



Digger's Digest, 2021-2022



Inside this issue

Nenahnezad Subsidence Page 2

Excavating two abandoned coal mines.

Cactus Hill Project Page 3

Natural underground coal fire.

Land Re-use on Navajo Nation Page 4

Redevelopment to federal agencies.

**Shiprock and Tuba City Uranium
Mill Tailings Disposal Site** Page 5

Yearly inspection complete with DOE.

Feedback to Navajo Nation Drought

Site tours of proposed solutions. Page 7

Tribal Consultation Page 9

DOE-LM and Navajo Nation President Nez.

**Abandoned Mines
Reclaimed**

For a period of time, the residents of Nenahnezad, NM have been concerned over what appeared to be a pothole almost 20 feet from the Chapter House. Reports first came to NAMLRD staff while hosting a STEM event in 2018.

Students and parents told stories of an old coal mine that was once located near the San Juan River, and locations of other abandoned mines. Under federal law and the Chapter Resolution, NAMLRD (NAML) engineers took this as a Priority One reclamation site to be addressed immediately to protect the public's health, safety and property from the effects of coal mining.

By 2020, NAMLRD reclaimed the two-coal mine subsidences and cleared solid waste such as wood and coal ash, tires, garden and construction material, household trash, electronics/computers and about ten abandoned vehicles. The abandoned coal mine feature was reclaimed through basic earthwork along the riverbed, where invasive species of trees and plants were removed.



Abandoned Mines Reclaimed

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What started as an initiative to reclaim two mines turned into a motivational development to revitalize the area into a recreational, family site. Through partnerships, they used other funds such as the Healthy Diné Nation Act, the Nenahnezad Chapter officials and administration established fishing spots, a trail, educational signage and space for outdoor canopies.

This project was completed in partnership with the Nenahnezad Chapter House, Navajo Transitional Energy Company, Navajo Nation Department of Fish & Wildlife, Clawson Excavating Incorporation and Office of the Surface Mining Reclamation and Enforcement (Denver Regional Office).

“You start thinking of the possibilities. I started thinking of the second graders coming here to do their projects, the sports runner running on the trail, the football team and their coach running up that stairs.”

- Arthur Bavaro, Chapter Community Service Coordinator

Nenahnezad Trail Now Open

“By improving the land, our goal is to promote a productive ecosystem and land-use for future generations.”



Response to Natural Coal Fire in Black Mesa

In February 2020, Navajo AML excavated a natural coal fire within the Black Mesa area, known as the Cactus Hill Project. The successful project involved excavating coal fire fissures and vent holes, that was then filled with compact sand and earthen materials.

A 20 feet depth fissure was identified and excavated. This project site consisted of a coal outcrop fire that had developed fissures/cracks in the overburden.

At the end of the project, trees on the excavation area were cut and harvested for firewood to the nearby senior center. The branches, leaves and root debris were chipped to be used as mulch at the site to reseed and re-vegetate the site.

Navajo AML made repairs and chose materials and construction techniques to minimize visits to the sites. NAML will continue to safeguard and inspect the area for community, livestock and wildlife safety.

Abandoned Mine Land Economic Revitalization (AMLER)

To help revitalize communities impacted by coal energy, the Biden-Harris administration with the Department of Interior, and the Office of Surface Mining Reclamation and Enforcement made available \$115 million for states and Tribes through the AMLER grant program. This grant provides an opportunity to revitalize local economies, support jobs and address environmental impacts.

The first project awarded was to Kayenta Township to develop an industrial park. The second grant was awarded to Shonto Community Governance for their development of a LaQuinta Hotel in partnership with the Navajo Nation Division of Economic Development. The initial \$3.33 million AMLER funding will benefit the economy, infrastructure and communities that have been hit hard by the downward coal production on the Navajo Nation.

NAML will be taking proposals for construction ready projects under the AMLER Program from coal impacted communities and chapters.



LaQuinta Hotel in Shonto ground breaking dedication



Continued 2-year Warranty Inspection

NAML engineers visited six reclaimed sites, known as Chacoan III Project located at Coyote Canyon, NM, White Rock, NM, Burnham, NM, Sanostee, NM and Beclabito, NM. This was to conduct our annual warranty inspection of the sites. Inspections included a sediment retention wall/drop structure, coal seam (portals) and watershed structures.

