



New Mexico Environment Department

Uranium Mining and Milling Cleanup and Reclamation

Radioactive and Hazardous Materials Committee
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Addressing Legacy Contamination

- Cleaning up legacy contamination from uranium mining and milling is a priority requiring sustained efforts and resources
- Active mining and milling across hundreds of sites in NM and on Tribal lands from the mid-1950s through the 1980s
- Environmental and public health risks include exposure to radioactivity and health-related effects from ingestion of contaminants in groundwater (e.g., selenium, nitrate, uranium)
- NMED has responsibilities related to protecting and restoring groundwater quality at former mines and mill sites

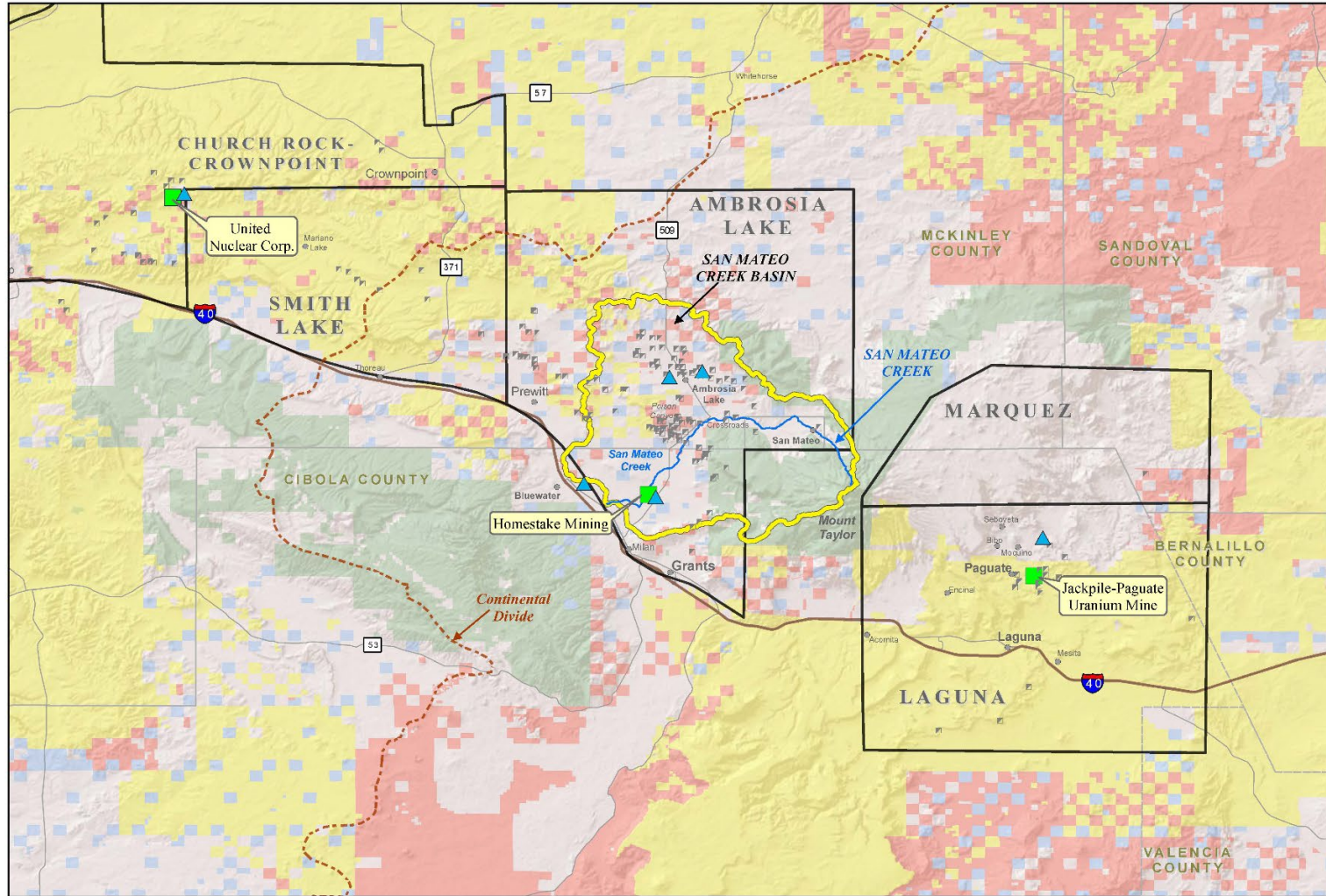


Complex Regulatory Regime

- State of New Mexico
 - ▣ *New Mexico Water Quality Act* (NMED Ground Water Quality Bureau)
 - ▣ *New Mexico Mining Act* (EMNRD Mining and Minerals Division)
- Federal Government
 - ▣ U.S. Environmental Protection Agency (EPA)
 - *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*, aka the Superfund law
 - Tronox Mines
 - Listed Superfund Sites
 - Other CERCLA actions
 - ▣ U.S. Nuclear Regulatory Commission (NRC)
 - *Licenses* for Uranium Mill Sites
 - ▣ Bureau of Land Management (BLM) and U.S. Forest Service (USFS) Actions
- Tribes, Nations, Pueblos
 - ▣ Sites on Navajo Nation
 - ▣ Jackpile-Paguate Superfund Site, Laguna Pueblo



Regional Overview of Grants Mineral Belt



