

Is Water from the Navajo Reservation different from water in Gallup?

By: Taylor Dineyazhe and Native American Science and Engineering Program

Abstract

Have you ever wondered if there was a difference between water where you live and water from a different area? Well, I am here today to answer that one specific question for you. Except I will be comparing water from my city/hometown and water from the Navajo reservation.

Introduction

Back in 1948 when uranium mining began on the Navajo reservation, some of the uranium and many other harmful chemicals spilled all over the Navajo reservation and one location it spilled into was their water. Their water soon became contaminated that it became very unsafe to drink and basically use in general. This caused a lot of Native Americans on the reservation to not have running water or travel far for water. Sometimes the places they would travel to get their water were also unsafe to drink as well.

Fast forward to now in 2021 some Native Americans are still facing this problem while others may have running water but it may still be unsafe to drink. Which is why I am here today to show you if that is true or false.

Research Statement

My hypothesis has not been the first to be tested but is one of many. Many other researchers like me in the past have tested the water on the Navajo reservation and have found that it is very dangerous and should be considered as a health crisis to those in their community. Today I am here to show you that not only is it a health crisis but a serious issue that needs to be addressed by not only us as observers but by our federal, local, and state governments as well.

Method

My method going into this project was to take different water samples from different areas on the Navajo Nation. Next, I would compare these samples by testing them using a Watersafe test kit that was provided to me by the Native American Science Engineering Program. The Watersafe test kit contained a bacteria test, lead/pesticide test, nitrate test, and a pH/hardness/chlorine test.

Once I gathered all my water materials and testing kits, I poured the different water samples into different containers. My next step was to then open the tests and get testing. Of course, I could not do this without a camera and notebook by my side to help keep track of the results. Throughout the testing process I took my time to carefully make sure every result was as accurate as possible. This meant closely measuring every water sample to the correct amount, not taking too much time on trying to record the sample. After every test I would take a picture just in case I needed to go back over it in the future.

When I was done testing, I cleaned my area and then went back over the photos to be sure they were accurate and not at all wrong. Finally, after this long process I got my result.

Result

The results of the test of the were shocking. As I mentioned before I took samples from my family's residence in both Sunrise Arizona, and Sheep Springs, New Mexico. The water samples from Sunrise almost all came back negative this meant there was no Lead/pesticide, or bacteria detected in the samples. The nitrite, pH/hardness/chlorine levels were low which is good.

Next, was the residence of my dad's family in Sheep Springs. A little history on that residence before they got any running water available, they had to travel miles to the closest well to get water. Now for this residence there was pesticide detected in the water for the house but no lead. The pH level was abnormally high which was a 10, but the chlorine and hardness levels were both low.

The livestock water had some pesticide detected in it as well. The pH level for this sample was also a 10 which is very high, but the rest of the levels were low. Next is my residence, this one took me a while to get since I mixed up the tests by accident but soon found out that I had no lead in my water however though I did have pesticide in it. My pH and hardness levels were very bad as well. One problem I did encounter though was when I was testing my nitrite/total nitrate the pads were both a little brown. Now when I went back to look over the booklet, I was given to determine the given result there was not a color brown on them. So, after taking some time to carefully reviewing the booklet and the testing stick, I concluded that the Nitrite must have been somewhere between 3.0 and 10



Conclusion and discussion

I learned a lot about my community through this research project. I learned a lot about the history of the Navajo Nation before running water was available to them and I also learned about how most parts of the Navajo reservation still don't have running water available to them. One thing I would like to add though is that I learned that not all water can be safe especially where you live. For example, you don't need to live in a very impoverished area to have poor water quality, but you can live anywhere. Which goes to show there is no difference with running water because at the end of the day we are reusing and reusing water from different parts of the world.

Although this project helped me learn a lot and help expand my knowledge of what is going on in my community it also helped me realize that we need to address the serious problems this crisis is developing. For example, because of the fact that Natives barely have any access to clean safe water, this causes them to drink more sugary drinks since they are more available and cheaper. This has worsened the diabetes crisis in the Navajo Nation. Not only did it affect their overall health but safety as well especially during these times.

Ever since the start of the pandemic Native Americans have had a difficult time trying to provide themselves with safe drinking water while at the same time stay safe from catching COVID-19. Of course, this is very hard to do when you have a very limited amount of water to use per week and need to wash your hand daily.

To conclude, this project was not only for the benefit of helping me learn more about my community, but to educate others as well.

Bibliography/Reference

<https://cen.acs.org/content/cen/articles/97/web/2019/08/Arsenic-metals-contaminate-Navajo-Nation.html>
<https://www.theguardian.com/us-news/2021/apr/28/indigenous-americans-drinking-water-navajo-nation>
<https://www.theverge.com/2020/7/6/21311211/navajo-nation-covid-19-running-water-access>