



# **Tronox Navajo Area Uranium Mines FY2021 FINANCIAL REPORT**



U.S. Environmental Protection Agency  
September 2022



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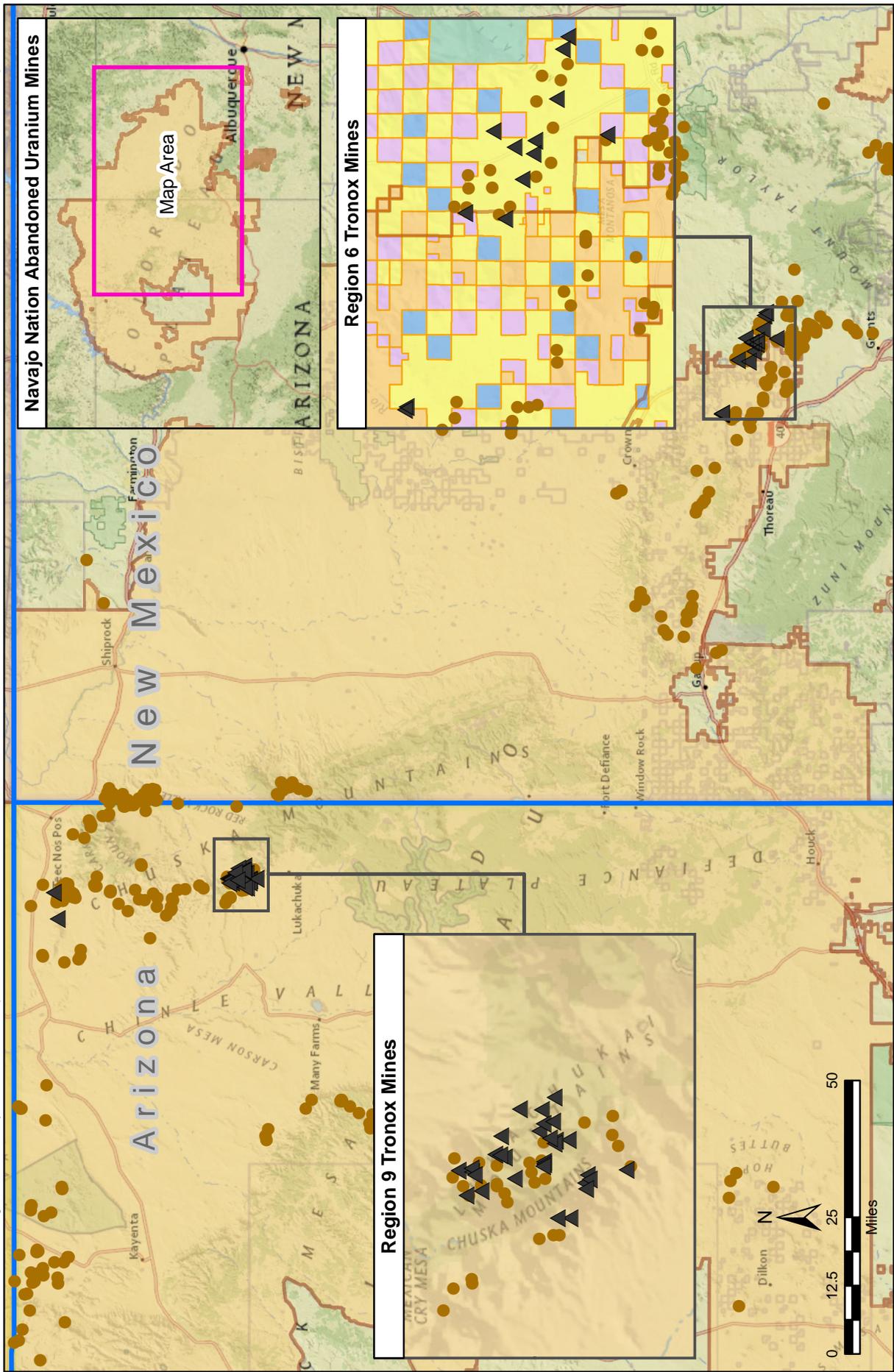
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### Common Acronyms used in Report

AUM	Abandoned Uranium Mines
BIA/BIE	Bureau of Indian Affairs/Bureau of Indian Education
CIC	Community Involvement Coordinator (US EPA)
EE/CA	Engineering Evaluation/Cost Analysis
GSA	Geographic Sub-Area
NAMLRD	Navajo Abandoned Mine Land Reclamation Department
NAUM	Navajo Area Uranium Mines
NNEPA	Navajo Nation Environmental Protection Agency
RSE	Removal Site Evaluation
TCRA	Time Critical Removal Action
US EPA	United States Environmental Protection Agency



Navajo Nation Abandoned Uranium Mines

Map Area

Region 6 Tronox Mines

Region 9 Tronox Mines



- Legend**
- Abandoned Uranium Mine
  - ▲ Tronox Abandoned Uranium Mine
  - EPA Region Boundary
  - ▭ Navajo Nation Boundary
  - Bureau of Land Management
  - Forest Service
  - Private Land
  - State Land
  - Tribal Land
- Abandoned Uranium Mines
- Tronox Mines - EPA Regions 6 and 9**

## 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 54 uranium mines that were operated, and subsequently abandoned, by Kerr-McGee in and near the Navajo Nation territory;
- US EPA also received a distribution of 2% (~\$92 million) for the cleanup of Quivira Mine Site; and
- Navajo Nation received a distribution of 1% (~\$45 million) in connection with the Shiprock Uranium Mill Site.

