



Tuba City Dump

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US EPA Starts New Phase of Work

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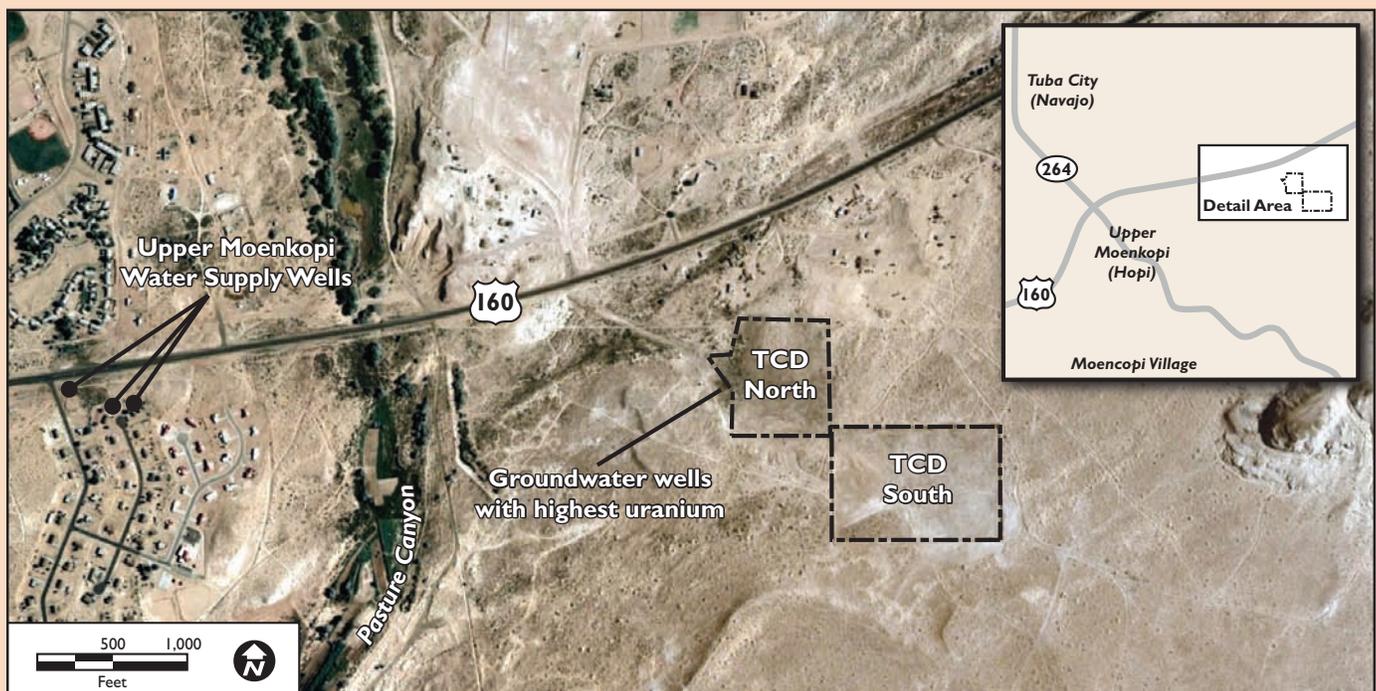


This newsletter is written by the U.S. Environmental Protection Agency (US EPA) for the residents of the Tuba City community, the Navajo Nation and the Hopi villages of Upper Moenkopi and Lower Moenkopi. It is intended to update you on what is going on with the investigation of soil and groundwater in your area as it relates to the Tuba City Dump (TCD), also known as the "Tuba City Open Dump." The TCD was used primarily for disposal of municipal waste by local businesses and the general public between the 1950s and 1997. It was operated by the Bureau of Indian Affairs (BIA).

Much information regarding the TCD and the surrounding groundwater has been gained by years of technical studies conducted by different groups, including the Hopi Tribe, the Navajo

Nation, U.S. Geological Survey (USGS) and US EPA. US EPA is considering all of that information as well as collecting the information that is still needed so that we can determine what needs to be done.

