

## NORTHERN ABANDONED URANIUM MINE (AUM) REGION

Number of abandoned uranium mines in the Northern AUM Region: 229

Of these 229 mines, 17 are priority mines

Northern AUM Region includes the following chapters: Red Mesa, Red Valley, Sweetwater, Teec Nos Pos, Cove, Shiprock, Aneth, Beclahbito, Lukachukai, Round Rock, and Sanostee

### PRIORITY MINES AND SETTLEMENTS

USEPA, in partnership with the Navajo Nation EPA (NNEPA), has identified 523 total AUMs on the Navajo Nation. Of these 523 AUMs, 46 mines were identified as “priority mines” based on radiation levels, proximity to homes, and potential for water contamination.

There are 17 priority mines in the Northern AUM Region. Funds are available to begin the cleanup process at 121 mines, approximately 53% of the mines in the Northern AUM Region, including all 17 priority mines. USEPA continues to look for companies responsible for the AUMs in this region to assess and clean up the remaining mines.



Phase 1 Trustee's contractors conducting an investigation at Barton No. 3, an abandoned uranium mine located in Red Mesa Chapter.

**Table 1:** Summary of the Northern AUM Region identifying the name of the potentially responsible party or trust responsible for mine cleanups, the number of mines, and the status in the Superfund process.

See section below "Legal Agreements and AUM Cleanup Activities" for more information on the settlements and trusts listed here.

Name of Potentially Responsible Party or Settlement	Number of Mines*	Superfund Process Status
<b>Tronox Settlement</b>	<ul style="list-style-type: none"> <li>33 mines (three of which are priority mines)</li> </ul>	<ul style="list-style-type: none"> <li>Removal Site Evaluation in progress, reports to be completed in 2018 for 33 mines</li> </ul>
<b>Cyprus Amax Minerals Company (Cyprus Amax) and Western Nuclear, Inc. (Western Nuclear)</b>	<ul style="list-style-type: none"> <li>82 mines (eight of which are priority mines)</li> </ul>	<ul style="list-style-type: none"> <li>Removal Site Evaluation in progress for 29 mines, reports planned to be completed in 2018 for eight mines</li> </ul>
<b>Phase 1 Trust</b> (limited to mine assessments) <b>Phase 2 PO Trust</b> (limited to mine cleanups, as needed)	<ul style="list-style-type: none"> <li>Six priority mines</li> </ul>	<ul style="list-style-type: none"> <li>Removal Site Evaluation in progress, reports to be completed in 2018 for all six mines</li> </ul>
<b>Total</b>	<b>121 mines (17 of which are priority mines)</b>	

\*One mine claim can include more than one site.