US EPA Tronox funds can be used to support activities related to the assessment and cleanup of the 54 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
- Constructing access roads to the mines for cleanup operations

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-four mines are being addressed, 34 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 Cove and Lukachukai areas and in Tse Tah. The Region 6 mines are located in Ambrosia Lake and Baca/Prewitt Chapters.

 Mt Taylor.



## 2.0

# US EPA Tronox Settlement Financial Expenditure Breakout

The approximately \$1 billion that US EPA received for the cleanup at Quirvia and the 54 Tronox Navajo Area Uranium Mines (NAUM) 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 2001 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.

To prioritize response actions and approve funding for individual projects, USEPA memorializes an annual "Approval and Annual Funding Projections for Implementation of Tronox Settlement Memo," that is provided to US EPA Region 6's Branch Chief, Assessment and Enforcement Branch, Superfund and Emergency Management Division (SEMD), for concurrence and then to the US EPA Region 9's Assistant Director, SEMD, for signature. Once projects are approved, a special account name/number is created for that project to track expenditures. Table 2.1 on page 7 summarizes approved Tronox projects 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 cost 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.

Figure 2.2 on page 8 is a graphical representation of Tronox Expenditures by Category.

## Accounting Line Active Project Names/Descriptions

Names	Descriptions
<b>Tronox NAUM (Region 6)</b>	Overall planning and logistical support for Removal activities and settlement implementation, including salary and travel, Phase II San Mateo Creek Basin groundwater study, and state grants.
<b>Tronox NAUM East GSA</b>	Assessment of Tronox mines in the eastern area of Ambrosia Lake to complete an RSE and Engineering Evaluation/Cost Analysis (EE/CA). Includes contracting, salary, and travel specific to this project.
<b>Tronox NAUM West GSA</b>	Assessment of Tronox mines in the western area of Ambrosia Lake to complete an RSE and EE/CA. Includes contracting, salary, and travel specific to this project.
<b>Tronox NAUM Central GSA</b>	Assessment of Tronox mines in the central area of Ambrosia Lake to complete an RSE and EE/CA. Includes contracting, salary, and travel specific to this project.
<b>Tronox NAUM S18 Mine Residential Removal</b>	A time critical radon abatement project for a residential structure adjacent to the Section 18 Tronox Mine in Ambrosia Lake. Includes contracting, salary, and travel specific to this project. Project was completed in FY18 Quarter 1.
<b>Tronox NAUM Section 10</b>	Assessment of the Section 10 Tronox mine in Ambrosia Lake to complete an RSE and EE/CA. Includes contracting, salary, and travel specific to this project.
<b>Tronox NAUM Sections 32 and 33</b>	A 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 to complete an RSE and EE/CA.
<b>Tronox Abandoned Uranium Mines on the Navajo Nation (2011-2015)</b>	Tronox NAUM activities (2011 – 2015) prior to the 2015 settlement included 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 mitigate surface erosion at the former transfer station located in the Cove Chapter of the Navajo Nation, in eastern Arizona.
<b>Tronox NAUM Mesa I Mine</b>	Mesa Mine I Preliminary Site Assessment has been conducted to determine risk to human health and the environment. 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: the Engineering Evaluation/Cost Analysis; and discuss the removal options with Navajo Nation, community members, and other stakeholders.
<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: NAUM Approved Projects, Budgets, and Expenditures

The chart below represents Budgets and Actual (paid) Expenditures. Each project has Unliquidated Obligations (ULO)\* associated with proposed activities (financial commitments to grants and contracts). For the purposes of this report, ULOs are combined into the Remaining Balance calculation.