The drinking water from village supply wells and springs in the area is safe. Drinking water in the villages of Upper Moenkopi, Lower Moenkopi and Tuba City has been tested and does not have elevated levels of uranium, the main contaminant of concern in the area of the TCD. US EPA is routinely providing information to, and inviting input from, the Hopi Tribe and the Navajo Nation during this work.



Tuba City Dump and surrounding areas

What is EPA Doing Now?

The Superfund Process and EPA's Order to BIA

This area has a complex geology. Studies have been done for varying purposes and not under one consistent strategy, leading to differing interpretations of the data. Therefore, US EPA is now addressing the TCD under its Superfund program, which is designed to use data to select a remedy. Two of the most important elements of the Superfund process are called the Remedial Investigation (RI) and Feasibility Study (FS). The RI/FS is not simply an isolated additional study. Instead, it pulls together all the information known about the site and surrounding conditions, gathers more data and performs analysis as needed to understand what is going on at the site. It then uses this complete analysis to develop and compare options for cleanup.

Additionally, US EPA now has an enforceable Administrative Order on Consent with BIA that requires BIA to perform the RI/FS subject to the oversight and approval of US EPA. This agreement has an enforceable schedule, and EPA can impose penalties for failure to comply with the agreement.

During this effort, US EPA is keeping the Hopi Tribe and Navajo Nation informed and requesting their input. The communities potentially affected by the site are part of the Superfund process. You will have an opportunity to review and provide comments to US EPA on the RI/FS and any proposed actions. US EPA is also concerned about the scarcity of public water supplies in this area and seeks a solution that is consistent with preserving as much of this resource as possible.

Some of What We Know From Past Work

In the Dump

In surface soil studies conducted at the TCD, arsenic, copper, strontium and vanadium were found at elevated levels compared to what is usually found naturally in the environment. These contaminants were also found in the shallow groundwater below the TCD. No significant contaminant gases were found, and no uranium-bearing process wastes or ores have been found in the TCD in studies to date. However, a number of ceramic and metal "milling balls" have been found on the dump surface. While these are not uranium waste, they may be spent equipment used by the former uranium mill located four miles east of the TCD on Highway 160.

Two studies, one by US EPA and one by the Hopi Tribe, looked in the dump for uranium-bearing wastes (derived from processing uranium ore) that might have come from the former uranium

mill. Despite an intensive and targeted search, no such material was found in the dump in these studies. US EPA is still looking into whether uranium-bearing mill process waste may be in the dump but is also looking into other possible sources of uranium in the shallow groundwater immediately adjacent to the TCD. For example, one possibility being explored is whether drainage channels (either on the surface or buried) are affecting the contamination.

Additional past studies provide useful information about the contents, dimensions and waste depths in the dump. Scans have been performed in boreholes looking for radioactivity, and the ground has been sampled in many locations for various constituents and different types of uranium. All of this past data is being considered by US EPA in the present work.

Groundwater

BIA and the Hopi Tribe have sampled groundwater monitoring wells for many years near the TCD. The results of this shallow groundwater monitoring have shown uranium, arsenic, chloride, lead, total dissolved solids, chromium, nitrate, selenium, strontium, sulfate and vanadium, some at levels above what US EPA says is safe for drinking water. (These levels were NOT found in drinking water supply wells.)

The levels of these are especially high in a few wells right next to the dump, on its west side. Some of these, such as total dissolved solids and sulfate, can be present in waste from milling and other operations. They can also occur naturally in surface drainage pathways (such as washes and gullies where water and sediments flow), and are often seen near municipal dumps and landfills.

US EPA has not yet determined how the groundwater near the dump has become contaminated, exactly how uranium in groundwater may be moving and whether it could later move to drinking water wells. Uranium is being monitored closely as it is present immediately next to the TCD at concentrations up to about 400 micrograms per liter ($\mu\text{g/l}$), also called "parts per billion". The US EPA drinking water standard is 30 $\mu\text{g/l}$. Drinking water supply wells for the village of Upper Moenkopi are located about 4,000 feet from the dump. The Lower Moenkopi springs are about 7,000 feet from the dump. As stated earlier, the water from the wells and springs are tested and meet drinking water standards.

