



# **Tronox Navajo Area Uranium Mines & Quivira Mine Site FY2024 FINANCIAL REPORT**



U.S. Environmental Protection Agency Region 9  
June 2025



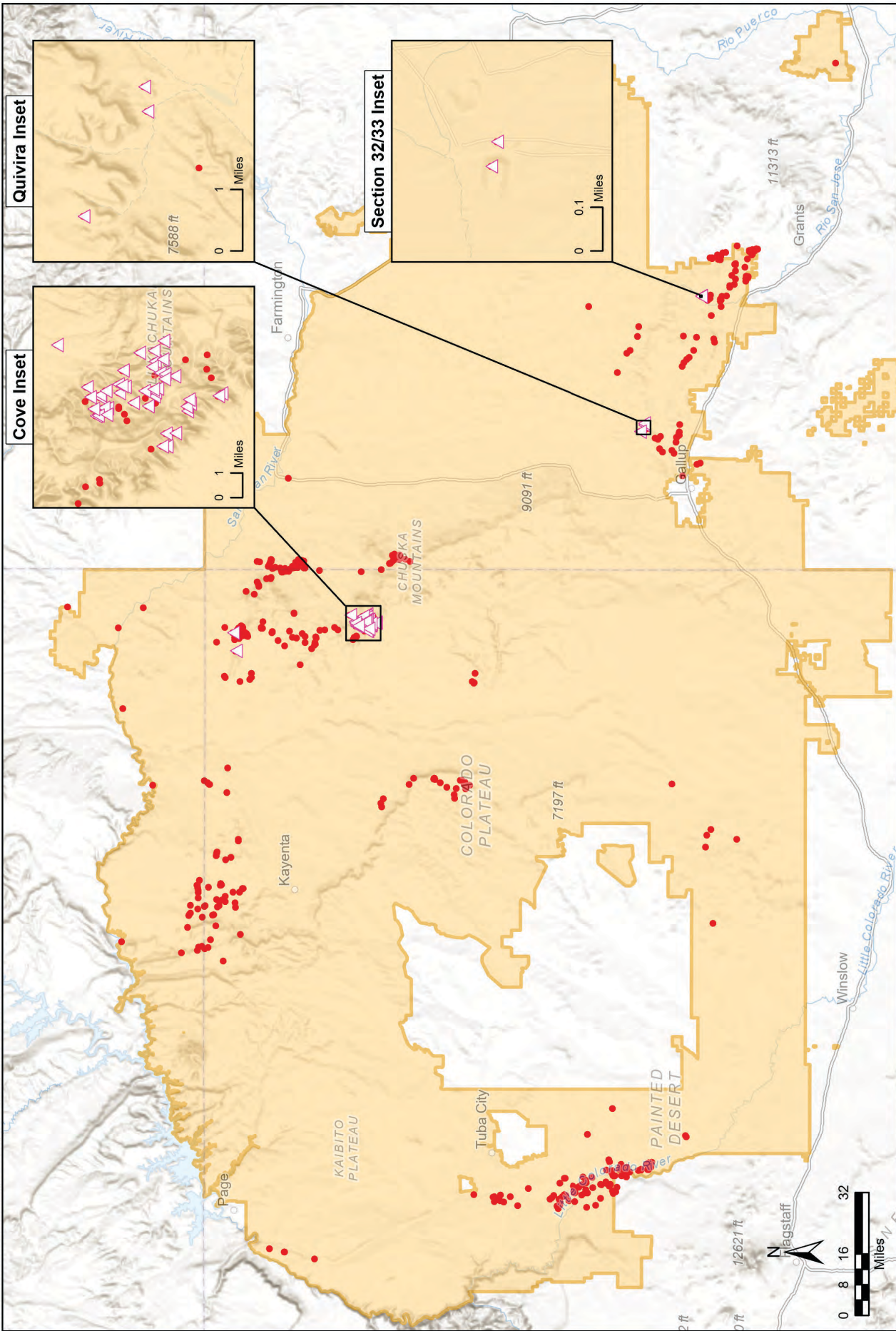
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## Common Acronyms used In Report

AUM	Abandoned Uranium Mines
BIA/BIE	Bureau of Indian Affairs/Bureau of Indian Education
CIC	Community Involvement Coordinator (US EPA)
CIP	Community Involvement Plan
CTS	Cove Transfer Station
EE/CA	Engineering Evaluation/Cost Analysis
FY	Fiscal Year
LMMD	Lukachukai Mountains Mining District
NAMLRD	Navajo Abandoned Mine Land Reclamation Department
NAUM	Navajo Area Uranium Mines
NPL	National Priority List
NNEPA	Navajo Nation Environmental Protection Agency
NN	Navajo Nation
RPM	Remedial Project Manager
RSE	Removal Site Evaluation
TCRA	Time Critical Removal Action
ULO	Unliquidated Obligation
US EPA	United States Environmental Protection Agency





- △ Tronox Abandoned Uranium Mines
- Abandoned Uranium Mines
- Navajo Nation Boundary

## Tronox Mines - EPA Region 9



# 1.0

## Tronox Settlement Background

### Background

On January 21, 2015, the Tronox settlement agreement, resolving fraudulent conveyance claims against Kerr-McGee Corporation and related subsidiaries of Anadarko Petroleum Corporation, went into effect. Pursuant to the settlement agreement, Anadarko paid \$5.15 billion plus interest to a litigation trust.

#### ***As a result of the Tronox settlement:***

- US EPA received a distribution of 20% (~\$917 million) for the cleanup of 55 uranium mines that were operated, and subsequently abandoned, by Kerr McGee Corporation in and near the Navajo Nation territory;
- US EPA also received a distribution of ~\$92 million for the cleanup of Quivira Mine site (Quivira); and
- Navajo Nation received a distribution of ~\$45 million in connection with the Shiprock Uranium Mill site.