Special Account Names	Total Budget	Total Expenditures	Remaining Balance
<b>US EPA Region 6</b>			
Tronox NAUM	\$5.9M	\$4.0M	\$1.9M
Tronox NAUM East GSA	\$2.3M	\$2.1M	\$244.6K
Tronox NAUM West GSA	\$1.9M	\$1.5M	\$469.2K
Tronox NAUM Central GSA	\$2.3M	\$2.1M	\$233.3K
Tronox NAUM S18 Mine Residential Removal	\$26.0K	\$25.4K	\$0.0K
Tronox NAUM Section 10	\$328.5K	\$282.7K	\$46.8K
Tronox NAUM Sections 32 and 33	\$816.7K	\$724.2K	\$92.5K
<b>US EPA Region 9</b>			
Abandoned Uranium Mines on the Navajo Nation	\$3.2M	\$3.2M	\$0.0M
Tronox Quivira Mines (formerly NE Churchrock Quivira)**	\$98.3M	\$9.2M	\$89.0M
Cove Transfer Station - Tronox	\$5.3M	\$3.6M	\$1708.9K
Mesa I Mines - Tronox	\$9.4K	\$9.4K	\$0.0K
Section 32 AUM Site - Tronox	\$2.1M	\$1.7M	\$415.4K
Section 33 AUM Site - Tronox	\$1.1M	\$214.5K	\$864.7K
Tronox NAUM Cove Wash Regional Assessment	\$4.2M	\$3.4M	\$813.8K
Tronox Navajo Area Uranium Mines	\$936.7M	\$26.4M	\$910.3M
Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps	\$3.1M	\$2.0M	\$1.2M
Tronox NAUM Mesa II	\$8.7M	\$1.6M	\$7.0M
Tronox NAUM Mesa V	\$2.3M	\$355.8K	\$1.9M
Tronox NAUM San Mateo Creek Basin	\$20.5K	\$8.6K	\$11.9K
Tronox NAUM Cove Mesa I Mines	\$2.2M	\$251.5K	\$2.0M
Tronox NAUM Cove Mesa III Mines	\$0.4M	\$41.9K	\$331.4K
Tronox NAUM Cove Mesa IV Mines	\$1.5M	\$167.7K	\$1.3M
Tronox NAUM Cove Mesa VI Mines	\$373.3K	\$42.4K	\$330.9K
Tronox NAUM Brodie I Mine	\$373.3K	\$41.9K	\$331.4K
Tronox NAUM Block K Mine	\$373.3K	\$41.9K	\$331.4K
Tronox NAUM Step Mesa	\$0.7M	\$83.8K	\$662.8K
Tronox NAUM Flag Mesa	\$1.5M	\$167.7K	\$1.3M
Tronox NAUM Knife Edge	\$373.3K	\$41.9K	\$331.4K
<b>Total All Special Accounts</b>	<b>\$1.1B</b>	<b>\$63.3M</b>	<b>\$1.0B</b>

\*Reports generated by EPA's CBOR (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.

