Weldon Spring, Missouri, Site

Frequently Asked Questions

Q: Is my drinking water safe?
A: On the basis of groundwater studies conducted by the U.S. Department of Energy (DOE), U.S. Geological Survey, and Missouri Department of Natural Resources, the extent of groundwater contamination is well understood. DOE can state with confidence that groundwater contaminants of concern generated by WSSRAP are not detectable above background levels in samples from any private drinking water wells or any of the pumping wells in the St. Charles County well field. The Missouri Department of Health has conducted private well surveys during the 1990s to test for project-related contaminants; data have shown no cause for concern. The St. Charles County well field is sampled quarterly.

Q: Will site contaminants hurt me if I drink from Burgermeister Spring?

A: No. In the St. Louis metropolitan area, people receive about 300 millirem per year of radiation from our environment (the millirem is a unit for measuring radiation received by people). If you were to drink 1 gallon of water from Burgermeister Spring, you would receive no more than 0.3 millirem. This is about the same amount of radiation received from spending 8 hours in a home containing the U.S. average radon concentration. (Average radon concentration as reported in the U.S. Environmental Protection Agency publication A Citizen's Guide to Radon, Third Edition.)

Q: Will DOE be onsite forever?

A: DOE has prepared a Long-Term Surveillance and Maintenance Plan in coordination with federal, state, and local organizations to ensure that long-term monitoring activities and land use restrictions at the site continue into the future.

Q: How safe is the disposal cell?

A: The disposal cell provides a complete and secure encapsulation of the waste materials. The waste materials are present in a solid, dense, and tightly compacted configuration, such that together with the clean soils and aggregates encapsulating them, they form a stable, gently sloped dome. The location of the cell was carefully selected for the stable, dense, low-permeability natural clays beneath it and its remoteness from any fault or weak bedrock zone.

The design life of the system was set for 1,000 years, but in reality the construction materials and the technologies used will extend the life of the cell for a much longer period. The soil and rock dome on top of the disposal cell was designed and built to resist some of the most dramatic natural disasters imaginable. The cell can sustain an earthquake of the largest magnitude possible in this area, scientifically called maximum credible earthquake (MCE). The rock slopes and cover materials were selected to protect it from erosion caused by the largest imaginable rainfall—probable maximum precipitation.

The base liner and cap of the disposal cell were designed with multiple layers of natural and synthetic materials to prevent liquid exfiltrations (such as leachate), liquid infiltrations (such as rainfall), and gaseous emissions (radon) from the waste.

The entire cell overlies between 20 and 30 feet of naturally occurring low-permeability clay. The base liner of the cell is composed of secondary and primary liner systems. The secondary liner consists of a 3-foot-thick layer of highly compacted low-permeability clay, a geosynthetic clay liner, and a flexible membrane. The primary liner consists of a thick, flexible geotextile of high-density polyethylene plastic. The base liner system is also designed to collect small amounts of leachate that will temporarily be generated from materials in the cell. This leachate is treated by an onsite water treatment facility.

The cap of the disposal cell consists of multiple layers including (from bottom to top) an infiltration radon barrier of silty clay, a geomembrane and geosynthetic clay liner, a gravel drainage layer, a sand filter, a bedding layer, and a thick layer of limestone riprap. This rock layer prevents intrusion by animals and plants.

This complete encapsulation system makes uncontrolled access to the buried waste materials virtually impossible.