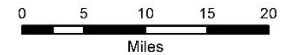
Uranium Mining in Northwestern New Mexico



Mining District Features

- Uranium Mill
- Abandoned Uranium Mine
- Uranium Related NPL Site
- Continental Divide
- San Mateo Creek
- San Mateo Creek Basin
- Uranium Sub-District
- County Boundary
- Land Ownership**
- BLM
- Forest Service
- Tribal Land
- Private Land
- State Land

Sources:
 MMD Legacy Uranium Mine Inventory, 12/2008.
 EPA Region 6 Superfund Study Areas, 4/2020.
 BLM Land Ownership 2014. Esri World Shaded Relief.



HPA Region 6
 Superfund
 GIS Support
 09/10/2021



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Three Case Studies

1. St. Anthony Mine – State Oversight
2. San Mateo Creek Basin – EPA Oversight
3. Church Rock Area – EPA and NRC Oversight



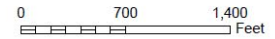
St. Anthony Mine

State of New Mexico Oversight

- NMED
 - ▣ Abatement of Water Pollution
 - NMED called United Nuclear Corporation (UNC) in for abatement of water pollution in 2002
 - Stage 1 Abatement Plan (approved November 2002)
 - Stage 2 Abatement Plan (approved May 2015)
 - ▣ Preferred Abatement Alternative
 - Partial Pit Backfill
 - Groundwater Alternative Abatement Standards (adopted September 2017)
- EMNRD Mining and Minerals Division - Mining Act Reclamation Permit
 - ▣ Surface Reclamation
 - Waste Rock Stockpiles
 - Open Pits
 - Ancillary Mine Units
- UNC Drafting Engineering Design for Agency Approval
 - ▣ ~ \$98 Million Joint Financial Assurance