## Table 2.2: NAUM Approved Expenditures

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

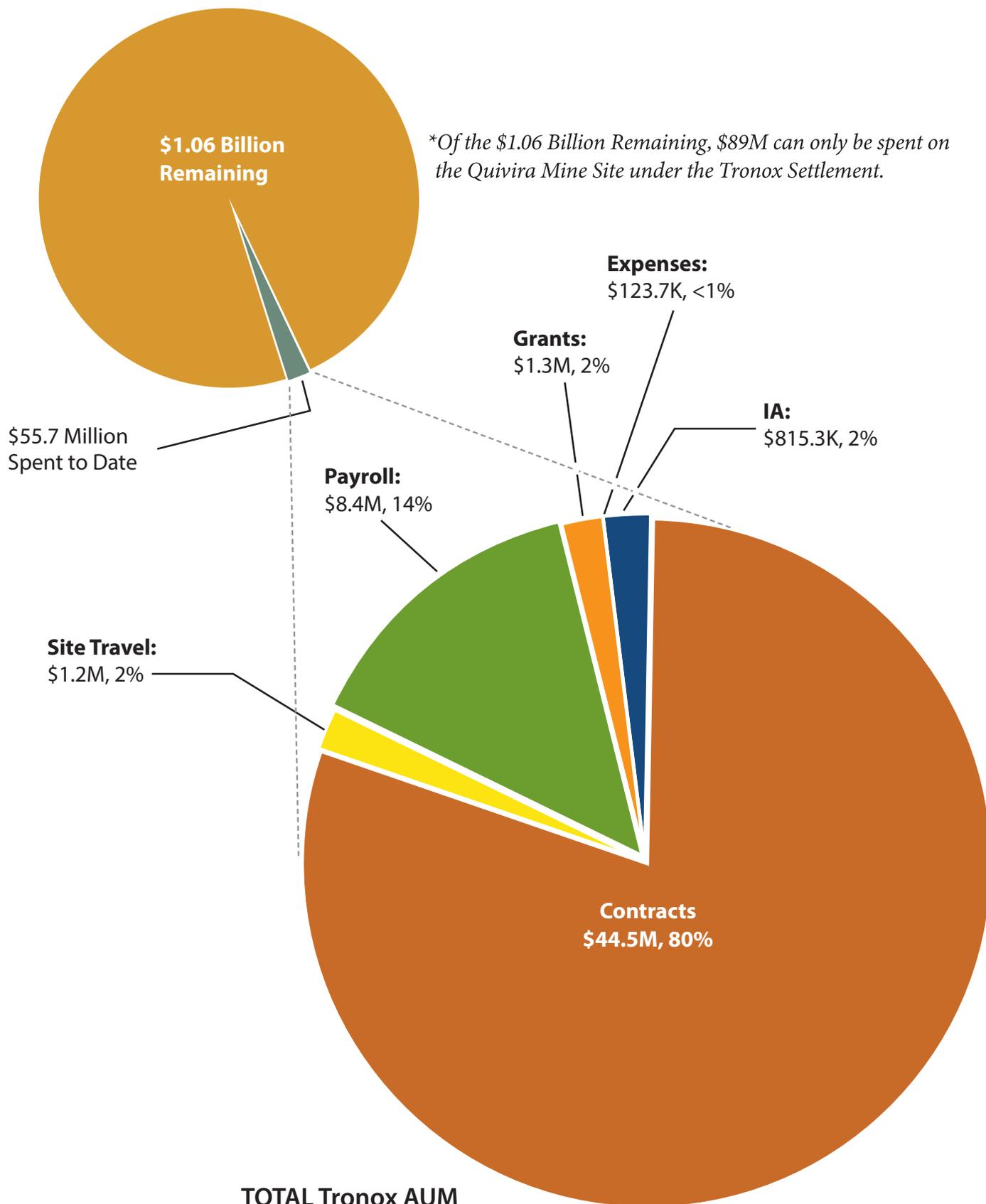
### Special Account Summary\*

Special Account Names	Contracts	IA	Expenses	Grants	Payroll	Site Travel	Total Spent
<b>US EPA Region 6</b>							
Tronox NAUM	\$2.6M	--	--	\$134.3K	\$1.1M	\$178.5K	\$4.0M
Tronox NAUM East GSA	\$1.8M	--	--	--	\$216.8K	\$41.4K	\$2.1M
Tronox NAUM West GSA	\$1.3M	--	--	--	\$119.3K	\$34.9K	\$1.5M
Tronox NAUM Central GSA	\$2.0M	--	--	--	\$54.0K	\$17.8K	\$2.1M
Tronox NAUM S18 Mine Residential Removal	\$23.6K	--	\$0.1K	--	\$1.7K	--	\$25.4K
Tronox NAUM Section 10	\$279.2K	--	--	--	\$2.4K	--	\$281.7K
Tronox NAUM Section 32 and 33	\$646.8K	--	--	--	\$67.4K	--	\$724.2K
<b>US EPA Region 9</b>							
Abandoned Uranium Mines on the Navajo Nation	\$1.8M	--	\$6.0K	\$115.5K	\$1.2M	\$114.9K	\$3.2M
Tronox Quivira Mines (formerly NE Churchrock Quivira)	\$7.1M	\$134.8K	\$3.6K	\$65.1K	\$715.0K	\$126.5K	\$8.2M
Cove Transfer Station - Tronox	\$3.5M	--	\$0.1K	\$3.0K	\$78.0K	\$33.1K	\$3.6M
Mesa I Mines - Tronox	\$0.0K	--	--	--	\$7.4K	\$2.0K	\$9.4K
Section 32 AUM Site - Tronox	\$1.4M	--	\$0.2K	\$10.1K	\$70.2K	\$9.1K	\$1.5M
Section 33 AUM Site - Tronox	\$69.1K	--	--	--	\$0.6K	\$1.1K	\$70.7K
Tronox NAUM Cove Wash Regional Assessment	\$2.0M	\$0.0K	\$0.0M	\$417.4K	\$698.5K	\$123.2K	\$3.3M
Tronox NAUM	\$16.1M	\$80.7K	\$0.1M	\$97.9K	\$3.8M	\$494.4K	\$20.7M
Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps	\$497.9K	\$599.8K	--	\$350.1K	\$124.9K	\$19.4K	\$1.6M
Tronox NAUM Mesa II	\$1.6M	--	--	--	\$41.9K	\$15.6K	\$1.6M
Tronox NAUM Mesa V	\$209.6K	--	\$0.3K	\$110.8K	\$35.2K	--	\$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
<b>Total</b>	<b>\$44.5M</b>	<b>\$815.3K</b>	<b>\$123.7K</b>	<b>\$1.3M</b>	<b>\$8.4M</b>	<b>\$1.2M</b>	<b>\$55.7M</b>

\*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 Tables 2.1 and 2.2 due to ULOs and EPA's Special Account Summary packages due to the posting date of invoices paid. Indirect Costs are not displayed above.

