

Susceptibility Analysis, Protective Strategies and Proposed Consumer Confidence Report Language for the City of Xenia

Susceptibility Analysis:

The aquifer that supplies drinking water to the City of Xenia's Oldtown and Massies Creek wellfields are susceptible to contamination. This determination was made because of the following reasons:

- < Samples of water collected by the City of Xenia between 1991 and 1999 contained detectable levels of nitrate;
- < The sand and gravel aquifer has a shallow depth to water, less than 15 feet below the ground surface;
- < The soils are primarily loams which allow for rapid infiltration;
- < The topography is relatively flat, allowing a significant amount of the precipitation to infiltrate into the ground instead of running off;
- < No confining layer exists which could act as a barrier between the ground surface and the aquifer; and
- < Potential contaminant sources exist within the protection area.

Water quality data collected to meet public water supply requirements provide a direct measurement for the presence of contamination in drinking water. Water quality data were evaluated using the drinking water compliance database available at the Ohio EPA. The Ohio EPA has a high confidence level in drinking water data collected since 1991. Water samples collected at Xenia between 1991 and 1999 contained detectable levels of nitrates. Nitrate has not been detected above the concentration of concern, 2.0 micrograms per liter. Nitrate has not been detected above the maximum contaminant level for drinking water (10 micrograms per liter) established by U.S. EPA.

Ten (10) potential sources of contamination were identified within the protection area in 1994, including underground storage tanks, septic systems, transportation routes, residential heating fuels and lawn chemical use, and the City of Xenia's Water Treatment plant.

Consequently the likelihood for contamination of the source water at the City of Xenia's wellfields is high unless the potential contaminants are handled carefully by implementing appropriate protection strategies.

Protection Strategies:

Based on the potential contaminant sources identified within the five year time-of-travel zone, the City of Xenia should place a priority on protecting its ground water resources through a combination of public education and source control strategies. It would be beneficial to provide focused education on the potential impacts from residential sources. The local fire department and county health department may be able to provide information and expertise about heating oil storage and septic system maintenance, respectively. Contingency planning to respond to spills in the drinking water protection area should be developed. The City of Xenia should continue to work with Xenia Township to implement a zoning overlay that requires specific standards for chemical storage, handling of waste materials, and other management practices to reduce the risk of ground water contamination in the protection area. Controlling development in the currently undeveloped areas (typically via zoning or purchase of property) is also an effective way to protect the drinking water source from future contamination. The City of Xenia has provided information to Ohio EPA about its development of a monitoring plan for the Oldtown and Massies Creek wellfields.