

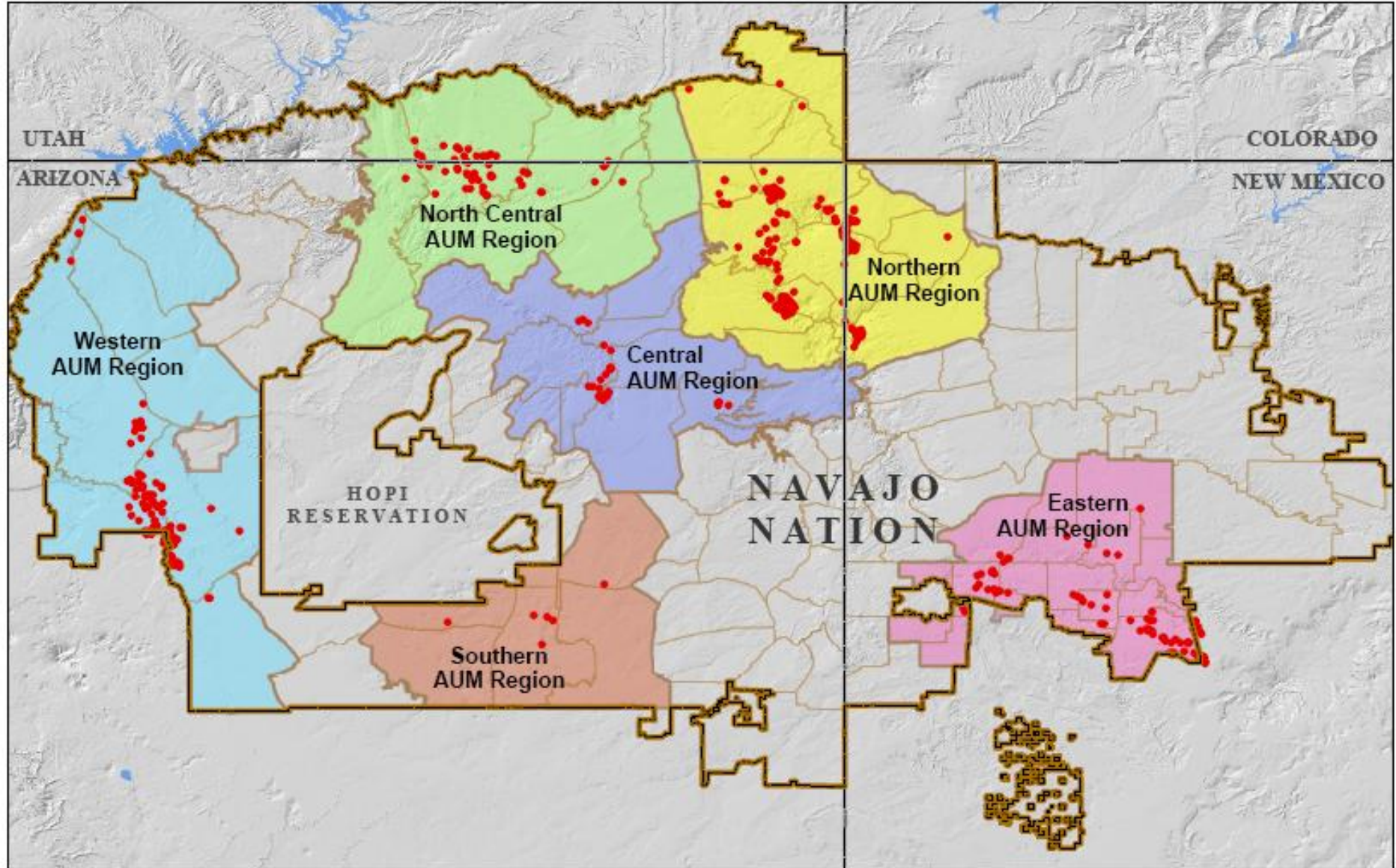
US EPA ARCHIVE DOCUMENT

# Abandoned Uranium Mines in the Western Navajo Region

Svetlana Zenkin

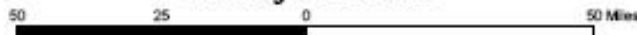
US EPA Region 9

San Francisco, CA



**Abandoned Uranium Mine Locations  
and AUM Regions  
on the  
Navajo Nation**

• Abandoned Uranium Mines