Chacoan III Project started in April 2016 and into July 2018. For the 2021 inspection, we found that after more than two years of service, seven earth-dam runoff drop structures are still in stable condition. The dams are retaining and impeding surface water to encourage vegetation growth and provide water to the local livestock and wildlife.

NAML engineers' goal for each site is to maintain the natural landscape features and improve reclaimed sites for post-land use.

Showcasing Innovative Land Re-use to U.S. DOE-LM

To showcase NAML's slope stabilization designs and practices, NAML hosted a site tour to Tse Tah, AZ and Monument Valley, UT Abandoned Uranium Mine (AUM) sites with the Department of Energy-Office of Legacy Management (DOE-LM). Navajo EPA- Superfund Program, and the U.S. EPA.

Goal of the site tour was to illustrate the ability to re-germinate on its own, meaning to have the seeds sprout after a period of inactivity. This stabilization design will help with erosion control especially in harsh environmental conditions. This also supports Navajo AML's goal of post land-reuse of abandoned mine locations.





UMTRA: Long-term Maintenance and Monitoring

Long-term surveillance and maintenance of the Uranium Mill Tailings Radiation Control Act (UMTRCA) sites are required through the site Long-Term Surveillance Plan (LTSP). There are four UMTRCA sites located in Shiprock, NM, Tuba City, AZ, Mexican Hat, UT, and Monument Valley, UT that are inspected each year. Due to COVID-19 travel restrictions, the inspection was led and conducted by Navajo AML and local DOE-LM staff.



U.S. DOE-LM scientists based in Grand Junction, CO provided the pre-inspection briefing and post-inspection close-out meeting via teleconference with the inspection team. Purpose of the inspection was to confirm the integrity of the visible features at the site, identify changes in conditions that might affect conformance with the LTSP, and evaluate the need, if any, for maintenance or additional inspection and monitoring activities.

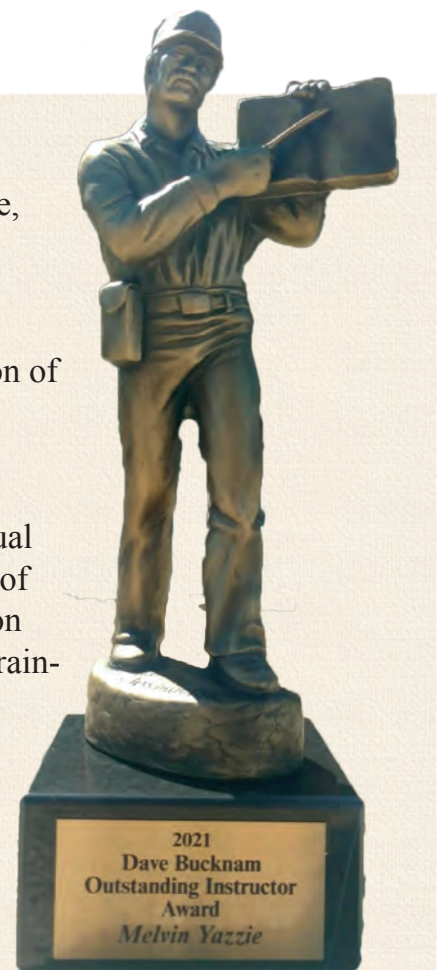
An evaporation pond at the Shiprock UMTRCA site is part of the groundwater remediation effort, that was constructed in 2002 with a two-layer liner design. In order to estimate the remaining life of the pond liner and identify/repair liner imperfections, a liner inspection was performed June 2021. The inspection included: a bare liner survey, and a filled pond survey. The surveys identify potential holes, and their locations, by utilizing electrical currents and sensor arrays to identify and locate leaks in the pond liner without draining.



Congratulations to, Melvin Yazzie, NAMLRD's Principal Mining Engineer, who won the Dave Bucknam Outstanding Instructor Award by the National Association of Abandoned Mine Land Programs (NAAMLPL).