St. Anthony Mine



Sources:
Ore body mass – UNC, 1977;
Aerial – RGIS website, dated 2011

Legend

Subsurface Mine Workings

Figure 1.2
Site Plan
St. Anthony Mine,
Stage 2 Plan



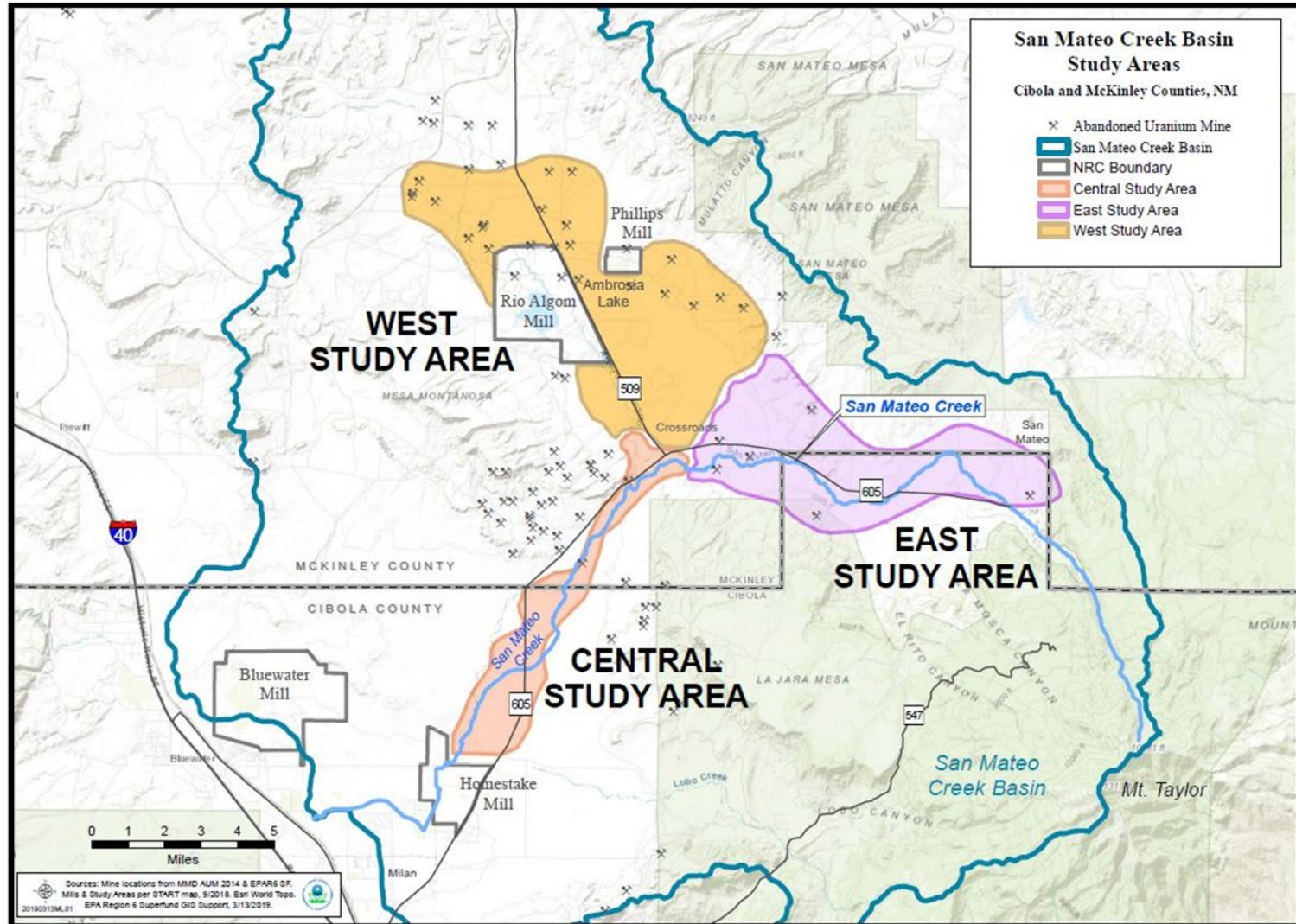
San Mateo Creek Basin

EPA Region 6 Lead; Three Study Areas

- Central Study Area Administrative Order on Consent (AOC) (Nov. 2019)
 - ▣ Impacted private wells
 - ▣ Threat to downstream water supplies
 - ▣ Groundwater Investigation - Homestake Mining Company (HMC), UNC, Rio Algom Mining, LLC (RAML)
 - ▣ NMED review and comment on work plans
- West Study Area
 - ▣ Initiating negotiations on establishing surface investigation AOC
 - Responsible Parties - HMC, UNC, RAML
 - Tronox Mines
 - Windblown RAML Mill impacts (NRC Lead Agency for RAML Mill)
 - ▣ NMED review and comment on work plans
- East Study Area
 - ▣ Negotiations not yet underway
 - Responsible Parties - UNC, HMC, Hecla Limited

