



Drinking Water Quality in Indian Country: Protecting Your Sources

WHAT IS SOURCE WATER PROTECTION?

Source water protection is preventing the pollution of the waters that serve as sources of drinking water. One of the most basic needs of any community is safe and clean drinking water. Nearly 700,000 people rely on safe drinking water provided by 750 community water systems, which are owned by tribes. Many tribes have seen treatment costs increase over the past 20 years and contaminant threats continue to increase as old infrastructures, such as septic tanks, underground gas tanks, and wastewater facilities, deteriorate. In 2003, ten percent of community water systems serving tribes violated health-based contaminant-related drinking water standards.

WHAT ARE THE THREATS?

Sometimes the source of drinking water contamination is something commonly used and not noticed because it may take years to reach the water supply. For example, the Shoshone-Bannock Tribes of Fort Hall Reservation in Idaho discovered high levels of a potentially carcinogenic pesticide, ethylene dibromide, in their ground water source during routine monitoring. This contamination resulted from



In 2004, there were 1,074 leaks from underground gasoline storage tanks in Indian Country.

following the manufacturer's recommended use of the pesticide. It was so extensive that the Tribe had to abandon the existing production wells and construct new wells outside the contamination area. Also, a multi-million dollar water delivery system had to be constructed to provide safe water to homes located in the contamination zone that rely on affected individual wells. Other threats are discussed in this fact sheet.

WHAT ARE SOME SOLUTIONS?

Instead of fixes such as added chemical treatment, and investment in new technologies after a contamination event, protecting a water source from contamination can be much more cost effective. If harmful pathogens (i.e., viruses and bacteria) chemicals are kept out of rivers, lakes, or underground water supplies (aquifers) that tribes use for drinking water, the risk to the human population is lowered significantly. The first barrier, *source water protection*, is not the only barrier to waterborne contamination threats, but it is an important first step that can save money and reduce risks to human health.

ASSESSING THE SOURCE

A tribal water supply operator should assess sources of drinking water and identify the potential problems to help determine what actions are needed to prevent contamination of the

?? DID YOU KNOW ??

By 2006, it's estimated that:

- Over half of all tribal community water systems will have completed source water assessments, and
- 20% of tribal community water systems will have adopted source water protection measures.

sources. *Protecting Drinking Water: A Workbook for Tribes* (Tribal Workbook) provides step-by-step instructions on how to develop a workplan and complete a source water assessment. It supplies worksheets and tables for copying and is available on line for downloading in a compressed WordPerfect file at: www.water-ed.org/specialprojects.asp, or contact your EPA regional office. The Tribal Workbook offers both a simplified approach and a detailed approach to completing assessments. EPA Regions are familiar with the Tribal Workbook and use it in conducting training and tribal assessments.

ASSESSMENT STEPS

MAP the Source Water Protection Area

INVENTORY Potential Contamination Sources

ANALYZE and Determine the Susceptibility of the Water Supply to Contamination

INFORM the Public

Step 1: Map the Source Water Protection Area The source water protection area is the land area that could contribute pollutants to the drinking water supply. For each tribal public water supply, a map of the “zone of influence” is made. For water systems that use a well, the source water protection area is the land that lies over the part of the aquifer that supplies water to the well. For a community that relies on a river, lake, or reservoir, the source water protection area is the watershed upstream of the drinking water intake. A watershed is the land area where rain or snow falls and flows over or through the ground to eventually enter the stream or lake.

Step 2: Inventory Potential Contaminant Sources For each source water protection area, the tribe or responsible agency conducts an

inventory of all potential contaminant threats and identifies potential sources of regulated contaminants listed in the Safe Drinking Water Act and other substances of concern to the tribe. Common potential sources of contamination and other substances of concern for tribes are cesspools, underground fuel storage tanks, residential or commercial septic systems, farms that apply pesticides and fertilizers, roads and other paved surfaces, and abandoned wells. EPA Regions have materials to assist with inventories.

Step 3: Determine the Susceptibility of the Water Supply to Contamination The next step is to determine the likelihood that the inventoried contaminants will impact the water supply. This helps tribal decision makers, the water supply operator and concerned tribal citizens, consider priority activities to undertake for protecting the source water area. The Tribal Workbook provides several susceptibility (or risk) determination methods for tribes. EPA Regions have examples of susceptibility determination approaches to assist tribes.

CONTAMINANT RISKS

How close are these potential contaminant sources to your water supply?

Gas stations	Abandoned wells
Septic tanks	Field Crops
Sewer lines	Chemical storage
Animal Feeding Operations	

Management practices can be an alternative to banning activities in source water protection areas.

