

Shock Disinfection of Water Supply Systems

Shock disinfection of water supply systems is used to ensure that your water well can provide water that is bacteriologically safe.

Prior to shock disinfection, a physical inspection of a well and the water system should be undertaken. This includes:

- Mud, garbage and other waste should be removed from the vicinity of the well to prevent potential contamination of the source water.
- Checking that there is no exposed or damaged wiring and that the pump controls and your electric system has been checked by a qualified electrician.
- Checking the integrity of sanitary well caps especially rubber gaskets or seals, the vent screen, and ensuring the proper hardware for securing the seal is present.
- Inspecting the well casing for rust perforations or other holes. The well casing should be 12 to 18-inches above the surrounding surface. Casings that are rusted through should be replaced. Holes in casings should be sealed with caulk.
- Checking and correcting soil which may be depressed around the well casing allowing surface water to pool next to the casing. Depressed areas should be filled in so that rain and surface water flow away from the casing.
- Inspect the physical integrity and condition of tanks, valves, pipes and other components of the water system. Components in poor condition (ie. rusted, cracked, leaking) should be replaced before placing your system in operation.
- Ensure there are no potential cross-connections in your water system. Examples include hoses from water taps immersed in sinks.

Following the physical inspection and maintenance of the water system, shock disinfection can proceed. The disinfection procedure described below is intended to eliminate current bacterial contamination of your system. The procedure is not intended to provide disinfection for a system that is continually impacted by bacterial contamination due to improper well and system construction, location, or poor maintenance.

Shock Disinfection Procedure

STEP 1

Pump the well to waste through a hose for an hour to reduce cloudiness and contaminant levels in the water and also remove stagnant water and dirt/rust from the water system.

STEP 2

Turn off the heating source of your water heater and bypass or remove any carbon filters or cartridges. Water conditioning equipment such as water softeners should remain online so that they will also be disinfected, but check with the manufacturer to make sure the equipment will not be damaged.

STEP 3

Remove the sanitary well seal or the vent from the well cap. Determine the quantity of household chlorine bleach that is required for your water system. Use fresh, common household chlorine bleach (5.25%) such as Clorox that does not have added fragrances or colors – do not use bleach substitutes. **Use caution when handling the chlorine bleach and wear eye and skin protection.** For a 6-inch diameter well casing, use one ounce of chlorine bleach per one foot of water in the well (ie. if a 6-inch diameter well contains 100 feet of water, pour 100 ounces of chlorine bleach into the well). If you do not know the depth of your well or how to measure the water level, please call the Broome County Health Department for assistance.

STEP 4

Connect a hose to a hose bib and run the hose into the top of the well. Turn on the water at the hose bib and allow the water to run into the top of the well. After several minutes, you should begin to smell the chlorine bleach odor in the water flowing from the hose into the well. If possible, begin rinsing down the inside wall of the well casing. Continue recirculating the water for 10 to 15 minutes. Turn off the hose and replace the sanitary seal on the well.

STEP 5

Turn on each indoor and outdoor water tap or faucet, one at a time. Allow the water to run until a strong odor of chlorine is detected. Turn off the tap and proceed to the next one. Make sure to run both cold and hot water taps, showers and hose bibs. After detecting the chlorine at each tap, allow the water system to sit undisturbed for 12 to 24 hours. This step sanitizes the distribution piping.

STEP 6

After the required time, flush the chlorine from the well. First, run the water from the outside hose bib through a hose to a bare soil area. Do not water a garden or lawn with the highly chlorinated water. Using an outside hose bib and hose will prevent overloading of your septic system. Allow the water to run until the chlorine odor has dissipated or is significantly reduced. To reduce the strain on your water well pump, allow the water to flow for one hour, then turn it off for one-half an hour – keep repeating this cycle. This step could take several hours.

STEP 7

Flush the chlorine from the distribution system by again running each tap or faucet, one at a time, until no or a significantly reduced chlorine odor is detected. Your well and water system should now be adequately sanitized and free of harmful bacteria.

BUT, to make sure your water is safe, a bacteriological water sample should be collected and submitted to a certified lab for analysis. If the sample indicates no bacterial presence, your water system is ready for use. But, if the sample is positive for bacteria, you should repeat the process above or contact the Broome County Health Department for assistance or advice.