USDA

United States Department of Agriculture

# Spring Development

*Conservation solutions for your Pennsylvania farm*

## Do you have problems with…

*Seeps or wet areas in your pasture?*
*Cattle standing in mud while trying to drink out of a spring?*
*Providing clean drinking water supplies for your livestock?*
*Getting water to remote areas of your pasture where electricity isn't available?*

**If so, you should consider a spring development!**

## DEFINITION:

A **spring development**, such as a spring or seep, takes advantage of wet areas in pasture by collecting the water for use. They are developed to provide clean drinking water for livestock, wildlife, or other conservation needs.

*BEFORE: In pasture springs can be a mess*

*AFTER: A spring development = clean water*

### Benefits:

- A clean, free source of water
- Doesn't freeze in the winter
- Water is cool in the summer and warm in the winter, encouraging livestock to drink more.
- Good water distribution improves grazing efficiency and animal health
- Pumps/electricity may not be needed

### And...

Even a small spring flowing at all times can provide a lot of water. For example, a spring flowing at 1/2 gallon/minute equals about 720 gallons per day. With a tank for storage, this could easily provide drinking water for 10 or more beef cows.

### Costs:

Spring development costs are relatively cheap compared to water wells or ponds. Pumps and electricity are usually not required. Some costs include: digging with a backhoe, gravel, a spring box, and pipeline.

# INSTALLING THE PRACTICE:

A spring is developed by collecting the water that flows out of a spring or seep in a pipe so that the water can flow through another pipe to a watering trough. A spring can be constructed in several ways, but generally the steps are as follows:

## STEPS:

1. **Dig into the hillside** to find the source of the spring or seep.
2. **Put down gravel** and 4" perforated pipe to collect the water.
3. **Build a dam** of compacted soil or concrete downstream from the gravel and pipeline to force the water into the pipe.
4. Run pipline to a **spring box unit** to settle out dirt and sand.
5. Run a pipeline to a **watering trough** from the spring box
6. **Grade the executed area,** making sure to cover all the pipeline and gravel.
7. If you have a large pasture, **install pipeline** in order to connect other spring developments, watering facilties, or pumps to make water distribution easier.

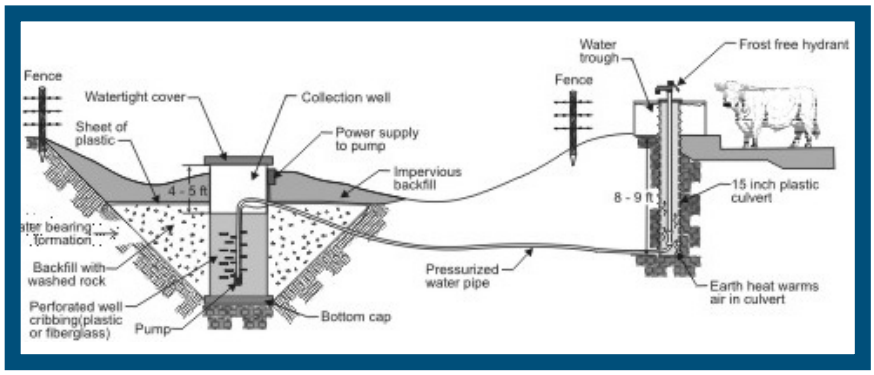


*Image: prariewaternews.ca*

### CAUTION: Wetlands

Springs are often associated with wetlands. Work with your local NRCS office to ensure that laws regarding wetlands will not be violated if you develop a spring, and that you have the correct applicable permits.

## MAINTENANCE:

Spring developments are easy to maintain! Follow these simple steps:

1. Keep livestock and farm equipment **away from the source area** with fencing, so only the trough is accessible.
2. **Divert surface water** away from the spring box unit. Surface water usually contains nutrient and sediments and could contaminate the spring.
3. **Check for leaks** in pipes and the spring box unit regularly.
4. **Check the overflow** pipe regularly to make sure its not clogged.

# Conservation Solutions for your Pennsylvania Farm

## Technical Help Is Available

Your local Natural Resources Conservation Service (NRCS) office has experienced conservationists that can assist you in planning and installing a spring development. Detailed plans and instructions are available. They can also help you develop a Conservation Plan to solve other issues you have identified on your farm.

There is no charge for our assistance. Simply call your local office at the number listed below to set up an appointment for someone to come to your farm.

You may also be eligible to receive financial assistance through state or federal programs. Your NRCS office will explain various programs that are available so you can make the best decision for your operation. All NRCS programs and services are voluntary.

**NRCS FIELD OFFICES:**

Adams: 717-334-4216 ext 3
Allegheny: 724-482-4800 ext 3
Armstrong: 724-545-1022 ext 3
Beaver: 724-482-4800 ext 3
Bedford: 814-623-7900 ext 3
Berks: 610-372-4655 ext 3
Blair: 814-695-6291 ext 3
Bradford: 570-265-6969 ext 3
Bucks: 215-453-9527 ext 3
Butler: 724-482-4800 ext 3
Cambria: 814-472-5502 ext 3
Cameron: 814-375-2125 ext 3
Carbon: 570-779-0645 ext 3
Centre: 570-726-3196 ext 3
Chester: 610-696-0398 ext 3
Clarion: 814-226-8160 ext 3
Clearfield: 814-375-2125 ext 3
Clinton: 570-726-3196 ext 3
Columbia: 570-784-1062 ext 3
Crawford: 814-724-1852 ext 3
Cumberland: 717-249-1037 ext 3
Dauphin: 717-921-2380 ext 3
Delaware: 610-696-0398 ext 3
Elk: 814-375-2125 ext 3
Erie: 814-796-6760 ext 3
Fayette: 724-437-7971 ext 3
Forest: 814-226-8160 ext 3
Franklin: 717-264-8074 ext 3
Fulton: 717-485-3812 ext 3
Greene: 724-627-5821
Huntingdon: 814-627-1626 ext 3
Indiana: 724-463-8547 ext 3
Jefferson: 814-375-2125 ext 3
Juniata: 717-436-8953 ext 3
Lackawanna: 570-282-8732 ext 3
Lancaster: 717-299-5361 ext 3
Lawrence: 717-662-3740 ext 3
Lebanon: 717-272-3908 ext 3
Lehigh: 610-625-8392 ext 3
Luzerne: 570-779-0645 ext 3
Lycoming: 570-433-3902 ext 3
McKean: 814-274-8166 ext 3
Mercer: 717-662-3740 ext 3
Mifflin: 717-248-9541 ext 3
Monroe: 570-282-8732 ext 3
Montgomery: 215-453-9527 ext 3
Northhampton: 610-625-8392 ext 3
Northumberland: 570-286-7114 ext 3
Perry: 717-582-4144 ext 3
Pike: 570-282-8732 ext 3
Potter: 814-274-8166 ext 3
Schuylkill: 570-622-1312 ext 3
Snyder: 570-837-0007 ext 3
Somerset: 814-445-6876 ext 3
Sullivan: 570-265-6969 ext 3
Susquehanna: 570-278-1011 ext 3
Tioga: 570-724-1726 ext 3
Union: 570-524-2549
Warren: 814-723-1217
Washington: 724-222-3060 ext 3
Wayne: 570-282-8732 ext 3
Westmoreland: 724-834-3970 ext 3
Wyoming: 570-836-2490 ext 3
Venango: 814-226-8160 ext 3
York: 717-755-2966 ext 3