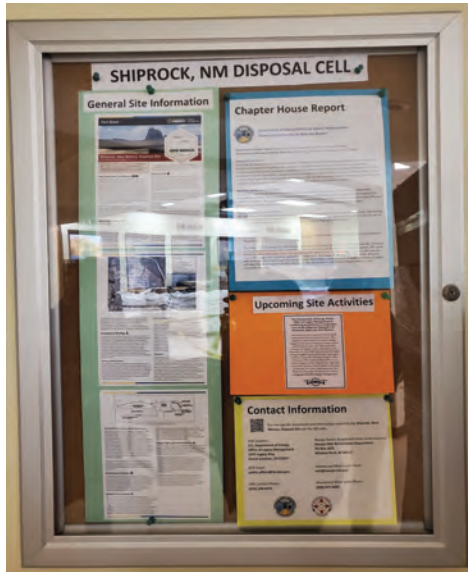
To receive this award, an individual must exhibit the special qualities of dedication, leadership, compassion and commitment in promoting trainings.

The national award is one of the most competitive and limited to state, tribal and federal



Community Outreach Events at UMTRCA Sites

Information Boards at Chapter Houses



DOE-LM and Navajo AML Public Affairs team installed an information board at the Shiprock Chapter House to inform the residence with updates about the Shiprock UMTRCA site. By installing the boards, NAML and DOE-LM hope residents will be more aware of upcoming site activities and chapter house reports. We will be installing more information boards at the other chapter houses close to the UMTRCA sites. DOE-LM and NAML also plan to provide brochure racks to include not only our information but also other federal entities' and Navajo departments' material about uranium

NAML & DOE Door-to-Door Outreach

To keep the Navajo communities informed of the four Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) sites, Department of Energy-Office of Legacy Management (DOE-LM) and NAMLRD public affairs team provide effective public outreach. One initiative we conduct is door-to-door outreach where we visit residence living near the UMTRCA sites. This is the time we are able to speak one-on-one with community members who may have questions or concerns. We handle door-to-door before aerial surveys or sampling is done by DOE's contractors. We strive to make sure our stakeholders are informed and understand why maintenance is being conducted.



From September 21 to 22, 2021, the DOE-LM and NAML public affairs team was in Halchita, UT community to conduct door-to-door outreach. About 50 homes were provided fact sheets about the Mexican Hat, UT Uranium Disposal Site, and the baseline aerial survey to be done the week of October 4th, 2021.

On December 06, 2021, the public affairs team visited Cane Valley, Utah where another UMTRCA site is located to do a door-to-door outreach. Fifteen families were provided information about the groundwater and surface water sampling being conducted.

Connect with NAMLRD



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NAML Provides Feedback to Navajo Nation Drought

On July 06, 2021 the Navajo Nation's Division of Natural Resources (DNR) departments, Navajo AML and Water Resources collaborated on a drought project. Navajo AML hosted a site tour with Jason John, Director for the Navajo Department of Water Resources to showcase NAML's work in surface water management. Navajo AML's Engineers use quality engineering designs, and ensures that NAML is work is effective



long-term in regards to environmental restoration using geomorphic concepts and natural environmental processes. During the summer, Navajo Nation declared a drought emergency so Navajo AML assisted by recommending innovative ways to reduce the impacts of severe drought conditions.

Navajo AML's past reclamation sites (some of which are also OSMRE award winnings projects) showcase the successes on water storage and soil protection (top soil). For projects such as this, Navajo AML is mindful of how the alluvial ground water can be recharged. For example, at Coyote Canyon, AZ Mine, we showed how a sediment retention structure (dam) can be designed to slow down (dissipate energy) the surface water (rain) run-off to retain sediments (soil), but also allowing the water to flow gently down the canyon.



From July 13-16, 2021, Navajo AML's Department Manager and Engineers joined a drought site tour across the Navajo Nation with prominent leaders and agencies to view flatlands, canyons and mountains with water depletion and other projects implementing water restoration. NAML demonstrated it has the capability and knowledge to implement engineering designs to follow NEPA clearances, but to construct and report on surface water management systems on Navajo Nation.