US EPA is closely examining how the ground in the area is divided into sand and rock layers. This is being done to understand the possible ways that water and contaminants can move through them, how contaminants may be related to one another and possibilities for where they may have originated.

Upcoming Field Work in the Remedial Investigation

The following is a list of the types of field work that will be taking place over the next four to six months:

Radiological Survey

BIA has almost completed a surface radiological survey that covers the area uphill from Pasture Canyon toward the east in the direction of the former uranium mill site. The survey area includes both Hopi and Navajo lands and follows the drainage pathways that lead into the dump and along Highway 160 to the north. Although a similar survey was done earlier, this one covers a much wider area. This type of study assists in looking for any buried radioactive sources.

Groundwater Monitoring Wells

Planned for June and July, additional specially-designed groundwater monitoring wells will be drilled in several areas near the dump and between the dump and Upper Moenkopi Village. These monitoring wells will provide a great deal more information about the layers in the ground at various locations, how water may be moving in them and in what direction water can move. BIA will install these special types of wells in these particular locations after considering the information from all the wells already installed and sampled in the past. These monitoring wells will be drilled using a large truck rig that has a vertical mast on the back. It can take one to several days to install each well.

Samples from Sediment in Water Drainages

During roughly the same time period, samples of water and soil will be collected from borings drilled in water drainages from Pasture Canyon uphill to the dump and east of the dump. Rather than focusing on the rock underneath as earlier studies have done, these borings will be located in channels through the sands that lie on top of the bedrock. Existing studies have strongly suggested that drainages are related to the chemical results we see in the groundwater. These borings will be installed with smaller jeep, van or truck rigs than are used for installing the monitoring wells described above. Some also may be dug by hand.

Confirmation Sampling of Landfill Gas

Finally, some samples of the air between the soil particles in the ground and in the waste at the dump will be collected to confirm earlier studies that indicated no significant methane or toxic gases are present in the landfill.

All the information gained by these investigations is needed to ensure that US EPA can propose an appropriate and effective cleanup option for the site.

Community Involvement

As part of the Superfund process, US EPA will ask community members how they most like to receive information. We will send out fact sheets as well as hold discussions with both villages and the Navajo community as the process proceeds, often with new information that has been obtained. We will consider any input you may have during that time and also at the point later in the process when US EPA proposes a cleanup option. We will hold large or small meetings, attend existing community meetings and pass out written materials. You will hear again from US EPA in the coming months.

For More Information

If you have questions or concerns about the TCD or related activities, please contact:

U.S. EPA

Jeff Dhont

Project Manager
(SFD-6-2)
75 Hawthorne St.
San Francisco, CA 94105
(415) 972-3020
dhont.jeff@epa.gov

Alejandro Díaz

Community Involvement
Coordinator (SFD-6-3)
75 Hawthorne St.
San Francisco, CA 94105
(415) 972-3242
Toll Free 1-800-231-3075
diaz.alejandro@epa.gov

Tribal representatives knowledgeable about the federal government's actions at the TCD site:

Lionel Puhuyesva

Director, Hopi Water
Resources Program
P.O. Box 123
Kykotsmovi, AZ 86039
(928) 734-3711
lpuhuyesva@hopi.nsn.us

Lillie Lane

Community Involvement
Coordinator
Navajo Nation EPA
P.O. Box 339
Window Rock, AZ 86515
(928) 871-6092
hozhoogo_nasha@yahoo.com

Cassandra Bloedel

Navajo Nation EPA
P.O. Box 339
Window Rock, AZ 86515
(928) 871-7816
cbloedel@navajo-nsn.gov





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United States Environmental Protection Agency, Region 9
75 Hawthorne Street (SFD-6-3)
San Francisco, CA 94105
Attn: Alejandro Díaz (Tuba City 6/12)

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