From the late 1940s to the 1980s, Kerr-McGee Corporation mined more than seven million tons of uranium ore on or near the Navajo Nation. Fifty-five mines are being addressed, 35 in Region 9, on the Navajo Nation and 20 in Region 6, outside the Navajo Nation in New Mexico. The Region 9 mines are located in the Casamero Lake, Cove, Coyote Canyon, Lukachukai, Pinedale, Standing Rock, and Tse Tah areas.

US EPA Tronox funds are available to support activities related to the assessment and cleanup of the 55 Tronox settlement mines and contamination caused by the mines. Examples of these activities include:

- Informing and involving the community about cleanup activities
- Investigating hazardous substances levels in water, soil, sediment, and indoor air
- Implementing land use controls such as fences and signs to warn people about dangerous areas
- Protecting cultural and biological resources in the mine areas
- Construction, repair, and maintain roads to the mines for investigation and cleanup operations.
- Conducting removal or remedial actions to protect human health and the environment.



 Road repair along IR-33



## 2.0 US EPA Tronox Settlement



 August 2024 Health and Safety Meeting with Guest Speaker, Mr. Arnold Clifford

The approximately \$1 billion that US EPA received for the cleanup at Quivira and the 55 Tronox Navajo Area Uranium Mines (NAUMs) has been deposited into US EPA Superfund Special Accounts. Consistent with Section 122(b)(3) of CERCLA, the Agency established these special accounts to receive funds, as provided for in the Tronox Settlement Agreements which became final in 2011 and 2015. Special accounts are site-specific, interest-bearing sub-accounts housed within US EPA's Hazardous Substances Superfund (Superfund Trust Fund). Charges to a special account must be consistent with the terms of the settlement pursuant to which the funds are received.

In response to a US EPA Office of Inspector General report, Region 6 and Region 9 identified several corrective measures to complete prioritization and resource allocation for the Tronox NAUM sites, one of which was the development of an allocation strategy. The strategy was presented to senior US EPA management, stakeholder representatives (Navajo Nation EPA, Navajo Nation Department of Justice, New Mexico Environment Department, and

New Mexico Mining and Minerals Department) for discussion and input, followed by a comment period in which US EPA provided responses. US EPA also initiated government-to-government consultation with the Navajo Nation Office of President and Vice President. On March 22, 2022, the unspent Tronox funds at that time (approximately \$925 million) were allocated between the two lead US EPA Regions - \$620 million to Region 9's 34 sites and \$305 million to Region 6's 20 sites. While previous financial reports contained information regarding funds spent at both Region 6 and Region 9 sites, this report provides specific information regarding funds spent at Region 9 sites only.

## US EPA Tronox Settlement Financial Expenditure Breakout

To prioritize response actions and approve funding for individual projects, US EPA memorializes an annual “Approval and Annual Funding Projections for Implementation of Tronox Settlement Memo.” Once projects are approved, a special account name/number is assigned for that project to track expenditures. Table 2.1 on page 8 summarizes approved Tronox projects to be undertaken by Region 9 by special account name, budget, expenditures, and balance. These expenditures are further broken out into the following expenditure categories.

**Payroll:** US EPA costs associated with assessment and cleanup of the mine/mine areas including US EPA field staff, administrative, technical support, legal, contracting and management.

**Travel:** Travel costs associated with the management, assessment, and cleanup of the mine/mine areas specified in the Tronox settlement.

**Contracts:** Contracting costs associated with the assessment and cleanup of the mine/mine areas specified in the Tronox settlement.

**Expenses:** Expense costs for equipment, property, supplies, and materials associated with the assessment and cleanup of the mine/mine areas specified in the Tronox settlement.

**Grants:** Grants associated with the management, assessment and cleanup of the mine/mine areas specified in the Tronox settlement.

**Interagency Agreements:** US EPA has entered into interagency technical services agreements with US Army Corps of Engineers and US Geological Survey to support work on mine/mine areas specified in the Tronox settlement.

Table 2.2 on page 9 is a graphical representation of Tronox expenditures by category.



 Work being conducted on Mesa V where CTS material is being preparing to be beneficially reused

