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## News Release

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# USGS report details uranium resources and potential effects of uranium mining near Grand Canyon

Flagstaff, Ariz. — As part of the Department of the Interior’s evaluation of whether to segregate nearly 1 million acres of federal lands near the Grand Canyon from new uranium claims, the United States Geological Survey today released a report on uranium resources and uranium mining impacts in the area.

The studies contained in the report looked at uranium found in breccia pipe deposits and explored the geological, hydrological, and biological issues related to uranium mining on Federal lands near the park.

“The current two year time-out on new uranium mining claims gives us an opportunity to gather the best science and input from the public, Congress, stakeholders, and Tribes on whether to withdraw lands near the Grand Canyon from new mining claims for a longer period of time,” said Secretary of the Interior Ken Salazar. “The USGS’s report and ongoing research will be helpful to a thoughtful consideration of how to best manage these areas.”

On July 21, 2009, Secretary of the Interior Ken Salazar announced a decision to segregate nearly 1 million acres of federal lands in the Arizona Strip for two years while the Department evaluates whether to withdraw these lands from new mining claims for an additional 20 years. The lands, managed by the Bureau of Land Management and U.S. Forest Service, are within portions of the Grand Canyon watershed and contain significant environmental and cultural resources as well as substantial uranium deposits.

U.S. Geological Survey scientists were tasked to conduct a series of short-term studies on the possible effects of uranium mining on the region’s natural resources.

The report’s key findings follow:

- The area proposed for withdrawal is estimated to contain about 163,000 tons (about 326 million pounds) of uranium oxide (U<sub>3</sub>O<sub>8</sub>), which is about 12 percent of the estimated total undiscovered uranium in northern Arizona (1.3 million tons or 2.6 billion pounds). For comparison, the United

States consumes about 27,550 tons (55 million pounds) of uranium oxide each year in its reactors; most of it comes from Canada, Australia, and Russia.

- Soil and sediment samples were analyzed for six sites that experienced various levels of uranium mining in Kanab Creek area north of Grand Canyon National Park, including mined and reclaimed sites, mined sites currently on standby, and sites that were exploratory drilled but not mined. Uranium and arsenic were two elements consistently detected in the areas disturbed by mining in values above natural background levels.
- Analysis of historical water-quality data for more than 1,000 water samples from 428 sites in northern Arizona shows that dissolved uranium concentrations in areas without mining were generally similar to those with active or reclaimed mines. Sixty-six percent of the sampled sites showed low dissolved uranium concentrations (less than 5 parts per billion). Ninety-five percent of the sampled sites had dissolved uranium levels of less than 30 parts per billion, the Environmental Protection Agency maximum for drinking water.
- Samples from 15 springs and 5 wells exhibited dissolved uranium concentrations greater than the Environmental Protection Agency maximum for drinking water. These springs and wells are close to or in direct contact with mineralized ore bodies, and concentration levels are related to natural processes, mining, or a combination of both factors.
- Almost 100 plants and animals identified by the State of Arizona or other land managers as species of concern inhabit the area proposed for withdrawal. Because uranium and its byproducts such as radon can affect survival, growth, and reproduction of plants and animals, USGS scientists identified exposure pathways (for example, ingestion or inhalation) for these species of concern.

“The research efforts undertaken by the U.S. Geological Survey will help decision makers better understand how uranium and uranium mining influence the water, soil, and wildlife of the lands surrounding Grand Canyon National Park,” said Andrea Alpine, Director of the USGS Southwest Biological Science Center.

A USGS report evaluating uranium resources and summarizing findings about the possible effects of uranium mining in northern Arizona is available online at <http://pubs.usgs.gov/sir/2010/5025/>

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