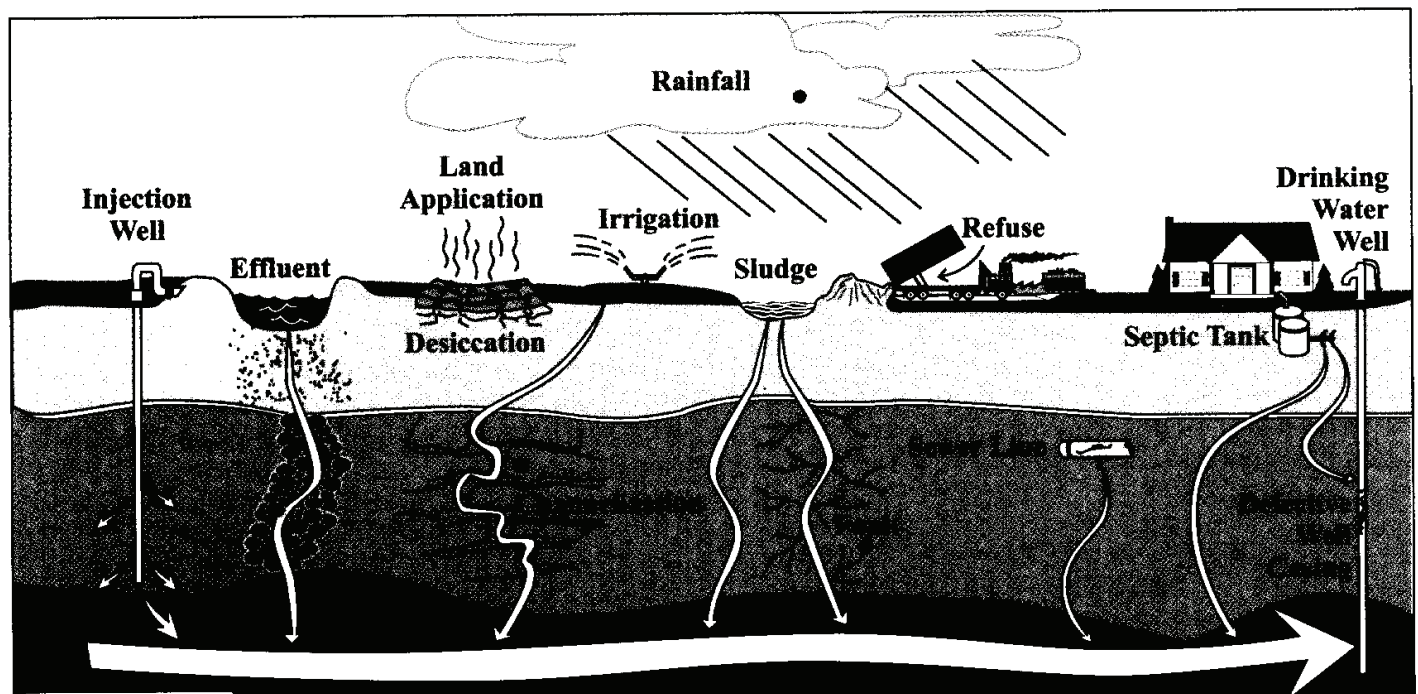


The Ground Water Sentinel

Passaic Valley Ground Water Protection Committee ~ Volume III, Issue 1 - December 2003

Protecting Drinking Water From Viruses¹

In New Jersey over 40% of our drinking water comes directly from the ground.² Historically, ground water has been considered a safe source of drinking water which required no treatment. It has long been believed that ground water was protected from contamination by viruses because the upper soil mantle removed microorganisms during percolation. But this isn't always true. The U.S. Center for Disease Control reports that between 1989 and 1990 there were 26 outbreaks of disease caused by drinking water. Half (13) of these outbreaks were attributed to contaminated ground water with viruses being the main disease vectors. Viruses get into ground water from many sources. The principal sources of viruses that cause problems for people are depicted in the figure below, which shows the migration and survival of viruses in the subsurface. The most pervasive sources of ground water contamination from viruses are septic tank effluent, sludge disposal, and the application of waste water to the land. EPA investigators conclude that the transmission and survival of human pathogens, particularly human enteric viruses, through the soil to underground sources of drinking water is a serious risk to public health.



¹ Much of this article and the figure above are derived from the following source: Azadpour-Keeley, Ann, Barton R. Faulkner & Jin-Song Chen. 2003. "Movement and Longevity of Viruses in the Subsurface." United States Environmental Protection Agency, National Risk Management Research Laboratory, Cincinnati, OH 45268. EPA/540/S-03/500, April 2003.