## Tronox Total Disbursed Breakout by Cost Category

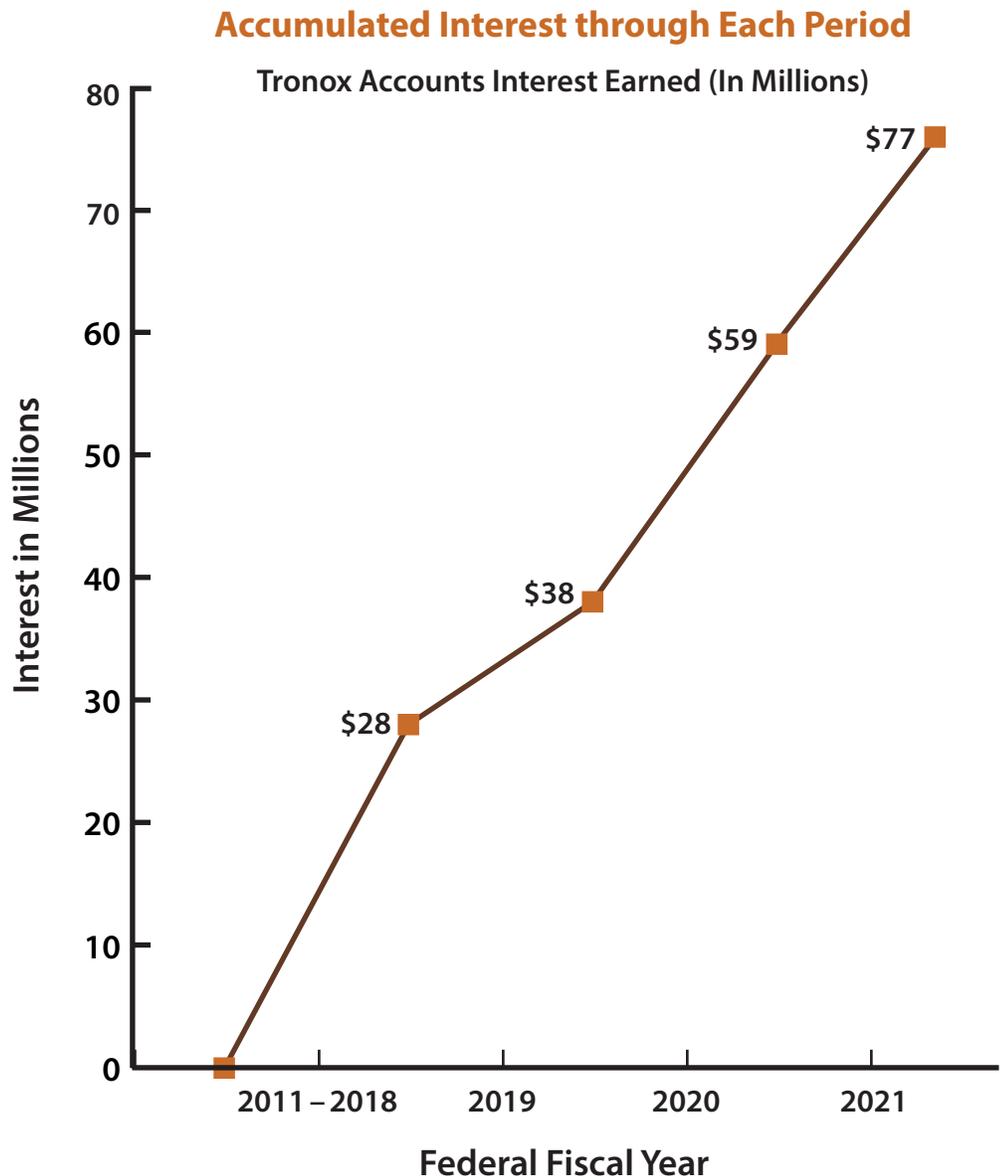
Total Settlement Expenditures (\$55.8 Million) by Category \$ in Millions



## Interest Earned on Tronox Special Accounts

Special accounts are funded entirely with money received from 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.

Fiscal Year	Rate
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 EPA's Superfund Special Accounts webpage at <https://www.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 Small Business 8a company 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.
- **AMRCS:** The Abandoned Mine Response and Construction Services (AMRCS) 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, 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 EPA, Navajo Nation, and the public on cleanup progress, training, and Navajo job and business opportunities.

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 specifically acknowledges the Navajo Employment Goals and reports progress in reporting on those goals.



 US EPA, Navajo AML and Navajo EPA staff at Mesa II.

## 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.

**State of NM** \$221k was provided to the State of New Mexico to support technical review of workplans, review cleanup options, assist with field oversight and interagency collaboration.

**Navajo Nation EPA** Over \$4.5M 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.** \$1.7M has been provided for on-site construction activities and technical review of proposed remediation strategies.

**Diné College** Funding in the amount of \$809,000 is supporting studies of uranium effects on livestock and the Cove watershed; Diné summer interns collected data and helped investigate potential mine impacts in the larger Cove Watershed.