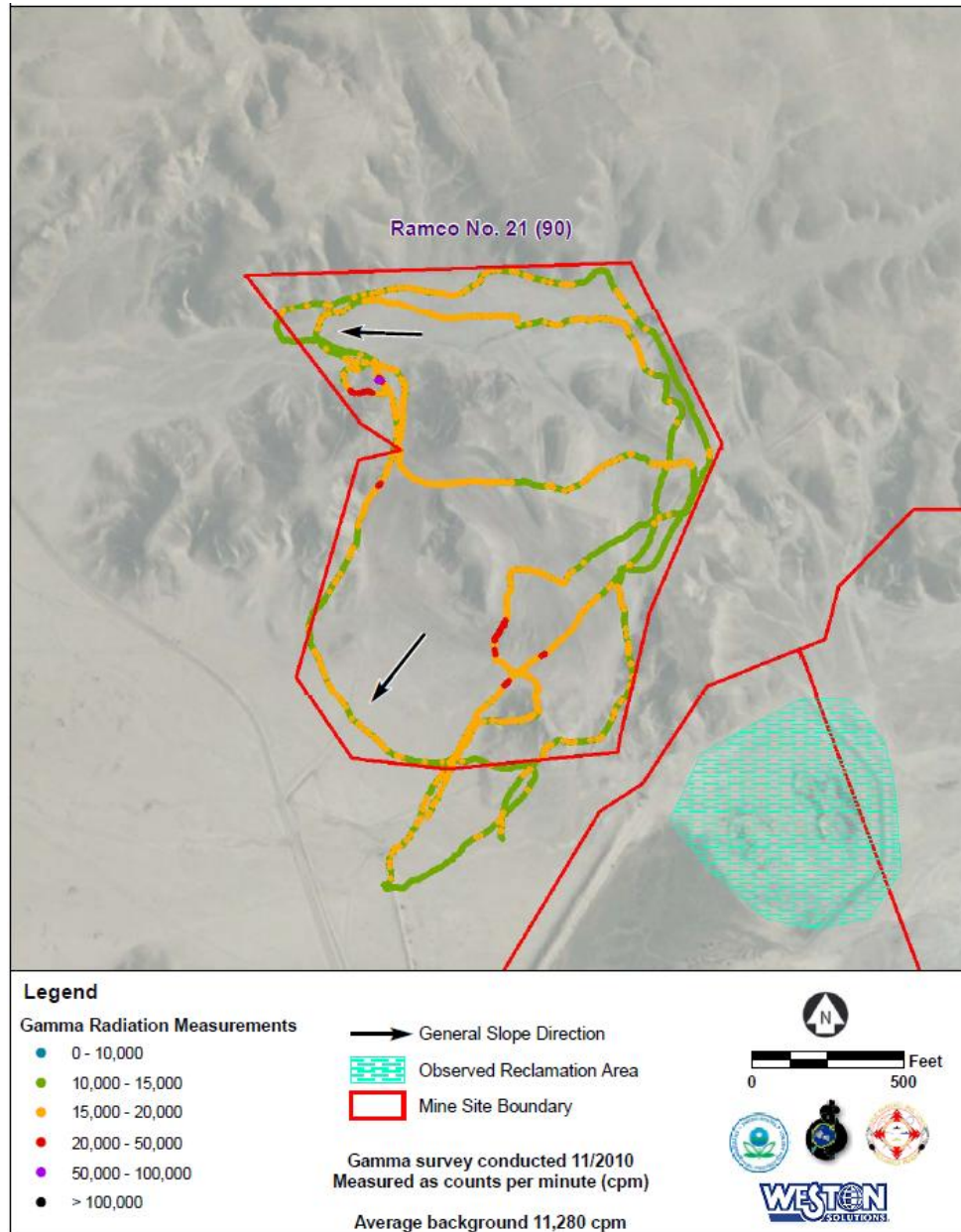
# The project

- Look at each one of the 520 mines and determine which ones need further investigation
- Move the worst mines towards cleanup
- Find companies and/or individuals to pay for the cleanup
- \* US EPA needs request/agreement from Navajo EPA in order to clean up mines

