

Uranium Water Treatment

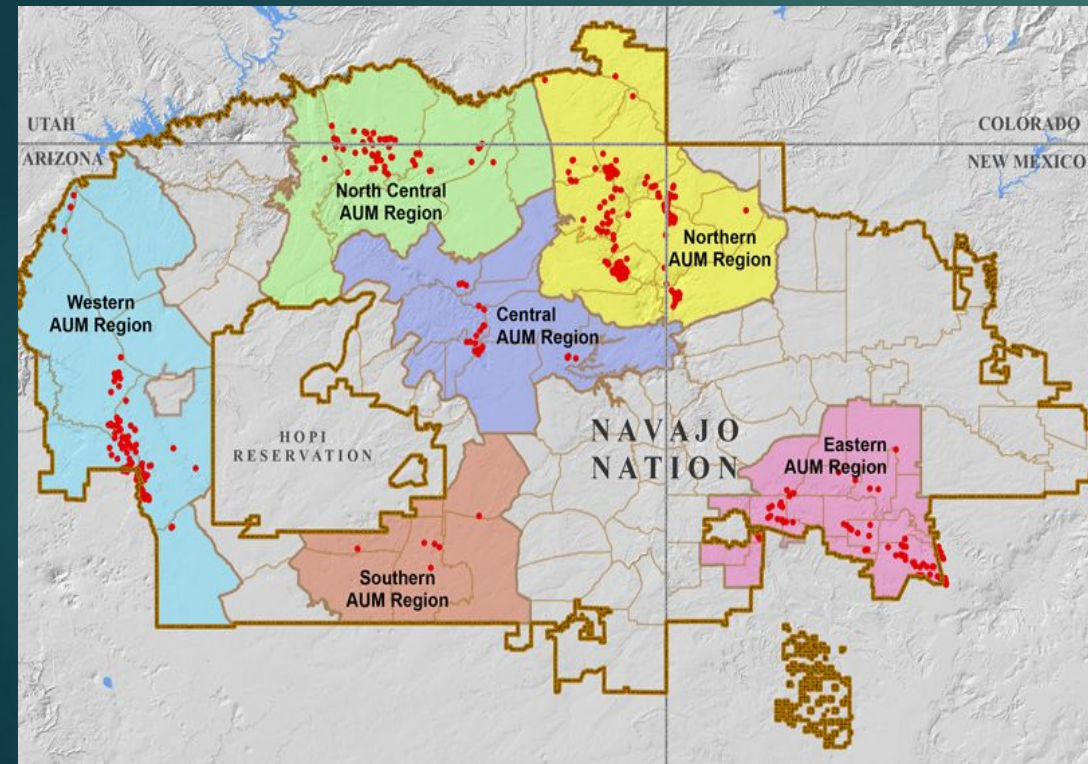


**WATER FROM
THIS WELL
IS NOT SAFE
TO DRINK**

This water has been tested and found to exceed Navajo EPA and U.S. EPA human drinking water standards for uranium or other contaminants.

Navajo Nation policy is that livestock-use-only wells are not to be used for human drinking water.

- Navajo territory has been greatly affected by the Uranium mining that occurred during 1944 to 1986
- Uranium leaked from the mines into the water, land, and atmosphere
- The Navajo people have been suffering for decades from lung cancer, bone cancer, tumors, and organ failures all linked to Uranium contamination
- The US EPA has set up several 5 year plans that have been implemented unsuccessfully due to lack of attention to the problem



- Educational and awareness programs have been implemented so that Navajo people stop drinking unsafe water
- The reality is that many do not read or write and thus, warning signs are an ineffective
- Clean water is trucked into the Navajo territory once a week which makes it hard for the people not to rely on unsafe water reservoirs
- There are over 500 contaminated sites all over Navajo Territory

Our Vision:



- As chemical engineers we believe we have the power to clean the water of the Navajo Nation
- We believe we can design and construct a plant next to the retention ponds powered by the electricity in the mines
- Our design will clean the water and residue, extract the uranium so that it can be sold to maintain the plant, create jobs for the Navajo people, and provide a safer environment for the younger Navajo generation

Benefits for students involved:



- The power to do good with your knowledge (helping others)
- Doing environmental good: alleviating the earth's distress
- Environmental Awareness for future engineering projects
- Improved problem solving, critical and creative thinking, and ability to work at a fast pace
- Ability to apply theory learned into a hands-on project
- Experience with process design and separation techniques

How will WE accomplish this?



- Traditional chemical engineering
- We will design a process where the water is pumped into a system to separate the sludge from the water and extract the uranium, dispose of hazardous waste, and clean the residue(dirt/sand in pond) to put it back in
- Keeping close communication with the Navajo nation and partnering with other University students/faculty near the Navajo territory

What we need to do now:



- Detail designing our plant
- Get sponsors to help cover the costs
- Address all questions provided by consultant to start designing
- Once we get funding, we buy equipment to do testing in small scale to prove it works
- Work hard to get this done in five months