 *Navajo AML, US EPA and Navajo EPA moving AML vegetation boxes.*



 *Mesa II.*

## 3.0 NAUM Approved Project Descriptions

### COVID-19 Impact on Tronox Activities & 2021 – 2029 Ten – Year Plan

Much of the planned activities for Fiscal Year (FY) 2021 were suspended due to the international pandemic. Like many communities, the Navajo Nation went on shelter in place status in mid-March 2020 (via Navajo Department of Health Public Health Emergency No. 2020 – 001 — Limit Mass Gatherings and Gatherings Due to COVID-19). US EPA also halted field efforts except in cases of urgent or emergency activities (i.e., wildfires, hurricanes or chemical releases). This continued to delay most planned community and technical meetings as well as planned field efforts. Urgent activities were undertaken at the Cove Day School (*see page 15*) and maintenance activities were undertaken by NAMLRD (*see page 16*)

US EPA and NNEPA utilized the time to move forward technical and policy documents including the 2020 – 2029 Ten-Year Plan which continues the effort of the previous Five-Year Plans and identifies the next steps in addressing the human health and environmental risks associated with the legacy

of uranium mining on the Navajo Nation. The Ten-Year Plan was developed in cooperation with multiple federal partner agencies including Bureau of Indian Affairs, Department of Energy, Nuclear Regulatory Commission, Navajo Area Indian Health Service, and the Agency for Toxic Substances and Disease Registry to incorporate goals and milestones for achieving assessment and cleanup actions. The document contains discrete sections that includes objectives in the following areas:

- Contaminated Structures
- Water
- Drinking Water
- Tuba City Dump Site
- Health
- Community Involvement
- Navajo Workforce Development

The Plan can be found on US EPA’s NAUM website: <https://www.epa.gov/navajo-nation-uranium-cleanup/abandoned-mines-cleanup-federal-plans> [Search terms, EPA, Tronox, Reporting]

## REGION 6 AND REGION 9

### Inspector General Commitments

In the Spring of 2021, the US EPA Office of Mountains, Deserts, and Plains (OMDP), established a US EPA workgroup to support Region 6 and Region 9 efforts to meet the final commitments to the US EPA Office of Inspector General (OIG). These final commitments, developing an allocation strategy and then implementing the strategy, were made in response to the report titled, “EPA Needs to Finish Prioritization and Resource Allocation Methodologies for Abandoned Uranium Mine Sites on or Near Navajo Nation Lands” (Report No. 18-P-0233). The Tronox Allocation Strategy Workgroup was formed with members from Region 6, Region 9, OMDP, the Office of Site

Remediation Enforcement, the Office of Land and Emergency Management, and other offices situated in US EPA headquarters to support the agency’s efforts to meet the final commitments.

Throughout the Summer of 2021, the Workgroup and several sub-workgroups met to develop an initial strategy, address legal issues in the development of the strategy, review prioritization, and develop communication strategies to support maximizing stakeholder involvement in the review of the strategy.

The strategy borrows from the bankruptcy model in which liabilities exceed the available funds. The workgroup identified potential cleanup costs to conduct non-Time Critical Removal Actions at the

Tronox NAUMs, identified potential US EPA salary and travel needs, estimated contractor oversight support costs, and estimated cooperative agreement\ grant needs for funding Navajo Nation EPA and New Mexico Environment Department and New Mexico Mining and Minerals Division. This provided the Workgroup with an overall funding need estimate of the extent to which the available Tronox Special Account was likely to be insufficient. The Workgroup, recognizing that cleanup alternatives were still being discussed with Navajo Nation, elected to use the off-site disposal costs estimates, the most expensive of the cleanup alternatives, to preserve the ability under the allocation strategy to implement that cleanup alternative if selected.

A key consideration of the Allocation Strategy was the Agency's knowledge of the viability of other liable potentially responsible parties (PRPs) through its PRP Search efforts. It is anticipated under the Allocation Strategy that US EPA will pursue all liable and viable PRPs and use all enforcement options available to have those PRPs address the anticipated shortfall in funding for the mine or group at mines at which each PRP has responsibility.

In September 2021, US EPA initiated discussions with its regulatory stakeholders concerning the proposed allocation strategy. US EPA met jointly with representatives of the Navajo Nation and the State of New Mexico on October 13, 2021, to present the draft strategy and request written comments on the strategy. US EPA met again with Navajo Nation and the State of New Mexico on November 9, 2021, to answer written comments and gather additional input from these external partners on the proposed strategy. Correspondence concerning the Tronox Allocation Strategy was received on November 5, 2021, from New Mexico and November 9, 2021, from Navajo Nation. US EPA responded to comments received on November 16, 2021. On November 18, 2021, US EPA Regions 6 and 9 held government to government consultation with Navajo Nation, followed by US EPA Region 9 providing a follow-up response to consultation. On November 30, 2021, Navajo Nation President Nez and Vice President Lizer provided a letter to US EPA summarizing their position following the consultation. US EPA replied to this letter on December 17, 2021. US EPA finalized the Allocation Strategy in December 2021, meeting the commitment to the US EPA Office of Inspector General. The final commitment, implementation of the strategy, was completed in March 2022 and will be discussed in the FY22 annual report.