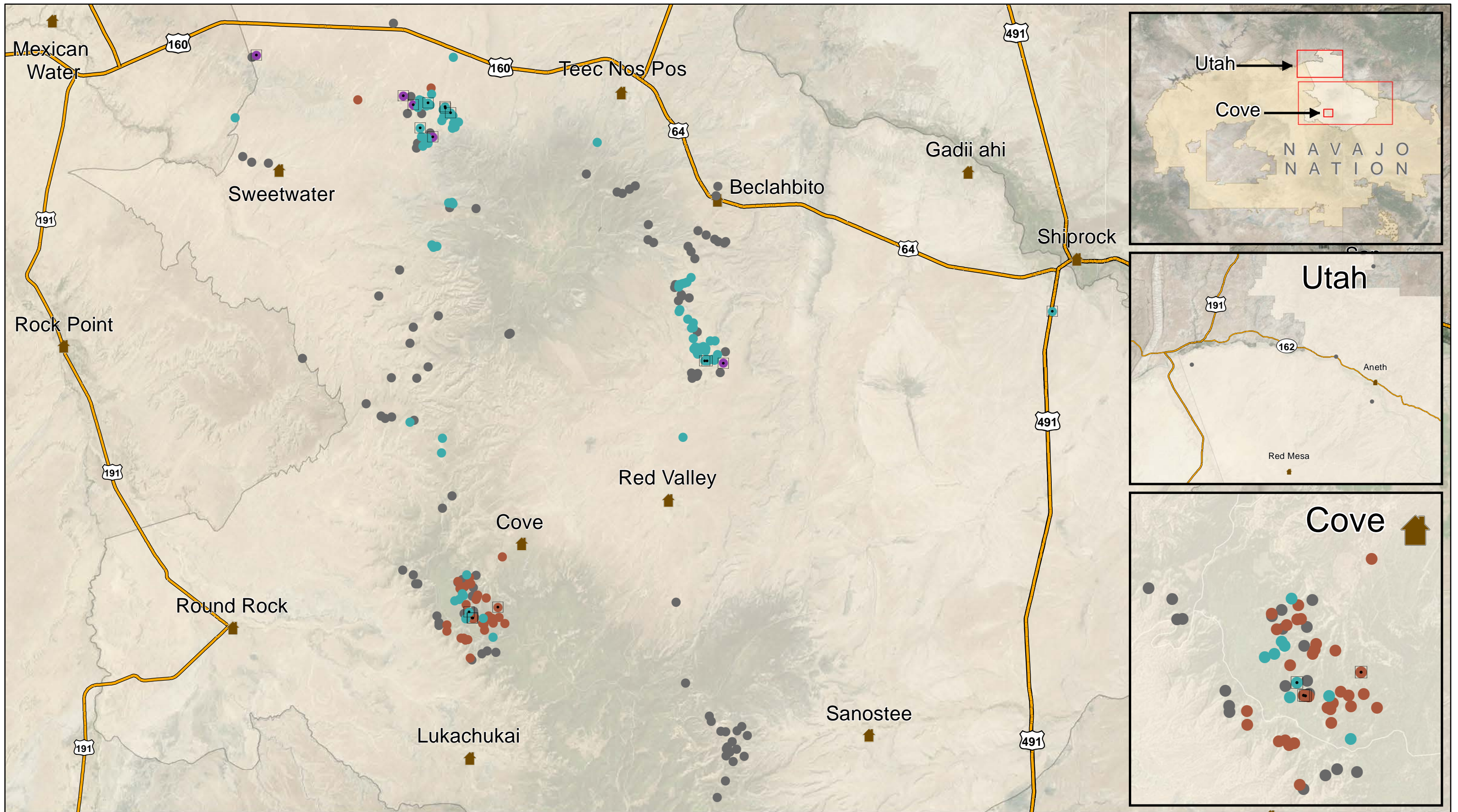
## Legal Agreements and AUM Cleanup Activities

### PHASE 1 SETTLEMENT

In 2015, the Navajo Nation and the United States entered into a \$13.2 million settlement called the Phase 1 Settlement. The Phase 1 Settlement includes one trust account, the Phase 1 Trust, and is managed by an independent trustee, with USEPA and NNEPA oversight. This settlement provides funds to assess 16 priority mines on the Navajo Nation, including six in the Northern AUM Region. In 2015, assessment work began at these six priority mines: Oak124/Oak125, Alongo Mines, NA-0904, NA-0928, Barton 3, and Tsosie 1. The Removal Site Evaluation reports, which provide information needed to determine the extent of contamination at these mines, are expected to be complete in 2018.

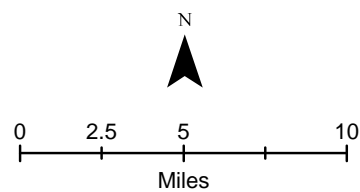
### PHASE 2 SETTLEMENT

In 2016, the Navajo Nation and the United States entered into an additional legal settlement called the Phase 2 Settlement. The Phase 2 Settlement includes two trust accounts: the Phase 2 Removal Site Evaluation (RSE) Trust and the Phase 2 Priority Orphan (PO) Trust. The Phase 2 trusts will be managed by independent trustees, with USEPA and NNEPA oversight. The Phase 2 RSE Trust provides funds to assess 30 mines on the Navajo Nation (including 13 mines in the Western AUM Region) and conduct two water studies. The Phase 2 PO Trust will provide funds to clean up the 16 mines assessed under Phase 1 Trust, as needed, including the six in the Northern AUM Region: Oak124/Oak125, Alongo Mines, NA-0904, NA-0928, Barton 3, and Tsosie 1.



### Navajo Nation - Northern Abandoned Uranium Mine Region

- Phase 1 Trust Mines
 ● Cyprus Amax/Western Nuclear Mines
 Priority Mines
- Tronox Mines
 ● All Other Mines
🏠 Chapter Houses



## CYPRUS AMAX / WESTERN NUCLEAR SETTLEMENT

In 2017, the United States and the Navajo Nation entered into a historic settlement agreement with Freeport-McMoRan subsidiaries, Cyprus Amax Minerals Company and Western Nuclear, Inc. The settlement funds the assessment and cleanup of 94 abandoned uranium mines on the Navajo Nation, including 82 mines in the Northern AUM Region. This settlement addresses almost 20% of the abandoned uranium mines on the Navajo Nation. The mines are located in the following chapters: Red Valley, Sweetwater, Teec Nos Pos, Cove, Shiprock (Northern AUM Region); Oljato, Dennehotso, Kayenta (North Central AUM Region); and Chilchinbeto (Central AUM Region).