## Accounting Line Active Project Names/Descriptions

Names	Descriptions
<b>US EPA Region 9</b>	
<b>Tronox NAUM Sections 32 and 33</b>	Former joint project between Region 6 and 9 to assess the Sections 32/33 Tronox mines in the Smith Lake sub-district in the Casamero Lake area and to complete an RSE and EE/CA. As part of the 2022 allocation discussed above, US EPA determined that Region 9 would take the lead on both Section 32 and 33 mines.
<b>Tronox Abandoned Uranium Mines on the Navajo Nation (2011-2015)</b>	Tronox NAUM activities (2011 – 2015) prior to the 2015 settlement, including quarterly meetings with Navajo Nation EPA; settlement implementation, planning, accounting and contracting strategy; community involvement; Tronox portal development; Northern Agency ASPECT data collection; and grants.
<b>Tronox NAUM Cove Transfer Station</b>	Construction activities to remove waste material, conduct radiological soil sorting, and mitigate surface erosion at the former transfer station in the Cove Chapter of the Navajo Nation, Arizona.
<b>Tronox NAUM Mesa I Mine</b>	Mesa Mine I Preliminary Site Assessment has been conducted to determine whether further remedial action is necessary. An RSE was conducted in FY2018.
<b>Tronox NAUM</b>	Activities included quarterly meetings with Navajo Nation; settlement records review; settlement implementation planning; Navajo Nation mines portal database; Northern Agency ASPECT gamma survey; annual quarterly reports; Tronox Northern Agency RSEs; Tronox Northern Agency EE/CAs; Cove Mesa V main access road improvement/design; Cove Mine access assessment; Northern Agency cultural resources survey; community involvement; and Navajo Nation grants.
<b>Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps</b>	Assimilate information from previous studies and actions of the site; research, gather and analyze other existing data and documents that could be used to develop the conceptual site model; break the site out into investigation areas based on known information; provide pictorial representations of the site; depict exposure pathways and receptors; provide recommendations for paths forward for each of the investigation areas; and, suggest general areas for data gap investigations.
<b>Tronox NAUM Quivira Mines</b>	Activities at the Quivira Mines include: finalizing the Engineering Evaluation/Cost Analysis in March 2024 and holding a 60-day public comment period.
<b>Tronox NAUM Cove Area Air Study</b>	Activities include sampling station construction, site restoration, and funding a year-long grant to allow Navajo Nation EPA staff to retrieve field samples.
<b>Tronox NAUM Mesa II Mine</b>	Activities include a time critical removal action (TCRA), sampling support and EE/CA. The TCRA was to repair the erosion of the burial cell and reestablish a functional drainage channel to avoid further erosion of the burial cell. Air monitoring and soil screening was conducted during the removal action to provide sampling support and ensure that work practices and dust suppression methods used during the TCRA prevented the off-site migration of dust with radionuclides.
<b>Tronox NAUM Mesa V Mine</b>	Activities at the Mesa V Mine include the EE/CA, and a removal action at the Mesa V Haul Shaft and a radon study, discussing the removal options with Navajo Nation, community members, and other stakeholders.



## Table 2.1: Tronox Region 9 Approved Projects, Budgets, and Expenditures

The table below represents the budgets, unliquidated obligations (ULOs), actual (paid) expenditures, and the remaining balances for each special account. For the purpose of this report, ULOs are not calculated into the remaining balance, only actual (paid) expenditures.

Special Account Names	Total Budget	ULOs	Total Expenditures	Remaining Balance
<b>US EPA Region 9</b>				
Tronox Quivira Mines (formerly NE Churchrock Quivira)**	\$102.9M	\$2.3M	\$15.3M	\$87.6M
Cove Transfer Station - Tronox*	\$30.1M	\$5.2M	\$28.9M	\$1.2M
Section 32 AUM Site - Tronox	\$3.1M	\$614.4K	\$2.7M	\$429.0K
Section 33 AUM Site - Tronox	\$1.1M	\$0.00	\$364.8K	\$758.9K
Tronox NAUM Cove Wash Regional Assessment*‡	\$4.2M	\$23.4K	\$3.4M	\$888.1K
Tronox Navajo Area Uranium Mines	\$657.9M	\$13.9M	\$60.3M	\$597.6M
Tronox NAUM Cove Sitewide Conceptual Model & Data Gaps*‡	\$2.1M	\$10.7K	\$1.9M	\$257.3K
<b>Total All Special Accounts</b>	<b>\$801.4M</b>	<b>\$22.2M</b>	<b>\$112.9M</b>	<b>\$688.7M</b>

*K = Thousand, M = Million*

*\*Reports generated by US EPA's Compass Business Objects Reporting system. The information above is for informational purposes only. Special Account Summaries provide final cost figures.*

*\*\*Funds utilized for Quivira only.*

*‡ Designated accounts will not appear on subsequent annual reports.*



 AMRCS Contractor site visit to Mesa V on-bench area



## Table 2.2: Tronox Region 9 Approved Expenditures

An overview of the approved projects and activities associated with these expenditures is located in Section 3.

