



Assessing the Condition & Location of Your Rain Water Collection System (Cistern)

Protecting Your Water Quality Through a Farm & Home Assessment



Why should you be concerned?

The condition of your rain water collection system (cistern) is an important factor to consider when looking at the potential for contamination of your drinking water supply. Specifically, you should be concerned about the location, condition, and maintenance of your rainwater collection system.

Some contaminants in water may only affect appearance, while others such as bacteria, nitrate, and toxins can be extremely harmful or even fatal.

What can you do?

The information in this chapter will address potential contaminants to your drinking water supply, and allow you to take voluntary action to protect your drinking water supply from contamination.

Use this chapter to address questions you have answered **Yes, or do not know** the answer to in the **Assessing the Condition and Location of Your Rain Water Collection System** section in your “Farm and Home Water Quality Assessment.” This chapter will help you develop an Action Plan to establish practices that reduce the risks of contamination to your drinking water supply.

A Partnership Program for Voluntary Pollution Prevention

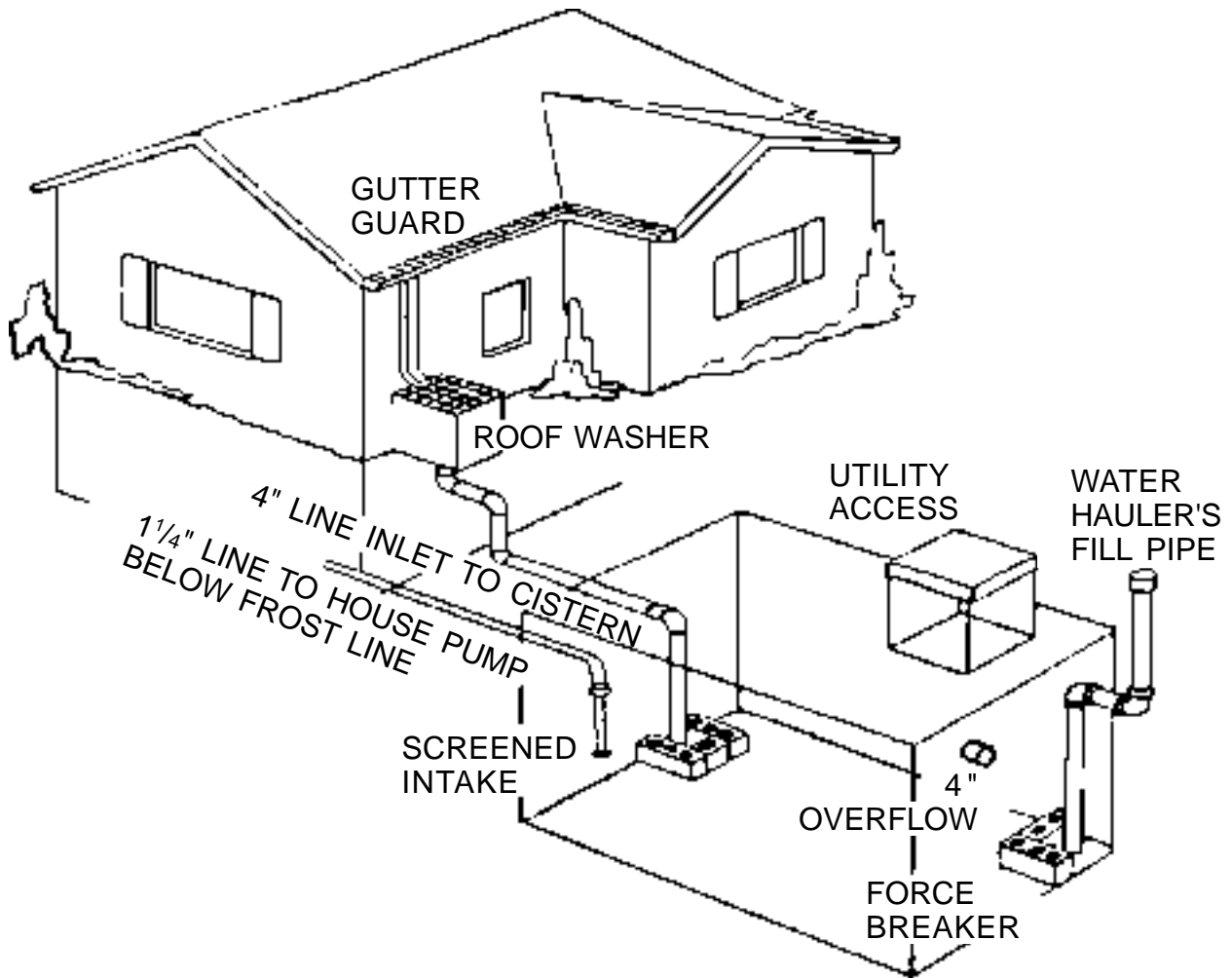
USDA Natural Resources
Conservation Service

USDA Cooperative State Research,
Education and Extension Service

USEnvironmental
Protection Agency

1 Has it been longer than three years since your cistern was emptied and cleaned?

The quality of your water supply is directly dependent upon the management of your collection system. Your cistern should be emptied and cleaned every three to five years to remove sludge deposits. This will minimize the amount of coliform bacteria and other contaminants in your drinking water.



