Significant Sand and Gravel Aquifers

WHAT IS AN AQUIFER?

Ground water, as the name implies, is water located below the earth's surface. In the context of this map, an aquifer is a geologic formation or geologic sequence that is a naturally saturated zone, which has sufficient permeability to transmit water and is a sufficient capacity to yield a supply of water. Aquifers provide drinking water for people, industrial and agricultural operations, and other uses. Ground water is the source of approximately one-third of the nation's water supply. Ground water is also used to recharge lakes and streams and to maintain wetlands. Many people get their drinking water from private wells. Geologists use maps showing surface and ground water conditions to help locate and manage water resources.

HOW ARE AQUIFERS MAPPED?

When mapping and using groundwater, geologists consider several factors that are important to understand a water resource. These factors include the location and size of the water resource, the type of water resource, the quality of the water, and the potential hazards to the resource. In addition, much information about an aquifer is obtained from field surveys and the analysis of data from wells, springs, and other types of water resources. The temperature of the water contained in a well is measured, and the geologic materials that form the water-bearing layer are identified. The geological composition of an aquifer provides information about the potential for contamination. The quality of the water is determined by chemical analysis and by the type of minerals and other substances that may be present.

GROUND-WATER FLOW AND CONTAMINATION

Because the water contained in an aquifer moves through the waterbearing layer, understanding the location and nature of the water-bearing layer is important. The flow of ground water is determined by the type of geologic materials that form the water-bearing layer, and the location of the water-bearing layer is determined by the geologic features and the topography of the area. Contamination of a ground water resource is determined by the type of geologic materials that form the water-bearing layer and by the location of the water-bearing layer. Geologists use maps to show the location and nature of the water-resource areas and to determine the potential for contamination. The type and extent of contamination are also determined by the type of geologic materials that form the water-bearing layer and by the location of the water-bearing layer. Geologists use maps to show the location and nature of the water-resource areas and to determine the potential for contamination.

OTHER SOURCES OF INFORMATION