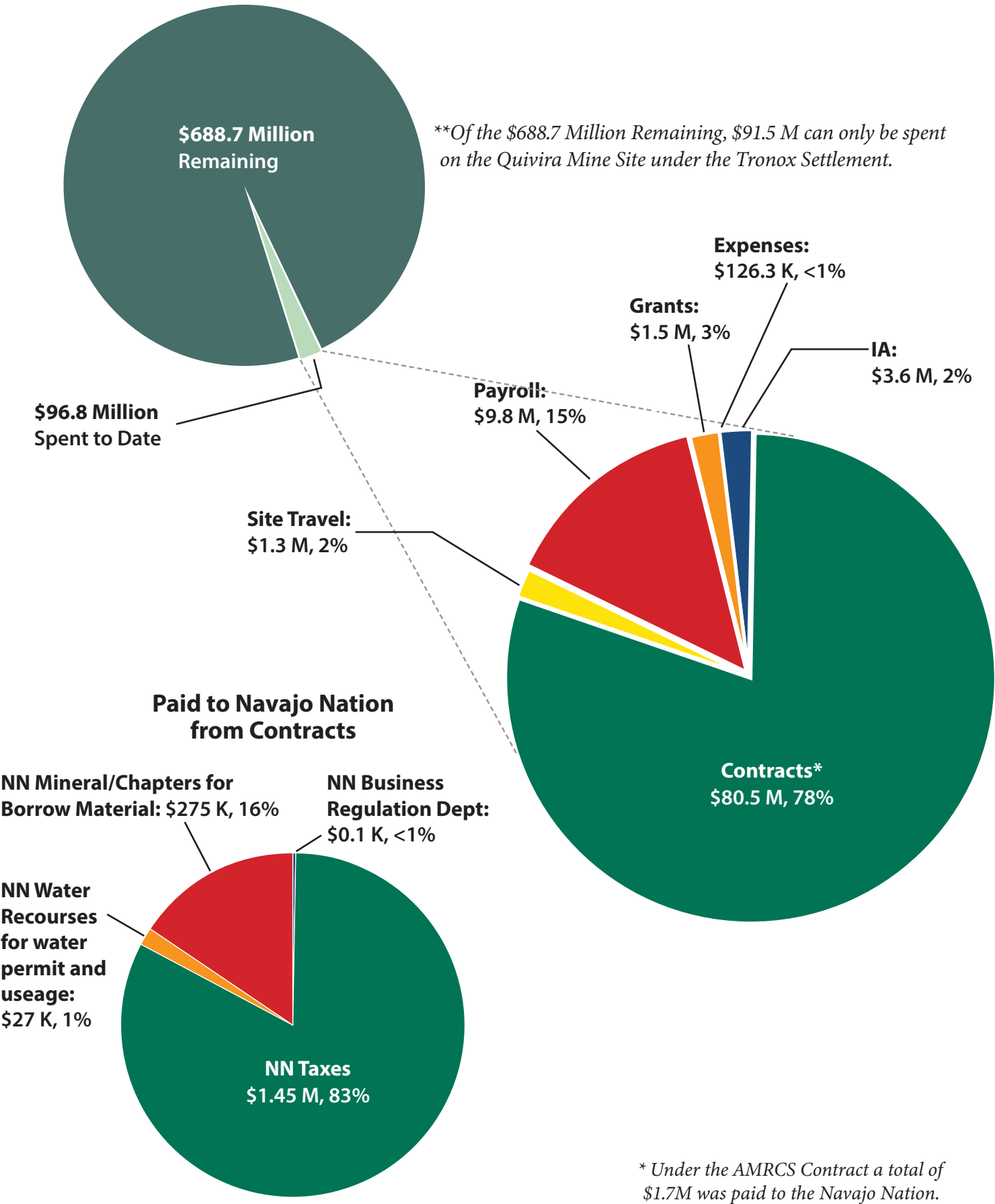
### Special Account Summary\*

Special Account Names	Contracts	IA	Expenses	Grants	Payroll	Site Travel	Total Spent
US EPA Region 9							
Abandoned Uranium Mines on the Navajo Nation	\$1.8M	--	\$6.0K	\$115.4K	\$1.2M	\$114.9K	\$3.2M
Tronox Quivira Mines (formerly NE Churchrock Quivira)	\$11.3M	\$260.2K	\$3.6K	\$106.9K	\$1.2M	\$177.7K	\$13.0M
Cove Transfer Station - Tronox ‡	\$23.5M	-\$0.1K	\$69.6	\$3.8K	\$78.0K	\$33.0K	\$23.7M
Mesa I Mines - Tronox ‡	\$0.0K	--	--	--	\$7.4K	\$2.0K	\$9.4K
Section 32 AUM Site - Tronox	\$1.9M	--	\$0.2K	\$22.1K	\$191.0K	\$14.8K	\$2.1M
Section 33 AUM Site - Tronox	\$347.9K	--	--	--	\$13.9K	\$3.0K	\$364.8K
Tronox NAUM Cove Wash Regional Assessment ‡	\$2.0M	--	\$3.3K	\$486.1K	\$708.0K	\$123.2K	\$3.3M
Tronox NAUM	\$36.3M	\$2.8M	\$112.8K	\$163.8K	\$6.2M	\$772.4K	\$46.4M
Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps ‡	\$627.2K	\$600.0K	--	\$486.8K	\$131.2K	\$19.4K	\$1.9M
Tronox NAUM Mesa II ‡	\$1.6M	--	--	--	\$41.9K	\$15.6K	\$1.6M
Tronox NAUM Mesa V ‡	\$209.6K	--	\$0.3K	\$110.8K	\$35.1K	--	\$355.8K
Tronox NAUM San Mateo Creek Basin ‡	--	--	--	--	\$8.6K	--	\$8.6K
Tronox NAUM Cove Mesa I Mines ‡	\$251.5K	--	--	--	--	--	\$251.5K
Tronox NAUM Cove Mesa III Mines ‡	\$41.9K	--	--	--	--	--	\$41.9K
Tronox NAUM Cove Mesa IV Mines ‡	\$167.7K	--	--	--	--	--	\$167.7K
Tronox NAUM Cove Mesa VI Mines ‡	\$41.9K	--	--	--	\$0.5K	--	\$42.4K
Tronox NAUM Brodie I Mine ‡	\$41.9K	--	--	--	--	--	\$41.9K
Tronox NAUM Block K Mine ‡	\$41.9K	--	--	--	--	--	\$41.9K
Tronox NAUM Step Mesa ‡	\$83.8K	--	--	--	--	--	\$83.8K
Tronox NAUM Flag Mesa ‡	\$167.7K	--	--	--	--	--	\$167.7K
Tronox NAUM Knife Edge ‡	\$41.9K	--	--	--	--	--	\$41.9K
Total	\$80.5M	\$3.6M	\$126.3K	\$1.5M	\$9.8M	\$1.3M	\$96.8M

\*US EPA reporting adjusted to reflect actual expenditures; Unliquidated Obligations (ULOs) or commitments to projects without spending will no longer be reported on this table. Discrepancies may be noted between figures between Tables 2.1 and 2.2 due to ULOs and US EPA's Special Account Summary packages due to the posting date of invoices paid. Indirect Costs are not displayed above.

‡US EPA transferred funds in special accounts designated with a "‡" to the remaining special accounts. This will allow US EPA to prioritize funds for use at sites where cleanup is anticipated in the near term.

