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REVIEW OF U.S. EPA-RECOMMENDED AND GERMAN WELLHEAD PROTECTION AREA DELINEATION METHODS

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ABSTRACT
The surface and subsurface area around wells that is delineated with the sole purpose of protecting water supplies from potential contamination is known as a wellhead protection area (WHPA). Federal regulations, however, do not require private water systems, such as those mainly found in agricultural settings, to identify such activity-restricted areas around wellheads. Ironically, private well operators, even though typically limited by financial resources, often have considerable control over regulating and excluding certain land use activities in the vicinity of their water supply. The WHPA delineation methods, as recommended by the U.S. Environmental Protection Agency (EPA), vary widely, providing more accurate delineation results directly proportional to the cost of the method. Several wellestablished German WHPA delineation approaches, on the other hand, are relatively inexpensive and simple in application, and may, therefore, provide a reasonable alternative for private water system operators to ensure safe drinking water. To provide a basis for a comparative analysis, the U.S. EPA-recommended and German WHPA delineation methods are presented and examined with respect to their validity, suitability, and differences. In addition, several German models for aquifer regeneration and restoration are presented..

Reference: *Strobl, R.O. and P. D. Robillard; Review Of U.S. EPA-Recommended and German Wellhead Protection Area Delineation Methods , Journal of Environmental Hydrology, Vol. 13, Paper 3, February 2005*

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