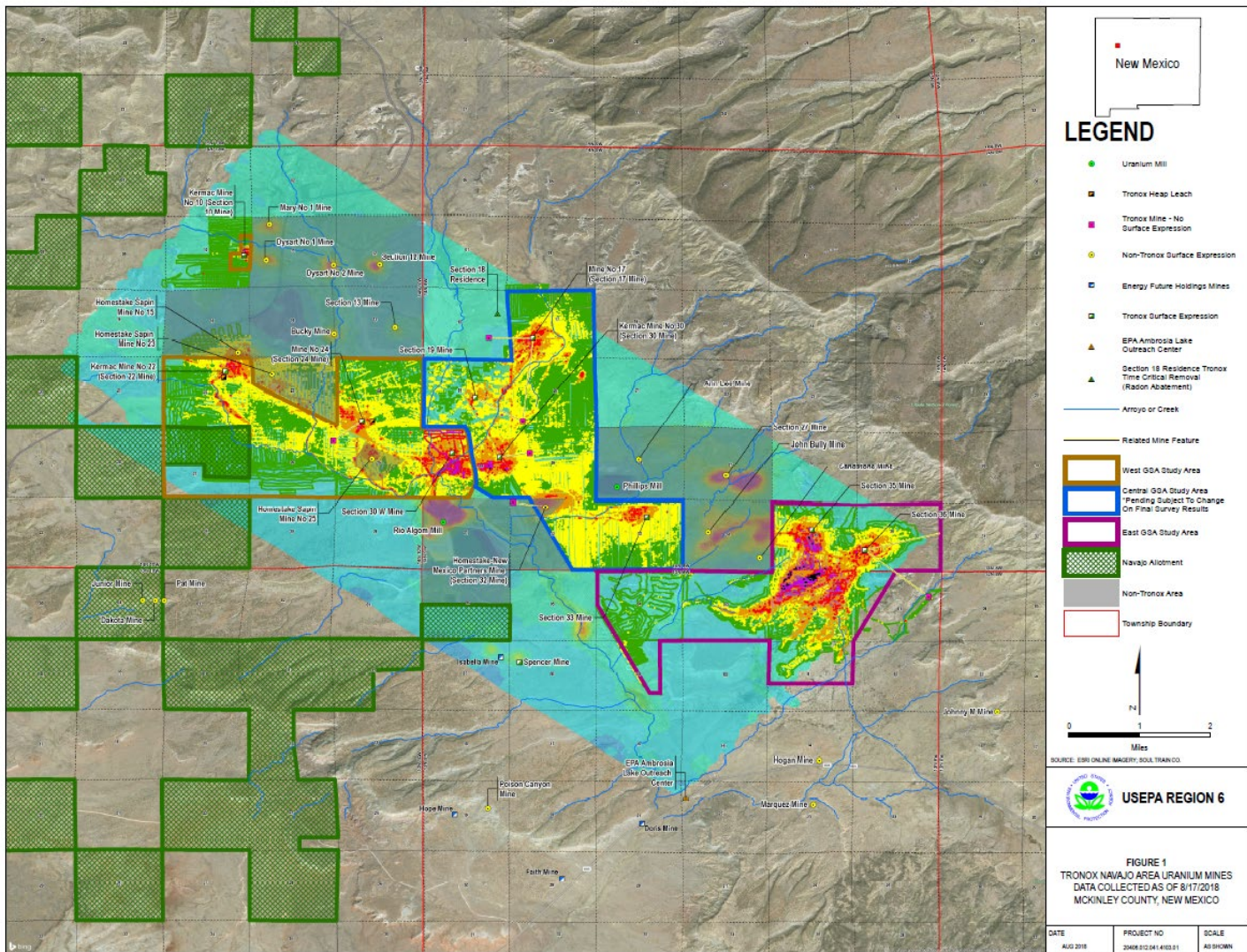


San Mateo Creek Basin Study Areas





West Study Area, Tronox Surface Investigation



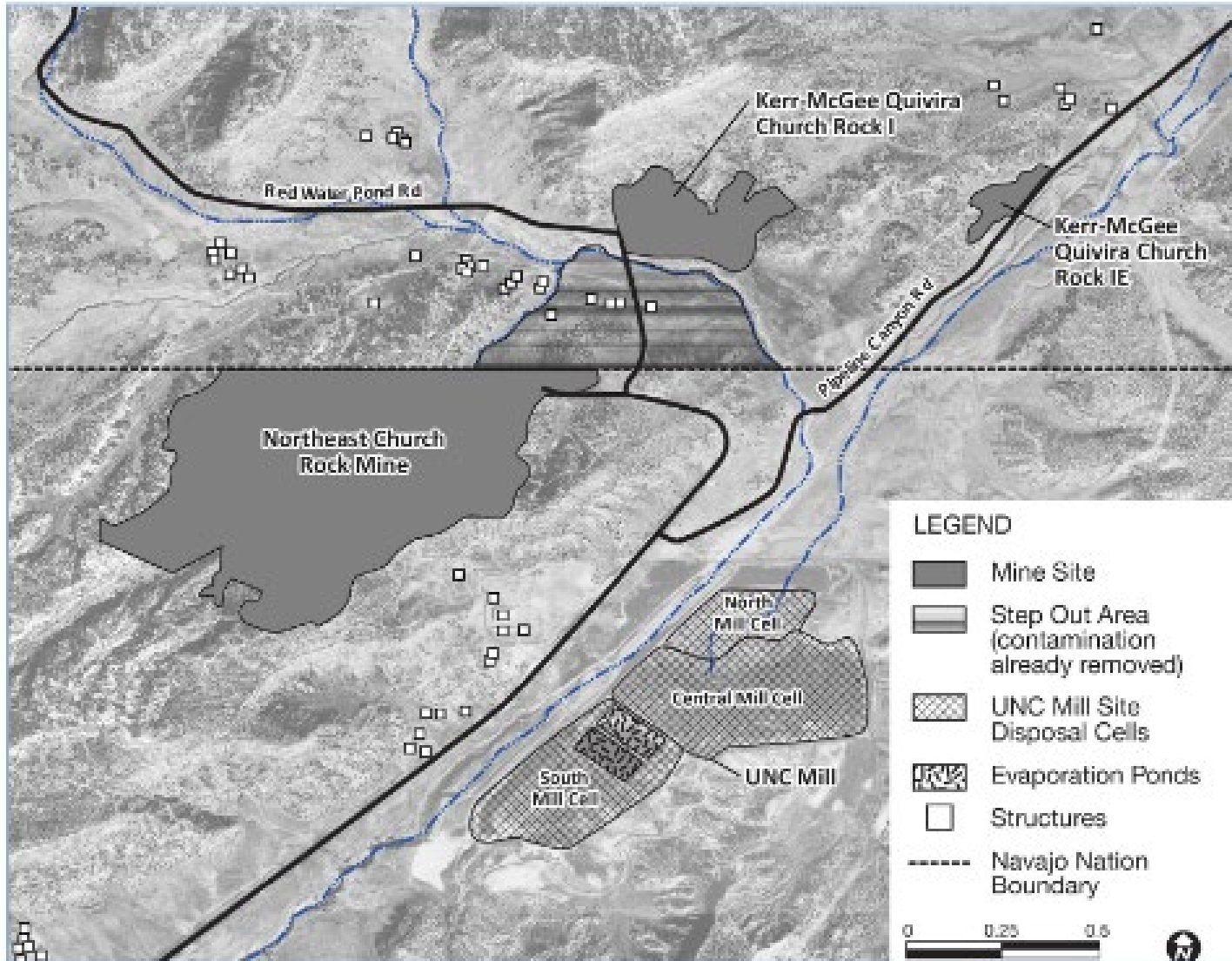


Church Rock Area

- Northeast Church Rock Mine (operated 1967-1982)
 - ▣ Responsible Party – United Nuclear Corp. (UNC)
 - ▣ Superfund Site: Lead is EPA Region 9 (San Francisco) in consultation with EPA Region 6 (Dallas)
 - ▣ NMED and Navajo Nation review and comment
- UNC Church Rock Uranium Mill
 - ▣ Superfund Site: Nuclear Regulatory Commission (NRC) and EPA Region 6 Lead
 - ▣ NRC License
 - ▣ NMED and Navajo Nation review and comment
 - ▣ NEPA process for proposed NRC license amendment is underway
- Quivira Mine Waste
 - ▣ Lead for cleanup is EPA Region 9 in consultation with EPA Region 6
 - ▣ NMED and Navajo Nation review and comment
 - ▣ Tronox Settlement funding
 - ▣ EPA report due end of 2021 to inform future decisions to select disposal alternative



Church Rock Area Mines and Mill





Current Regulatory Activity (Church Rock)

- Draft Environmental Impact Statement (DEIS) for NRC license amendment published October 2020
- Comment period initially closed May 27, 2021, and NRC reopened it on June 17, 2021; new comment deadline is October 31, 2021
- NRC project website is <https://www.nrc.gov/info-finder/decommissioning/uranium/united-nuclear-corporation.html>
- NMED comment letter available at <https://www.env.nm.gov/wp-content/uploads/2020/05/2021-05-26-NMED-Comments-on-NRC-DEIS-for-Northeast-Church-Rock-Final.pdf>

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