Region 9 Total Expenditure Breakout by Cost Category





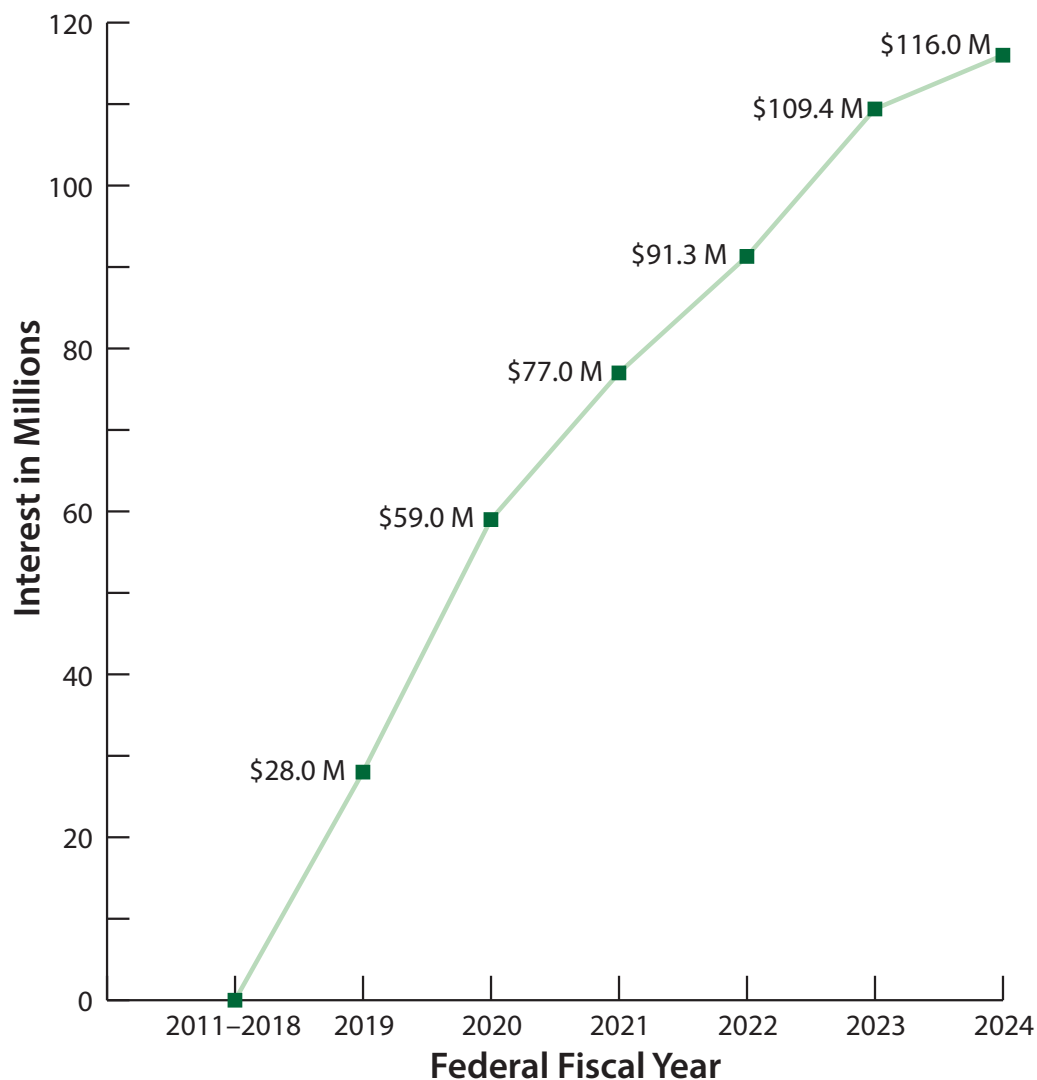
## Interest Earned on Tronox Special Accounts

Special accounts are funded entirely with money received from potentially responsible parties (PRPs). US EPA retains money received through settlements with PRPs in these site-specific accounts to conduct planned future cleanup work at the site based on the terms of the settlement agreement.

### Accumulated Interest through Each Period

Tronox Accounts Interest Earned (In Millions)

Fiscal Year	Rate
2024	3.46%
2023	3.01%
2022	0.10%
2021	0.10%
2020	2.22%
2019	1.75%
2018	0.87%
2017	0.70%
2016	0.67%
2015	0.75%
2014	0.81%
2013	0.78%
2012	0.74%
2011	0.69%



## Special Accounts Management

Special accounts for the Tronox NAUMs are managed and used consistent with national special account policy and guidance. Information about national special account policy, guidance, and management can be found on US EPA's Superfund Special Accounts webpage at [epa.gov/enforcement/superfund-special-accounts](https://epa.gov/enforcement/superfund-special-accounts).

Funds maintained in the Hazardous Substance Superfund Trust Fund are invested by the Treasury in U.S. market based securities. Treasury's Bureau of Fiscal Services uses the yield to maturity effective at the time of purchase of these securities to calculate the Superfund interest rate each fiscal year. Interest is accrued and available in each account based on the account's available balance. Interest accrued is kept in the special account on which it is earned.

## Contracting Vehicles

Since the Tronox settlement in 2011, US EPA has been utilizing new and existing contracts to conduct cleanup activities, which allowed the Agency to expeditiously achieve our goal of protecting human health and the environment on the Navajo Nation. These contracts include:

- **Arrow Indian Contractors:** A Navajo-owned company under Section 8(a) of the Small Business Act was awarded a \$4 million dollar contract to perform a time critical removal action of contaminated soils near ventilation shafts and repair a bridge at the Quivira Mine.
- **START Contract:** Superfund Technical Assessment and Response Team – provides scientific/technical support for assessing chemical, biological, and radiological contamination as well as site assessment and remedial support activities.
- **ERRS Contract:** Emergency and Rapid Response Services – provides management, field personnel, and equipment resources to execute decontamination and demolition and removal services.
- **RAC:** Remedial Action Contract – provides remedial response, enforcement oversight, non-time critical removal activities, engineering support, and assessment services.
- **TASC Contract:** Technical Assistance Services for Communities – to help communities better understand the science, regulations and policies of environmental issues.
- **RAES Contract:** The Response, Assessment and Evaluation Services \$85 million capacity contract was awarded on October 11, 2017 to Tetra Tech, and the scope of work includes site assessment of the abandoned uranium mines.
- **RAES II Contract:** The second Response, Assessment and Evaluation Services \$65 million capacity contract was awarded on May 30, 2023 to Tetra Tech, and will be used to address risks to public health and the environment from former mines on Navajo land.
- **AMRCS:** The Abandoned Mine Response and Construction Services contract(s) was awarded February 11, 2021 for cleanup efforts at more than 50 abandoned uranium mine sites in and around the Navajo Nation, for up to \$220 million over the next five years. In addition to the funds from the Tronox settlement, US EPA and Navajo Nation have secured funding agreements, through enforcement agreements and other legal settlements, for the assessment and cleanup of approximately 200 abandoned uranium mine sites on the Navajo Nation. The contracts were awarded to Red Rock Remediation Joint Venture, Environmental Quality Management Inc. and Arrowhead Contracting Inc. Each company will develop training programs for Navajo individuals and businesses to promote professional growth in areas related to the AMRCS contract. Workforce training may cover radiological contamination, health and safety, construction and road building. In addition, the contracts require the selectees to provide quarterly reports to the US EPA, Navajo Nation, and the public on cleanup progress, training, and Navajo job and business opportunities.
- **Clawson Excavating:** Clawson Excavating: a Navajo-Woman owned/ Small Business was awarded a \$1 million contract to complete mine access and road upgrades for the mine sites in the Cove Chapter and performed a TCRA at Mesa II.



 Road maintenance along Mesa

US EPA Region 9's contracts direct that best efforts shall be used to give Native American organizations and Native American-owned economic enterprises the opportunity to participate in subcontract awards. RAES II and AMRCS specifically acknowledges the Navajo employment goals and reports progress in reporting on those goals.



## Approved Grant Expenditures

US EPA provides grant funding to agencies in support of community interests and to fund partner agencies' activities that support the assessment and cleanup of Tronox NAUMs. Funding has been provided to the Navajo Nation, the State of New Mexico and Diné College. The purposes and levels of the funding are outlined below.

**Navajo Nation EPA** Over \$6.0 million has been provided to support technical review of remediation plans and final cleanup options, community involvement activities including coordination for community meetings, distribution of information, and collecting environmental samples.

**Navajo Nation Abandoned Mines Lands Dept.** \$1.25M\* has been provided for on-site construction activities and technical review of proposed remediation strategies. This grant ended in October 2024.

**Diné College** Funding in the amount of \$809,000 supported studies of uranium effects on livestock and the Cove watershed. As part of these studies, Diné summer interns collected data and helped investigate potential mine impacts in the larger Cove watershed. This grant ended in July 22, 2022.



 USEPA Remedial Project Managers conducting site visit in LMMD in May 2024



 Road Improvements and widening along Mesa I access road

\*This grant total expenditure is corrected from past fiscal year financial reports.

## 3.0 NAUM Approved Project Descriptions

### REGION 9

#### Tronox

##### ***Conducted Weekly Meetings with Navajo Nation EPA (NNEPA)***

US EPA and NNEPA staff met weekly to discuss planning, field activities, and document development and review.

##### ***Community Meetings***

US EPA attended monthly Cove Chapter meetings to update the community on the current activities at Cove Transfer Station and US EPA investigations within the Lukachukai Mountains. While construction was occurring as part of the Cove Transfer Station (CTS) Time Critical Removal Action (TCRA), a US EPA Remedial Project Manager kept office hours at the Cove Chapter House to address any concerns from the community. US EPA also participated in monthly meetings with Red Water Pond Road and Pipeline Road communities surrounding the Quivira Mines site.

##### ***Cove Day School***

US EPA has been committed in assisting the Bureau of Indian Affairs (BIA) and the Bureau of Indian Education (BIE) in the investigation, demolition and rebuilding of the Cove Day School over the last several years. In April 2024, US EPA along with its technical contractor, Tetra Tech, and construction contractor, Arrowhead, investigated and excavated select points of interest on the school grounds that were identified in a March 2024 report prepared for BIA. US EPA completed a Cove Day School Technical Memorandum on October 28, 2024, that confirmed the excavated and surrounding areas met release criteria. US EPA is collaborating monthly with BIA, BIE, and NNEPA to ensure their phased demolition meets release criteria and a new school is built in the next few years.

##### ***Supplemental Investigations***

In June 2023, US EPA began site scoping and supplemental investigation/characterization field work at the Simpson Complex, Mesa VI Complex,

Frank Jr. Complex, and Mesa I, West Complex. US EPA will compile information collected into data transmittal reports, which will be incorporated into Engineering Evaluation/Cost Analyses (EE/CAs) and will support planning for Time Critical and Non- Time Critical Removal Actions at the sites.

##### ***Time Critical Removal Action at the Cove Transfer Station***

US EPA continued work on the Cove Transfer Station TCRA, including road maintenance and repairs, excavation of material from the Cove Day School and CTS 1, and excavation and transport of material from CTS 2 to Mesa V where the material is temporarily stored to be used for beneficial reuse on mine-scarred lands as part of the Mesa V TCRA. Additionally, surface water retaining structures at CTS 1 and along Indian Route 33 were installed along with surface water best management practices at Orchard Road, CTS 2, and Mesa V. Significant restoration at CTS 1 was conducted.

##### ***Lukachukai Mountains Mining District Site Added to National Priorities List***

On March 5th, 2024, US EPA added the Lukachukai Mountains Mining District (LMMD) to the National Priorities List (NPL). The LMMD is located primarily in the Cove, Lukachukai, and Round Rock Chapters of the Navajo Nation in northeastern Arizona. The site includes approximately 88 mine areas and over a hundred mine waste piles from former uranium and vanadium mining. The Cove Chapter Tronox mines are included in the LMMD site. Contaminants of concern from these waste piles include radium-226, uranium, and other heavy metals.