Navajo AML Awarded Federal Funds

U.S. EPA Awards Navajo AML

Under a Superfund Multi-Site Cooperative Agreement, Navajo AML was awarded funds through a five-year grant from United States EPA as a technical expert on abandoned uranium mine sites. Navajo AML will help provide information to EPA, principle responsible parties, federal agencies and assist with site investigation and response activities.

American Rescue Plan Act & Fiscal Recovery Fund

Navajo AML was successful in obtaining funding through the ARPA/FRF that will allow assistance on the Navajo Nation Environmental and Surface Water Infrastructure projects. Funding will ensure NAML to create engineering designs, partnerships, environmental and compliance, eventual construction of AML projects, earthen dams, sediment control structures, and possibly water wells and watering points up to 2026.

Defense Related Uranium Mines (DRUM) with Department of Energy

Navajo AML was awarded a five-year Cooperative Grant through the DRUM program with DOE. This will allow NAML to assist DOE DRUM evaluations across the Navajo Nation. We will also be providing administrative, technical, research, field and public relations assistance. DOE DRUM has been tasked with evaluating defense related uranium mines on the Navajo Nation that does not fall under the authority of the U.S. EPA and their Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

NAMLRD Hosts DOE & Navajo Nation Tribal Consultation

On October 26, 2021, Navajo AML hosted a virtual Tribal Consultation with Department of Energy-Office of Legacy Management (DOE-LM) Director, Carmelo Melendez and Navajo Nation President Jonathan Nez. This was in regards to United States President Joe Biden is Memorandum for Executive Order 13175 to strengthen government-to-government relationship.

President Nez spoke about NAML's Cooperative Agreement with DOE-LM and emphasized on several recommendations to; 1) beneficial land re-use 2) water remediation 3) Navajo workforce development and 4) community involvement. Ensuring that under the Nuclear Regulatory Commission (NRC) is oversight, all environmental pathways are monitored and remediated.

Joni Tallbull, NAML's former Senior Environmental Specialist, further elaborated on capacity building by DOE utilizing Navajo contractors and working with Navajo schools and colleges. Tallbull gave examples of Navajo AML's land re-use projects such as the Nenahnezad Chapter subsidence project.





Crownpoint to Open Long-awaited Youth Center

Soon the Crownpoint and surrounding community youths will have a youth center to call their own when the Crownpoint Youth Center is complete in 2023. The 27,000 square feet of playing space, gymnasium, library, classrooms, a kitchen, and lounges is the ultimate vision of Virginia Nelson, the Crownpoint Office of Diné Youth (ODY) is Program Supervisor III.



Nelson never gave up when searching for funds, and one of those was submitting a grant application to the Office of Surface Mining Reclamation and Enforcement (OSMRE) for the Public Facilities Project (PFP). PFP's under the SMCRA is a means of off-setting mining related impacts to tribal communities, by contributing to the development of local infrastructure and other public facilities. With Nelson's willingness to have a youth center built, Navajo AML and OSMRE awarded ODY in 2014 of \$400,000.



“Number one, it’ll be a safe haven for the youths and a place for them to go. Here in our small building, after school the kids get off the bus and one of us will be at the door waiting for them. Makes your heart sing or cry because you’ve got kids into the building so excited to be here. Second, this building is going to be our after-school program that will include sports leagues. A lot of our kids go to Gallup or Farmington just to play in leagues, but once our building is up, we’ll be able to do volleyball, basketball, soccer leagues and Zumba. There’s so many things they’re going to be able to do,” said Nelson.

Dorothy Luarkie, Navajo Housing Authority (NHA) Development Coordinator, agrees the new center will be a safe space for youths. NHA also funded the center and is the lead to build the infrastructure.

“There will be an art room where they can be creative and it’ll give an opportunity for the kids to learn to weave,” said Luarkie. “There will be a gymnasium and a place for the community to gather, no matter what age. This is a way for everyone to get to know each other.”

NAML would like to thank the partnership with Crownpoint ODY, NHA, Arviso Construction, and OSMRE. PFP's are no longer a project grant that ended in 2017.