

NAVAJO GOLD KING MINE EXPOSURE PROJECT

WINTER 2017, ISSUE 2



Funded by:

National Institutes of Health

\$434,028 (3/2016-2/2018)

Agnese Nelms Haury Foundation

\$600,000 (7/2016-7/2019)

U. of Arizona (UA), Northern Arizona

U. (NAU), Navajo Nation, Diné

College, Tó Bee Nihi Dził, & Fort

Lewis College

TÓLÍTSO, THE WATER IS YELLOW:

*Investigating short term exposure and risk perception of Navajo Communities to the Gold King Mine Spill
– Upper Fruitland; NM, Shiprock, NM; and Aneth, UT –*

Aim 1: Determine exposure of Diné residents in these three communities to the spill.

August 2016: Navajo Community Health Representatives sampled drinking water, yard soil, and household dust in about 60 Diné homes to measure for lead and arsenic. They did a finger prick to measure lead in residents' blood using a 3-minute test machine. They collected a urine sample to measure for arsenic. They also asked people what they eat, how they use the river, and how the spill impacted them.

To Date: All water, dust, and urine samples are being tested and 10 of 50 soil samples are almost ready to be tested. We collected 7 corn samples to test for lead and arsenic.

Aim 2: Measure lead and arsenic in river water, river sediment, agricultural soil, irrigation water, and irrigation sediment.

November 2015: Student volunteers collected samples of water and sediment from the river and irrigation canals and soil from fields.

June 2016: Tó' Bee Nihi Dził, Diné College, New Mexico State University Extension, NAU, and UA took more samples of water and sediment from the river and irrigation canals and soil from fields.

To Date: We have almost 1,000 water, sediment, and soil samples that university students are processing. It will take until Spring 2017 to measure the concentrations of lead and arsenic.

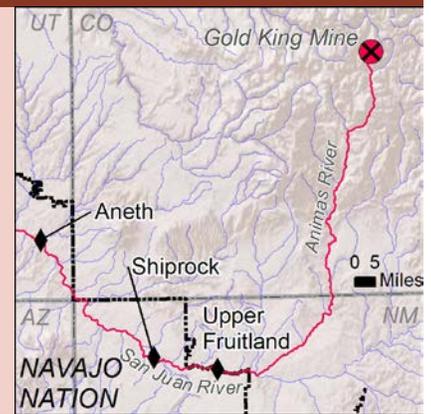
Aim 3: Determine what people think are the risks in using the river after the spill and measuring the risk based on the samples and information collected for Aims 1 and 2 (left & middle columns).

May 13-22 & June 15-17: We held 12 group discussions or "focus groups:" 4 in Upper Fruitland; 6 in Shiprock; and 2 in Aneth. 123 total people took part in these focus groups. We asked people how they used the river before the spill; how the spill impacted them; and what they think about the river's future.

To Date: We wrote down all English comments word-for-word. 50 hours are being translated from Diné'ke'jí to English. We are working to carefully summarize what people said.

THREE DINÉ COMMUNITIES

This project focuses on three Navajo chapters or communities who use San Juan River water for farming or ranching: Upper Fruitland, NM, the most upstream chapter who voted to open the irrigation water after the spill; Shiprock, NM, 20 miles downstream who voted to keep irrigation canals closed and allow their fields to go fallow; and Aneth, UT.



EARLY FINDINGS FROM SHIPROCK FOCUS GROUPS

In December 2016, we read through notes from 3 of the 6 focus groups that were held in Shiprock, NM in May 2016. Thirty-four people participated in these 3 Shiprock focus groups. We reviewed the comments to understand people's experiences and concerns. We wanted to know people's worries about the spill and if they had changed their behavior because of the spill. We were also interested in people's hopes for the future. Overall, people in these 3 focus groups most often mentioned future visions. They also expressed concerns about health, community well-being, and the environment.

HOW PEOPLE CHANGED FARMING PRACTICES AFTER THE SPILL

People in these 3 focus groups talked about farming less of their land (or none at all) after the spill, which reduced their income from selling crops and their families' food. People also spoke about how they hauled in water or used tap water to irrigate their crops instead of using river water.

PEOPLE'S CONCERNS ABOUT HEALTH, COMMUNITY, AND ENVIRONMENT

People in these 3 focus groups were anxious about health effects for families and animals who come into contact with the river water or who eat crops irrigated with river water. People were worried that the spill might keep people from using the river for ceremonies; might discourage future generations from farming; and could damage the community's reputation for growing healthy crops. People were troubled about how long the river water and soils could be contaminated from the spill.

PEOPLE'S FUTURE VISIONS FOR THE SAN JUAN RIVER

People in these 3 focus groups spoke about finding sustainable ways to clean river water. They said their community needs to unite to ask questions and get answers.

WHAT'S NEXT?

- Collect sheep and more corn samples.
- Continue to process and analyze soil, water, and urine samples and information from focus groups.
- Late Spring to Summer 2017: start sharing preliminary results.
- Fall 2017 to Spring 2018: share full results.