Step 4: Inform the Public Tribes should balance protection activities to inform the public about security and sensitivity concerns. The results of the assessments can help communities better understand the potential threats to their water supplies and identify priority needs for protecting their source water from contamination. The most important aspect of an

assessment is that it provides the basic information needed to plan activities that will lower the risk of contamination.

INFORMING THE PUBLIC

EFFECTIVE WAYS TO PROVIDE ASSESSMENT INFORMATION TO THE PUBLIC

- Post on community bulletin boards
- Write a newspaper article
- Use local radio programs
- Announce it at tribal meetings
- Include information in the water bill
- Work with schools to educate children

Source water protection relies on individual responsibility, which in turn relies on being informed.

AFTER THE ASSESSMENT

Consider Source Water Protection

While source water protection is not the only barrier to safeguard against waterborne contaminant threats, it is an important first step that can save money and decrease risks to human health. Tribes have undertaken a wide array of activities to prevent contamination of drinking water supplies. Some examples include:

Oneida Tribe of Indians of Wisconsin Well Abandonment Ordinance

The Oneida Tribe developed an ordinance requiring the proper abandonment, or upgrading, of all unused wells within the reservation boundaries. The Tribe believes that the proper abandonment of wells protects public health, safety, and welfare by assuring that wells that may serve as pathways for contamination are properly abandoned. With this ordinance in place, the Tribe's drinking water source is less vulnerable to contamination by substances that could drain into improperly abandoned wells. Regulatory approaches, such as restricting land uses that may release contaminants in critical source water areas, are sometimes the best solution.

Hoopa Tribe Public Outreach Campaign

The Hoopa Tribe sponsored radio programs and public service announcements about drinking water issues and the need to prevent source water contamination. They distributed fliers to inform the community about its water supply, posted "No Dumping" signs in the watershed, published articles promoting source water protection, and encouraged citizens and businesses to recycle used oil, limit their use of pesticides, and participate in watershed cleanup activities.

Sauk-Suiattle Tribe Source Water Protection Actions

The Sauk-Suiattle Reservation was established on 15 acres in 1984. Overdevelopment on the shallow aquifer supplying the public water supply is an ongoing threat. The Sauk-Suiattle Tribe developed corrective actions as identified in its Source Water Protection Plan (Plan). The Tribe received a grant from U.S. Department of Agriculture Rural Development and is working with Indian Health Service to drill a deeper well into a confined aquifer. It is replacing, upgrading and separating failing septic systems. The Plan was effective in gaining cooperation with landowners in the absence of regulatory authority, as in reducing the number of cars from 100 to 10 in a private junkyard above or around the aquifer. The Tribe is also reducing threats from gravel mining, forestry practices, and pesticides in the source water area.

La Posta Band of Mission Indians

La Posta Environmental Protection Agency (EPA) completed source water assessments on seven supply wells. Quarterly newsletters included updates on a source water assessment plan (SWAP), which inform the tribal community about progress on each assessment step along the way. La Posta EPA talked to elementary students at schools about how ground water becomes contaminated (directly and indirectly), and prevention. La Posta also held workshops for the community to inform the public of SWAP efforts and ways to make sure a water supply meets federal and local standards. La Posta EPA also held Earth Day, an event at which the public was educated on preventing pollution, and direct and indirect groundwater contamination.

RESOURCES FOR TRIBES

Protecting Drinking Water: A Workbook for Tribes is used by many tribes to conduct source water assessments and protection and may be downloaded from the Water Education Foundation web site:
www.water-ed.org/specialprojects.asp or contact your EPA regional office

The ***Trust for Public Land*** has three publications on protection available for download or purchase from its website, www.tpl.org. *Protecting the Source* explores ideas for using land conservation for drinking water protection and presents best practices for local use. *Path to Protection* presents ten strategies for source water protection, with case studies of successful application of the strategies. *Source Protection Handbook* provides source water conservation tools to: identify protection opportunities, conduct funded programs, and acquire and protect lands to keep tribal drinking water clean.

EPA Source Water Protection Grants are funds set aside for tribes for source water activities. EPA regional offices use the funds to support technical circuit riders (part trainer, part management consultant) to assist tribes and provide grants directly to interested tribes.

Tribal Pesticide and Special Projects Grants are awarded by the Office of Pesticide Programs to tribes to carry out projects to assess or reduce pesticides for protecting ground water.

EPA Clean Water Act Section 106 Grants can be used for water pollution control and ground water protection activities in Indian country, including source water protection.

For More Information

To learn more about source water assessment and protection opportunities, contact the EPA Regional Offices. More information is available from the Office of Ground Water and Drinking Water tribal webpage:
<http://www.epa.gov/safewater/protect/tribe.html>
Or contact the EPA Safe Drinking Water Hotline: 1-800-426-4791.

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