**USEPA, Jesse Kass and NNEPA, Tennille Begay looking at former mining features at Mesa V.**



 *USEPA Jesse Kass and Elsa Johnson during Cove Day School Assessment.*

## REGION 9

### **Data Gaps Analysis**

The 2021 field season was put on hold due to COVID-19 restrictions. The data gaps analysis work is anticipated to take place during the 2022 field season (April – September 2022).

### **Cove Day School Radiological Assessment**

In July 2021, the Bureau of Indian Affairs (BIA) Department of Facility Management and Construction (DFMC) approached US EPA Region 9 to survey the interior of the Cove Day School after a BIA contractor detected several areas on the exterior school grounds with radiation levels of concern. The US EPA Tronox Northern Agency team took the lead on this request due to the proximity of the school to the Cove Transfer Station. The Tronox team, in coordination with NNEPA, BIA, and Bureau of Indian Education (BIE), came up with a plan to conduct an interior assessment at the school to ensure no radiation level of concern were found within the school.

In September 2021, US EPA RPM's Jesse Kass and Danielle Huang along with Community Involvement Coordinator (CIC) Elsa Johnson conducted a radiological assessment of the Cove Day School. The assessment aimed to identify any radioactive contaminants potentially located inside the school

building that may be producing unacceptable exposures to the occupants. The assessment included gamma scans of the walls and floors and exposure rate measurements at various locations around the rooms. In addition, the NNEPA Air Quality program completed indoor radon sampling as part of a joint agency effort. US EPA also met with community leaders and the school board members to inform them on assessment process. In December 2021, US EPA released the report to other agencies and the community. The assessment work conducted in the interior of the school by NNEPA and US EPA did not identify any areas of concern.

US EPA and NNEPA will continue working with BIA DFMC to review their work plan for cleaning up the elevated areas located on the exterior school grounds. US EPA has recommended that a characterization survey be completed as well as a final status survey after the elevated areas have been excavated. A final report should be written and presented to the community members.

**Note:** In January 2022, EPA's sampling findings were shared with the Cove Residents. Based on the findings from radiation scanning inside school facility structures, the interior of the Cove Day School is safe for use by students and faculty. The measurements of radiation from non-mining related materials are below USEPA-recommended action levels.

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## **Engineering Evaluation/Cost Analysis – Tronox Northern Agency sites**

Draft EE/CAs for 5 of the 34 sites in the Lukachukai Mountains and Tse Tah areas were developed before the end of FY21. This includes risk assessment and developing removal alternatives based on RSE data.

### **Community Meetings**

Due to COVID-19 restrictions, most community meetings in FY21 took place virtually. On August 19, 2021, US EPA CIC-Elsa Johnson, conducted a virtual meeting with the Cove Chapter President and Cove Day School Board President to provide an update on planned activities at the Cove Day School. RPMs Krista Brown, Jesse Kass and Danielle Huang explained to the community leaders the results of the prior survey conducted by BIA contractor. The RPMs shared the US EPA workplan to survey the interior of the school building, and the steps BIA is taking to mitigate the contamination found on the school property.

On August 25, US EPA participated in a Navajo Nation Council Health, Education and Human Services Committee meeting at the Committee's request. US EPA gave a brief description of federal CERCLA regulations and the assessment work underway by two legal settlements (for responsible parties) in the Cove Chapter at the opening of their presentation. US EPA reviewed how the agency is providing technical assistance to BIE to determine whether the Cove Day School is safe to occupy.

On September 8, 2021, US EPA hosted an outdoor meeting with community leaders and the school board members on Cove Day School at Cove, AZ. US EPA and its contractor (Environmental Restoration Group) explained the process for conducting the radiological assessment of the interior of the school, three modular, and maintenance buildings from September 8 – 10, 2021. Navajo EPA Air Quality Manager, Glenna Lee, informed the leaders that radon testing was completed.

A meeting occurred on September 22, 2021, with BIA DFMC, BIE, NNEPA, and US EPA to discuss the radiological assessment that took place at the Cove Day School the week of September 6, 2021. Agenda topics included the interior radon testing and findings from NNEPA, the interior gamma scanning process and preliminary findings by US EPA, and next steps for addressing elevated areas on the outside grounds by BIA DFMC.

### **NAMLRD Road and Site Inspections**

Between June and September 2021, Navajo Nation Abandoned Mine Lands Reclamation Department (NAMLRD), under the direction of US EPA, conducted road and site inspections of the Mesa I, II, V, & VI, and Cove AUM sites to evaluate the road conditions in preparation for future mine visits. Access roads at Mesa V and from Mesa V to Mesa II are in fairly good condition. NAMLRD did make the recommendation to maintain and improve the roads. Road improvements are expected to be completed ahead of any Spring 2023 field work.