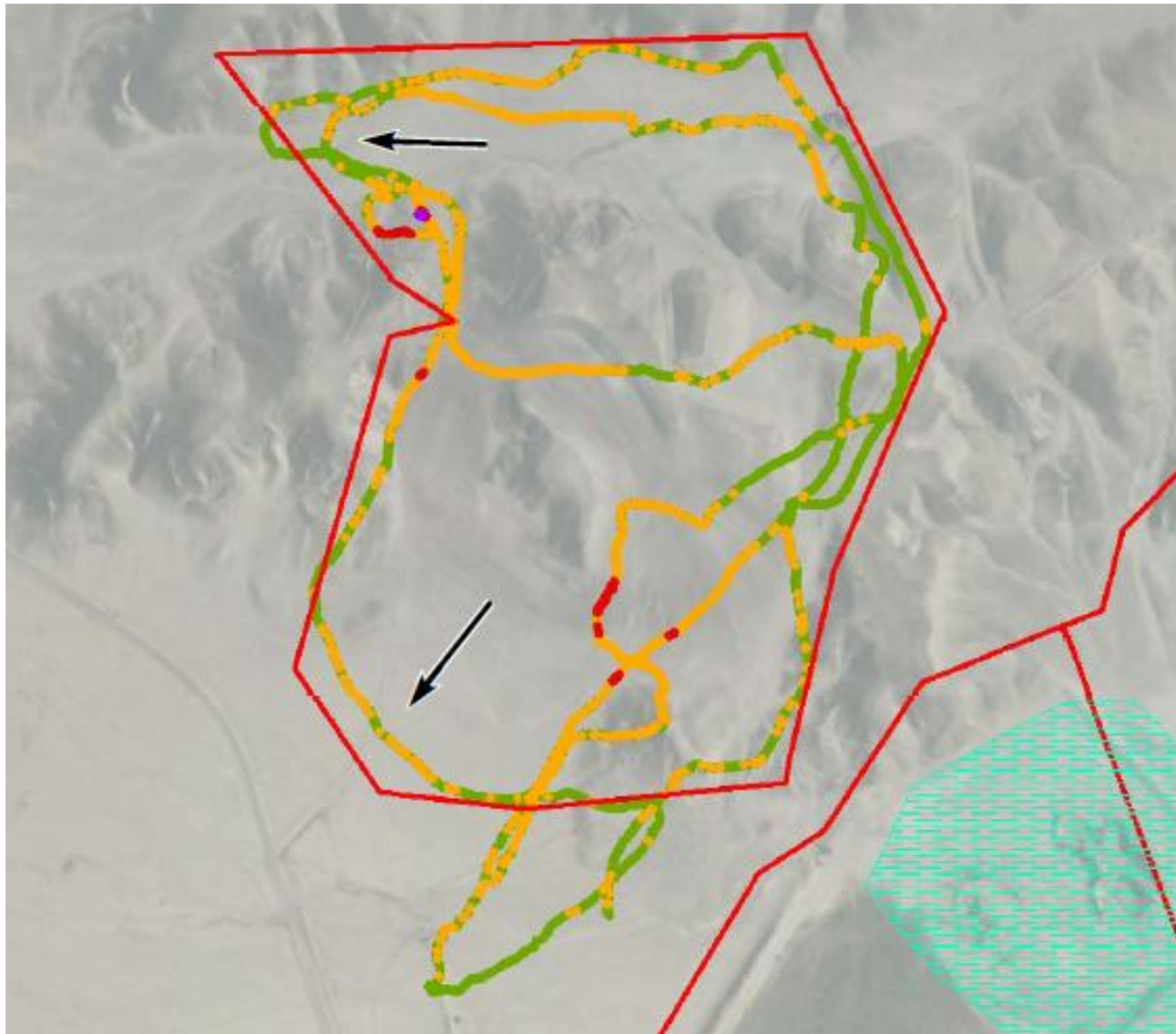
# Mine screen = initial evaluation



# What is a mine screen?



# Mine screen path







*D7110 baa' 1konosin.*

**Water from Box Spring (5N-7E) at Black Falls, AZ (Cameron and Leupp Chapters) is NOT safe to drink**

*\*Uranium exceeds drinking water standards*

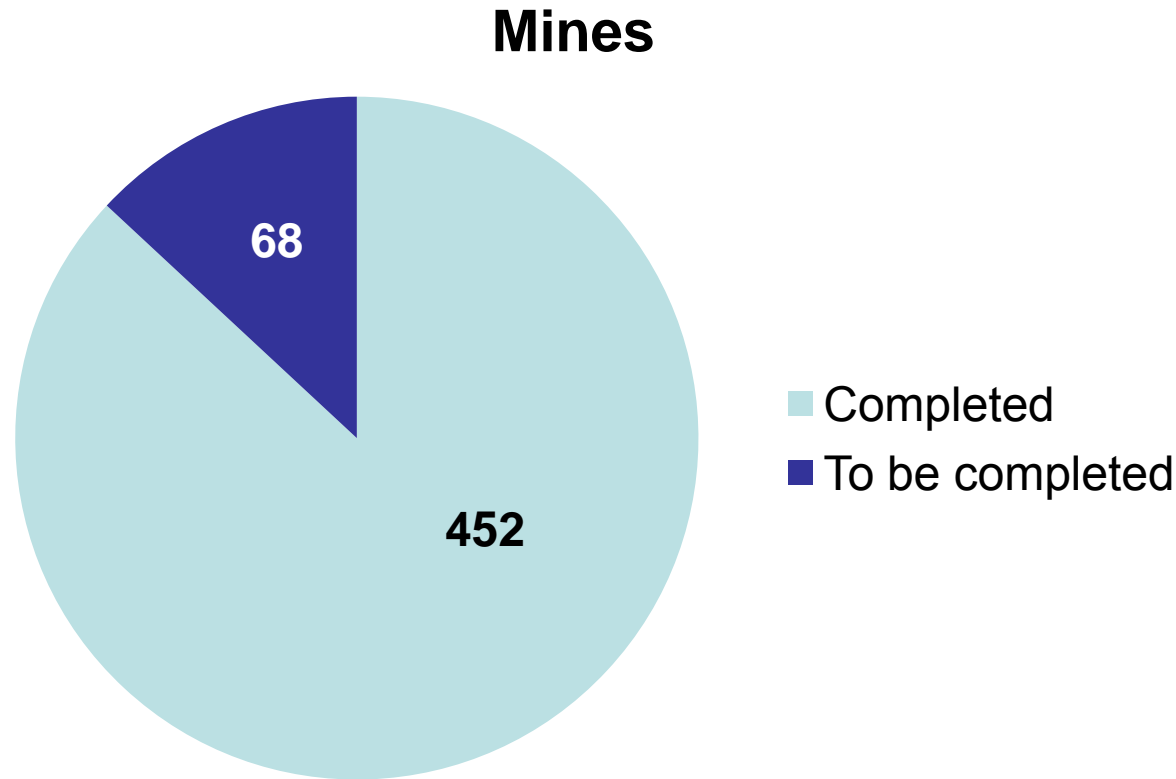
Box Spring, AZ



Approved May 2008 by  
New Mexico Environmental Protection Agency  
Environmental Protection Agency  
U.S. Environmental Protection Agency  
Arizona Department of Environmental Quality  
U.S. Environmental Protection Agency  
U.S. Environmental Protection Agency  
U.S. Environmental Protection Agency