WELCOMING NEW STUDY LEADER DR. REBECCA CLAUSEN, FORT LEWIS COLLEGE

Dr. Rebecca Clausen is an Associate Professor and Chair of the Sociology & Human Services Department at Fort Lewis College. She joined the college in 2008 from the University of Oregon. Dr. Clausen researches how society can change the environment, global food systems, and damages to marine fisheries. In 2015, Dr. Clausen co-authored and published *The Tragedy of the Commodity: Oceans, Fisheries, and Aquaculture*. Dr. Clausen is involved in the Animas Listening and Community Empowerment Project who held listening sessions in Silverton, CO, Durango, CO, and Farmington, NM after the Spill. Dr. Clausen mentors many Diné students and takes her students to Black Mesa to do a service project while learning about the impacts of coal mining on Diné residents. Dr. Clausen says *"I became interested in environmental sociology after living and working in a rural fishing town in Alaska that was deeply affected by the Exxon Valdez Oil Spill. I began studying how rural, subsistence communities respond to a technological, "man-made" disaster. I was interested in how the spill affected traditional food sources and formal/informal economies. Now that I live in Durango, I again find myself near a resource that has been affected by a spill. I am interested in how downstream communities are being affected from a socio-emotional perspective."*



REFLECTION BY STEVEN CHISCHILLY JR. (DINÉ) FORT LEWIS COLLEGE UNDERGRADUATE STUDENT

My time this year with the Navajo Gold King Mine Spill Project was very memorable. The introduction to the Yellow River Alliance was quite empowering. I felt liberated as I sat at the table with native people that had such a high caliber of knowledge and willingness to mitigate environmental issues on Dinetah.

The meeting I attended was very well structured and as it went on I started to admire all the people around me even more. The meeting caused me to look into some of the people who attended the meeting. I ended up reading Dr. Perry Charley's literature on uranium mining on the Navajo Nation and sifting through Dr. Karletta Chief's amazing accolades attained from higher education.



Dr. Clausen and her student Steven Chischilly, Jr. (Diné), Fort Lewis College, Durango, CO

I aided Dr. Rebecca Clausen from Fort Lewis College and Dr. Karletta Chief with transcribing process of teach-in responses and the sociological impacts of the Gold King Mine Spill as part of my senior capstone class. The presentation of the final product was very refreshing as well. It was much different than the in-class presentations that do not have the

weight that public presentations do. The presentation was different, but very much for the better.

All in all, the research was an amazing glance into social research. It was even more gratifying because I got to work with the responses from the Navajo people. I would like to thank Dr. Rebecca Clausen, Dr. Karletta Chief, Dr. Paloma Beamer, Janene Yazzie, and the Agnese Nelms Haury Foundation for funding this project.

OUTREACH AT THE NORTHERN NAVAJO NATION FAIR

On October 1, 2016, the Navajo Gold King Mine Exposure Project had an information table at the annual Northern Navajo Nation Fair in Shiprock, NM. Navajo volunteers gave out information on the Navajo Gold King Mine Exposure Project, a safe gardening project (Garden Roots), and UA Superfund Research Program fact sheets on the spill. We collected names and contact information for community members interested in receiving future information. October 1 was the day of the Fair Parade so attendance was good. As part of the Navajo Gold King Mine Exposure Project, corn grown in fields along the San Juan River was collected and will be analyzed for lead and arsenic. The results will be shared with the community. Overall, the event was well received by the community as many folks offered their encouragement for the project.



Corinna Sabaque (Diné), a UA Masters Student at the info table at the Northern Navajo Nation Fair.

AHE' HEE!

Ahé'heel We gratefully acknowledge our many research partners, volunteer students, advisory board members, and funding sources. This research effort is enhanced immensely by their enthusiastic support.



National Institute of Environmental Health Sciences

IR2IESO26948-01



Agnese Nelms Haury Program in Environment and Social Justice



MEL & ENID ZUCKERMAN COLLEGE OF PUBLIC HEALTH
Center for Indigenous Environmental Health Research (CIEHR)
5P5OESO26089-02



IP20MD006872



Superfund Research Program
The University of Arizona
P42ESO4940

THE UNIVERSITY OF ARIZONA

SOUTHWEST ENVIRONMENTAL HEALTH SCIENCES CENTER
A National Institute of Environmental Health Sciences Center at the University of Arizona
P30ES006694



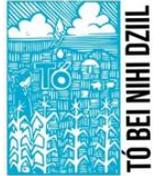
Yoshi Ornelas Van Horne, Dr. Paloma Beamer, and Rachelle Begay (Diné) in August 2016 during the household sampling in partnership with Navajo Community Health Representatives.

Fact Sheet

Chief, K., J.F. Artiola, P. Beamer, S. Wilkinson, R.M Maier, C. Rock, and C. Sanchez. 2015. Understanding the Gold King Mine Spill. Fact Sheet. University of Arizona, Tucson, AZ. (http://www.superfund.pharmacy.arizona.edu/sites/default/files/u43/gold_king_mine_spill.pdf)

News Article

Beamer, P., K. Chief, N. Borrero, and B. Rivera. 2016. Water Is Our Life: How a Mining Disaster Affected the Navajo Nation. Truth Out, April 2016. <http://www.truth-out.org/news/item/36049-water-is-our-life-how-a-mining-disaster-affected-the-navajo-nation>.



UNIVERSITY OF ARIZONA

Karletta Chief
Dept. of Soil, Water & Environmental Sciences
PO Box 210038
Tucson, AZ 85737
goldkingproject@gmail.com
(505) 652-4563 or 505-652-GKME
Like us on Facebook

[RECIPIENT]

Address Line 1
Address Line 2
Address Line 3
Address Line 4