On June 14, 2021, NAMLRD performed a mine site visit to the Mesa II repository to assess the status and performance of the erosion control system implemented at Mesa II. While NAMLRD found the erosion control system stable and solid, they noted concern over natural rock retaining wall ledges and the drainage channel and made recommendations to improve the drainage channel to contain surface water flow. After a few major precipitation events, NAMLRD conducted another mine site visit to the Mesa II repository on August 20, 2021 and found the conditions to be the same as in June 2021.

### **Cove Air Study**

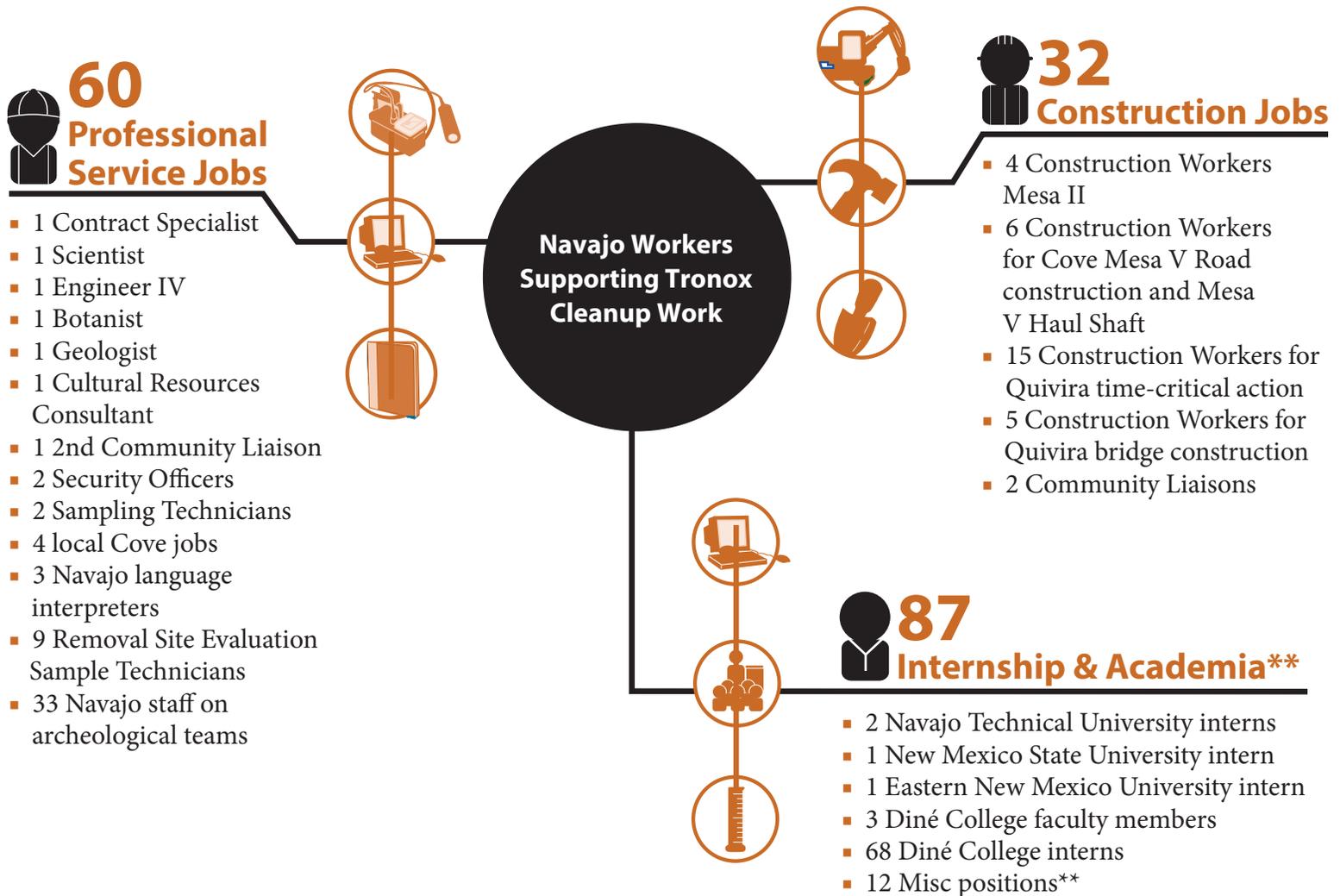
The Cove Air Study was restarted in May 2021, data from the air monitors is being collected weekly. Quarterly reports summarizing the data will be provided and shared with the community. The initially planned year-long monitoring event is now anticipated to run from May 2021 to June 2022.

# 4.0

## FY2021 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



\*\*FY2021 total updated to correct calculation for FY14 – 2021



 **USEPA and technical contractors, ERG with NNEPA conducting a background as**





*Assessment for Cove Day School Assessment.*



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