# Progress so far



Completed screens of 452 mines – currently in the field completing the remaining 68

# Current work

- 74 screenings
  - 68 mines from original plan
  - 6 locations identified by community members in the Western Agency
- Chapters:
  - North Central Region: Oljato, Kayenta, Dennehotso, Shonto
  - Southern Region: Indian Wells, Steamboat, Teesto

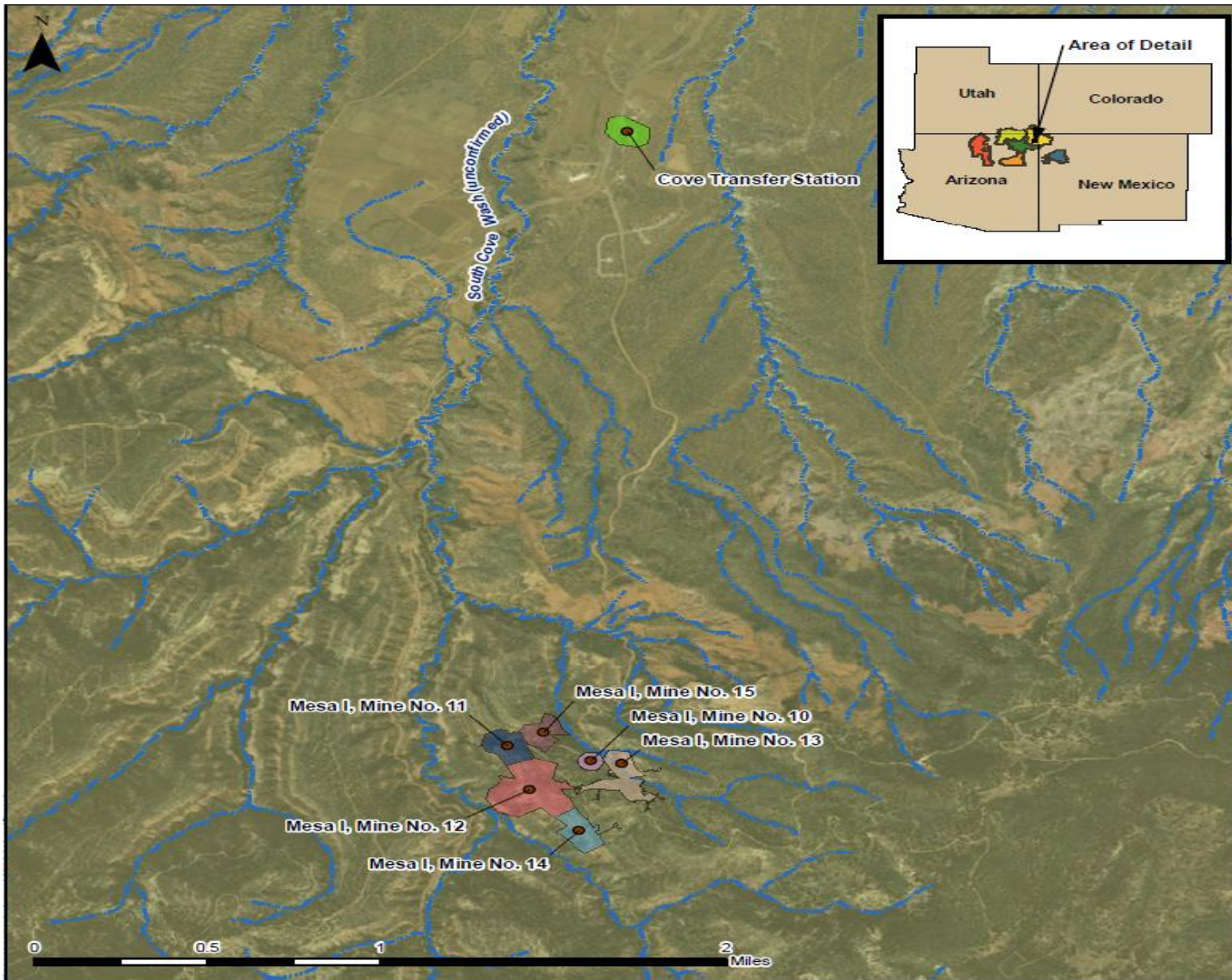
# What has been done and what is next

- Skyline Mine: cleanup completed October 2011
- Northeast Churchrock Mine: Cleanup selected in September 2011. Design in progress
- Quivira Mine: Enforcement agreement signed in 2010. Data from site under evaluation
- Mariano Lake Mine: Enforcement Agreement signed July 2011. Requires 4 phases of work

# What is next

- Northern Agency, Cove Chapter:

December 2011: Meet with residents to discuss work at 4 sites in Cove Chapter (2 Transfer Stations, Cove Wash, Mesa I Mines 10-15)



● AUM Mine Score Point	<b>Mine Area</b>	<b>Navajo Nation Regions</b>
— Intermittent Stream	■ Cove Transfer Station	■ Eastern AUM Region
	■ Mesa I, Mine No. 10	■ Central AUM Region
	■ Mesa I, Mine No. 11	■ North Central AUM Region
	■ Mesa I, Mine No. 12	■ Northern AUM Region
	■ Mesa I, Mine No. 13	■ Southern AUM Region
	■ Mesa I, Mine No. 14	■ Western AUM Region
	■ Mesa I, Mine No. 15	

Notes: Mine points, mine areas, intermittent streams and Navajo Nation Region boundaries from 2007 AUM Screening Assessment files provided by TerraSpectra Geomatics. South Cove Wash identified based on description provided by Preliminary Assessment Report for Cove Transfer Station (Weston Solutions, Inc., August 2007). Aerial basemap from ESRI Imagery Basemap.

**Navajo Nation Abandoned Uranium Mines**  
**Tronox and Other Mines**  
**Mesa I, Mine Nos. 10 - 15 and**  
**Cove Transfer Station**

