

## Providing Safe Drinking Water through Wellhead Protection

By Mike Lucas, Sourcewater Specialist

A safe drinking water supply for our communities is extremely valuable. We now know that safe drinking water from groundwater can no longer be taken for granted. Groundwater and surface water supplies can be contaminated from many manmade causes or practices, such as, landfills, waste lagoons, the use of pesticides and fertilizers, chemical spills, septic systems, leaking underground storage tanks, manure spreading, junkyards, improperly abandoned wells, pipelines, improperly constructed wells, mining activities, etc. The costs of dealing with contaminated drinking water can easily run into the millions of dollars. It is said that one gallon of gasoline can cause one million gallons of water to be unusable for human consumption. Because groundwater generally moves slowly contamination may not be discovered for years. Once the contaminate source is eliminated the cleanup of the water supply can be extremely expensive if not impossible. Alternative water sources or treatment may be an option but again at great additional cost. Wellhead protection is the least costly alternative and generally focused on preventing the initial contamination. Often referred to as “wellhead protection plans” they may be more accurately considered to be “wellhead or source water protection programs.” As opposed to a plan that is developed and then shelved waiting for the time it is needed, the management program is a living, dynamic effort to mitigate the risk to public health and invest in safe, community drinking water. Through this program the community stakeholders manage potential contaminants within the recharge area of their water sources.

### The Five Step Process for Wellhead Protection

1. Form a community planning team to initiate and implement a wellhead protection program.
2. Delineate the wellhead protection area.
3. Identify and locate potential sources of contamination.
4. Manage the wellhead protection area. Management techniques can vary widely depending on economic, industrial and political conditions in the community.
5. Plan for the future including long-term plans for alternative water supplies if contamination occurs.
  - The final plan is reviewed and approved by the Nebraska Department of Environmental Quality
  - Throughout the program development and management efforts, the public must be informed and included.

In future articles we plan to spotlight individual community wellhead/source water protection efforts.

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