2 Has it been longer than four months since you treated your cistern with chlorine?

You should add chlorine to your system on a regular basis to disinfect your water supply. Treat cistern water with five fluid ounces of liquid chlorine bleach, unscented sodium hypochlorite 5.25% (regular laundry bleach) per 1000 gallons of water monthly or bimonthly depending upon the frequency and amount of rainfall.

As a general rule, add one ounce of chlorine per 400 gallons of water during wet periods and one ounce of chlorine per 200 gallons of water in dry periods.

3 Is there debris on your roof or in your rainwater collection system (drains, pipes, cistern)?

Your maintenance program should include regular cleaning of rooftops (or other collection surfaces), gutters, and pipes leading to the cistern. This will prevent clogging of the system and reduce bacterial contamination.

You should inspect the collection system for blockages and/or debris after every major storm event. (Studies conducted in the Virgin Islands have found leaf litter and other organic debris left on rooftops and in gutters and cisterns to be the primary source of coliform bacteria in cistern drinking water.)

Trees should be pruned back so that branches do not hang over rooftops, gutters, or other collection areas.

4 Is your roof made or coated with toxic materials (i.e., asbestos, lead paint, zinc, etc.)?

Many roof coatings, paints and collection materials can contain toxic substances such as zinc, copper, and lead that can contaminate your cistern water.

For example, galvanized roofing is a source of zinc, roofs with copper flashing can have high copper and lead concentrations, and some roof coatings may contain lead. You should consider treating or replacing these materials with coatings or components that are made from nontoxic materials.

If you suspect your collection system contains or is treated with toxic materials you should have your drinking water tested. Consult with your local Health office or water quality agency.

5 Are there places on your roof, collection area, or in your gutter system where water stands instead of flowing into your cistern?

Standing water on roofs, in the collection system, or in improperly sloped gutters creates birdbaths, mosquito breeding areas, and stagnant water that can reduce the quality of water entering your cistern.

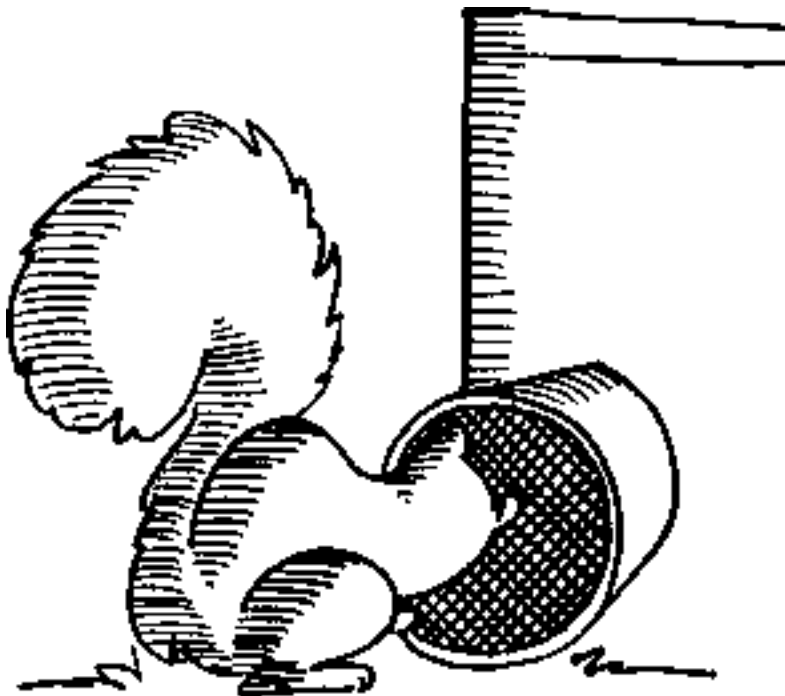
Inspect your system after a heavy rain to see if you have any standing water. Reshape gutter areas where water stands.

6 Can animals or debris enter through the screen(s) on your rainwater collection system?

All openings to your cistern should be screened to prevent animals and debris from entering. Check all screens after major storms to remove any debris that may have collected. It is also a good idea to fence any portion of your collection system that may be accessible to animals and children.

7 Has it been longer than two years since you inspected your cistern for cracks or leaks?

Contaminants from failing septic systems, livestock areas, or a leaking petroleum storage tank can enter cisterns through cracks or leaks, contaminating your drinking water supply. Any cracks or leaks in the cistern should be immediately filled and sealed.



Assessing the Condition and Location of Your Rain Water Collection System (Cistern)

If you answered "Yes" to the following questions.	What to do	Who to call	Other References	What you did
Question 1	Empty and clean out every 3-5 years.		Local Extension Service office, Health office, Water Quality Agency, NRCS office or Conservation District office.	
Question 2	Add chlorine to your system at recommended rates and intervals.		Local Extension Service office, Health office, NRCS office or Conservation District office.	
Question 3,	Develop a regular maintenance schedule. Inspect after large storms.		Local Extension Service office, Health office, NRCS office or Conservation District office.	
Question 4	Cover with nontoxic material or remove toxic material.		Local Water Quality Agency, Extension Service office, Health office, NRCS office or Conservation District office.	
Question 5	Inspect gutters for places where water may stand.		Local Water Quality Agency, Extension Service office, Health office, NRCS office or Conservation District office.	
Question 6	Inspect and repair all damaged screens. Fence collection areas accessible to animals and children. Fill and seal leaks in cistern.		Local Water Quality Agency, Extension Service office, Health office, NRCS office or Conservation District office.	