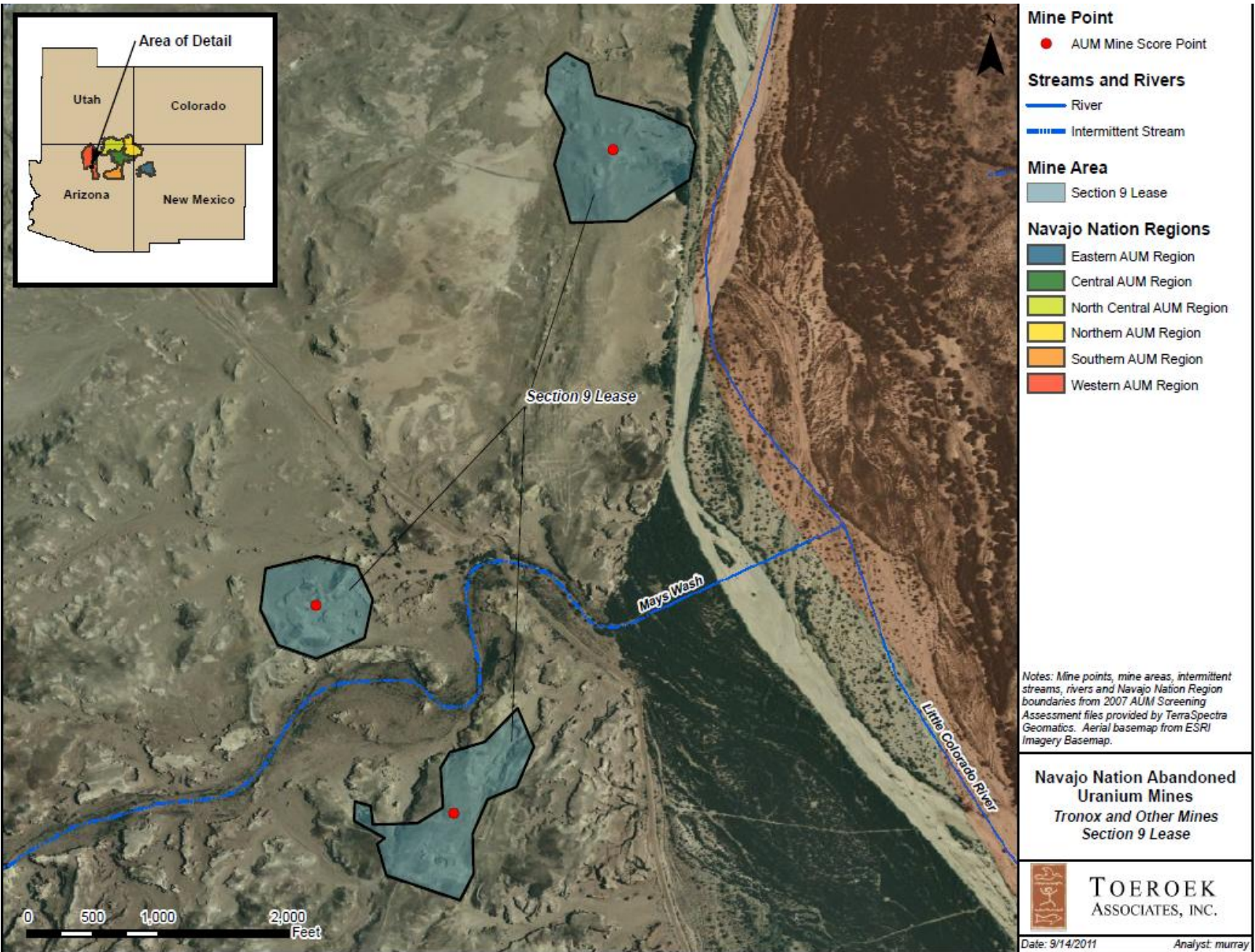


Date: 9/19/2011 Analyst: murray

# What is Next

Western Agency:

Spring 2012: Meet with residents regarding Cameron transfer site and begin on-site evaluation.



**Mine Point**

- AUM Mine Score Point

**Streams and Rivers**

- River
- Intermittent Stream

**Mine Area**

- Section 9 Lease

**Navajo Nation Regions**

- Eastern AUM Region
- Central AUM Region
- North Central AUM Region
- Northern AUM Region
- Southern AUM Region
- Western AUM Region

*Notes: Mine points, mine areas, intermittent streams, rivers and Navajo Nation Region boundaries from 2007 AUM Screening Assessment files provided by TerraSpectra Geomatics. Aerial basemap from ESRI Imagery Basemap.*

