation requirements

- All reasonable steps are taken to minimise groundwater entry.
- Facility for taking a representative sample of sewer discharge.
- A discharge flow meter in accordance with the [Discharge Flow Meters Guideline](#).
- The discharge flow rate is effectively controlled to within the permitted maximum.
- Bunds or other acceptable means prevent accidental entry to sewer of chemicals or other substances stored in the basement.
- Final lockable valve or other means of isolation from sewer.

Typical operation

- Our Restricted Trade Waste team will issue an *Authorisation to Discharge Groundwater to Sewer* which stipulates the conditions of the individual discharge.

- The Restricted Trade Waste team will undertake random monitoring of connections for compliance.
- Ongoing compliance testing of groundwater will be carried out in accordance with your authorisation to discharge groundwater to sewer and with the [Sampling and Analysis Guideline](#).

Fees and charges

- The costs of sampling by the Restricted Trade Waste team and subsequent analytical and administrative costs incurred by us are borne by the operator.
- The cost of disposal to sewer of groundwater is charged to the operator in accordance with the current rates for non-domestic hauled waste.
- Billing frequency is negotiated between the parties before commencement of the operation. Normally annually per financial year.
- Should the accounts rendered by us to the operator fall into arrears at any time, we may immediately suspend further discharges upon giving written notice to all parties involved.

More Information

Mains Water Protection (AS/NZS 3500-20015 Part 1)

[Backflow Prevention Requirements - Office of the Technical Regulator](#)

[Trade Waste Bunding and Blind Tanks Guideline](#)