KARST | 2006 EPA WIPP FACT SHEET No. 6

Karst in the Area of the WIPP

Some stakeholders believe that the geologic characterization of the subsurface surrounding the WIPP repository does not adequately identify the presence of karst. As a result of these concerns, EPA agreed to re-evaluate the potential for the presence of karst at WIPP and the possible impacts of the long-term containment of waste for the 2004 WIPP Recertification.

During the 1998 certification, EPA reviewed existing information to understand the issue of karst around the WIPP site. As a result of that review, EPA agreed that there are karst features in the vicinity of the WIPP site, but that karst feature development will not impact the containment capabilities of the WIPP for at least the 10,000-year regulatory period.

As part of the 2004 recertification process, EPA conducted the following activities to further investigate any potential for karst near the WIPP site.

- EPA examined the geophysical methods suggested by stakeholders to locate karst.
- EPA conducted a thorough review of the geologic and hydrologic information related to karst.
- EPA conducted a field trip to re-examine the evidence of karst around the WIPP site.
- EPA considered all pertinent information that was developed since EPA's 1998 certification decision.
- EPA reviewed the DOE/Sandia National Laboratory analysis of the potential for karst.
- EPA also considered public comments on karst.

What is Karst?

Karst is a type of topography in which there are numerous sinkholes and large voids, such as caves. Karst is caused when soluble rocks dissolve. Karst may form when rainwater, reacting with carbon dioxide from the air and forming carbonic acid, seeps through the soil into the rock. Soluble rock includes limestone and evaporite rocks, such as halite (salt) and gypsum.

If substantial and abundant karst features were present at WIPP, this could increase the speed at which releases of radionuclides travel away from the repository through the subsurface.

As a result of this in-depth review of the potential for karst at the WIPP site, EPA again concludes that the WIPP site does not exhibit evidence of karst; it is highly unlikely that reactive water could reach and dissolve the Rustler dolomites; and the hydrologic regime at WIPP is adequately modeled without modeling karst features.

For more information on EPA's karst evaluation go to EPA's WIPP website or docket, to the Compliance Application Review Documents, Section 15, and EPA's Technical Support Document for Section 194.14: Evaluation of Karst at the WIPP Site.

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