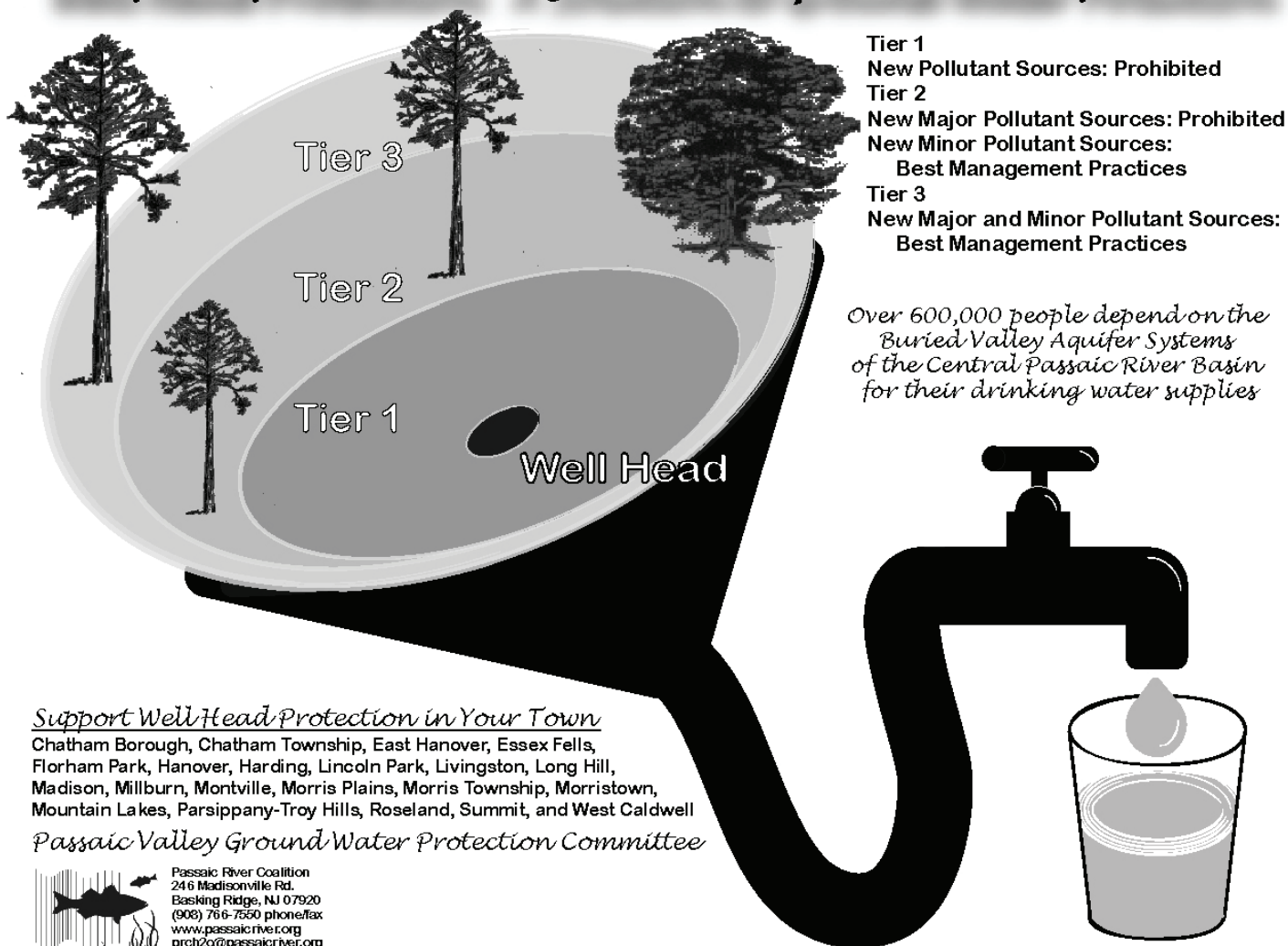
² Hoffman, Jeffrey L. & Steven E. Lieberman. 2000. "New Jersey Water Withdrawals, 1990-1996." New Jersey Department of Environmental Protection, Division of Science, Research and Technology, New Jersey Geological Survey, Open File Report 00-1.

Protecting Drinking Water From Viruses (continued)

One way to reduce the risk of disease from viruses in drinking water is to disinfect the water by chlorination or other means. However, not all ground water supplies are disinfected. In addition, disinfection adds to the cost of water, may change the water's taste and odor, and can form disinfection byproducts which may be toxic.

How can drinking water that comes from the ground be protected from pollution by viruses? Well Head Protection is a solution! Has your municipality adopted a Well Head Protection ordinance? This ordinance will prohibit the introduction of sources of human pathogenic viruses into Tier 1 areas around public community wells. Outside of Tier 1 areas viruses would have to travel more than two years before reaching the well, and would not survive the journey. Drinking water taken from public non-community wells and domestic wells also needs to be protected. For more information on how you can protect your drinking water please contact the Passaic Valley Ground Water Protection Committee. You may call Louisa Lubiak at 908-766-7550, send an e-mail to l_lubiak@passaicriver.org, or go online at www.passaicriver.org.

Well Head Protection: A Solution to Ground Water Pollution



Support Well Head Protection in Your Town

Chatham Borough, Chatham Township, East Hanover, Essex Fells, Florham Park, Hanover, Harding, Lincoln Park, Livingston, Long Hill, Madison, Millburn, Montville, Morris Plains, Morris Township, Morristown, Mountain Lakes, Parsippany-Troy Hills, Roseland, Summit, and West Caldwell

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