

Treatment and Use of Bores After Flooding

How Can Floodwater Affect my Bore?

If floodwater has inundated the ground around the base of your bore or overtopped your bore casing there is likelihood that floodwater has entered the bore and aquifer. The pathway for the floodwater is either directly into the top of the casing, if it is not sealed, or down through the space outside the casing if it has not been constructed correctly. Water may also enter through nearby sinkholes.

Floodwater entering a bore has the potential to contaminate the bore and aquifer with bacteria, rendering it unfit for human consumption if untreated. It also has the potential to backfill the bore with sediment carried in the floodwater and/or de-stabilise sediment around the casing, washing the sediment down (slumping). This may cause blockage of the screens or slots of the bore and a drop in flow from the bore.

Contamination of the Bore and Aquifer

Floodwater may carry bacteria, viruses, parasites, and other pathogens (disease-causing organisms), as well as chemicals. Diseases such as dysentery, hepatitis and giardiasis can be transmitted through bores that have been contaminated by floodwaters. Chemicals such as pesticides, fertilisers, solvents, and petroleum-based products can also pose a health risk and all pumpage of potentially contaminated water should be contained and treated.

When Can I Start Drinking Water From my Bore Again?

It is recommended that you do not drink untreated water from your bore until the bore has been pumped for 30 days and tested for bacteria contamination. If it tests clear, you can resume drinking your bore water untreated. If the test fails you should contact NRETA or the Department of Health and Community Services to determine further remedial action.

Why do you need to pump Waste for so long?

Major flooding has the potential to recharge a significant volume of floodwater into your bore. This volume will be much less if the bore has been constructed and maintained appropriately. However, some contamination is still likely to occur as the contaminated floodwater can make its way to the aquifer via other poorly constructed and maintained bores and naturally occurring sinkholes.

Can I Drink the Water from my Bore in the Interim?

Yes, providing that it is treated. Before testing your bore water for bacterial contamination (during the first 30 days of pumping), it is recommended that bore water for drinking and food preparation should first be disinfected.

Once water from the bore looks clean and smells okay, pump it into a "clean" tank and disinfect by chlorination or boiling. It is recommended that when boiling ensure rolling boil for 5 to 8 minutes.

If administering Chlorination, 1.5 grams of dry pool chlorine should be added for every 1000 litres (dry pool chlorine (calcium hypochlorite) should be rated at 65-70 per cent available chlorine).

How Can I Prepare Myself for a Flooding Event?

To prevent groundwater pollution prior to and during a flooding event remove any potential sources of contamination (ie. containers of fuel, oil, pesticides, fertilisers, animal carcasses, spoiled food, etc) away from areas prone to flooding. All materials of this nature should be stored or disposed of adequately at all times throughout the year.

Detailed Procedure to Resume Pumping After Flooding

The following steps should be carried out where possible before resuming pumping to minimise adverse impacts on the pump and bore if slumping or backfilling has occurred.

1. Disconnect all power from the pump.
2. As the floodwater recedes, check the integrity of the bore head, blocking any openings where water is entering the bore. Remove any potential sources of contamination.
3. If possible remove pump from bore. If pump cannot be removed go to Step 8.
4. Have a qualified electrician check and repair power board, switches and pump before re-connecting.
5. Measure the total depth of the bore and compare to the constructed depth.
6. If the depth is shallower check if the screens or slots have been blocked (i.e. total depth of bore is within screen or slotted interval).
7. If the screens or slots have been partially blocked contact the Water Management Branch for further advice. If not, re-install pump.
8. Start pump at the lowest flow rate possible and monitor the discharging water for colour and sediment. Pump for at least 1 hour. DO NOT pump to your storage tank!
9. Steadily increase the pump flow rate, whilst continuing to monitor the discharging water, until the normal pumping rate, prior to flooding, is reached. Keep pumping the bore to waste continuously for at least 24 hours.
10. If the colour of the water being pumped worsens and the flow rate becomes irregular, turn off the pump. Contact the Water Management Branch for advice. It is likely that the screens or slots of the bore have been blocked and remedial work will be required on the bore.
11. After 24 hours of pumping check that the discharge is clear. If so, a tank can be filled for treatment with chlorine.



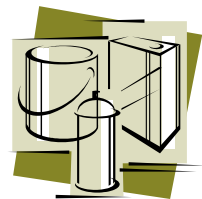
Detailed Disinfection Procedures

Steps for disinfecting tanks and plumbing fed from bores:

1. Pump your bore until water is clear or only slightly cloudy (turbid).
3. Clean all sediment from the inside of the tank.
4. Part-fill the tank with water (best if filled to a pre-determined volume). While tank is filling add granulated chlorine at a dosage rate of: -
 - 150 grams per 1000 litres for turbid water
 - 75 grams per 1000 litres for clear water

**** DO NOT DRINK THIS WATER ****

5. Once mixed, run all taps until chlorine can be detected.
6. Close taps and allow the chlorinated water to stand in the pipes for four hours.
7. Drain the tank and the plumbing.
8. Fill the tank with water adding 1.5 grams of granulated chlorine per 1000 litres.
9. Flush the plumbing with this water.
10. The tank can continue to be filled with bore water and treated with 1.5 grams of granulated chlorine per 1000 litres and used for domestic purposes.



If the treatment cannot be maintained, water for drinking and food preparation should be obtained from the town water supply. Water from the bore, if clear, should be safe for other domestic uses other than drinking and food preparation

The tank and all reticulation (including hot water system) should be drained. If possible the bore water should be clear before pumping into the tank to maximise the effect of disinfection. Household water treatment systems will not provide sufficient protection and may need to be disinfected. Membranes, cartridges and filters within water treatment devices should be replaced. Water softeners and water heaters should also receive special attention because they will serve as sources to reintroduce bacteria into your water system if not properly disinfected.

Bacteria and other living organisms can be killed through disinfection with chlorine, but disinfecting the bore will not remove other chemicals or sediment. If you suspect nitrate or man-made chemicals have been introduced to the bore, use an alternate water supply until you can confirm it is safe.

For assistance, contact the Water Management Branch:

- **Palmerston**
4th Floor Goyder Building, PO Box 496 Palmerston NT 0831 Ph: 89 993678
- **Katherine**
Randazzo Arcade, 16 Katherine Terrace, Katherine NT 0850, Ph: 89 738100
- **Alice Springs**
1st Floor Alice Plaza, Todd Mall, PO Box 1120 Alice Springs NT 0871, Ph: 89 519215

Internet Site : www.nt.gov.au/nreta/naturalresources/publications