

SPRING PROTECTION

What is this Action Sheet about?

If you get your water supply from a spring – a place where groundwater naturally comes to the surface – small improvements can make a big difference to the health of the community. Because spring water is filtered through rock and soil and is moving quickly, it can be considered safe unless it is contaminated at the surface.

How can we check for contamination?

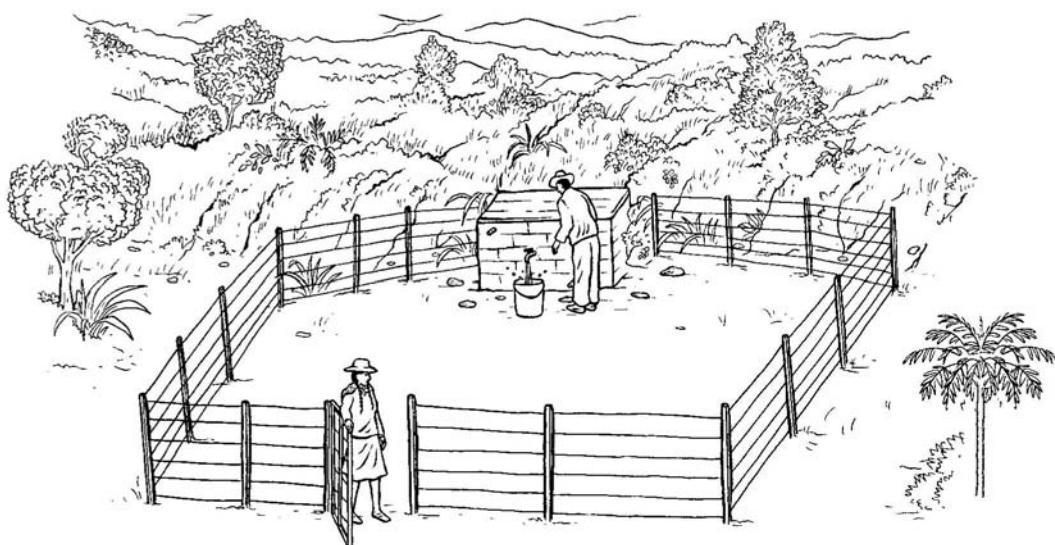
To know if a spring is safe, find the true source of the spring – where it comes out of the ground – and ask these questions:

- Is there a stream or other surface water that goes underground above the spring? If so, what appears to be a spring may in fact be surface water that flows a short distance underground. In this case, it will likely be contaminated or may flow only during the rainy season.
- Are there large openings in the rock above the spring? If so, check the water in the spring after a heavy rain. If it appears very cloudy or muddy, contamination from surface runoff is likely.
- Is there a possibility of contamination from human or animal wastes near or just above the source of the spring? This could include pastures for livestock, pit toilets, septic tanks, or other human activity.
- Is the soil very loose or sandy within 15 metres of the spring? This could allow contaminated surface runoff to enter the groundwater.

How could we protect the area around the spring

Protecting a spring is cheaper than digging a well or borehole. And once a spring is protected it is relatively easy to run pipes from the spring closer to the community.

To protect the area around a spring, fence the area 10 metres all around it and dig a drainage ditch to carry away surface runoff and waste. Planting trees near the spring will protect it even more, prevent erosion, and make it a more pleasant place to collect water.



A fence around the spring will keep animals out.

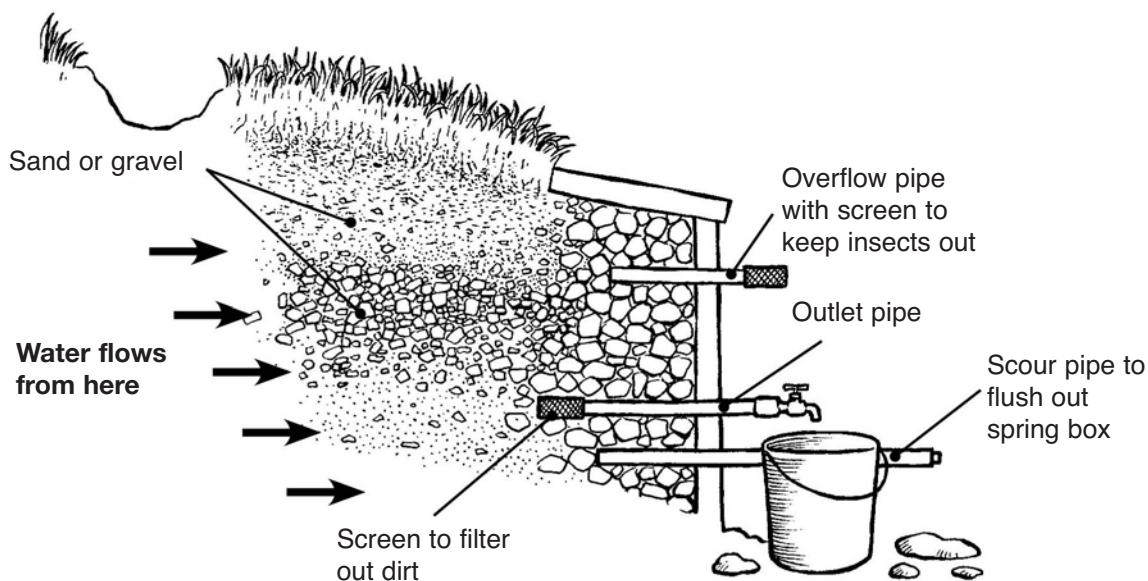
Build a spring box to capture the water

A protected spring should also have a covered spring box made of masonry, brick or concrete with an overflow pipe.

Springs may be far from where people live, making water collection difficult. If water is piped from a spring, the spring box built to direct water into pipes may also help protect the water from contamination.

Parts of a spring box

WELL TECHNICAL BRIEF Factsheet 34: Protecting Springs: An Alternative to



Spring Boxes

This shows a spring box with 1 side cut away to see how the inside looks.

Pipes and spring boxes need cleaning often

Spring boxes need to be monitored to ensure that the spring continues to provide safe water. Silt, leaves, dead animals and other things can collect in the pipes and spring box and block the pipes or contaminate the water. Putting a wire screen on the pipe leading into the spring box will prevent unsafe things from entering pipes. Cleaning the screen every now and again will ensure a steady flow of water.

Is a spring box the only way to protect a spring?

No. A simpler alternative to a spring box, especially suitable for flatter ground is described in: WELL TECHNICAL BRIEF Factsheet 34: Protecting Springs: An Alternative to Spring Boxes (available from WELL/WEDC).

The spring is far from the village. How can we safely bring the water closer?

A pipe can be attached to the exit of the spring box. See Action Sheet 20 on Safe Water Transport and Storage.

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FOR MORE INFORMATION

CONTACTS

CAP-NET www.cap-net.org/
Global Water Partnership www.gwpforum.org
Institute of Water and Sanitation Development www.iwesd.co.zw
IRC - International Water and Sanitation Centre www.irc.nl
Network for Water and Sanitation International (NETWAS) www.netwas.org/
Streams of Knowledge www.streams.net
UNDP Community Water Initiative www.undp.org/water/
WaterAid www.wateraid.org
WELL (WEDC) www.lboro.ac.uk/well/index.htm

RESOURCES

WELL TECHNICAL BRIEF Factsheet 34: Protecting Springs: An Alternative to Spring Boxes (available on:
<http://www.lboro.ac.uk/well/resources/technical-briefs/34-protecting-springs.pdf>