



Guidelines for the collection and use of sea water for household purposes during the Cape Town water crisis

DISCLAIMER: The City reserves the right to at any stage withdraw these guidelines and stop the use of seawater for toilet flushing and topping up swimming pools.

These guidelines are limited to flushing toilets and topping up swimming pools with seawater.

The water crisis has required the City to explore a number of alternative water sources, including sources never previously considered, such as seawater for toilet flushing and for topping up swimming pools. It must, however, be used with caution and in terms of the guidelines supplied.

In the absence of specific regulation and information, this document serves to provide guidance during this water crisis. While the City does not necessarily advocate the use of seawater, it acknowledges the short-term benefits and recommends that its use be undertaken according to these guidelines.

To this end, this guideline provides information regarding firstly, the legally permissible places for seawater collection in terms of the National Environmental Management: Protected Areas Act, Section 48A(1)(e); secondly, the possible uses of sea water and thirdly, it outlines guidelines for the discharge of sea-water from swimming pool backwash.

Legal requirements for the collection of sea water

Although Cape Town is surrounded by an extensive coastline, collection is limited by the guidelines below.

- Sea-water collection from Marine Protected Areas (MPAs) is not permitted in terms of the National Environmental Management: Protected Areas Act, Section 48A(1)(e).
- Cape Town's MPAs include: The Helderberg MPA (located between the Eerste and Lourens River and Strand) and the Table Mountain National Park (TMNP) MPA (including Karbonkelberg, Cape of Good Hope, Paulsberg, St James, Boulders and Castle Rock) – see map below for TMNP MPA.
- Seawater may be collected in coastal areas located outside of MPAs on condition that:
 - all generators for pumping must include a drip tray to prevent fuel leaking onto the beach;
 - no machinery or infrastructure for seawater collection be stored on or near the beach or beach access point;
 - public access to or use of the beach not be obstructed or negatively affected during seawater collection; and vehicles do not drive onto the beach or any part of the natural coastal environment.

Vehicles require a permit if they are used in the natural coastal environment, which typically includes beaches and sand dunes. Because of the negative impact that vehicles have on the natural coastal environment, the City recommends that seawater be collected from areas where vehicular access across natural coastal environment is not required. Suitable areas are slipways (boat ramps), ports and harbours and any other locations that include road infrastructure and/or parking facilities.

Guidelines for the limited use of seawater in swimming pools

Whereas the City does not promote the use of seawater for topping up conventional swimming pools, it acknowledges that this may be a short-term option for homeowners during the water crisis. To this end, please read the guidelines below:

- Conventional, saltwater and/or natural swimming pool systems are not designed for seawater, which contains an average of nine times more salt than a standard saltwater swimming pool.
- Saltwater swimming pool systems are designed for a certain salinity level and are fitted with saltwater chlorinators.
- The salinity level of a conventional swimming pool can, however, be safely increased to the same level of a saltwater swimming pool, without modifications to the system and hardware. A standard 40 000 litre conventional swimming pool can be topped up with approximately 5 000 litres of seawater with little to no impact on the pool equipment. Increasing the salinity further than this limit is not recommended.
- While it has no effect on swimmers' health, seawater will accelerate corrosion and degrade infrastructure if used on a long-term and ongoing basis.
- The chlorine and other chemicals used to treat conventional pool water are not aimed at treating seawater. Using them for this purpose may result in staining of the pool walls and a permanently green pool, rather than the expected sparkling blue.
- Maintaining a healthy pool requires some backwashing of pool water. If seawater is used in pools, this water must be discharged into the sewage system.

Guidelines for discharging backwash from a swimming pool

- The wastewater generated from the backwash of a conventional swimming pool must be discharged into the **sewage system**.
- The wastewater generated from the backwash of a saltwater pool or a pool that has been **topped up** with seawater must also be discharged into the **sewage system**.
- Under no circumstances should backwash wastewater be directly discharged into the environment or the storm water system. The high salinity levels will damage the health of plants and animals in fresh water aquatic systems such as rivers and wetlands.

Guidelines for using seawater to flush toilets

- The use of seawater to flush toilets over the short term is permitted by the City. Seawater must, however, be used with discretion and only as a last resort. This is because the sewage system is not designed to treat high levels of salinity, which will damage the biological processes at the wastewater treatment works.
- A bucket must be used to pour seawater directly into the toilet bowl and not into the cistern. Please ensure there are no solids such as sand or seaweed in the seawater before pouring it into the toilet bowl as these solids may block the plumbing and/or sewage system.

- Due to the chemical composition of seawater, flushing seawater into the sewage system will have an impact on the infrastructure and mechanical equipment:
 - it will accelerate the corrosion of metal pipework, fittings and valves installed within the existing sewage network and which are not designed to withstand the corrosive effects of seawater; and
 - it will deteriorate the concrete components of the sewage system.

The effect of seawater on our wastewater treatment works

Except for the City's three marine outfalls where a river, drain, or sewer empties into the sea (Hout Bay, Camps Bay and Green Point), the wastewater (including sewage) from all other catchments is treated in biological wastewater treatment works.

The City's wastewater treatment works are designed to treat wastewater originating from drinking water, but not from sewage combined with seawater. The chemical compounds found in seawater are known to interfere with the biological treatment processes that occur at the treatment plants. For the reasons above, the use of seawater for flushing toilets and for topping up conventional swimming pools is not envisaged in the long term.