The NPL serves as the basis for prioritizing US EPA Superfund cleanup funding and enforcement actions. Releases at non-federal NPL sites are eligible to receive federal funding for long-term, permanent cleanup.

Funding for the NPL site will supplement funding from the Tronox and Cyprus Amax settlements and



will be used to address releases from mines and other contaminated media without a funding source. The listing also will allow US EPA to address potential releases to drainages and ground water and for site wide investigations/actions.

On March 15, 2024, US EPA Region 9 Tribal Lands Cleanup Section held a media event at the Cove Chapter house to formally recognize the LMMD NPL listing. US EPA regional and headquarters officials, tribal leaders, and agencies, and seven media outlets attended.

**EE/CA Alternatives Presentation**

On March 8th, 2024, US EPA remedial project managers presented the preliminary Engineering Evaluation/Cost Analysis (EE/CA) cleanup alternatives to the Cove community for the 31 abandoned uranium mines covered under the Tronox settlement. US EPA presented an overview of the geology of the Lukachukai Mountains, site conditions and characteristics, removal action objectives, a risk assessment overview, and the five potential cleanup alternatives.

An overview animation for each of the five cleanup alternatives was presented to the community in Navajo with English subtitles. US EPA remedial project managers then presented, in both Navajo and English, an in-depth analysis of the cleanup alternatives including each alternative's effectiveness, implementability, and cost. Finally, US EPA and NNEPA presented next steps and answered questions from the community.

**Supplemental Investigations**

From April 2024 through October 2024, US EPA conducted scoping and characterization supplemental investigation field work at seven mining complexes which includes 17 mines. The information collected will be compiled into data transmittal reports, incorporated into the EE/CAs for the sites, and support planning for removal actions.

**Presentation and Interviews for Community Involvement Plan**

On August 21 and 22, 2024, US EPA held open houses at the Lukachukai and Cove Chapter houses to discuss the LMMD NPL site and to gather input

from community members into the development of a community involvement plan (CIP). Community members from the Cove, Lukachukai, and Round Rock Chapters attended the two meetings. Remedial project managers Kenyon Larsen and Gilbert Dayzie and community involvement coordinator Elsa Johnson presented information about the NPL site, the CIP process, and the geology of the Lukachukai Mountains. Following the presentations, community members were interviewed to inform and improve US EPA development of the CIP.

**Road Repairs with LMMD**

Road Repairs with Tronox Funding	
10/2023 - 11/2023	Two major road repairs were conducted on BIA Road N-33 with BIA.
04/2024 - 05/2024	Lower Mesa II Road Repairs
4/2024 - 5/2024	Mesa V to Mesa II and VI Road
4/2024 - 10/2024	Improve and widen Mesa I access road.
6/2024 - 6/2024	Major road repairs along N-33 near the Cove Chapter House and the bridge above the large culverts/wash to the northeast
7/2024	Mesa 1 1/2 Tree Removal
9/2024 - 10/2024	Mesa II Road Repairs

Road Repairs by the Superfund	
5/17/2024	Vegetation clearance activities and substantially completed road repairs to the Joleo Mine
5/28/2024	Road investigation visit to plan Camp Road Repairs
7/8/2024	Camp Road Repairs

**Mine Void Investigation**

US EPA conducted microgravity surveys to detect underground mine workings in the vicinity of the Mesa V, Simpson Mine, and Frank No.1 Mine complexes. The surveys provide geophysical imaging and near-surface void/geohazards characterization. The results of the surveys were used in conducting a targeted drilling investigation with borings and lidar scanning of open voids to confirm volumes. The results of the drilling investigation did not detect

open underground workings. Tetra Tech is currently reassessing the results of the microgravity surveys and comparing them to other data such as old ore mining reports. In addition, Tetra Tech is preparing geologic cross sections of Mesa I and Mesa V to assess the potential depth of mine uranium and assessing known working locations and adits. This information will be used along with the microgravity results to identify drilling locations at Mesa V in 2025.

### ***Slurry Mix Design Development***

US EPA tasked Tetra Tech with conducting a study to assess the feasibility of injecting mine waste slurry into underground mine workings as a potential disposal option. As part of the study, Tetra Tech will assess the feasibility of mixing mine waste with a binder, such as cement, to create a solidified slurry mix, and test the solidified slurry for parameters such as strength, permeability, and leachability. The results of the investigation will be used to plan and perform the slurry injection pilot study.

### ***Working with Navajo Nation Partners***

US EPA worked with six departments under Navajo Nation Division of Natural Resources. These departments are: the Navajo AML Reclamation Department, Navajo Forestry Department, Navajo Nation Department of Fish and Wildlife, Navajo Historic Preservation Department, Navajo Minerals Department, and Navajo Water Resources Department. These NDNR departments assisted US EPA by providing historic records of Navajo AUM sites, prior reclamation of AUMs information on the native vegetation, biological compliance, archeological historic preservation compliance, construction borrow materials, and construction water.

## **Section 32/33**

On March 24, 2024, US EPA, in coordination with Navajo EPA, issued the final EE/CA for the Section 32/33 Mines site, initiating a 60-day public comment period. US EPA held a public meeting at the University of New Mexico in Gallup on March 24, 2024, to present the contents of the EE/CA and to describe the recommended cleanup alternative for the Section 32/33 Mines site. The recommended

action is to remove all mine waste from the site and to transport it for final disposal at a new disposal cell to be permitted and constructed by the Northwest New Mexico Regional Solid Waste Authority at the Red Rocks Landfill.

