

Comments to: “Ground Water Use, Value and Vulnerability as Factors in Setting Cleanup Goals”

By Pierre Sargent, Hydrologist
U. S. Geological Survey
Suite 120
3535 S. Sherwood Forest Blvd.
Baton Rouge, LA 70816-2255
Tel: 225.298.5481 ext. 3211
Fax: 225.298.5490

First I would like to thank Diana Hinds, Land Reuse Team Coordinator and Superfund Reuse Coordinator for Region 6, for initiating the email that I eventually received and providing information about the discussion papers and where to send the comments.

Overview

For a particular ground water region or management area the factors of water use, value, and vulnerability for setting up cleanup goals may be divided into two groups. Ground water use and vulnerability could be thought of as data and information based and value could be thought of as opinion based. With this context in mind, data about ground water use and ground water vulnerability could be utilized in a value assessment process. The results of the value assessment would be a water use, value, and vulnerability (UVV) matrix. The UVV matrix, in combination with geographic information, could be used to create a satisfactory and defensible cleanup map that would identify cleanup goals for the particular ground water region.

In the context of the seven options presented in the discussion paper, a combination of Option #1 (Develop of educational fact sheets and education on ground water UVV) and Option #6 (Use SWAP areas to promote greater consistency in ground water cleanups) with some modifications would be selected. The selection of the two options would provide a significant contribution to resolution of the four problems statements in a satisfactory manner.

Discussion

Option #1 is the only option that provides a significant contribution to resolving the problem that there is insufficient recognition of ground water UVV. The educational focus of Option #1 would be modified in that the focus would be on specific ground water regions and address water use and vulnerability issues within that region. The products from Option #1 could then be used, with the addition of value analysis, to develop a UVV matrix within a SWAP area (Option #6).

As an illustration, water use data for Louisiana is readily available for the period 1960 – 2000 (<http://la.water.usgs.gov/WaterUse/>). Withdrawal data is divided by source: ground water and surface water; category: public supply, industry, power generation, rice irrigation, general irrigation, livestock, aquaculture, and rural domestic;

and by county (parish). Ground water use for ecological or recreational purposes for the same time period has not been computed. This data could be utilized to create fact sheets for specific ground water regions.

It is assumed that the knowledge and information about brownfields, federal facilities, leaking underground storage tanks, RCRA sites, Superfund sites, and related geology and hydrogeology is available within EPA and State agencies for the development of ground water region specific vulnerability fact sheets. Other factors like increasing population growth, increasing urbanization and corresponding reduction in recharge, limited water supplies, and drought could be developed into fact sheets after an examination of available data. The vulnerability and water use facts sheets would be used in the SWAP areas to develop the UVV matrix by allowing stakeholders to place a value stamp on the combination of water use needs and ground water vulnerabilities.

Option #6 provides a significant contribution to resolving problems 2-4. As part of Option #6, which uses SWAP areas, a focus group or committee could be identified to develop the UVV matrix. The educational program developed with Option #1 would aid the group making value judgments to create the UVV matrix. A geographic information system (GIS) would be used to resolve different value judgments in the matrix so that an ultimate cleanup map can be created.

As an illustration the UVV matrix might contain an item as to the existence of alternate supplies of drinking water. Those areas where surface water supplies provide an alternate source to available ground water supplies would get a lower value than areas where ground water is the only source. A map from the analysis of alternate water sources would be combined with many other maps in a “layer cake” fashion to produce the final cleanup map.

Comment on a Disadvantage of Option #6

One critique of Option #6 and the SWAP program is that it does not address rural areas. The United States Department of Agriculture’s Source Water Protection Program (SWPP) is aimed at rural areas. The program is a joint project by the Farm Service Agency (FSA) and the nonprofit National Rural Water Association (NRWA). A fact sheet about the program is found at:

<http://www.fsa.usda.gov/pas/publications/facts/html/sourcewater04.htm> .

Quoting from the fact sheet:

“The Source Water Protection Program, a joint project by the U.S. Department of Agriculture's (USDA) Farm Service Agency (FSA) and the nonprofit National Rural Water Association (NRWA), is designed to help prevent source water pollution in 33 states through voluntary practices installed by producers at local levels....

Working with State Rural Water Associations, technicians will also facilitate the creation of local teams comprised of citizens with diverse backgrounds from federal, state, local, and private entities. These teams will collaborate in the development of Rural Source Water Protection plans that promote clean ground water. The technicians will assist the teams in gathering local data and facilitate a planning workshop. The purpose of the workshop will

be to create a plan that will include, but will not be limited to, developing the following:

- A map outlining the impacted area;
- An inventory of potential contaminant sources;
- A definition of areas that match up with entities and organizations;
- A definition of voluntary measures that may be initiated;
- Identification of public education initiatives; and
- Identification of entities and resources that will facilitate implementation of the plan and its sustainability.

Rural Source Water Protection plans will outline voluntary measures that farmers, ranchers, and other producers can install on their lands to prevent source water pollution. Voluntary measures may range from producers storing herbicides, pesticides, or other substances in more secure containers to relocating waste lagoons. By working at the grassroots level, local team members will inform and educate producers about source water protection measures that benefit their neighbors and communities. Additionally, the plans will establish steering committees to evaluate voluntary practices implemented by local producers. FSA will monitor the overall performance of the program.”

In Louisiana the SWPP appears to be operating in conjunction with the SWAP program so private water supplies are addressed.