## Tronox Settlement

In 2014, the United States entered into a historic legal settlement that will provide almost \$1 billion to investigate and clean up approximately 50 abandoned uranium mines on or near the Navajo Nation that were operated by Kerr-McGee Corporation and its successor, Tronox. There are 31 of these mines in the Cove/Lukachukai area and two mines in the Tse Tah area in the Northern AUM Region.

## COVE TRANSFER STATION

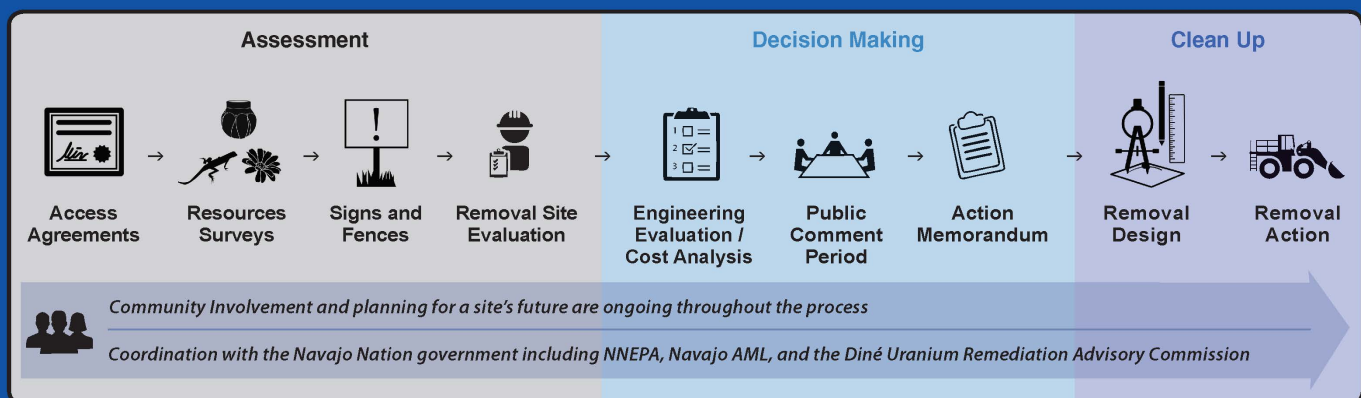
In October 2017, USEPA completed construction activities to stop surface erosion at the former Cove Transfer Station #1 site—an area located in the Cove Chapter on the Navajo Nation in eastern Arizona—formerly used to stage mining materials for transfer.

## COVE WASH WATERSHED ASSESSMENT

The Cove Wash watershed is approximately 47-square miles in area and includes 42 AUMs, 24 of which are Tronox mines, within the Lukachukai Mountains. Year-round water is found in peaks and canyons above 7,000 feet elevation, where springs and seeps emerge. Developed springs and wells are also part of the watershed. Sampling determined that the watershed has elevated uranium concentrations in surface and ground water around and below the historically mined areas.

From 2015 to 2017, the USEPA, NNEPA, and staff and student interns from the Diné Environmental Institute of Diné College sampled soil, sediment, and water across the Cove Wash watershed.

## Superfund Process on the Navajo Nation



## Reduce Your Contact with Uranium and Radiation

### Steps to keep yourself safe:

- Stay away from abandoned mines and mills
- Find out if your home is a contaminated structure
- Use regulated water for human needs
- Never use unregulated water for human needs—even if it looks ok
- Use good water hauling practices to keep your water clean
- Get regular cancer screenings, like pap tests, mammograms, colonoscopies, and other cancer screenings

## For More Information

Chip Poalinelli  
Remedial Project Manager  
USEPA Region 9  
(415) 972-3390  
[poalinelli.edwin@epa.gov](mailto:poalinelli.edwin@epa.gov)

Secody Hubbard  
Community Involvement Coordinator  
USEPA Region 9  
(415) 972-3241  
[hubbard.secody@epa.gov](mailto:hubbard.secody@epa.gov)

Dariel Yazzie  
Environmental Program Supervisor  
NNEPA Superfund  
(928) 871-7601  
[darielyazzie@navajo-nsn.gov](mailto:darielyazzie@navajo-nsn.gov)

USEPA Navajo Abandoned Uranium Mine website: [www.epa.gov/navajo-nation-uranium-cleanup](http://www.epa.gov/navajo-nation-uranium-cleanup)