## **Quivira**

In February 2024, US EPA completed erosion control and maintenance work on the CR-1 waste pile. The erosion control activities mitigated potential migration of waste pile cover material onto nearby Red Water Pond Road and prevented off-site migration surrounding the pile. A berm was placed around the top of the pile to prevent rainwater from eroding the top of the pile and diverted rainwater around the pile to an off-site retention pond prior to discharge to the nearby arroyo. The Red Water Pond Road bridge over the arroyo implemented many of the recommendations in a recent bridge inspection report. The work was conducted by the RAES 2 contractor and their subcontractors.

On March 24, 2024, US EPA in coordination with Navajo EPA issued the final EE/CA for the Quivira Mines site and held a public meeting on the University of New Mexico campus in Gallup, New Mexico. The EE/CA recommended removing the waste from the site and taking it to a newly permitted and constructed disposal cell at the Red Rocks Landfill for permanent disposal. The final EE/CA issuance and public meeting started a 60-day public comment period that ended on May 22, 2024. US EPA received over 60 public comments on the EE/CA, most of which were in support of the recommended action.

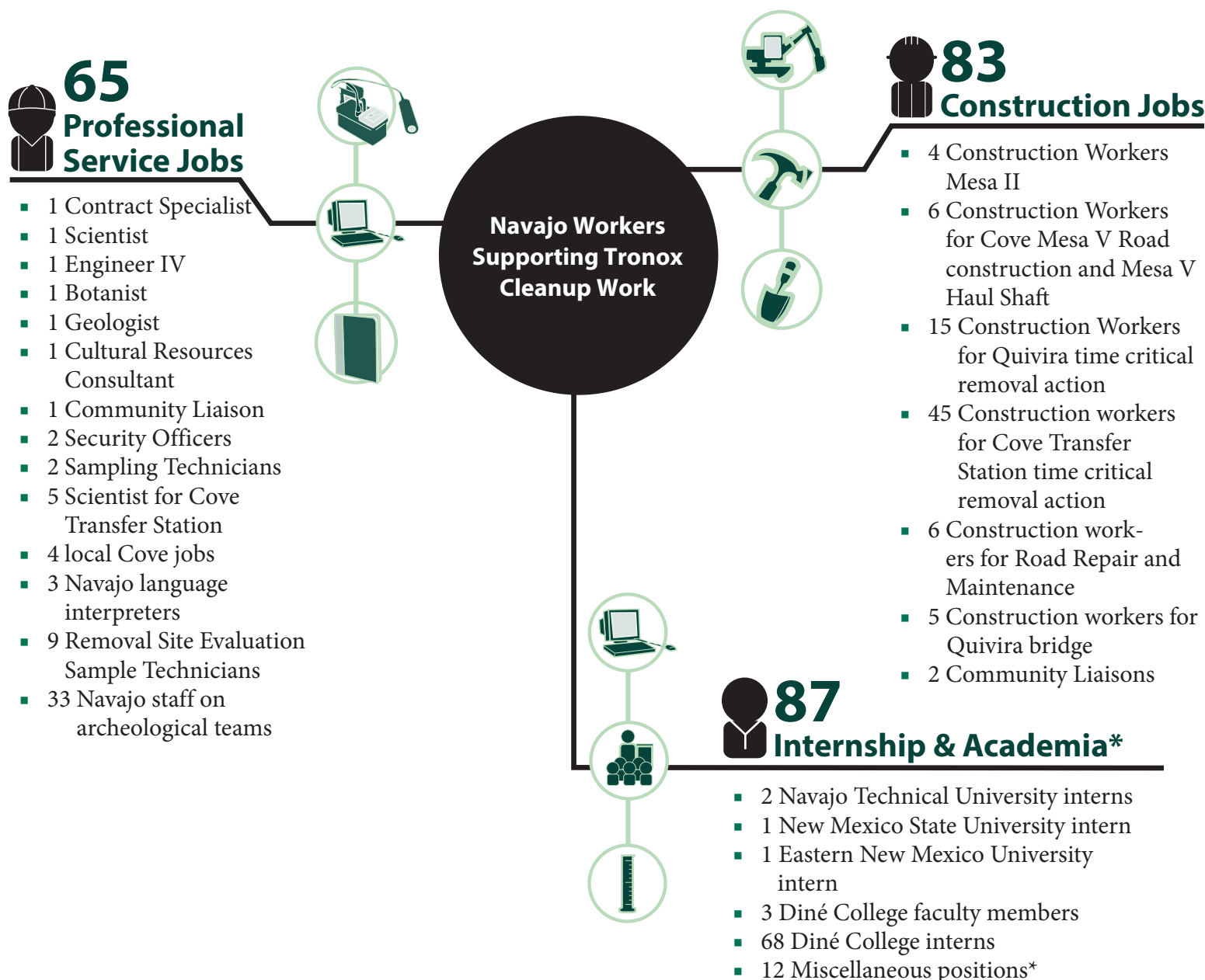
The final action memorandum for the Quivira Mines site was signed by US EPA's Office of Land and Emergency Management Principal Deputy Assistant Administrator, Barry Breen, on December 30, 2024. The action memorandum authorized funding for implementing the EE/CA's recommended action and a primary haul route.



## 4.0 FY2024 Navajo Workforce Development

Cleaning up abandoned uranium mines on the Navajo Nation creates jobs for Navajo workers and provides opportunities for Navajo businesses. The work is project specific and usually of a short duration. Some positions may be part-time, seasonal and/or limited to a specific project. These opportunities will increase as cleanup work at the mines accelerates. The following provides a summary of workers that have supported Tronox Mine Cleanup work:

### Tronox: Cumulative Total Summary Types of Jobs Created FY14 to Present



\*FY2024 total updated to correct calculation for 2014 – 2024



 Road improvements along Mesa I haul road in May 2024

## For More Information (US EPA Contacts)

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