**Navajo Nation Abandoned Uranium Mines  
Tronox and Other Mines  
Section 9 Lease**



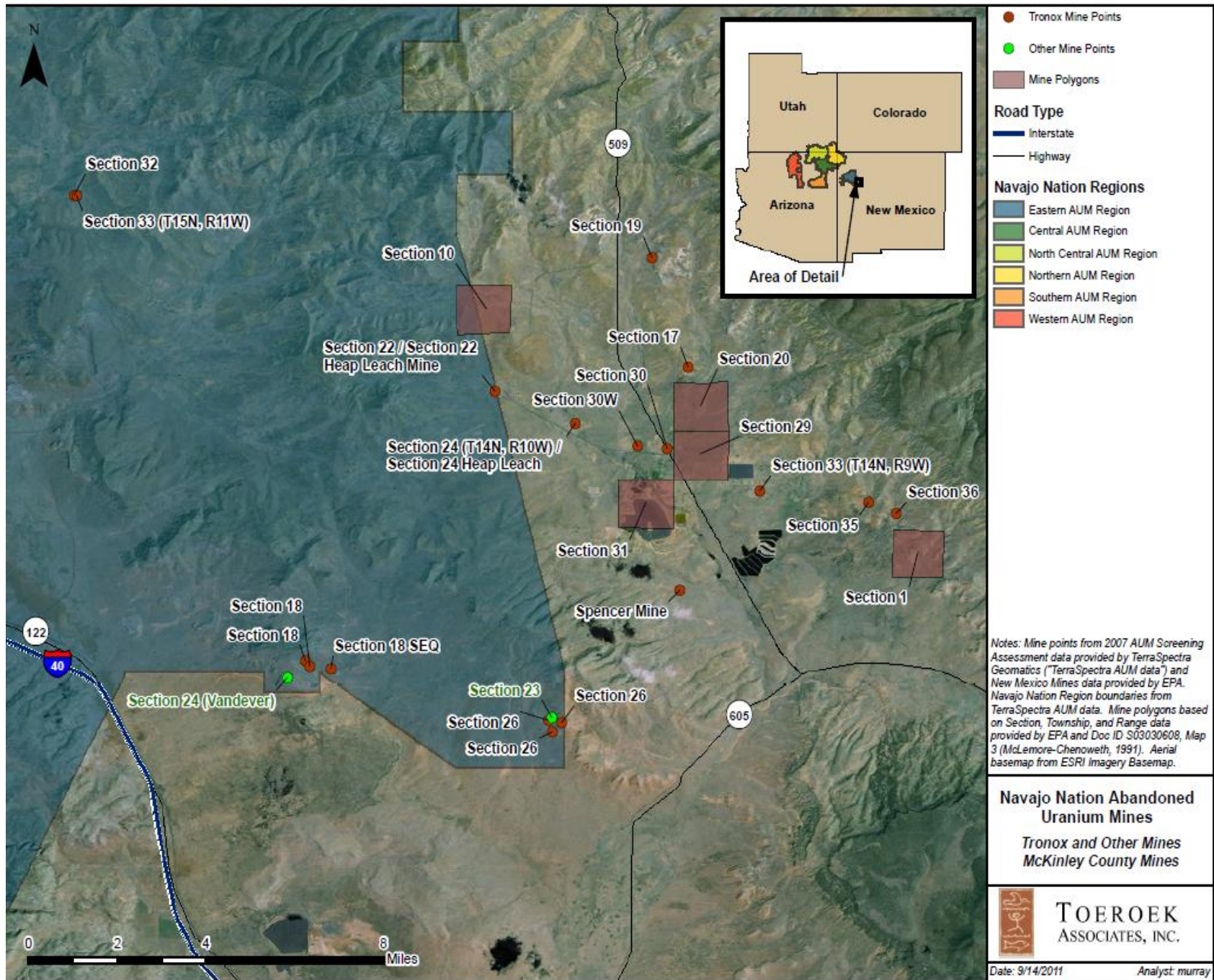
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# What is next

- Eastern Agency:

Spring/Summer 2012: Meet with Casamero Lake Chapter, Smith Lake Chapter, Baca/Haystack Chapter to discuss mines with high readings and gather input



- Tronox Mine Points
- Other Mine Points
- Mine Polygons

**Road Type**

- Interstate
- Highway

**Navajo Nation Regions**

- Eastern AUM Region
- Central AUM Region
- North Central AUM Region
- Northern AUM Region
- Southern AUM Region
- Western AUM Region

*Notes: Mine points from 2007 AUM Screening Assessment data provided by TerraSpectra Geomatics ("TerraSpectra AUM data") and New Mexico Mines data provided by EPA. Navajo Nation Region boundaries from TerraSpectra AUM data. Mine polygons based on Section, Township, and Range data provided by EPA and Doc ID S03030608, Map 3 (McLemore-Chenoweth, 1991). Aerial basemap from ESRI Imagery Basemap.*

**Navajo Nation Abandoned Uranium Mines**  
**Tronox and Other Mines**  
**McKinley County Mines**



**TOEROEK ASSOCIATES, INC.**

# We want your input

- What outreach efforts about the AUM investigation are you aware of?
- What has worked best so far?
- What should we focus on in the future?