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The 'mighty' Amargosa sparks Yucca fear

SOUTHERN INYO COUNTY GROUP BEGINS BASELINE WATER STUDY TO WARN FUTURE GENERATIONS

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Swollen by record rainfalls, Death Valley's seldom seen Amargosa River rushed through its Tecopa monitoring station at more than a thousand cubic feet per second last week, measuring eight and a half feet high, according to the USGS, and raging on to spill onto California Highway 127, causing brief closures and some hair-raising moments for motorists trying to navigate the rising waters. Running at about five hundred times its normal strength, the river caught the attention of desert enthusiasts interested in kayaking or rafting this rare phenomenon they've dubbed the Mighty Amargosa.

But the mighty and sometimes unpredictable Amargosa, normally shy and flowing at about two cubic feet per second under the surface of the dust dry desert, is also the subject of a quieter and more somber study. For both independent and government employed scientists, the Amargosa and its tributaries, otherwise so little thought of or noticed, are of grave importance.

The course of this water could help decide the future of the proposed Yucca Mountain nuclear waste repository in Nye County. And if the development of the repository succeeds, studying this water could help protect future generations living in the region.

"Every drop of surface water in the Yucca Mountain area of Nevada that is not evaporated flows south to Inyo County," said Jennifer Viereck, coordinator of an independent research project formed to study and document current levels of elements identified in the Safe Drinking Water Act. And she added, some studies indicate that the

Amargosa is fed by deep aquifer systems running from under the Yucca Mountain area into California. In short, this means that the residents of the small Inyo County communities such as Death Valley Junction, the Timbisha Shoshone reservation, the employee housing complex at Furnace Creek in Death Valley National Park, and the families living in Tecopa and Shoshone "would be among the first to be poisoned if something went wrong."

Despite ongoing assurances by the DOE that nothing could go wrong in the packaging, transportation, or storage of nuclear waste that must remain contained for at least 10,000 years, Viereck and several other researchers are unconvinced. So, under the auspices of a nonprofit called Healing Ourselves and Mother Earth (HOME), they are developing baseline water tests in order to create a record for future generations to use when evaluating the amounts of radiation and other carcinogens that could leak from Yucca Mountain or the Nevada Test Site nuclear waste dumps into the water tables.

In January the team visited locations all along the course of the river from Beatty to its terminus in the Badwater basin inside Death Valley National Park. Along its route, south to the Dumont Dunes area where it turns north again, the winding Amargosa crosses under California Highway 127 13 times. This highway currently sees sometimes as much as a truckload a day of low or mixed level nuclear waste rolling over its surface on the way to the Nevada Test Site, according to a 2004 report released by the DOE.

"This is not a road specifically engineered for heavy traffic. This is just an old two lane road made of asphalt rolled out over the desert," Viereck said. Minor flooding in the roadway is common during heavy rains and could lead to accidents involving vehicles carrying nuclear waste.

While the federal government gambles the nation's environmental future on the ability of its scientists and engineers to design containment systems that will last several hundred thousand years, HOME and other groups are tackling the task of how to respond if this gamble fails. Transportation issues are an immediate concern, but Viereck's group is currently focused on collecting data that could help protect future generations if concerns arise over whether the water has become polluted with radionuclides.

Some testing has already been done in this area, Viereck said, but most testing is to determine water direction and levels. "We don't want to reinvent the wheel so we're investigating what other researchers have already done and trying to pull all of that information together."

While a variety of organizations, including federal and Nye and Inyo county commissioned agencies, are studying the local water tables, few are coordinating their

program objectives with one another, Viereck said, or publishing their findings so far. This makes getting basic information difficult, so another of the team's objectives is to establish a collection of this material for public access.

"Remember Erin Brockovich?" Viereck asked. When Brockovich began her campaign to prove that PG&E had poisoned the people of Hinkley, Calif., with hexavalent chromium, she had no baseline studies to go from. If residents of Inyo or Nye counties find themselves wondering in the future, they will have a place to start. And the Brockovich analogy is relevant in another way, Viereck said, since some of the new protective cask designs include chromium in their makeup. "This will make them last longer but when they do start to break down, and inevitably they will, then there will also be chromium hexafluoride leaking into the water."

But knowing how to preserve the information for a time when it might be needed is tricky. "It could be 500 years before anyone needs this," Viereck said. "Information mediums are changing every couple of years so predicting what will be most accessible in 500 years or more is difficult." Depositing copies of the material in university libraries seems the most sensible choice, Viereck said. "We hope we'll still have universities in 500 years, but we don't really know what we'll have."

The HOME studies are funded by a grant from the Citizens Monitoring and Technical Assessment Fund, created with a 1996 settlement from the DOE after 39 organizations charged the Department with failure to provide affected citizens with adequate information about their nuclear projects. The CMTA money, Viereck said, has funded a variety of similar studies and projects all over the country. "It allows the people to hire their own experts," she said.

The HOME experts on this project are hydrologist George Rice, and John Hadder, a chemist who has been working on the Yucca Mountain issue for many years. Together, Viereck said, they will decide what tests seem most appropriate and work with other interested agencies to get the testing done. "Obviously we can't drill our own wells for testing," Viereck said, so the group hopes to cooperate with landowners and other agencies such as Inyo County's Yucca Mountain Repository Assessment Office in obtaining samples. Studies done by Inyo County in wells drilled especially for that purpose were among the first to begin establishing the connection between the aquifer under Yucca Mountain and the springs inside Death Valley National Park.

So far these wells and the studies done through them, said Viereck, "tell us where the water is moving. That tells us who would be poisoned first, but it doesn't tell us whether the water meets Safe Drinking Water standards now. We hope this testing can clarify current conditions and encourage ongoing monitoring. We have to be able to predict

what people might be exposed to and you can't do that if you don't have a starting point.

The testing can be expensive, Viereck said, so the group has to choose wisely. Costs can range between $15 and $1,000 per test, "so we have to figure out what's most important."

Meanwhile, Viereck laments the fact that more nuclear energy plants are applying for a renewal of operating permits. "I think this is absolutely dangerous and insane," Viereck said. "The first thing I tell the kids I work with is if a project is going to make a mess we can't clean up, then we don't do it. There's no way to clean up this mess now, and the only smart solution is to stop making it."

According to Viereck, nuclear reactors produce about 20 percent of the nation's overall electrical usage. Each household in the country could easily cut its electric consumption 20 percent, she said, by remembering to turn off lights, using appliances sparingly, using solar energy for things like hot water heaters, and making other small adjustments.

"Really," she said, "they could just turn off all the neon in Las Vegas and it would be done."

For more information, visit www.h-o-m-e.org.